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**Soil and Groundwater Investigation Report  
Former Glovatorium  
Oakland, California**

**6895.00-026  
March 20, 2000**

Prepared for  
Smiland & Khachigian  
601 West Fifth Street, 7<sup>th</sup> Floor  
Los Angeles, California 90071-2004



March 20, 2000

6895.00-026

Mr. Scott Seery, CHMM  
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Alameda County Health Care Services Agency  
Department of Environmental Health  
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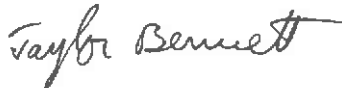
Subject: Soil and Groundwater Investigation Report, Former Glovatorium, 3815 Broadway  
Avenue, Oakland, California

Dear Mr. Seery:

As you requested in your letter dated January 5, 2000 to Mr. Robert Depper, owner of the former Glovatorium, LFR Levine-Fricke (LFR) is submitting the enclosed report presenting the results of the soil and groundwater investigations LFR performed at the subject site from July 1999 through January 2000. The investigations were performed in general accordance with the LFR work plan dated May 6, 1999, with modifications that we discussed with you in a subsequent meeting on October 15, 1999. Additional groundwater-level measurements, groundwater sampling, and a survey were performed in January 2000, as requested in your January 5 letter.

If you have any questions or comments regarding the enclosed report, please call me.

Sincerely,



Taylor Bennett, R.G.  
Senior Project Hydrogeologist

Enclosures

cc: Stuart Depper, Clean Tech Machinery  
Albert M. Cohen, Esq., Smiland & Khachigian  
Bruce Page, Ph.D., Bruce W. Page Consulting, Inc. (without Appendix E)  
William Walters, Esq.

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## CERTIFICATION

All hydrogeologic and geologic information, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by an LFR Levine-Fricke California Registered Geologist.

*Taylor Bennett*

*3/20/00*

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Taylor Bennett  
Senior Project Hydrogeologist  
California Registered Geologist (6595)

Date

## 1.0 INTRODUCTION

This report, prepared by LFR Levine·Fricke (LFR) for Smiland & Khachigian, on behalf of their clients, the owners of the former Glovatorium, presents the results of soil and groundwater investigations conducted at the former Glovatorium, a dry cleaning business located at 3815 Broadway Avenue in Oakland, California (the Site; Figure 1). The investigation was requested in part to evaluate claims by Earl Thompson ? regarding environmental contamination on the property.

The report is organized into the following sections:

- Section 1.0 is an introduction and summarizes recent regulatory correspondence and meetings.
- Section 2.0 presents the objectives, scope, and status of investigations.
- Section 3.0 provides a description of the Site and background information.
- Section 4.0 describes the local and site geology and hydrogeology, including groundwater-level measurements.
- Section 5.0 presents the results of laboratory analysis of soil and groundwater samples.
- Section 6.0 presents conclusions and recommendations for further work.

This report was prepared pursuant to letters from Scott Seery of the Alameda County Health Care Services Agency (ACHCSA) dated June 4 and June 18, 1999; a letter from Taylor Bennett of LFR to Mr. Seery dated September 15, 1999; a meeting with Mr. Seery on October 15, 1999; and a letter from Mr. Seery dated January 5, 2000. The letters and meeting are summarized below.

The ACHCSA's letter dated June 4, 1999 accepted the work plan for soil and groundwater investigations contained in the LFR document entitled, "Results of Utility Survey and Work Plan for Soil and Grab Groundwater Investigation," dated May 6, 1999 ("Work Plan"). The June 4, 1999 letter established a schedule for completing the soil borings described in the Work Plan and for submitting a report of the investigation.

The ACHCSA's letter dated June 18, 1999 modified the schedule to allow until July 29, 1999 to initiate the field investigation activities described in the Work Plan.

LFR's letter dated September 15, 1999 summarized the status of soil and groundwater investigations completed as of that date, and documented discussions between LFR and ACHCSA regarding the schedule for submitting a report on the investigations.

A meeting at the offices of ACHCSA on October 15, 1999 was attended by Mr. Seery of ACHCSA, Dr. Bruce Page of Bruce W. Page Consulting, and Mr. Bennett of LFR. The purpose of the meeting was to discuss the results of soil and groundwater

investigations conducted to date, and to identify the tasks necessary to select the locations of permanent groundwater monitoring wells. At the meeting, it was agreed that the following tasks would be performed by or on behalf of the Site owners, Robert and Stuart Depper:

- Open temporary groundwater sampling points that were installed by a previous consultant, GeoSolv, LLC ("GeoSolv"), and which had been constructed for possible future reuse by capping them with bentonite seals and removable concrete surface caps.
- Survey all temporary sampling points installed by GeoSolv and LFR.
- Obtain street encroachment permits required by the City of Oakland for temporary sampling points to be installed in 38<sup>th</sup> Street and Manila Avenue.
- Request permission to access well MW-11, which is located north of the Site and is owned by Unocal.
- Begin quarterly groundwater monitoring to determine groundwater flow directions using temporary sampling points installed by GeoSolv and LFR and monitoring well MW-11 (contingent on obtaining Unocal's permission to access this well).

The ACHCSA's January 5, 2000 letter identified two tasks to be conducted, which are summarized below:

- Task 1: Survey all accessible temporary sampling points installed by LFR and GeoSolv, measure groundwater elevations, and collect grab groundwater samples. Analyze the groundwater samples using the methods identified in Section 3.1.6 of the Work Plan on a one-week or shorter turnaround time. Obtain necessary permits required by the City of Oakland for temporary sampling points and install security measures (well boxes and locking caps) on temporary sampling points that were installed by GeoSolv.
- Task 2: Submit a final soil and water investigation (SWI) report documenting the results of soil and groundwater investigations conducted in accordance with the Work Plan and identified in Task 1, above.

## **2.0 OBJECTIVES, SCOPE, AND STATUS OF INVESTIGATIONS**

The following sections discuss the objectives, scope, and status of investigations at the Site.

### **2.1 Objectives of Investigations**

The objectives of the soil and groundwater investigations were as follows:

- Assess possible releases from underground storage tanks (USTs) located under the sidewalk on the north side of 38<sup>th</sup> Street.



- Assess the potential for migration of chemicals along preferential pathways, in particular, the 54-inch storm drain and 10-inch sanitary sewer.
- Obtain sufficient preliminary information regarding groundwater gradients and quality to allow selection of permanent groundwater monitoring well locations.
- Collect soil and groundwater samples to assess human health risks and evaluate the possible occurrence of natural bioattenuation.
- Evaluate claims by Earl Thompson regarding possible migration of chemicals on the property. ?

## 2.2 Scope of Investigations

To meet the objectives outlined in the preceding section, and in accordance with the Work Plan, LFR conducted the following work at the Site:

- On July 15 and 16, 1999, LFR supervised a drilling subcontractor (Precision Sampling, Inc. of Richmond, California) who drilled ten soil borings (GW-1 through GW-8, GW-5A, and GW-6A; Figure 2) using the direct-push method. LFR collected soil samples for laboratory analysis and lithologic description, and installed nine temporary groundwater sampling points in the borings.
- On July 15, 19, and 21, 1999, LFR collected grab groundwater samples from five of the nine temporary groundwater sampling points (GW-2, GW-3, GW-4, GW-7, and GW-8). Four of the temporary sampling points (GW-1, GW-5, GW-6, and GW-6A) could not be sampled on these dates because they were dry or there was insufficient water present for grab groundwater samples to be collected.
- On August 27, 1999, LFR collected grab groundwater samples from temporary sampling points GW-5 and GW-6A. Sampling point GW-1 was dry and could not be sampled on this date. Sampling point GW-6 was not measured or sampled because the adjacent sampling point, GW-6A, was sampled instead.
- LFR submitted the soil and grab groundwater samples to Curtis & Tompkins and Sequoia Analytical, Inc., both California-certified laboratories, for analysis.

In accordance with the ACHCSA's January 5, 2000 letter, LFR conducted the following additional work:

- On January 18 and 19, 2000, LFR identified seven temporary sampling points installed by GeoSolv inside the former Glovatorium building that were capped with removable cement caps. LFR removed the cement caps and inspected the temporary sampling points. The polyvinyl chloride (PVC) casing of one of the temporary sampling points, B-3 was found to be broken; the others were in good condition.
- On January 19, 2000, LFR measured groundwater levels in temporary sampling points installed by LFR and GeoSolv.

- On January 20, 2000, LFR obtained permission from a representative of Unocal to access well MW-11 to measure the water level and collect a groundwater sample.
- On January 21, 2000, a licensed surveying subcontractor (Carlson, Barbee & Gibson of San Ramon, California) surveyed the locations and elevations of temporary sampling points installed by LFR, temporary sampling point B-3, and well MW-11.
- On January 19 through 25, 2000, LFR collected groundwater samples from the temporary sampling points installed by LFR and GeoSolv, and from well MW-11. LFR also collected samples of ~~floating product~~ (light, non-aqueous phase liquid [LNAPL]) from sampling points B-3 and B-8.
- LFR submitted the groundwater samples to Curtis & Tompkins and LNAPL samples to Friedman & Bruya, Inc., both California-certified laboratories, for analysis.

### 2.3 Status of Investigations

The investigations completed to date, described in Section 2.2, have substantially met the project objectives, outlined in Section 2.1. All of the borings and temporary sampling points proposed in the Work Plan were completed, and soil and groundwater samples were collected in accordance with the Work Plan from all but one of the temporary sampling points (GW-1), which has remained dry since it was installed. The extent to which project objectives have been met is discussed below:

- Possible releases from USTs owned by Earl Thompson and the Glovatorium, and located under the sidewalk on the north side of 38<sup>th</sup> Street, were assessed by collecting and analyzing groundwater and/or soil samples from locations GW-5, GW-5A, GW-6A, and GW-7 (Figure 2).
- The potential for migration of chemicals along preferential pathways (specifically, the 54-inch storm drain and 10-inch sanitary sewer) was assessed by collecting and analyzing groundwater and/or soil samples from locations GW-1, GW-4, GW-5, GW-5A, GW-6A, and GW-8 (Figure 2).
- Preliminary information regarding groundwater gradients was obtained by surveying the locations and elevations of, and by measuring groundwater levels in, temporary sampling points installed by GeoSolv and LFR, and well MW-11. However, additional survey and groundwater-level data are needed to evaluate groundwater gradients and to help select the locations of permanent monitoring wells.
- Preliminary information regarding groundwater quality was obtained by collecting and analyzing groundwater samples from temporary sampling points installed by GeoSolv and LFR, and well MW-11.
- Data that will be used to assess human health risks were obtained by collecting and analyzing soil and groundwater samples as described above.

- Groundwater quality data were collected to evaluate the possible occurrence of natural bioattenuation; however, additional data will be required to complete this evaluation.

### 3.0 SITE DESCRIPTION AND BACKGROUND

The following sections describe the Site and the surrounding land uses, and summarize previous investigations conducted at the Site.

#### 3.1 Site Description

The Site is located between Manila Avenue and Broadway Avenue, near the intersection with 38<sup>th</sup> Street, in Oakland. Dry-cleaning operations have occurred at the Site since the 1920s. During its operation, the former Glovatorium had 60 employees, but it closed in the mid-1990s and remains closed. Another smaller-scale dry-cleaning business currently operates at the Site.

The ground surface at the Site slopes gently southwest, with surface elevations ranging from approximately 84 to 78 feet above mean sea level.

The storm drain and sanitary sewer lines that run underneath the former Glovatorium building were described in detail in the Work Plan. A summary of this description is provided in the following paragraphs.

A 54-inch-inside-diameter masonry storm drain culvert passes under the property, from Manila Street on the west to 38<sup>th</sup> Street on the south (Figure 2). The storm drain culvert is reportedly under the jurisdiction of the County of Alameda. The culvert directs the combined flow of the Rockridge and Broadway branches of Glen Echo Creek (formerly known as the west branch of Cemetery Creek). The storm drain culvert discharges to an open channel south of the Site. Glen Echo Creek flows into Lake Merritt approximately one mile south of the Site. According to a historical creek and watershed map (Sowers 1995), the channel for Glen Echo Creek formerly ran approximately north-south through the middle of the Site, roughly parallel to Broadway and Manila Avenue, and intersected the current storm drain culvert alignment near 38<sup>th</sup> Street. However, a Sanborn™ map dated 1902 indicates that the former creek channel followed closely the current route of the storm drain culvert under the Site.

A 10-inch-diameter, cast iron sanitary sewer lateral extends from a manhole inside the building approximately 110 feet west to a connection with the sanitary sewer main that runs north-south down the middle of Manila Avenue. The sanitary sewer lateral plunges steeply downward under the western wall of the building and passes underneath the storm drain culvert. The westernmost 26-foot segment of the sanitary sewer lateral is constructed of 6-inch-diameter cast iron pipe.

Several downspouts from the roof of the former Glovatorium building were observed during Site visits to be directed into catch basins inside the building. Some of these catch basins appear to be connected through a system of drain lines to the sanitary sewer manhole inside the building. Some catch basins and drain lines appear to have been abandoned by filling them with cement grout.

Six USTs are located at the Site. Two tanks are located under the sidewalk, on 38<sup>th</sup> Street, and four tanks are located inside the building (Figure 2). The volumes of the tanks have been variously reported as ranging from 800 up to 5,000 gallons (HK2, Inc./Semco 1997; Tracer Research Corp. 1993; and The Sutton Group 1995). They reportedly contained Stoddard Solvent, fuel oil, and possibly waste oil.

\* A video camera was used to inspect the inside of each of the tanks during closure. Groundwater was reported to have recharged into the four tanks inside the building after their contents were pumped out during closure activities in 1997. Holes were observed in two of the tanks inside the building, and groundwater was observed seeping into the tanks during the video inspection (HK2, Inc./Semco 1997).

The six USTs were closed in-place by backfilling with cement-sand slurry or pea gravel in August 1997. The tank located closest to the underground storm drain under the sidewalk on 38<sup>th</sup> Street was filled with pea gravel, which is less dense than cement-sand slurry. This was done to reduce the risk of damage to the storm drain (HK2, Inc./Semco 1997).

### 3.2 Land Uses

Land use in the Site vicinity is residential, commercial, and industrial. Three houses are located south of the Site, along 38<sup>th</sup> Street and Manila Avenue (Figure 2). A parking lot and Masonic Temple are located north of the Site. A building owned by Earl Thompson, Sr. is located south of the Site, at 316 38<sup>th</sup> Street.

Three to four USTs owned by Mr. Thompson are located under the sidewalk along 38<sup>th</sup> Street (Figure 2). The ownership of one of the two tanks that were closed in place in 1997 (discussed in Section 3.1) is uncertain. The tank appears to be located on Mr. Thompson's property. This tank was identified as a waste oil tank owned by Mr. Thompson in a letter dated December 20, 1995 from John R. Sutton of the Sutton Group to Medula Logan of ACHCSA. The tank reportedly had a volume of between 850 to 1,400 gallons, and contained a 1-inch layer of waste oil floating on oily water. A sample of the water from this tank contained 170,000 parts per billion (ppb) of acetone and 3,500 ppb of Stoddard Solvent or kerosene (it was not reported whether the water samples represented by these results were composites or discrete samples).

The other three tanks located under the sidewalk on 38<sup>th</sup> Street that are owned by Mr. Thompson are described in Mr. Sutton's December 20, 1995 letter to Medula Logan as follows (from west to east):

- An estimated 5,000-gallon tank with a riser pipe labeled "Standard Stoddard Solvent" and utility box lid marked "Buckeye." This tank reportedly contained 2 feet of water with no discernible odor during an inspection on July 28, 1995. The samples of the water in the tank reportedly contained Stoddard Solvent (2,900 ppb), acetone (80 ppb), methyl isobutyl ketone (MIBK; 13 ppb), methyl ethyl ketone (MEK; 18 ppb), 1,2-dichloroethane (1,2-DCA; 14 ppb), styrene (2 ppb), tetrachloroethene (PCE; 6 ppb), and total xylenes (4 ppb). It was not reported whether the water samples represented by these results were composite or discrete samples.
- An estimated 200- to 360-gallon tank with a utility box lid marked "SF Bowser." The tank reportedly contained no fluid, and reddish brown, medium sand was recovered on a probe. No samples were collected for analysis from this tank.
- An estimated 3,000- to 7,500-gallon vertical-axis "silo" tank extending to a depth of approximately 24 feet below ground surface (bgs). The utility box lid is marked "SF Bowser." The tank was reportedly full to the top of the riser pipe with water emulsified with oil, and a 1.5-foot-thick layer of black oil was found under the water in the tank (the location of this oil indicates that it is a dense, non-aqueous phase liquid [DNAPL]). Samples of the water in this tank reportedly contained diesel fuel (9,500 ppb), acetone (4,700 ppb), MIBK (4,700 ppb), toluene (210 ppb), ethylbenzene (180 ppb), 1,2-DCA (180 ppb), trichloroethene (TCE; 110 ppb), and total xylenes (2,200 ppb). It was not reported whether the water samples represented by these results were composite or discrete samples.

The following businesses are also located near the Site and reportedly have aboveground tanks and/or USTs:

- Unocal service station and car wash, 3943 Broadway (approximately 240 feet north of the Site, at the intersection of 40<sup>th</sup> Street)
- Precision Tune, 3810 Broadway (former Texaco service station, approximately 80 feet east of the Site, at 38<sup>th</sup> Street)
- Piedmont Lumber Company (approximately 250 feet north of the Site, at the intersection of 40<sup>th</sup> Street and Manila Avenue)

### 3.3 Summary of Previous Investigations

Geosolv performed a soil and grab groundwater investigation on August 18 through 22, 1997. The investigation consisted of advancing 14 soil borings to depths of between 10 and 24 feet bgs using the direct-push drilling method. Seven of the soil borings (B-2, B-3, B-7, B-8, B-9, B-10, and B-13; Figure 2) were converted to temporary groundwater sampling points, from which grab groundwater samples were collected. The depth to water in the piezometers ranged from approximately 4 to 6.6 feet bgs.

Geosolv performed an additional soil and grab groundwater investigation on September 9 through 15, 1998. The investigation consisted of advancing 12 direct-push soil borings to depths of 19 to 25 feet bgs. All 12 of the soil borings were converted to temporary piezometers (E-15 through E-26; Figure 2). Grab groundwater samples were

collected from nine of the temporary sampling points (the other three sampling points went dry after the initial water levels were measured, and could not be sampled). All of the temporary piezometers were abandoned and sealed after this investigation by removing the casings and backfilling the boreholes with cement grout. The depth to water in the piezometers ranged from approximately 8.6 to 15.1 feet bgs.

A summary of the results that were reported by GeoSolv for these investigations is presented below (GeoSolv 1998, 1999).

The highest concentrations of Stoddard solvent (TPHss), toluene, ethylbenzene, total xylenes, and/or volatile organic compounds (VOCs) in soil were detected in borings B-7, B-10, E-15, E-17, E-19, and E-20 (Figure 2), at depths between approximately 2 to 18.5 feet bgs. The primary chemicals detected in soil were the following:

- TPHss (up to 10,000 milligrams per kilogram [mg/kg])
- toluene (up to 2.3 mg/kg), ethylbenzene (up to 6.2 mg/kg), and total xylenes (up to 89 mg/kg)
- methyl tertiary-butyl ether (MTBE; up to 0.048 mg/kg)
- tetrachloroethene (PCE; up to 5.5 mg/kg)
- trichloroethene (TCE; up to 0.27 mg/kg)
- cis-1,2-dichloroethene (cis-1,2-DCE; up to 3.2 mg/kg)
- trans-1,2-dichloroethene (trans-1,2-DCE; up to 0.013 mg/kg)

In addition, 1,2-dichlorobenzene (0.039 mg/kg), n-butyl benzene (0.11 mg/kg), sec-butyl benzene (0.18 mg/kg), and tert-butyl benzene (0.020 mg/kg) were detected in soil.

The highest concentrations of TPHss, benzene, toluene, ethylbenzene, and total xylenes (BTEX), and/or VOCs in groundwater were detected in grab samples collected from temporary sampling points B-3, B-7, B-9, B-10, E-17, E-19, and E-20. The primary chemicals detected in groundwater were the following:

- TPHss (up to 48 milligrams per liter [mg/l])
- BTEX (up to 0.018 mg/l benzene, 0.12 mg/l toluene, 0.036 mg/l ethylbenzene, and 0.41 mg/l total xylenes)
- MTBE (up to 0.85 mg/l)
- PCE (up to 13 mg/l)
- TCE (up to 0.82 mg/l)
- cis-1,2-DCE (up to 8.7 mg/l)

In addition 1,1-dichloroethane (1,1-DCA; 0.0030 mg/l), 1,2-dichloroethane (1,2-DCA; 0.0041 mg/l), trans-1,2-DCE (0.013 mg/l), chlorobenzene (0.0027 mg/l), and 1,2-dichloropropane (1,2-DCP; 0.031 mg/l) were detected in groundwater.

## 4.0 LOCAL AND SITE GEOLOGY AND HYDROGEOLOGY

The following sections describe the local geology, sediments encountered in soil borings at the Site, and Site hydrogeology, including groundwater elevation measurements.

### 4.1 Local Geology

The Site is located on the alluvial plain between the San Francisco Bay shoreline and the Oakland hills. Surface sediments in the Site 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 (Helley and Graymer 1997).

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.

### 4.2 Site Geology and Hydrogeology

Boring logs for this investigation are presented in Appendix A. Figure 3 shows the locations of geologic cross-sections, which are presented in Figures 4 through 7. Table 1 summarizes construction data for the borings and temporary groundwater sampling points.

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.

As indicated on the boring logs (Appendix A), groundwater was generally encountered during drilling at depths of approximately 7 to 13 feet bgs (68 to 70 feet bgs). These observations are consistent with previous investigations at the Site by GeoSolv.

As shown on cross-section A-A' (Figure 4), a relatively coarse-grained layer of silty sand, clayey sand, and clayey gravel was encountered in borings GW-2, GW-3 and GW-8 at depths between approximately 4.5 to 13 feet bgs (at elevations ranging from approximately 66 to 74 feet above mean sea level [msl]). The thickness of this unit

ranges from approximately 5.5 to 7 feet in these borings. A clayey sand layer was encountered at depths from 18 to 20 feet in boring GW-8 (the total depth of the boring was 20 feet). Because this boring was drilled adjacent to the sanitary sewer lateral, the sediments encountered there might represent fill material around and above the sanitary sewer pipe. The sediments encountered in boring GW-1 could also represent fill material adjacent to the storm drain culvert, although they are difficult to distinguish from native materials encountered in other borings at the Site.

As shown on cross-section B-B' (Figure 5), sediments encountered in borings drilled by GeoSolv and LFR consisted predominantly of silty clay, sandy clay, and clay. Relatively coarse-grained materials consisting of clayey gravel, silty sand, and clayey sand were encountered in borings GW-7, E-23, E-25, and E-26 at depths between approximately 10 and 14 feet bgs (approximately 67 to 71 feet msl). A layer of silty to clayey sand was encountered in borings GW-7, B-11, E-23, and E-25 between approximately 17 and 21 feet bgs (approximately 61 to 64 feet msl). These units are discontinuous and were not encountered in borings B-2 or B-3. Borings B-2, B-11, and E-26 were drilled adjacent to USTs or piping associated with the USTs. Relatively coarse-grained backfill material around these underground structures was encountered at depths less than approximately 8.5 feet bgs.

As shown in cross-section C-C' (Figure 6), relatively coarse-grained sediments consisting of silty sand, clayey sand, and clayey gravel were encountered in borings GW-3 and GW-7 at depths between approximately 6 and 13 feet bgs (approximately 65.5 to 72 feet msl). The layer of silty sand encountered at depths between approximately 17 and 19 feet bgs (62 to 64 feet msl) in boring GW-7 was not encountered in boring GW-3. Fill material was encountered in borings GW-5 and GW-5A, which were drilled adjacent to the storm drain culvert.

As shown in cross-section D-D' (Figure 7), relatively coarse-grained sediments consisting of clayey sand were encountered in borings GW-2 and E-23 at depths between approximately 4.5 and 12 feet bgs (approximately 68 to 74 feet msl). This unit appears to be discontinuous, based on its absence in boring E-24. The layer of clayey sand encountered at depths between approximately 20 and 21 feet bgs (60 to 61 feet msl) in boring E-23 was not encountered in boring GW-2. Fill material was encountered in boring GW-4, which was drilled adjacent to the storm drain culvert.

### 4.3 Groundwater Elevation Measurements

Table 2 presents groundwater elevations measured in temporary sampling points installed by GeoSolv and LFR, and in monitoring well MW-11, which is owned by Unocal. Appendix B presents a survey report by Carlson, Barbee & Gibson of San Ramon, California.

LFR measured groundwater elevations in the temporary groundwater sampling points installed by GeoSolv and LFR on January 19, 2000. On January 20, 2000, Dave



DeWitt, a representative of Unocal, granted permission to LFR to measure the groundwater level and collect a groundwater sample from well MW-11.

Groundwater elevations measured on January 19 and 25, 2000 are shown on Figure 8. Groundwater elevations measured on these dates ranged from 67.73 feet msl in temporary sampling point GW-6A to 74.72 feet msl in temporary sampling point B-13.

Groundwater elevations measured in well MW-11 and several of the temporary groundwater sampling points could not be used to construct an accurate groundwater-elevation contour map and to calculate groundwater gradients. Therefore, groundwater elevation contours are not shown on Figure 8. The reasons these measurements could not be used to construct a contour map and calculate groundwater gradients are presented below.

- The groundwater level in well MW-11 was not measured on the same date that the other measurements were taken, because permission to access this well was not granted until January 20, 2000.
- Temporary sampling points GW-1, GW-4, GW-5, GW-6, and GW-6A are constructed in backfill material adjacent to the storm drain culvert, and have screened intervals higher (shallower) than those of most other points (Table 1).
- Temporary sampling points B-2, B-3, B-7, B-8, B-9, B-10, and B-13, located inside the building, have groundwater elevations that are both higher and lower than those outside the building, indicating that apparently both a groundwater mound and depression exist in close proximity. The groundwater elevations in these points might be influenced by the presence of backfill material in the vicinity of the USTs or possibly by leaking floor drain lines inside the building.
- LNAPL or product sheen was observed in all of the points inside the building, with the exception of B-13. The presence of LNAPL could have caused the apparent depression in some of the groundwater elevations.
- Groundwater elevations in the points inside the building were observed to increase by as much as 2.6 feet between January 19 and January 24, 2000, when groundwater samples were collected from these points (Table 2). These groundwater-level fluctuations are not consistent with observed groundwater elevations in points outside the building.
- After LFR measured the groundwater elevations to the tops of casings on January 19, it was discovered that the temporary sampling points installed by GeoSolv had been surveyed to the ground surface, not the tops of casings. The difference in elevation between the concrete surface and the tops of casings must be measured and used to correct the groundwater-elevation measurements.

Because of the considerations listed above, the only remaining points that can be used to calculate the groundwater gradient are temporary sampling points GW-2, GW-3, and GW-8. Because these points are located in a nearly straight line, an additional measurement point is needed to calculate the gradient. To obtain a preliminary estimate of the groundwater gradient direction, LFR used the groundwater elevation measured

in well MW-11 on January 25, 2000 as an additional measurement point. Using this measurement point with two other pairs of temporary sampling points allowed LFR to calculate the groundwater gradient in two ways:

- Using MW-11, GW-2, and GW-3, LFR estimated the gradient to be 0.034 foot per foot (ft/ft) towards the west.
- Using MW-11, GW-3, and GW-8, LFR estimated the gradient to be 0.016 ft/ft towards the southwest.

## 5.0 RESULTS OF SOIL AND GROUNDWATER ANALYSES

Section 5.1 presents the results of soil analyses. Section 5.2 presents the results of groundwater analyses. Section 5.3 presents the results of LNAPL analysis. Field and laboratory methods used to collect soil and groundwater samples are presented in Appendix C. Water-quality sampling information forms are presented in Appendix D. Laboratory certificates are presented in Appendix E.

### 5.1 Soil Analysis Results

Soil samples were collected for analysis from borings GW-1, GW-4, GW-5A, GW-6A, GW-7, and GW-8. The results of laboratory analyses of soil samples collected at the Site are summarized in Tables 3 and 4. The results of soil analyses for TPHss, PCE, and TCE are illustrated on Figures 9, 10, and 11, respectively, and are discussed below.

- As shown on Figure 9, TPHss was not detected in soil samples collected from borings GW-1, GW-4, GW-5A, GW-6A, and GW-7. TPHss was detected only in one soil sample collected at a depth of 12 feet in boring GW-8 (4.8 mg/kg).
- As shown on Figure 10, PCE was not detected in soil samples collected from borings GW-4, GW-5A, GW-6A, and GW-7. PCE was detected in soil samples collected at depths of 7 and 8 feet bgs in boring GW-1 and at a depth of 9 feet bgs in boring GW-8. The highest detected concentration of PCE in soil was 0.71 mg/kg (GW-1 at 7 feet bgs).
- As shown on Figure 11, TCE was not detected in soil samples collected from borings GW-1, GW-4, GW-5A, GW-6A, and GW-7. TCE was detected in soil samples collected at depths of 9 and 12 feet in boring GW-8. The highest detected concentration of TCE in soil was 0.013 mg/kg.

### 5.2 Groundwater Analysis Results

Groundwater samples were collected for analysis from temporary sampling points B-2, B-3, B-7, B-8, B-9, B-10, B-13, GW-2, GW-3, GW-4, GW-5, GW-6A, GW-7, and GW-8; and from well MW-11. The results of laboratory analyses of groundwater

samples collected at the Site by LFR are summarized in Tables 5 and 6. The results of groundwater analyses for TPHss, benzene, PCE, TCE, cis-1,2-DCE, and vinyl chloride are illustrated on Figures 12 through 17, respectively, and are discussed in the following items.

- As shown on Figure 12, in July and August 1999, TPHss was not detected in groundwater samples collected from sampling points GW-2, GW-5, GW-6A, or GW-8. TPHss was detected in grab groundwater samples collected from sampling points GW-3, GW-4, and GW-7, at concentrations up to 6.8 mg/l (GW-4).
- As shown on Figure 12, in January 2000, TPHss was not detected in groundwater samples collected from sampling points GW-5, GW-6A, or MW-11. TPHss was detected in grab groundwater samples collected from sampling points GW-2, GW-3, GW-4, and GW-8, at concentrations up to 0.97 mg/l (GW-4). TPHss was also detected in grab groundwater samples collected from all of the sampling points inside the building, at concentrations ranging from 1 mg/l (B-9) to 20 mg/l (B-2).
- As shown on Figure 13, in July and August 1999, benzene was not detected in grab groundwater samples collected from sampling points GW-2, GW-3, GW-4, GW-5, GW-6A, or GW-8. Benzene was detected only in grab groundwater samples collected from sampling point GW-7, at concentrations up to 0.076 mg/l.
- As shown on Figure 13, in January 2000, benzene was not detected in groundwater samples collected from sampling points B-2, B-7, B-8, B-9, B-13, GW-2, GW-3, GW-4, GW-5, GW-6A, or MW-11. Benzene was detected in grab groundwater samples collected from sampling points B-3, B-10, and GW-8, at concentrations up to 0.0072 mg/l.
- As shown on Figure 14, in July and August 1999, PCE was not detected in grab groundwater samples collected from sampling points GW-4, GW-5, GW-6A, or GW-7. PCE was detected in grab groundwater samples collected from sampling points GW-2, GW-3, and GW-8, at concentrations up to 0.22 mg/l (GW-3).
- As shown on Figure 14, in January 2000, PCE was not detected in groundwater samples collected from sampling points B-2, B-3, B-7, B-8, B-9, GW-5, GW-6A, or MW-11. PCE was detected in grab groundwater samples collected from sampling points B-10, B-13, GW-2, GW-3, GW-4, and GW-8, at concentrations up to 1.2 mg/l.
- As shown on Figure 15, in July and August 1999, TCE was not detected in grab groundwater samples collected from sampling points GW-3, GW-4, GW-5, GW-6A, or GW-7. TCE was detected in grab groundwater samples collected from sampling points GW-2, and GW-8, at concentrations up to 0.015 mg/l (GW-8).
- As shown on Figure 15, in January 2000, TCE was not detected in groundwater samples collected from sampling points B-2, B-3, B-7, B-8, GW-4, GW-5, GW-6A, or MW-11. TCE was detected in grab groundwater samples collected from sampling points B-9, B-10, B-13, GW-2, GW-3, and GW-8, at concentrations up to 2.4 mg/l (B-10).

- As shown on Figure 16, in July and August 1999, cis-1,2-DCE was not detected in grab groundwater samples collected from sampling points GW-2, GW-3, GW-5, or GW-6A. Cis-1,2-DCE was detected in grab groundwater samples collected from sampling points GW-4, GW-7, and GW-8, at concentrations up to 0.004 mg/l (GW-7).
- As shown on Figure 16, in January 2000, cis-1,2-DCE was not detected in groundwater samples collected from sampling points GW-5 or GW-6A, or MW-11. Cis-1,2-DCE was detected in grab groundwater samples collected from GW-2, GW-3, GW-4, and GW-8, at concentrations up to 0.053 mg/l. Cis-1,2-DCE was also detected in all of the sampling points inside the building, at concentrations up to 14 mg/l (B-10).
- As shown on Figure 17, in July and August 1999 and January 2000, vinyl chloride was only detected in grab groundwater samples collected from sampling point GW-8, at concentrations up to 0.0046 mg/l.

In addition to the chemicals discussed above, the following chemicals were detected in groundwater samples collected at the Site (Table 6):

- The grab groundwater samples collected from sampling point GW-7 in July 1999 contained sec- and tert-butylbenzene (up to 0.0021 and 0.0031 mg/l, respectively) and carbon tetrachloride (up to 0.0079 mg/l).
- The grab groundwater samples collected from sampling point GW-4 in January 2000 contained 1,2-dichloropropane (up to 0.0021 mg/l), n-, sec-, and tert-butylbenzene (up to 0.0067, 0.024, and 0.0034 mg/l, respectively) isopropylbenzene (up to 0.0078 mg/l), propylbenzene (up to 0.014 mg/l), 1,3,5-trimethylbenzene (up to 0.0022 mg/l), 1,2,4-trimethylbenzene (up to 0.0083 mg/l), para-isopropyl toluene (up to 0.0021 mg/l).

### 5.3 LNAPL Analysis Results

Samples of LNAPL were collected from sampling points B-3 and B-8 and sent to Friedman & Bruya, Inc. of Seattle, Washington for product identification. The product in both samples was identified as Stoddard solvent.

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

Section 6.1 presents LFR's conclusions, based on the results of this investigation that were presented in Sections 3.0 through 5.0 of this report. Section 6.2 presents LFR's recommendations for future work.

## 6.1 Conclusions

Based on the soil and groundwater investigation results presented in Sections 4.0 and 5.0 of this report, LFR has reached the following conclusions:

- The Site lies on Holocene alluvial deposits consisting predominantly of fine-grained materials of relatively low permeability (silts and clays). Discontinuous lenses of relatively coarse-grained materials (clayey and silty sands and gravels) were encountered at depths between approximately 4.5 and 14 feet bgs (66 to 74 feet msl), and 17 and 21 feet bgs (60 to 64 feet msl).
- The depth to groundwater below the Site ranges from 6.16 to 13.98 feet. Preliminary estimates of the groundwater gradient range from 0.016 ft/ft to 0.034 ft/ft towards the west to southwest.
- Chemicals associated with the Site have had minor effects on soil at locations GW-1 and GW-8, where low concentrations of TPHss (4.8 mg/kg), PCE (up to 0.71 mg/kg), and TCE (up to 0.013 mg/kg) were detected. However, these chemicals have not migrated in soil along the storm drain to downgradient locations (GW-4, GW-5A, and GW-6A).
- Chemicals associated with the Site have affected groundwater below the building, where LNAPL (Stoddard solvent) and product sheen were observed in sampling points installed by GeoSolv, and relatively high concentrations of dissolved-phase TPHss (up to 20 mg/l), PCE (up to 1.2 mg/l), TCE (up to 2.4 mg/l) and cis-1,2-DCE (up to 14 mg/l) were detected.
- Chemicals associated with the Site have affected groundwater at sampling point GW-3, where PCE (up to 0.22 mg/l), TCE (up to 0.001 mg/l), and cis-1,2-DCE (up to 0.02 mg/kg) have been detected. There are insufficient data to determine the pathway(s) of migration for chemicals detected in groundwater at locations GW-2, GW-3, and GW-8. Possible migration pathways include advection in groundwater or possible leakage from the sanitary sewer.
- Chemicals detected in groundwater at location GW-4 indicate that the backfill material along the storm drain could act as a preferential pathway for migration of these chemicals. However, these chemicals were not detected along the storm drain at downgradient locations (GW-5 and GW-6A).
- Sec- and tert-butylbenzene were detected in grab groundwater samples from sampling points GW-4 and GW-7, suggesting a common source for these chemicals. These chemicals were detected in soil at location E-26 during previous investigations by GeoSolv. Several of the compounds (n-, sec-, and tert-butylbenzene, isopropylbenzene, propylbenzene, 1,3,5-trimethylbenzene, and 1,2,4-trimethylbenzene) detected in the grab groundwater samples collected at location GW-4 in January 2000 are typical components of gasoline. 1,2-dichloropropane is a common spotting agent, an intermediate for PCE and carbon tetrachloride production, and a lead scavenger for anti-knock fluids. The source of these chemicals in soil and groundwater is not known.

- Although the grab groundwater sample analysis results should be considered estimates of groundwater quality, the results for January 2000 indicate that concentrations of PCE and its breakdown products increased in samples collected from temporary sampling points GW-2 and GW-8, and concentrations of PCE decreased in samples from location GW-3, as compared to the July and August 1999 results. In addition, concentrations of gasoline-range petroleum hydrocarbons and Stoddard solvent decreased in samples from GW-4 in January 2000.
- The detections of degradation products, TCE and cis-1,2-DCE, in samples collected from temporary sampling points GW-2, GW-3, and GW-8 in January 2000, and vinyl chloride in samples collected from location GW-8 in July 1999 and January 2000, provide evidence for the occurrence of natural bioattenuation of PCE in groundwater at the Site.
- The presence of TPHss, PCE, and one or more of the breakdown products TCE, cis-1,2-DCE, and vinyl chloride in grab groundwater samples collected from sampling points inside the building and at locations GW-2, GW-3, GW-4, and GW-8 provides additional evidence that natural bioattenuation of PCE is occurring. TPHss could act as a carbon source to help drive the reductive dechlorination of PCE and its breakdown products.
- Analysis results for soil and grab groundwater samples collected at locations GW-5, GW-5A, GW-6A, and GW-7 indicate that soil is not affected and only minor impacts to groundwater might have occurred due to possible releases from USTs belonging to the former Glovatorium and located under the sidewalk on 38<sup>th</sup> Street. Additional sampling will be required to evaluate the impact of the Earl Thompson tanks. Only low concentrations of TPHss, benzene, ethylbenzene, total xylenes, sec- and tert-butylbenzene, 1,2-dichloropropane, cis-1,2-DCE, and/or acetone were detected in grab groundwater samples from these locations.

## 6.2 Recommendations

Following are LFR's recommendations for future work at the Site:

- Continue quarterly monitoring of groundwater levels and quality in temporary sampling points installed by LFR and Geosolv, and in monitoring well MW-11. These data will allow further assessment of groundwater quality and flow directions to help select the locations of permanent monitoring wells.
- Request a log of well construction and lithology for Unocal well MW-11, to help correlate data from this well with other sampling points.
- Request permission from representatives of Unocal, and possibly Precision Tune at 3810 Broadway (former Texaco service station) to access additional known monitoring wells so groundwater levels can be measured in the Site vicinity.
- Measure the vertical distance, to the nearest 0.01 foot, between the concrete surface and tops-of-casings for temporary sampling points installed by GeoSolv so that groundwater elevation measurements at these locations can be corrected.

- Evaluate future groundwater-level measurements to select additional data points that can be used to construct groundwater-elevation contour maps and calculate groundwater gradients.
- Meet and/or converse with representatives of ACHCSA and the Regional Water Quality Control Board (RWQCB) to discuss the collection of additional data (oxidation-reduction potential, dissolved oxygen, hydrogen, ferrous iron, nitrate, and sulfate) to evaluate the possible occurrence of natural bioattenuation of PCE in groundwater. If sufficient data are available, select the locations of permanent monitoring wells that can provide more representative data regarding groundwater quality at the Site.

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**Table 1**  
**Construction Data for Temporary Sampling Points**  
**Former Glovatorium**  
**3815 Broadway, Oakland, California**

Location	Date Installed	Ground Surface Elevation (ft msl)	Top of Casing Elevation (ft msl)	Total Depth (feet)	Screened Interval Depth (ft bgs)	Screened Interval Elevation (ft msl)	Notes
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Temporary sampling points installed by GeoSolv, LLC:

B-2	19-Aug-97	82.20	NS	21	5 to 21	77.2 to 61.2	
B-3	19-Aug-97	82.60	82.57	18	5 to 18	77.6 to 64.6	(1)
B-7	20-Aug-97	77.33	NS	17.5	5 to 17.5	72.3 to 59.8	
B-8	20-Aug-97	82.06	NS	24	9 to 24	73.1 to 58.1	
B-9	21-Aug-97	77.57	NS	19.5	4.5 to 19.5	73.1 to 58.1	
B-10	21-Aug-97	81.65	NS	19	4 to 19	77.7 to 62.7	
B-13	22-Aug-97	85.12	NS	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	
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	80.10	20	10 to 20	70.3 to 60.3	

**Notes:**

(1) Top of casing surveyed on south side on January 21, 2000 because the casing was broken.

(2) Surface elevation estimated to be 81.3 feet msl.

ft msl = feet above mean sea level

ft bgs = feet below ground surface

NS = Not surveyed. Temporary sampling points installed by GeoSolv were surveyed to ground surface instead of the tops of casings. Temporary sampling point B-3 was resurveyed to the top-of-casing by LFR on January 21, 2000, because the casing was broken. Temporary sampling point GW-7 was not surveyed because the casing was removed and the boring was backfilled with cement grout after a grab groundwater sample was collected on July 15, 1999, in accordance with LFR's work plan dated May 6, 1999.

**Table 2**  
**Groundwater Elevation Measurements**  
**Former Glovatorium**  
**3815 Broadway, Oakland, California**

Location	Date Sampled	Top of Casing Elevation (ft msl)	Depth To Groundwater (feet)	Groundwater Elevation (ft msl)	Notes
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Temporary sampling points installed by GeoSolv, LLC:

B-2	26-Oct-97	82.20	9.54	72.66	(1)
	18-Feb-98	82.20	4.04	78.16	(1)
	19-Jan-00	82.20	8.12	74.1	(3)
	24-Jan-00	82.20	6.16	76.0	(3)
B-3	26-Oct-97	82.60	8.93	73.67	(1)
	18-Feb-98	82.60	4.53	78.07	(1)
	19-Jan-00	82.57	9.35	73.22	(2)
	24-Jan-00	82.57	6.74	75.83	
B-7	26-Oct-97	77.33	9.24	68.09	
	18-Feb-98	77.33	5.76	71.57	
	19-Jan-00	77.33	7.3	70.0	(3)
	24-Jan-00	77.33	8.36	69.0	
B-8	26-Oct-97	82.06	10.95	71.11	
	18-Feb-98	82.06	5.42	76.64	
	19-Jan-00	82.06	10.01	72.1	(3)
	24-Jan-00	82.06	8.98	73.1	(3)
B-9	26-Oct-97	77.57	9.18	68.39	
	18-Feb-98	77.57	6.13	71.44	
	19-Jan-00	77.57	8.46	69.1	(3)
	24-Jan-00	77.57	7.12	70.5	(3)
B-10	26-Oct-97	81.65	9.39	72.26	
	18-Feb-98	81.65	6.52	75.13	
	19-Jan-00	81.65	8.48	73.2	(3)
	24-Jan-00	81.65	7.35	74.3	(3)
B-13	26-Oct-97	85.12	12.10	73.02	
	18-Feb-98	85.12	6.61	78.51	
	19-Jan-00	85.12	10.40	74.7	(3)
	24-Jan-00	85.12	8.26	76.9	(3)

Temporary sampling points installed by LFR:

GW-1	27-Aug-99	79.94	DRY	DRY	
	19-Jan-00	79.94	DRY	DRY	
GW-2	27-Aug-99	79.14	10.68	68.46	
	19-Jan-00	79.14	10.90	68.24	
	21-Jan-00	79.14	10.82	68.32	

**Table 2**  
**Groundwater Elevation Measurements**  
**Former Glovatorium**  
**3815 Broadway, Oakland, California**

Location	Date Sampled	Top of Casing Elevation (ft msl)	Depth To Groundwater (feet)	Groundwater Elevation (ft msl)	Notes
GW-3	27-Aug-99	77.92	10.26	67.66	
	19-Jan-00	77.92	10.06	67.86	
	20-Jan-00	77.92	9.99	67.93	
GW-4	27-Aug-99	82.37	NM	NM	
	19-Jan-00	82.37	7.66	74.71	
	21-Jan-00	82.37	8.04	74.33	
GW-5	27-Aug-99	81.01	12.30	68.71	
	19-Jan-00	81.01	12.40	68.61	
	20-Jan-00	81.01	12.40	68.61	
GW-6A	27-Aug-99	81.61	13.90	67.71	
	19-Jan-00	81.61	13.98	67.63	
GW-8	27-Aug-99	80.10	9.50	70.60	
	19-Jan-00	80.10	9.66	70.44	
	20-Jan-00	80.10	9.68	70.42	
Monitoring well owned by Unocal:					
MW-11	25-Jan-00	84.21	10.73	73.48	

**Notes:**

- (1) Survey elevation and water level measurement taken at concrete surface
- (2) Top of casing was resurveyed because it was broken
- (3) Water level measured from top-of-casing. Because the top-of-casing elevation was surveyed at the concrete surface (see note 1), the groundwater elevation is reported to the nearest 0.1 foot.

ft msl = feet above mean sea level

NM = Not measured

NS = Not surveyed

**Table 3**  
**Summary of Analytical Results For Total Petroleum Hydrocarbon, BTEX, and MTBE Analyses**  
**Soil Samples Collected in the Vicinity of the Former Glovatorium**  
**3815 Broadway, Oakland, California**

*All results expressed in parts per million (ppm)*

Location	Date Sampled	Depth (ft bgs)	TPH, purge., Stoddard	TPH, purge., Gasoline	MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes
GW-1	16-Jul-99	8	<1	<1	<0.02	<0.005	<0.005	<0.005	<0.005
GW-1	16-Jul-99	7	<1	<1	<0.02	<0.005	<0.005	<0.005	<0.005
GW-4	16-Jul-99	9	<1	<1	<0.02	<0.005	<0.005	<0.005	<0.005
GW-5A	16-Jul-99	9	<1	<1	<0.02	<0.005	<0.005	<0.005	<0.005
GW-6A	16-Jul-99	10	<1	<1	<0.02	<0.005	<0.005	<0.005	<0.005
GW-7	15-Jul-99	9	<1	1.4 YH	<0.02	<0.005	<0.005	<0.005	<0.005
GW-7	15-Jul-99	16	<1	<1	<0.02	<0.005	<0.005	<0.005	<0.005
GW-7	15-Jul-99	14	<1	<1	<0.02	<0.005	<0.005	<0.005	<0.005
GW-7	15-Jul-99	11	<1	<1	<0.02	<0.005	<0.005	<0.005	<0.005
GW-8	16-Jul-99	9	<1	<1	<0.02	<0.005	<0.005	<0.005	<0.005
GW-8	16-Jul-99	12	4.8	8.2 YH	<0.02	<0.005	<0.005	<0.005	0.14 C

**Notes:**

C = Presence of this compound confirmed by second column, however, the confirmation concentration differed from the reported result by more than a factor of two.

YH = Sample exhibits fuel pattern which does not resemble TPH gasoline standard. Heavier hydrocarbons than the TPH gasoline standard are present in the sample.

ft. bgs = feet below ground surface

MTBE = Methyl tertiary-butyl ether

**Table 4**  
**Summary of Analytical Results For Volatile Organic Chemical (VOC) Analyses**  
**Soil Samples Collected in the Vicinity of the Former Glovatorium**  
**3815 Broadway, Oakland, California**

*All results expressed in parts per million (ppm)*

Location	Date Sampled	Depth (ft bgs)	PCE	TCE	Cis-1,2-DCE
GW-1	16-Jul-99	8	0.14	<0.0048	<0.0048
GW-1	16-Jul-99	7	0.71	<0.023	<0.023
GW-4	16-Jul-99	9	<0.0046	<0.0046	<0.0046
GW-5A	16-Jul-99	9	<0.005	<0.005	<0.005
GW-6A	16-Jul-99	10	<0.0051	<0.0051	<0.0051
GW-7	15-Jul-99	9	<0.0051	<0.0051	<0.0051
GW-7	15-Jul-99	16	<0.0049	<0.0049	<0.0049
GW-7	15-Jul-99	14	<0.0046	<0.0046	<0.0046
GW-7	15-Jul-99	11	<0.0049	<0.0049	<0.0049
GW-8	16-Jul-99	9	0.05	0.0061	<0.0046
GW-8	16-Jul-99	12	<0.005	0.013	<0.005

**Notes:**

ft. bgs = feet below ground surface

Cis-1,2-DCE = Cis-1,2-Dichloroethene

PCE = Tetrachloroethene

TCE = Trichloroethene

**Table 5**  
**Summary of Analytical Results For Total Petroleum Hydrocarbon, BTEX, and MTBE Analyses**  
**Grab Groundwater Samples Collected in the Vicinity of the Former Glovatorium**  
**3815 Broadway, Oakland, California**

*All results expressed in parts per million (ppm)*

Location	Date Sampled	Screened Interval Depth (ft bgs)	TPH, ext., Stoddard	TPH, purge., Stoddard	TPH, ext., Diesel	TPH, purge., Gasoline	MTBE	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	Notes
<b>Temporary sampling points installed by GeoSolv, LLC:</b>												
B-2	24-Jan-00	5 to 21	NA	20	NA	31 Y	<0.05	<0.013	<0.013	0.11 C	0.22 C	(1)
B-3	24-Jan-00	5 to 18	NA	4.9	NA	8.8 Y	<0.01	0.0048	<0.0025	<0.0025	0.0714	(1)
B-7	24-Jan-00	5 to 17.5	NA	19	NA	30 Y	<0.05	<0.013	0.062	<0.013	0.207	
B-8	24-Jan-00	9 to 24	NA	11	NA	19 Y	<0.01	<0.0025	<0.0025	<0.0025	0.17 C	(1)
B-9	24-Jan-00	4.5 to 19.5	NA	1 Y	NA	1.8 YH	<0.002	<0.0005	<0.0005	0.01 C	0.0089 C	(1)
B-10	24-Jan-00	4 to 19	NA	2.4 Y	NA	4.2	0.014 C	0.0072	0.027	0.025 C	0.032	
B-13	24-Jan-00	5 to 20	NA	1.7	NA	3 Y	<0.01	<0.0025	<0.0025	<0.0025	0.02	(1)
<b>Temporary sampling points installed by LFR:</b>												
GW-2	19-Jul-99	10 to 20	NA	<0.05	NA	<0.05	0.0025	<0.0005	0.00071	<0.0005	0.00074	
GW-2	20-Jan-00	10 to 20	NA	0.15	NA	0.25 Y	0.0044	<0.0005	<0.0005	0.00097 C	0.0013	
GW-3	19-Jul-99	10 to 20	NA	0.07 Z	NA	0.1 Z	<0.002	<0.0005	<0.0005	<0.0005	0.00064	
GW-3	20-Jan-00	10 to 20	NA	0.15	NA	0.26 Y	<0.002	<0.0005	0.00051	<0.0005	0.0013 C	
GW-4	21-Jul-99	7 to 12	NA	6.8	NA	10 YH	0.0022	<0.0005	<0.0005	<0.0005	0.0029	(2)
GW-4	20-Jan-00	7 to 12	NA	0.97	NA	1.6 Y	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	(3)
Duplicate	20-Jan-00		NA	0.85	NA	1.5 Y	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	(3)
GW-5	27-Aug-99	8 to 13	NA	<0.05	NA	<0.05	<0.001	<0.001	<0.001	<0.001	<0.001	
GW-5	20-Jan-00	8 to 13	NA	<0.05	NA	0.057 Y	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	

**Table 5**  
**Summary of Analytical Results For Total Petroleum Hydrocarbon, BTEX, and MTBE Analyses**  
**Grab Groundwater Samples Collected in the Vicinity of the Former Glovatorium**  
**3815 Broadway, Oakland, California**

*All results expressed in parts per million (ppm)*

Location	Date Sampled	Screened Interval Depth (ft bgs)	TPH, ext., Stoddard	TPH, purge., Stoddard	TPH, ext., Diesel	TPH, purge., Gasoline	MTBE	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Notes
GW-6A	27-Aug-99	5 to 15	NA	NA	NA	NA	0.0057	<0.0005	<0.0005	<0.0005	<0.0005	
Duplicate	27-Aug-99		NA	NA	NA	NA	0.0054	<0.0005	<0.0005	<0.0005	<0.0005	
GW-6A	27-Aug-99	5 to 15	NA	<0.05	NA	0.054 Y	0.0089	<0.0005	<0.0005	<0.0005	<0.0005	
Duplicate	27-Aug-99		NA	<0.05	NA	0.057 Y	0.0087	<0.0005	<0.0005	<0.0005	<0.0005	
GW-6A	25-Jan-00	5 to 15	NA	<0.05	NA	<0.05	0.0022	<0.0005	<0.0005	<0.0005	<0.0005	
GW-7	15-Jul-99	10 to 20	0.697 B	NA	1.79 A	NA	<0.0025	0.05	<0.0005	0.000727	0.00313	(4)
Duplicate	15-Jul-99		1.42 B	NA	3.1 A	NA	NA	NA	NA	NA	NA	(4)
GW-7	15-Jul-99	10 to 20	NA	NA	NA	NA	NA	0.0567	<0.002	<0.002	<0.002	(5)
Duplicate	15-Jul-99		NA	NA	NA	NA	NA	0.0755	<0.002	<0.002	<0.002	(5)
GW-8	19-Jul-99	10 to 20	NA	<0.05	NA	<0.05	0.0078	<0.0005	0.00064	<0.0005	0.00151	
GW-8	20-Jan-00	10 to 20	NA	0.19	NA	0.33 Y	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	
Duplicate	20-Jan-00		NA	0.2	NA	0.37 Y	<0.002	0.00058	<0.0005	<0.0005	<0.0005	
<b>Monitoring well owned by Unocal:</b>												
MW-11	25-Jan-00		NA	<0.05	NA	<0.05	0.009	<0.0005	<0.0005	<0.0005	<0.0005	
<b>Blanks</b>												
Trip Blank	19-Jul-99		NA	<0.05	NA	<0.05	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	
Trip Blank	20-Jan-00		NA	<0.05	NA	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	

**Table 5**  
**Summary of Analytical Results For Total Petroleum Hydrocarbon, BTEX, and MTBE Analyses**  
**Grab Groundwater Samples Collected in the Vicinity of the Former Glovatorium**  
**3815 Broadway, Oakland, California**

*All results expressed in parts per million (ppm)*

Location	Date Sampled	Screened Interval Depth (ft bgs)	TPH, ext., Stoddard	TPH, purge., Stoddard	TPH, ext., Diesel	TPH, purge., Gasoline	MTBE	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Notes
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**Notes:**

- (1) = TPH results are estimated due to high surrogate recoveries for Bromofluorobenzene
- (2) = Gasoline and stoddard solvent results are estimated due to surrogate recovery of Bromofluorobenzene above upper QC limit.
- (3) = Gasoline and stoddard solvent results estimated due to high surrogate recoveries above the upper QC limit.
- (4) = TPH diesel results are estimated due to high RPD > 50%. BTEX results are estimated due to high surrogate recovery above upper QC limits.
- (5) = Results are estimated because EPA recommended hold time was exceeded.
- A = Chromatogram Pattern: Unidentified Hydrocarbons C9-C24
- B = Chromatogram Pattern: Unidentified Hydrocarbons C9-C13
- C = Presence of this compound confirmed by second column, however, the confirmation concentration differed from the reported result by more than a factor of two.
- Y = Sample exhibits fuel pattern which does not resemble TPH gasoline standard.
- YH = Sample exhibits fuel pattern which does not resemble TPH gasoline standard. Heavier hydrocarbons than the TPH gasoline standard are present in the sample.
- Z = Chromatogram exhibits unknown single peak or peaks in the range of stoddard solvent and gasoline.

ft bgs = feet below ground surface

NA = Not analyzed

TPH, ext. = Total petroleum hydrocarbons (extractable)  
 TPH, purge. = Total petroleum hydrocarbons (purgeable)  
 MTBE = Methyl tertiary-butyl ether



**Table 6**  
**Summary of Analytical Results For Volatile Organic Chemical (VOC) Analyses**  
**Grab Groundwater Samples Collected in the Vicinity of the Former Glovatorium**  
**3815 Broadway, Oakland, California**

*All results expressed in parts per million (ppm)*

Location	Date Sampled	Screened Interval Depth (ft bgs)	Acetone	PCE	TCE	Cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	1,2-Dichloropropane	Notes
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**Temporary sampling points installed by GeoSolv, LLC:**

B-2	24-Jan-00	5 to 21	NA	<0.0013	<0.0013	0.27	0.0014	<0.0013	<0.0013	
B-3	24-Jan-00	5 to 18	NA	<0.002	<0.002	0.61	<0.002	<0.002	<0.002	
B-7	24-Jan-00	5 to 17.5	NA	<0.0036	<0.0036	0.92	0.0043	<0.0036	<0.0036	
B-8	24-Jan-00	9 to 24	NA	<0.0005	<0.0005	0.035	<0.0005	<0.0005	<0.0005	
B-9	24-Jan-00	4.5 to 19.5	NA	<0.0005	0.0006	0.0032	<0.0005	<0.0005	<0.0005	
B-10	24-Jan-00	4 to 19	NA	1.2	2.4	14	0.09	<0.063	<0.063	
B-13	24-Jan-00	5 to 20	NA	0.02	0.029	0.13	0.0049	<0.0005	<0.0005	

**Temporary sampling points installed by LFR:**

GW-2	19-Jul-99	10 to 20	NA	0.014	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	
GW-2	20-Jan-00	10 to 20	NA	0.13	0.019	0.0055	<0.0005	<0.0005	<0.0005	
GW-3	19-Jul-99	10 to 20	NA	0.22	<0.001	<0.001	<0.001	<0.001	<0.001	
GW-3	20-Jan-00	10 to 20	NA	0.055	0.001	0.02	<0.0005	<0.0005	<0.0005	
GW-4	19-Jul-99	7 to 12	NA	<0.0005	<0.0005	0.0035	<0.0005	<0.0005	0.0017	
GW-4	20-Jan-00	7 to 12	<0.01	0.0008	<0.0005	0.0036	<0.0005	<0.0005	0.0015	(1)
Duplicate	20-Jan-00		<0.01	0.0006	<0.0005	0.0044	<0.0005	<0.0005	0.0021	(2)
GW-5	27-Aug-99	8 to 13	0.24	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
GW-5	20-Jan-00	8 to 13	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
GW-6A	27-Aug-99	5 to 15	0.19	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	

**Table 6**  
**Summary of Analytical Results For Volatile Organic Chemical (VOC) Analyses**  
**Grab Groundwater Samples Collected in the Vicinity of the Former Glovatorium**  
**3815 Broadway, Oakland, California**

*All results expressed in parts per million (ppm)*

Location	Date Sampled	Screened Interval Depth (ft bgs)	Acetone	PCE	TCE	Cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	1,2-Dichloropropane	Notes
Duplicate	27-Aug-99		0.11	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
GW-6A	25-Jan-00	5 to 15	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
GW-7	15-Jul-99	10 to 20	NA	<0.0005	<0.0005	0.00358	<0.0005	<0.0005	0.000632	
GW-7	15-Jul-99	10 to 20	NA	<0.002	<0.002	0.00398	<0.002	<0.002	<0.002	(3)
Duplicate	15-Jul-99		NA	<0.002	<0.002	0.00383	<0.002	<0.002	<0.002	(4)
GW-8	19-Jul-99	10 to 20	NA	0.024	0.015	0.0038	0.0017	0.0012	<0.0005	
GW-8	20-Jan-00	10 to 20	NA	0.15	0.19	0.053	0.012	0.0045	<0.0007	
Duplicate	20-Jan-00		NA	0.15	0.18	0.052	0.011	0.0046	<0.0005	
<b>Monitoring well owned by Unocal:</b>										
MW-11	25-Jan-00	Unknown	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
<b>Blanks</b>										
Trip Blank	19-Jul-99		NA	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
Trip Blank	20-Jan-00		<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	

**Table 6**  
**Summary of Analytical Results For Volatile Organic Chemical (VOC) Analyses**  
**Grab Groundwater Samples Collected in the Vicinity of the Former Glovatorium**  
**3815 Broadway, Oakland, California**

*All results expressed in parts per million (ppm)*

Location	Date Sampled	Screened Interval Depth (ft bgs)	Acetone	PCE	TCE	Cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	1,2-Dichloropropane	Notes
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**Notes:**

- (1) = 1,2,4-Trimethylbenzene was detected at 0.0034 mg/L; 1,3,5-Trimethylbenzene was detected at 0.0009 mg/L; Isopropylbenzene was detected at 0.0055 mg/L; n-Butylbenzene was detected at 0.0041 mg/L; para-Isopropyl Toluene was detected at 0.0009 mg/L; Propylbenzene was detected at 0.0094 mg/L; sec-Butylbenzene was detected at 0.017 mg/L; tert-Butylbenzene was detected at 0.0027 mg/L; 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, para-isopropyl toluene, and n-butylbenzene results are estimated due to FD RPD > 50%.
- (2) = 1,2,4-Trimethylbenzene was detected at 0.0083 mg/L; 1,3,5-Trimethylbenzene was detected at 0.0022 mg/L; Isopropylbenzene was detected at 0.0078 mg/L; n-Butylbenzene was detected at 0.0067 mg/L; para-Isopropyl Toluene was detected at 0.0021 mg/L; Propylbenzene was detected at 0.014 mg/L; sec-Butylbenzene was detected at 0.024 mg/L; tert-Butylbenzene was detected at 0.0034 mg/L.; 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, para-isopropyl toluene, and n-butylbenzene results are estimated due to FD RPD > 50%
- (3) = Tert-Butylbenzene was detected at 0.00307 mg/L. Results are estimated because EPA recommended hold time was exceeded.
- (4) = Sec-Butylbenzene was detected at 0.00206 mg/L; tert-Butylbenzene was detected at 0.0031 mg/L; carbon tetrachloride was detected at 0.00786 mg/L. Results are estimated because EPA recommended hold time was exceeded.

ft bgs = feet below ground surface

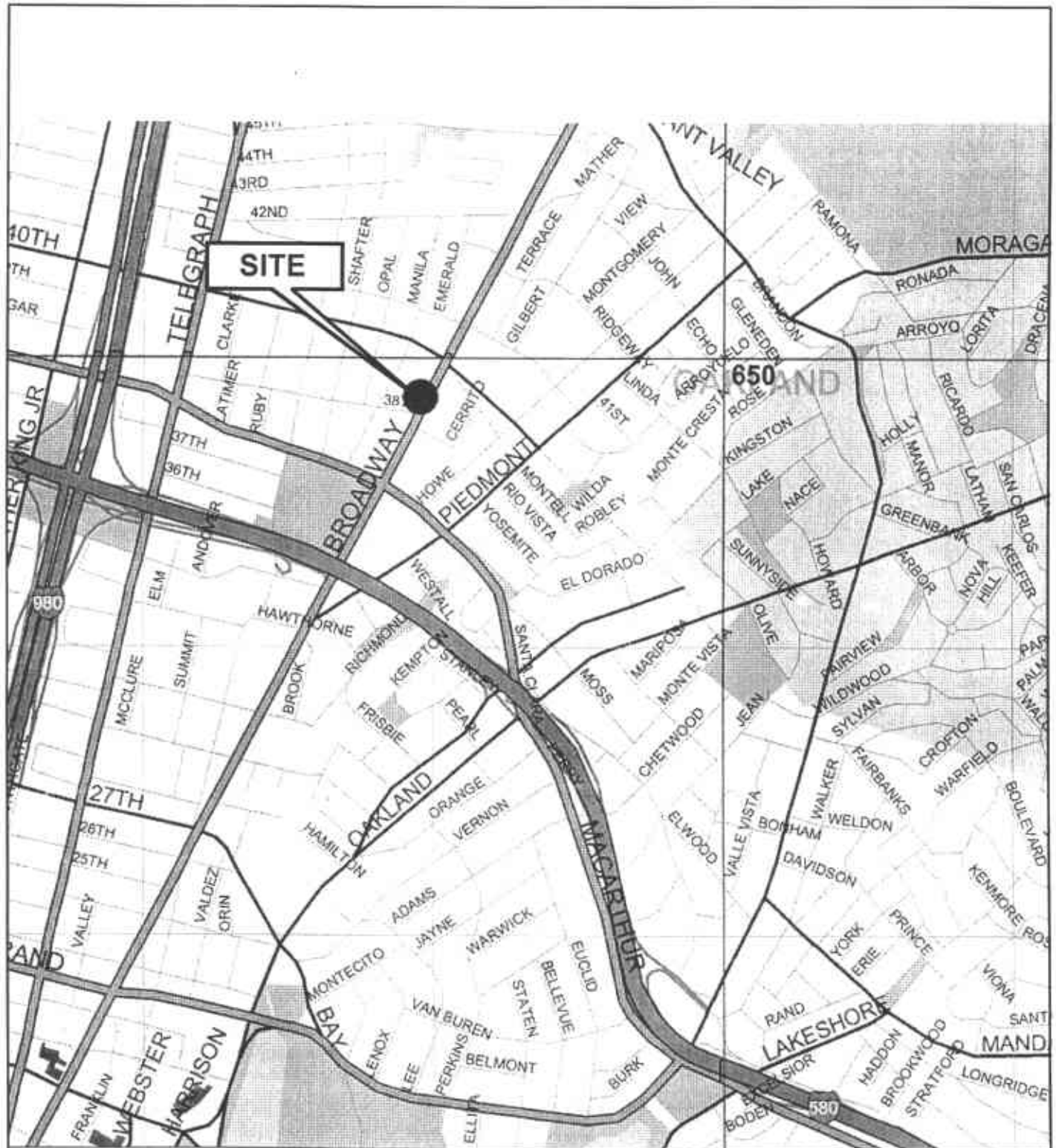
NA = Not analyzed

Cis-1,2-DCE = Cis-1,2-Dichloroethene

trans-1,2-DCE =trans-1,2-Dichloroethene

PCE = Tetrachloroethene

TCE = Trichloroethene



Source: The Thomas Guide Digital Edition  
1999 Bay Area

3815 BROADWAY AVENUE, OAKLAND, CALIFORNIA

### Site Location Map

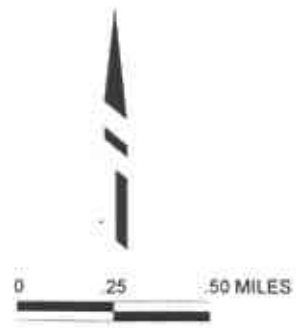
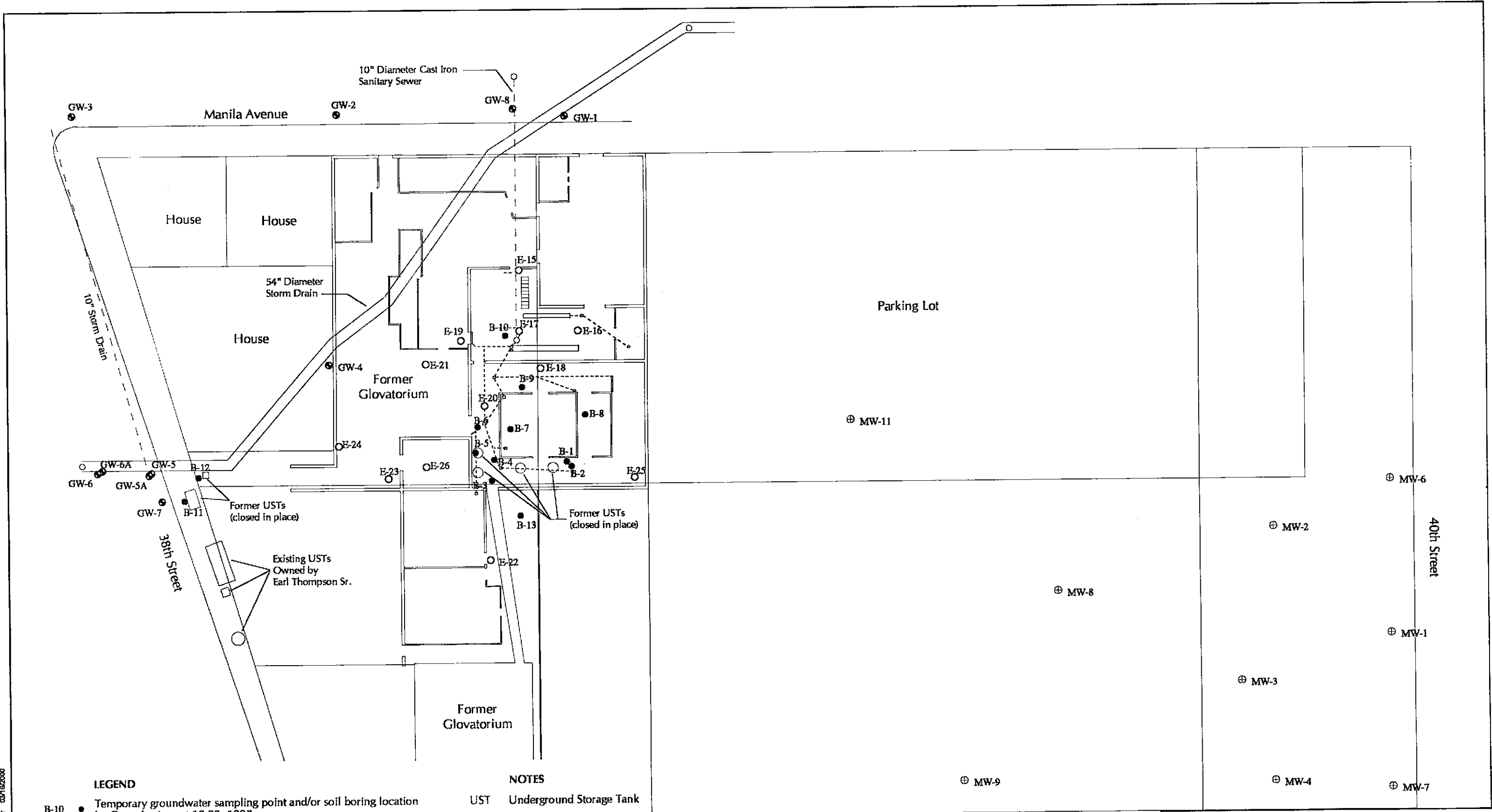


Figure 1

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**LEGEND**

- B-10 ● Temporary groundwater sampling point and/or soil boring location by Geosolv, August 19-22, 1997
- E-19 ○ Temporary groundwater sampling point and/or soil boring location by Geosolv, September 9-15, 1998
- GW-5 ● Temporary groundwater sampling point and/or soil boring location by LFR, July 15-16, 1999
- MW-11 ⊕ Groundwater monitoring well owned by Unocal

**NOTES**

UST Underground Storage Tank

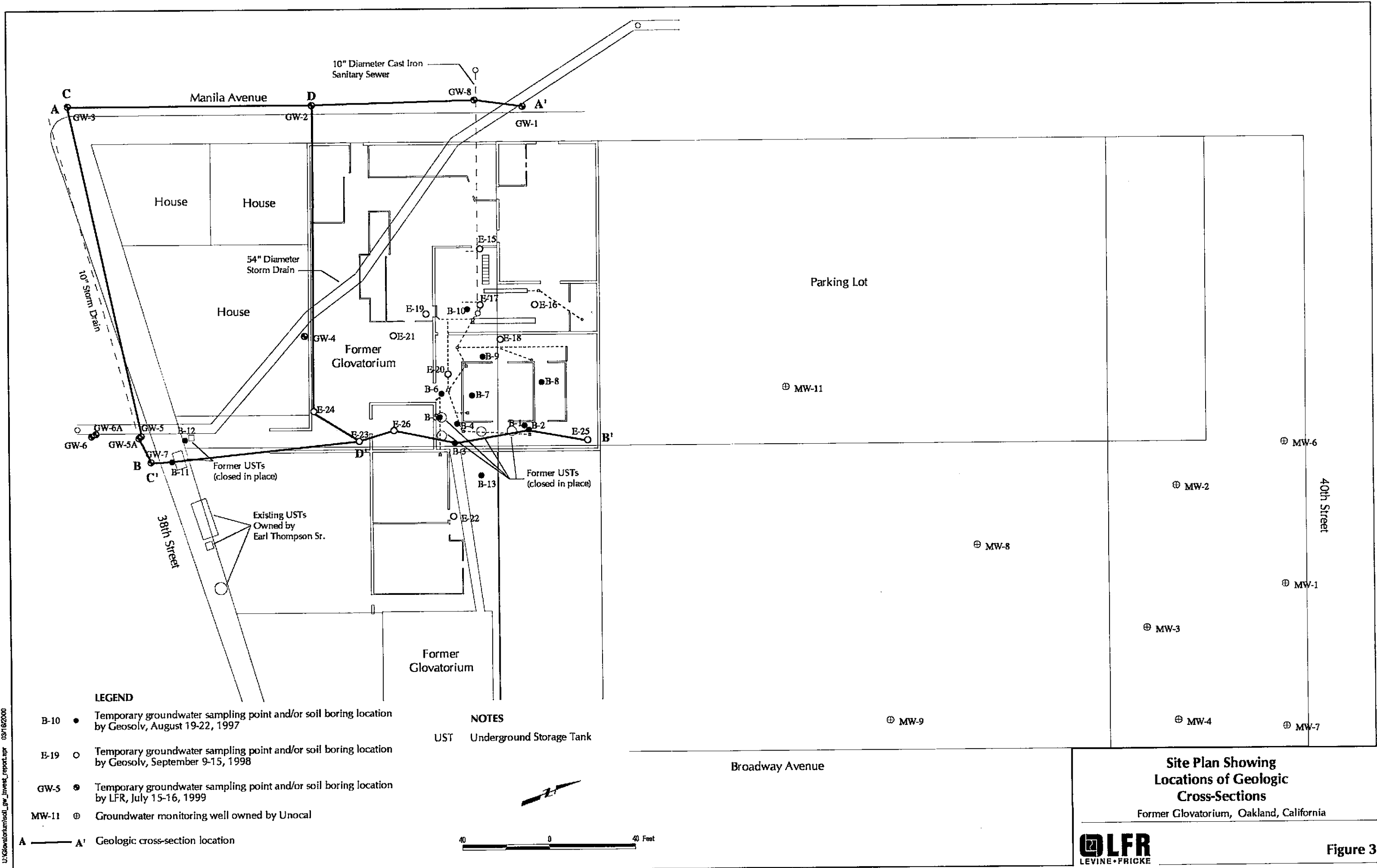


**Site Plan Showing  
Soil and Grab Groundwater  
Sampling Locations**

Former Glovatorium, Oakland, California



**Figure 2**

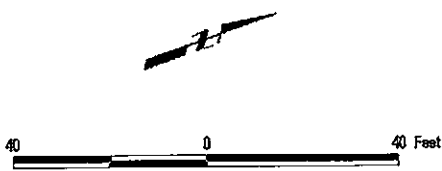


**LEGEND**

- B-10 ● Temporary groundwater sampling point and/or soil boring location by Geosolv, August 19-22, 1997
- E-19 ○ Temporary groundwater sampling point and/or soil boring location by Geosolv, September 9-15, 1998
- GW-5 ● Temporary groundwater sampling point and/or soil boring location by LFR, July 15-16, 1999
- MW-11 ⊕ Groundwater monitoring well owned by Unocal
- A — A' Geologic cross-section location

**NOTES**

UST Underground Storage Tank



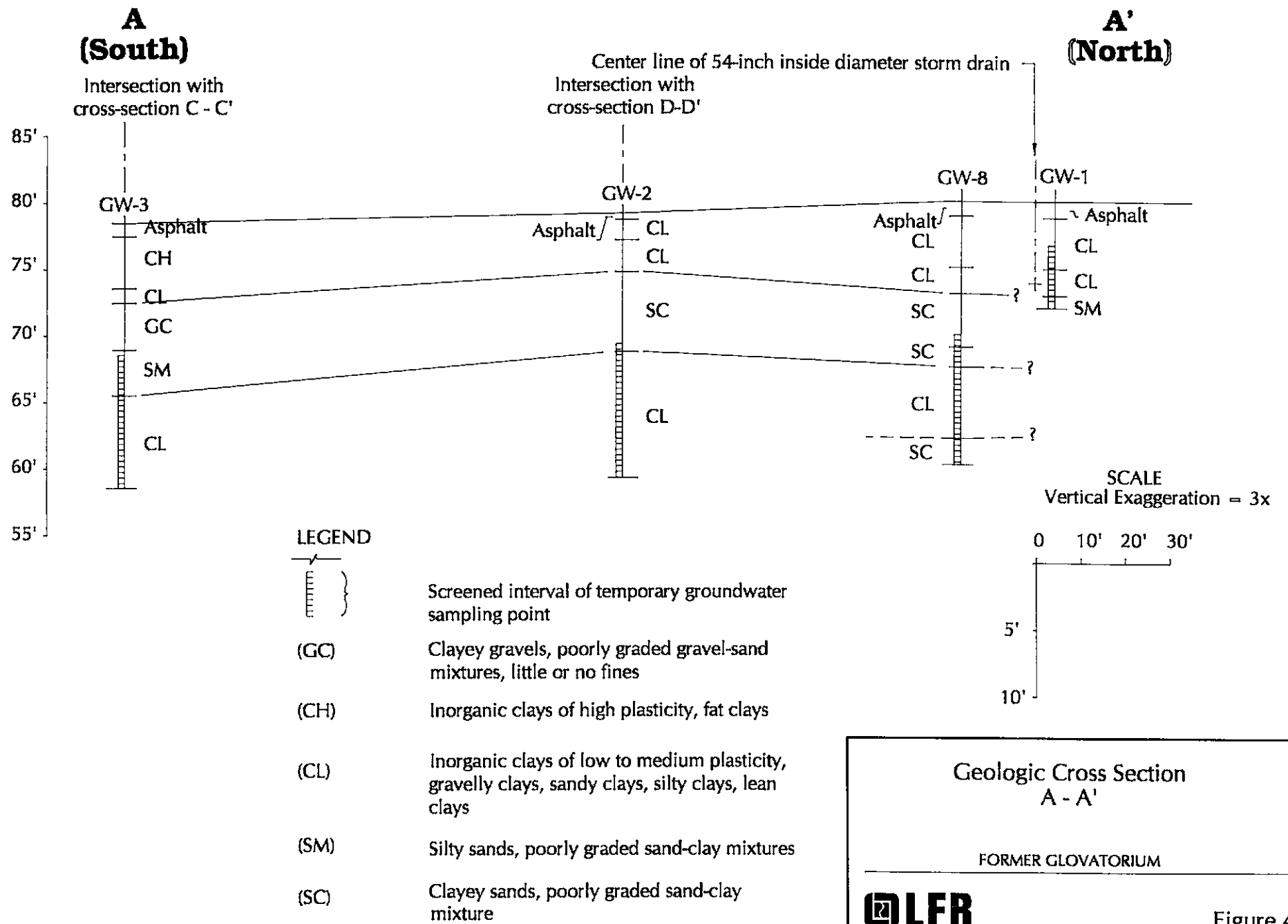
**Site Plan Showing Locations of Geologic Cross-Sections**  
Former Glovatorium, Oakland, California



**Figure 3**

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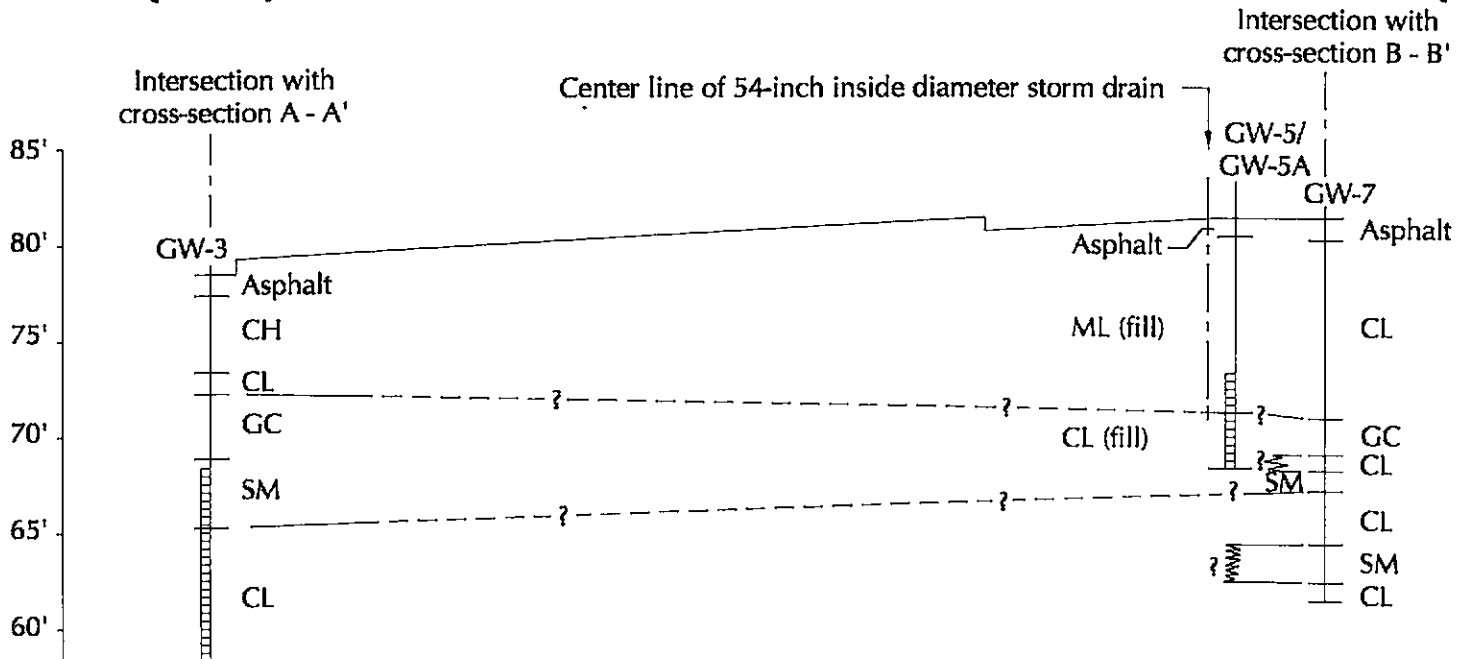




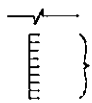
3/20/2000 10:37 A.M. Drawing File (DWG): C:\68815\68815X004.DWG

**C**  
**(West)**

**C'**  
**(East)**



**LEGEND**



Screened interval of temporary groundwater sampling point

- (GC) Clayey gravels, poorly graded gravel-sand-clay mixtures
- (ML) Inorganic silts and very fine sands, rock flour, silty or clayey fine sands with slight plasticity
- (CH) Inorganic clays of high plasticity, fat clays
- (CL) Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
- (SM) Silty sands, poorly graded sand-clay mixtures

0 10' 20' 30'

5'  
10'

**SCALE**  
Vertical Exaggeration = 3x

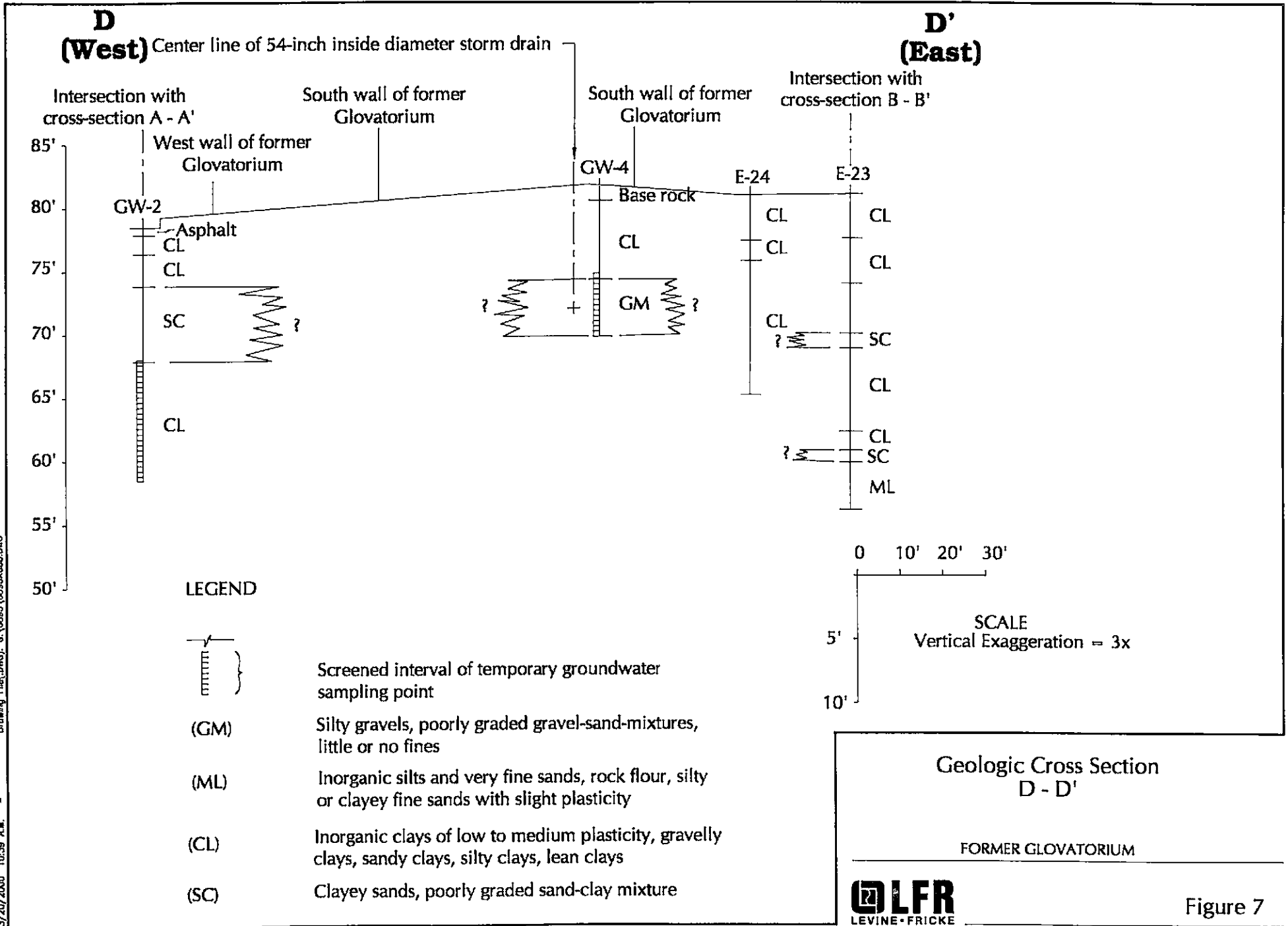
**Geologic Cross Section**  
**C - C'**

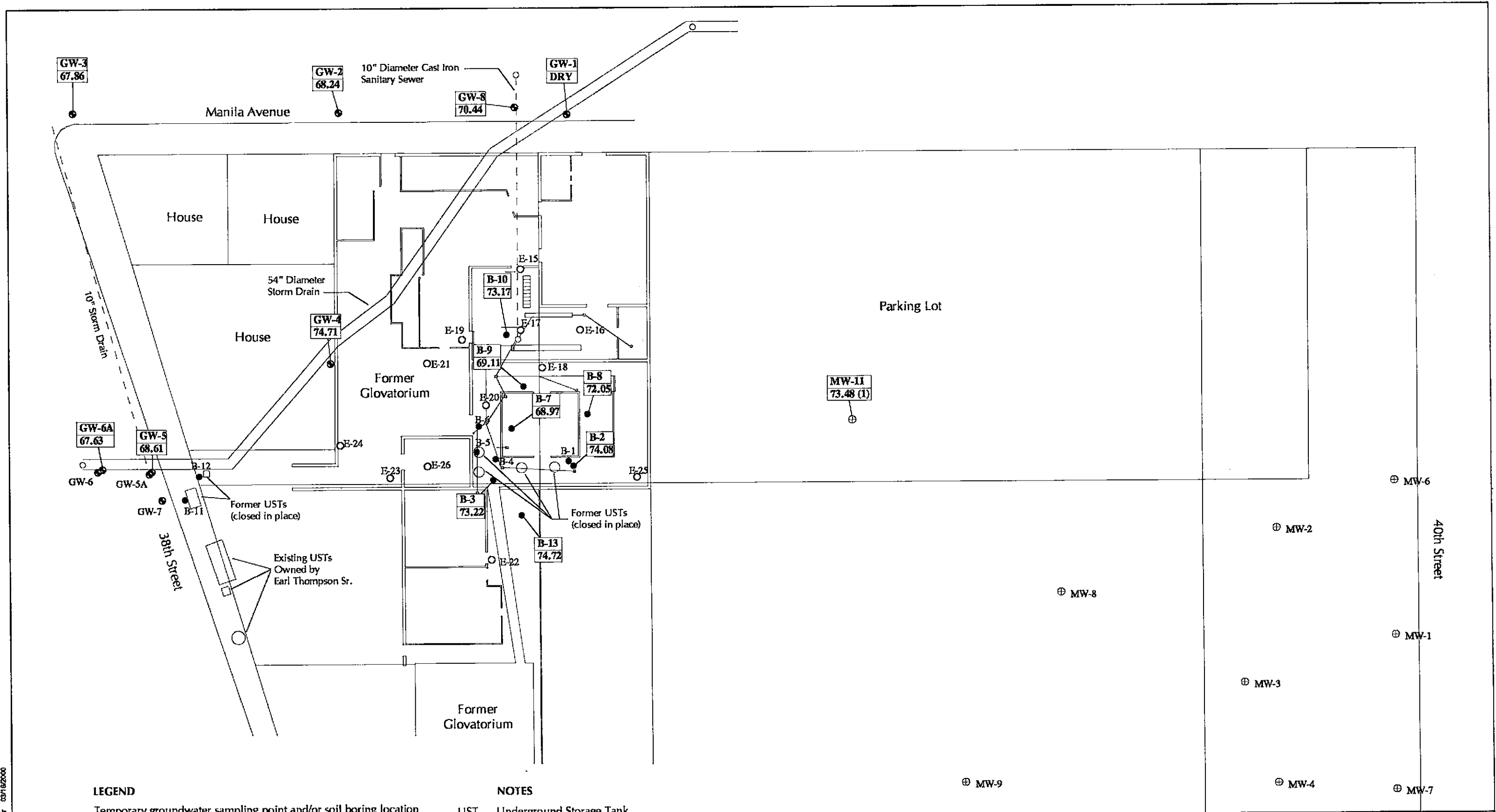
FORMER GLOVATORIUM



Figure 6

3/20/2000 10:39 A.M. Drawing File(DWG): G:\6885\6885X003.DWG



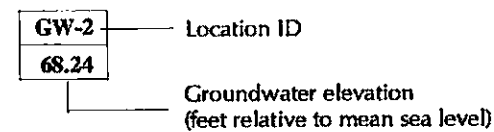


**LEGEND**

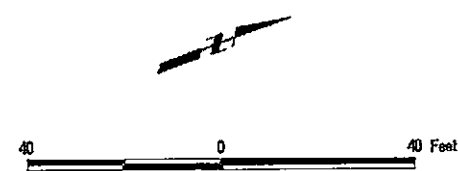
- B-10 ● Temporary groundwater sampling point and/or soil boring location by Geosolv, August 19-22, 1997
- E-19 ○ Temporary groundwater sampling point and/or soil boring location by Geosolv, September 9-15, 1998
- GW-5 ● Temporary groundwater sampling point and/or soil boring location by LFR, July 15-16, 1999
- MW-11 ⊕ Groundwater monitoring well owned by Unocal

**NOTES**

- UST Underground Storage Tank
- (1) Groundwater elevation was measured on January 25, 2000 because Unocal granted permission to access the well on January 20, 2000.



Broadway Avenue



**Groundwater Elevation Measurements  
January 19, 2000**

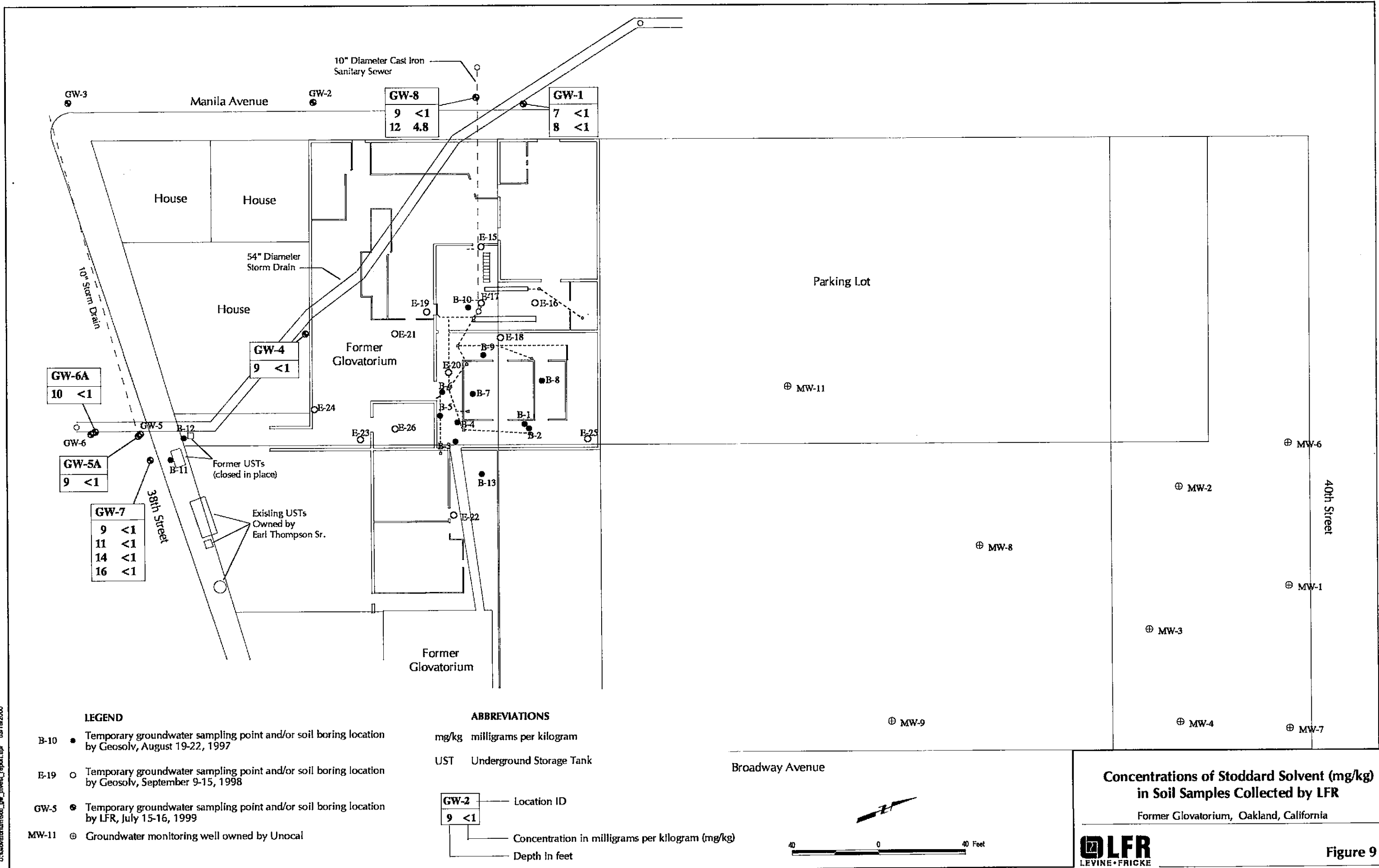
Former Glovatorium, Oakland, California

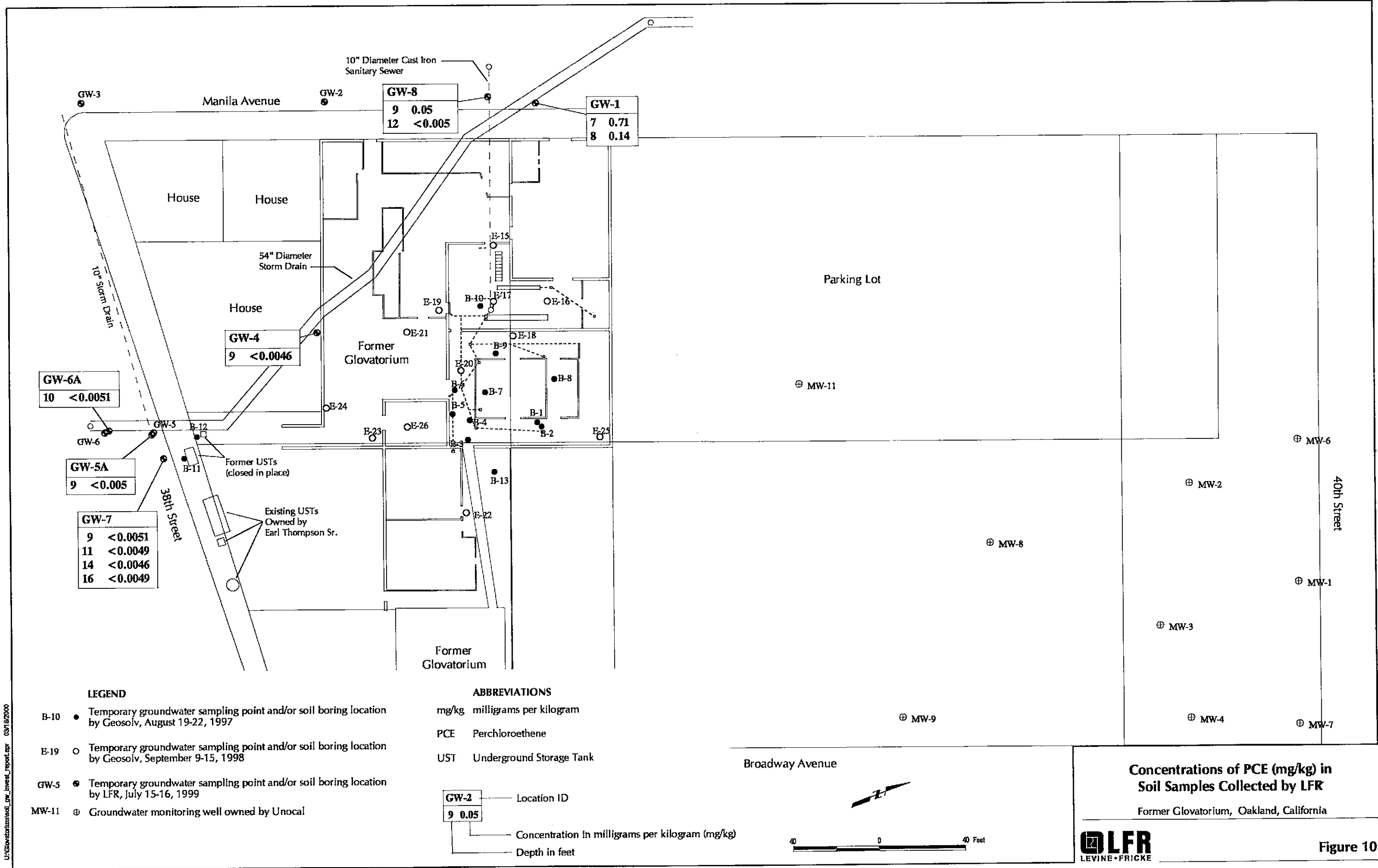


**Figure 8**

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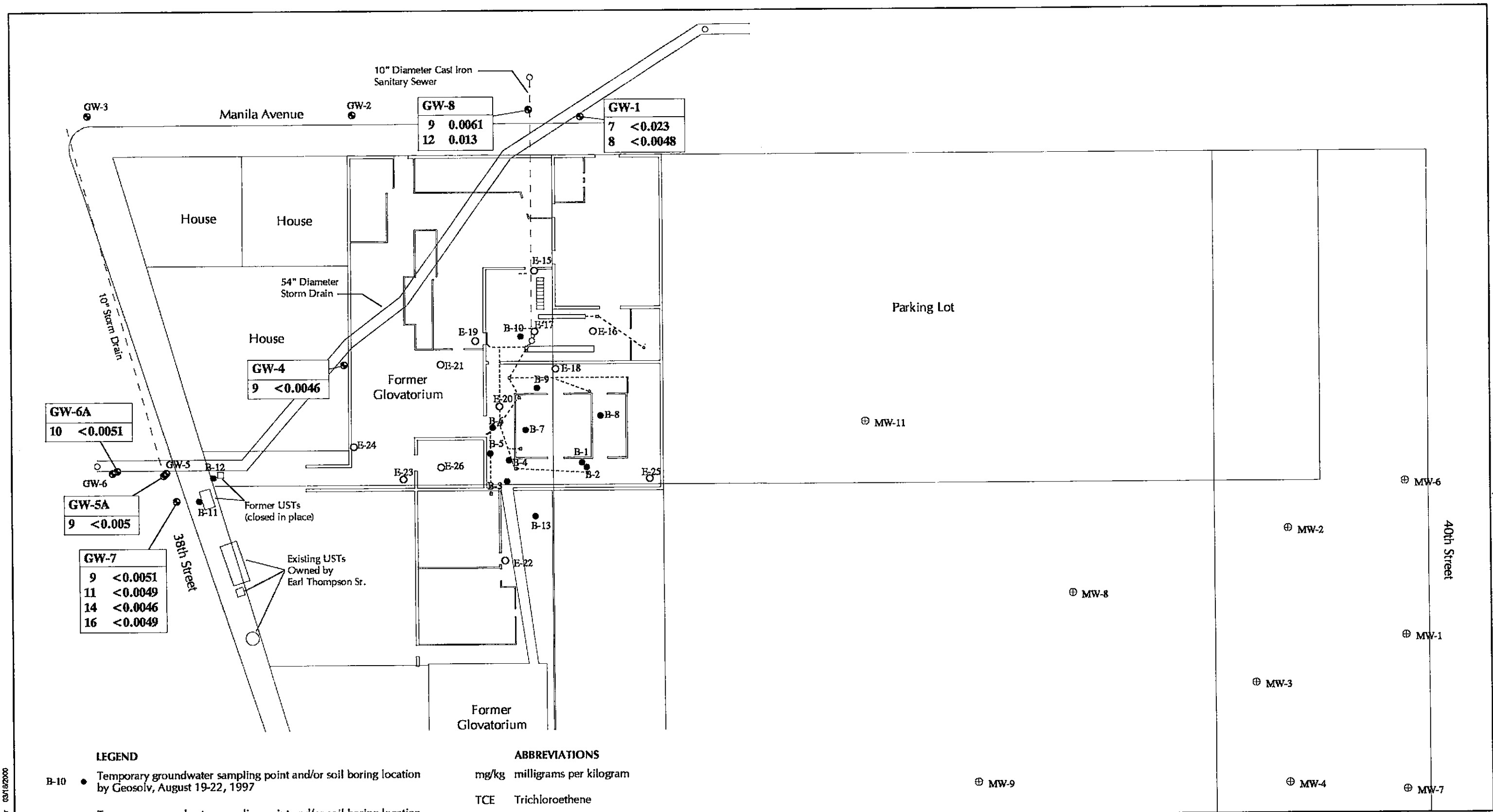
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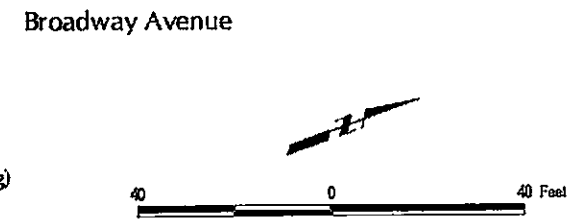
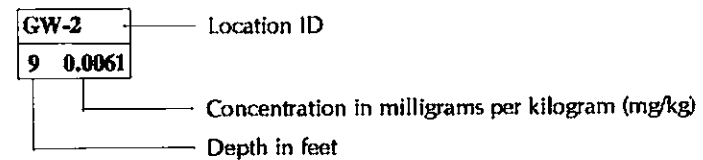
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- LEGEND**
- B-10 ● Temporary groundwater sampling point and/or soil boring location by Geosolv, August 19-22, 1997
  - B-19 ○ Temporary groundwater sampling point and/or soil boring location by Geosolv, September 9-15, 1998
  - GW-5 ● Temporary groundwater sampling point and/or soil boring location by LFR, July 15-16, 1999
  - MW-11 ⊕ Groundwater monitoring well owned by Unocal

- ABBREVIATIONS**
- mg/kg milligrams per kilogram
  - TCE Trichloroethene
  - UST Underground Storage Tank

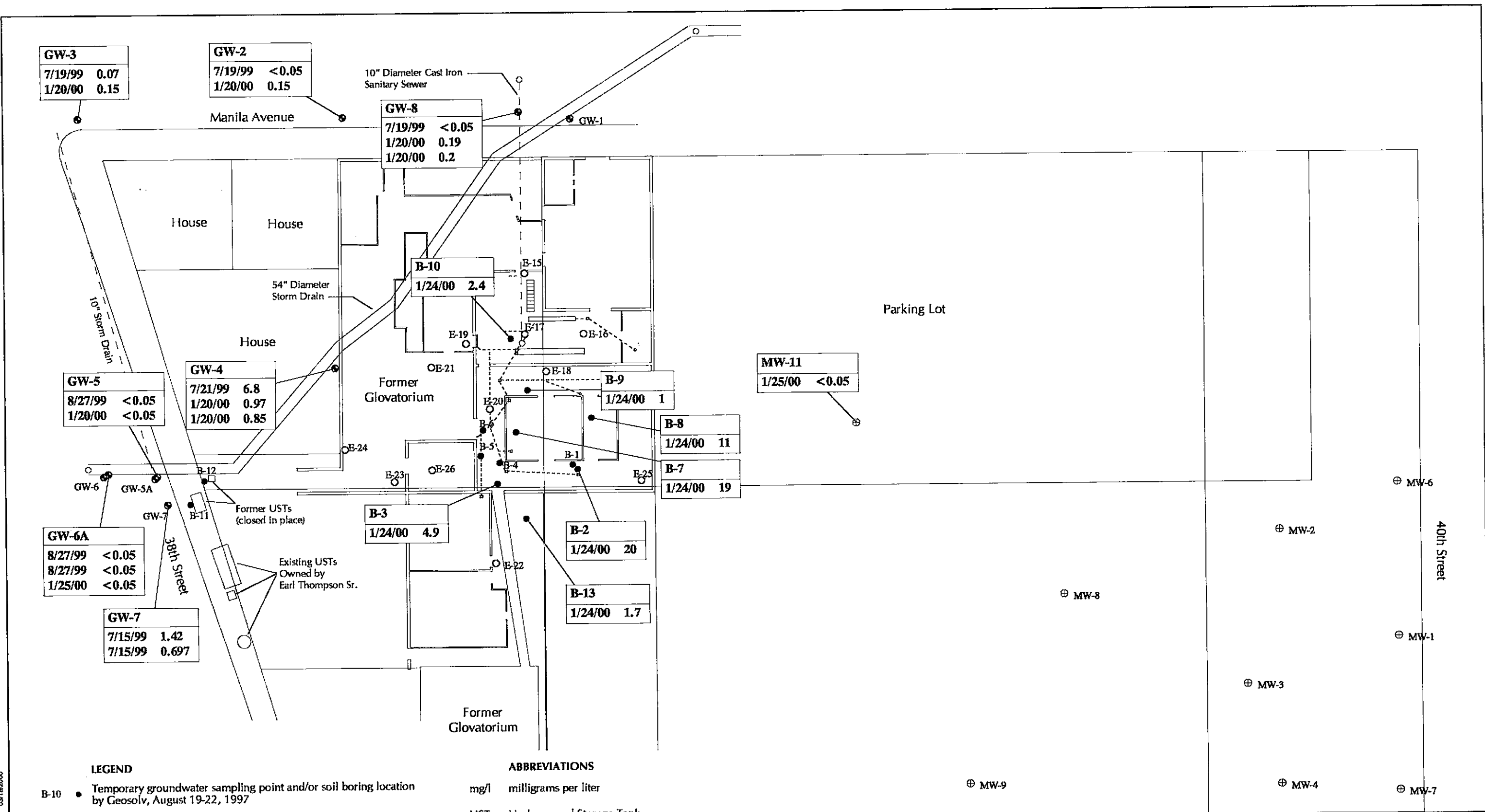


**Concentrations of TCE (mg/kg) in Soil Samples Collected by LFR**  
Former Glovatorium, Oakland, California

**LFR**  
LEVINE • FRICKE

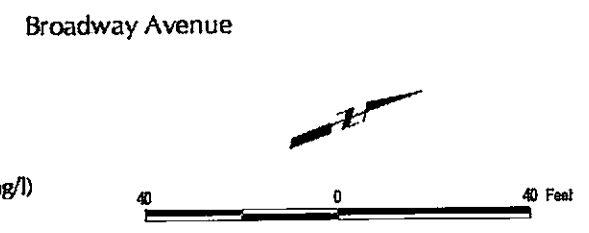
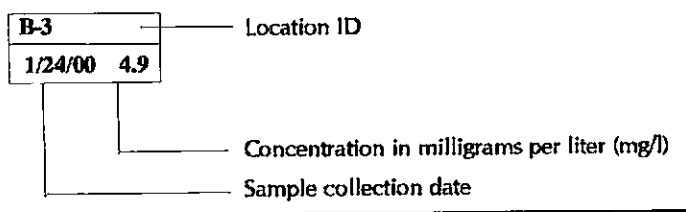
**Figure 11**

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- LEGEND**
- B-10 ● Temporary groundwater sampling point and/or soil boring location by Geosolv, August 19-22, 1997
  - E-19 ○ Temporary groundwater sampling point and/or soil boring location by Geosolv, September 9-15, 1998
  - GW-5 ● Temporary groundwater sampling point and/or soil boring location by LFR, July 15-16, 1999
  - MW-11 ⊕ Groundwater monitoring well owned by Unocal

- ABBREVIATIONS**
- mg/l milligrams per liter
  - UST Underground Storage Tank

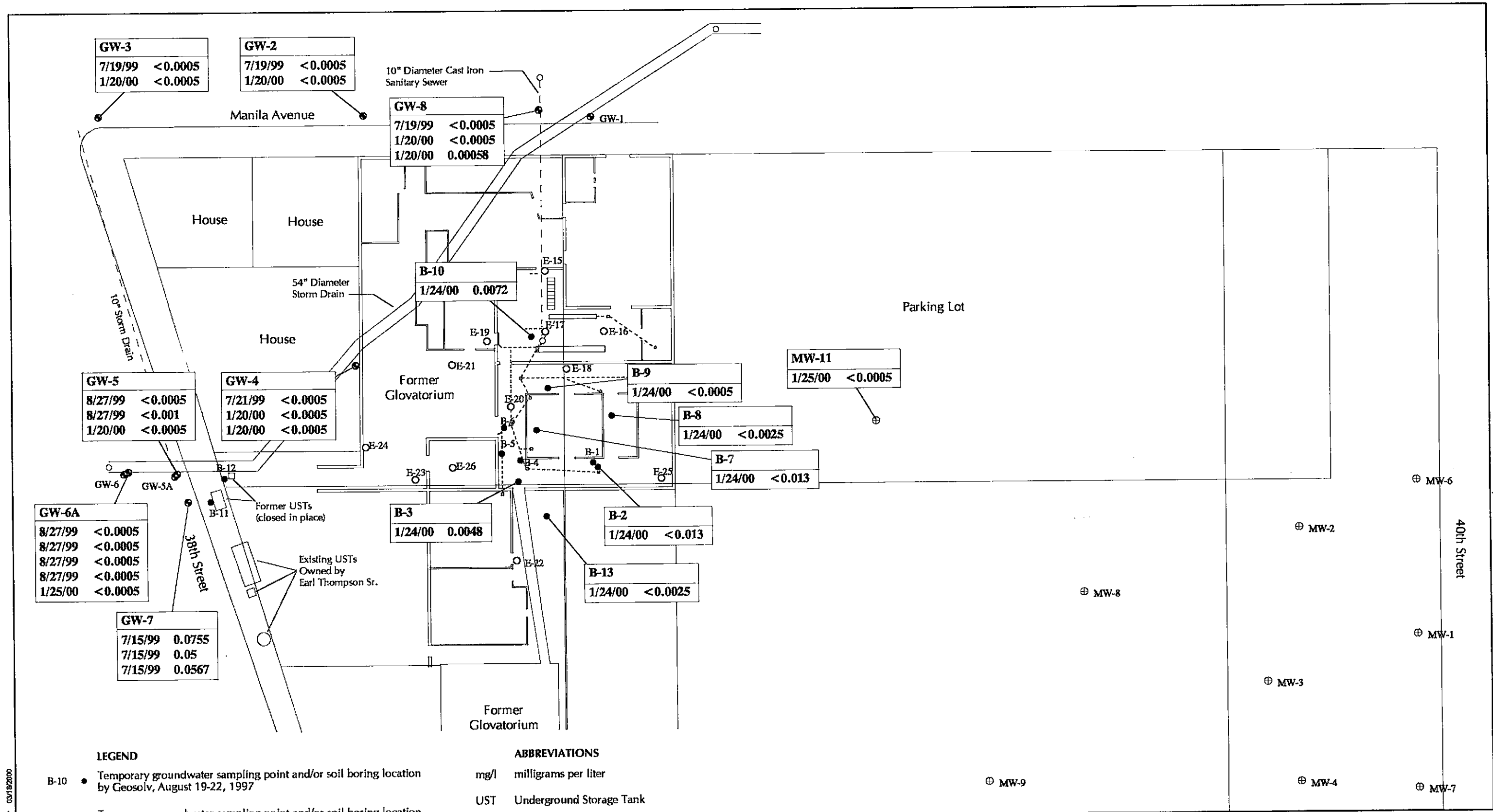


**Concentrations of Stoddard Solvent (mg/l) in Groundwater Samples Collected by LFR**  
Former Glovatorium, Oakland, California



**Figure 12**

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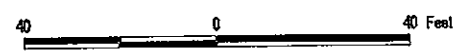


**Concentrations of Benzene (mg/l) in Groundwater Samples Collected by LFR**

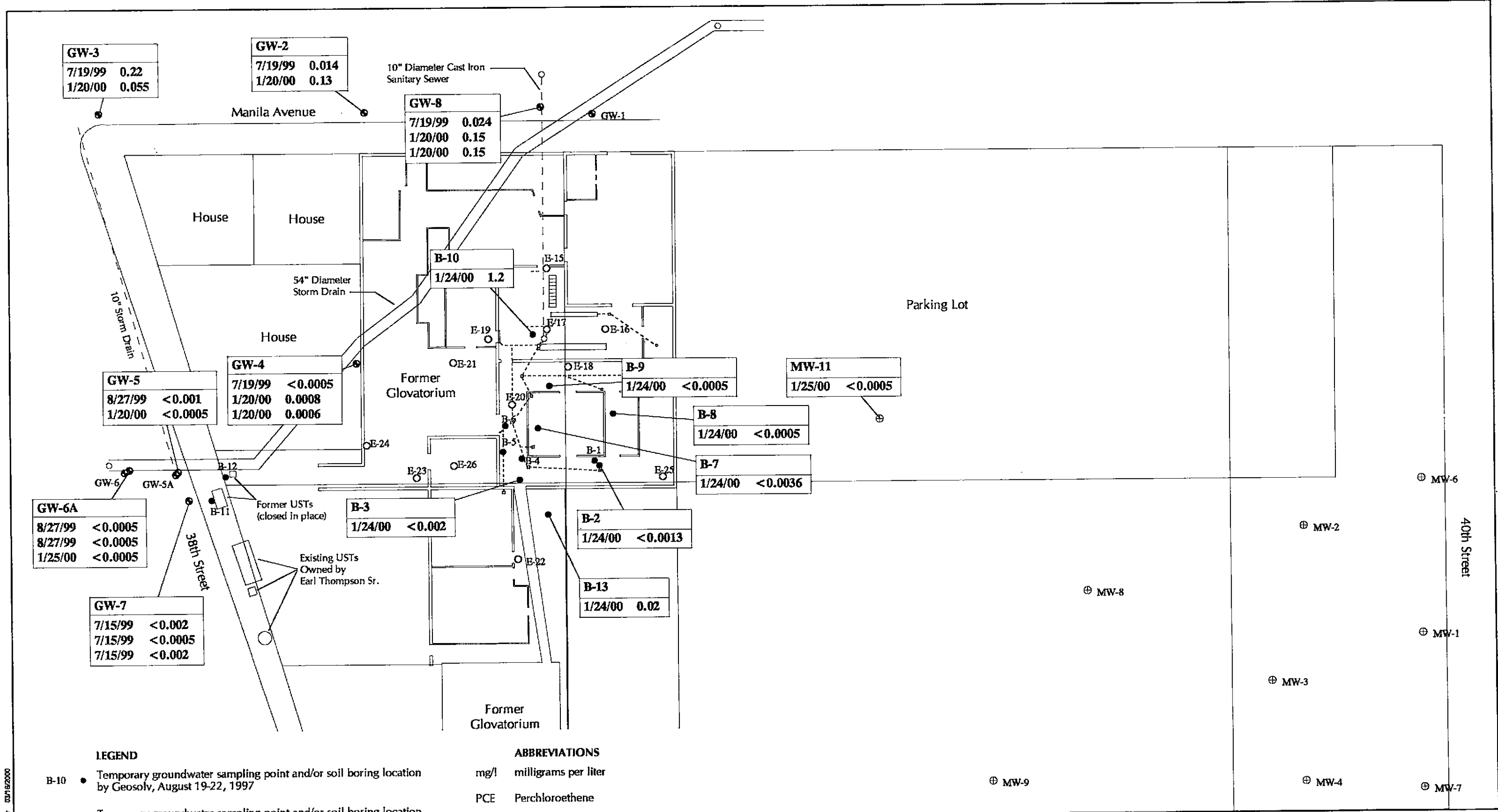
Former Glovatorium, Oakland, California



Figure 13



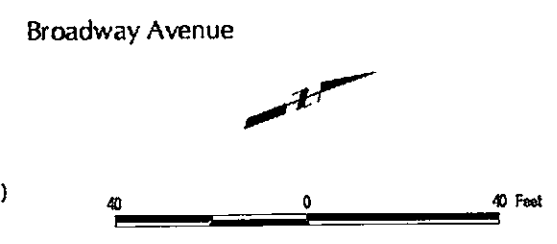




- LEGEND**
- B-10 • Temporary groundwater sampling point and/or soil boring location by Geosolv, August 19-22, 1997
  - E-19 ○ Temporary groundwater sampling point and/or soil boring location by Geosolv, September 9-15, 1998
  - GW-5 ● Temporary groundwater sampling point and/or soil boring location by LFR, July 15-16, 1999
  - MW-11 ⊕ Groundwater monitoring well owned by Unocal

- ABBREVIATIONS**
- mg/l milligrams per liter
  - PCE Perchloroethene
  - UST Underground Storage Tank

GW-5	Location ID
8/27/99 <0.001	Concentration in milligrams per liter (mg/l)
1/20/00 <0.0005	Sample collection date



**Concentrations of PCE (mg/l) in Groundwater Samples Collected by LFR**

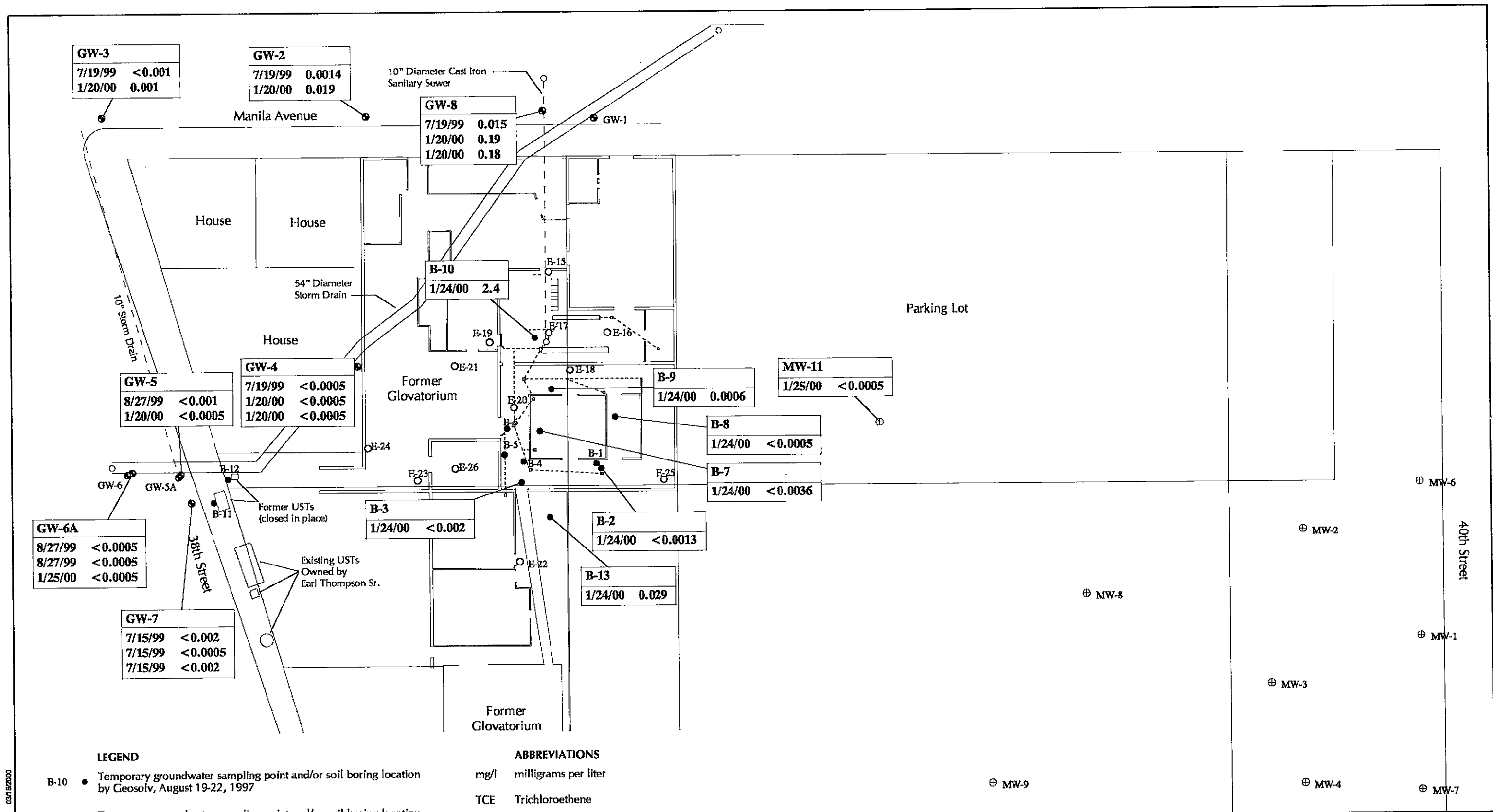
Former Glovatorium, Oakland, California



**Figure 14**

U:\Glovatorium\seal\_inv\invest\_report.apr 03/15/2000

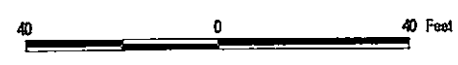
U:\GIS\arcum\lfr\_gw\_invest\_report.dwg 03/18/2000

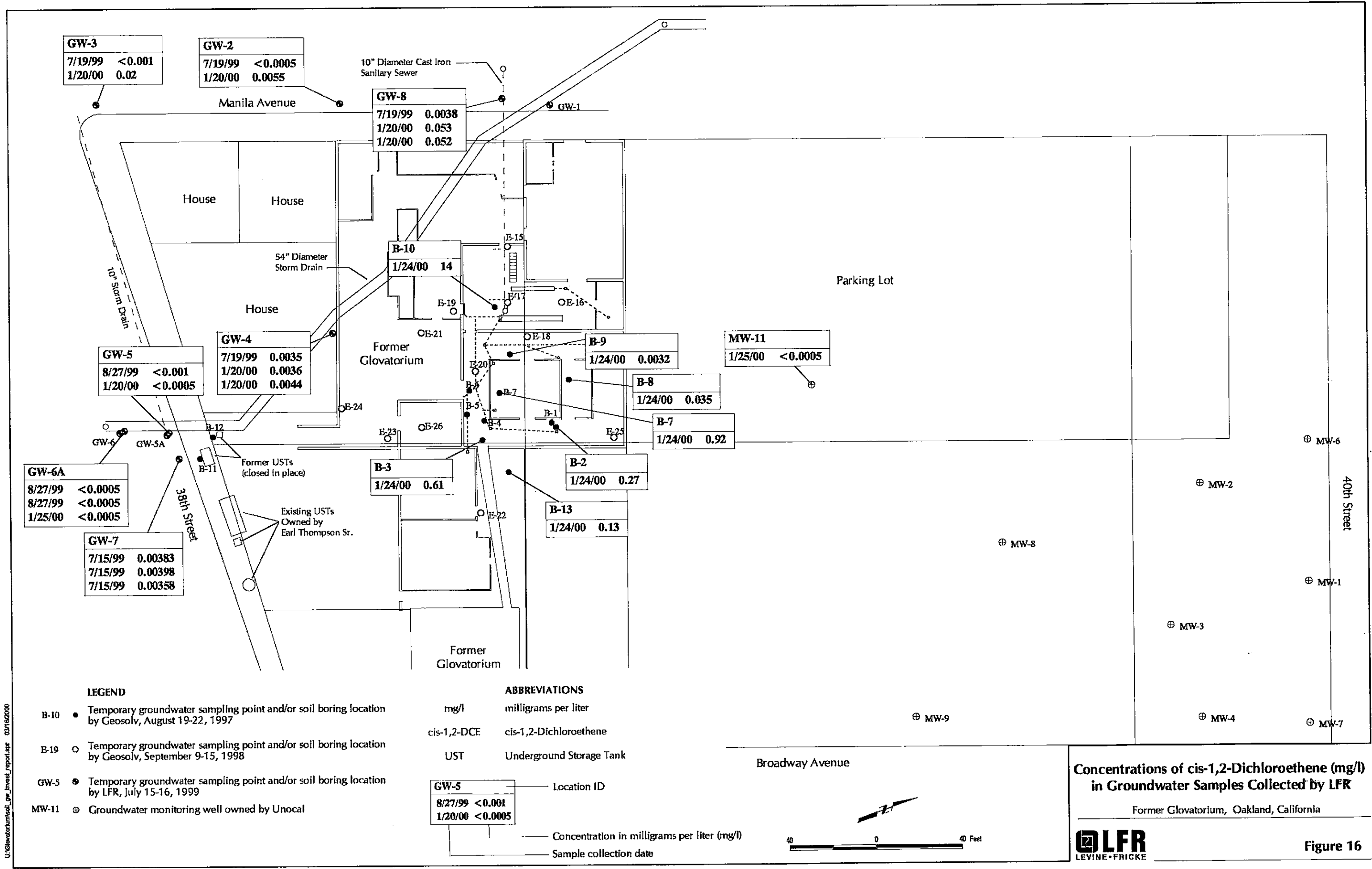


**Concentrations of TCE (mg/l) in  
Groundwater Samples Collected by LFR**  
Former Glovatorium, Oakland, California



**Figure 15**





**GW-3**  
 7/19/99 <0.001  
 1/20/00 0.02

**GW-2**  
 7/19/99 <0.0005  
 1/20/00 0.0055

**GW-8**  
 7/19/99 0.0038  
 1/20/00 0.053  
 1/20/00 0.052

**GW-5**  
 8/27/99 <0.001  
 1/20/00 <0.0005

**GW-4**  
 7/19/99 0.0035  
 1/20/00 0.0036  
 1/20/00 0.0044

**GW-6A**  
 8/27/99 <0.0005  
 8/27/99 <0.0005  
 1/25/00 <0.0005

**GW-7**  
 7/15/99 0.00383  
 7/15/99 0.00398  
 7/15/99 0.00358

**B-10**  
 1/24/00 14

**B-9**  
 1/24/00 0.0032

**B-8**  
 1/24/00 0.035

**B-7**  
 1/24/00 0.92

**B-2**  
 1/24/00 0.27

**B-13**  
 1/24/00 0.13

**B-3**  
 1/24/00 0.61

**MW-11**  
 1/25/00 <0.0005

**LEGEND**

- B-10 ● Temporary groundwater sampling point and/or soil boring location by Geosolv, August 19-22, 1997
- E-19 ○ Temporary groundwater sampling point and/or soil boring location by Geosolv, September 9-15, 1998
- GW-5 ⊙ Temporary groundwater sampling point and/or soil boring location by LFR, July 15-16, 1999
- MW-11 ⊕ Groundwater monitoring well owned by Unocal

**ABBREVIATIONS**

- mg/l milligrams per liter
- cis-1,2-DCE cis-1,2-Dichloroethene
- UST Underground Storage Tank

**GW-5** — Location ID  
 8/27/99 <0.001  
 1/20/00 <0.0005

— Concentration in milligrams per liter (mg/l)  
 — Sample collection date

**Concentrations of cis-1,2-Dichloroethene (mg/l) in Groundwater Samples Collected by LFR**

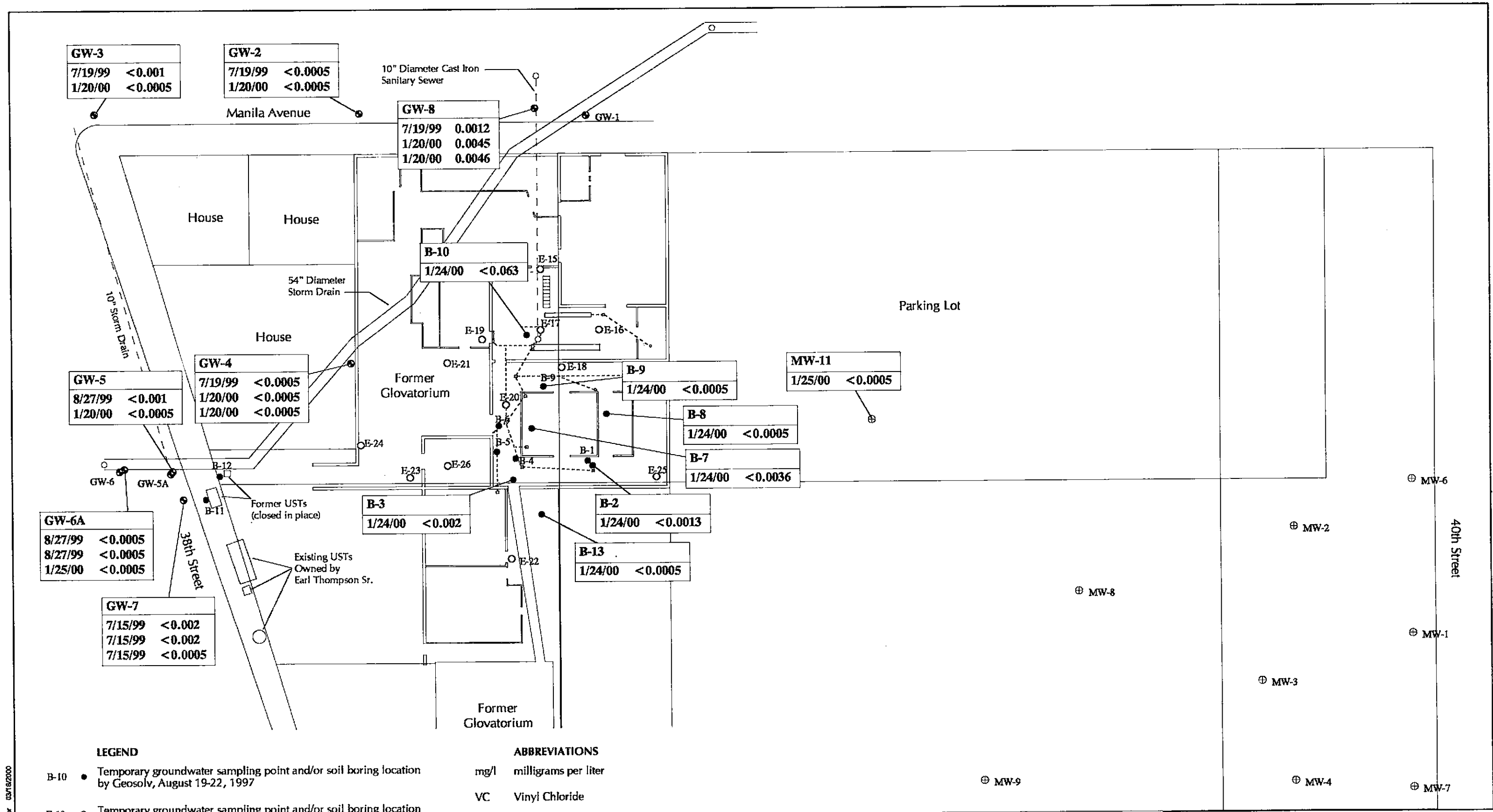
Former Glovatorium, Oakland, California



**Figure 16**

U:\Glovatorium\sal\_gw\_invest\_report.dwg 03/16/2000

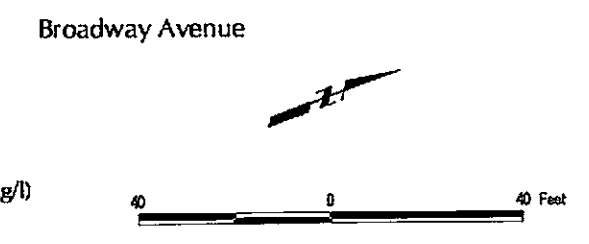
U:\GIS\arcinfo\lfr\_gw\_invest\_report.apr 03/18/2000



- LEGEND**
- B-10 ● Temporary groundwater sampling point and/or soil boring location by Geosolv, August 19-22, 1997
  - B-19 ○ Temporary groundwater sampling point and/or soil boring location by Geosolv, September 9-15, 1998
  - GW-5 ● Temporary groundwater sampling point and/or soil boring location by LFR, July 15-16, 1999
  - MW-11 ⊕ Groundwater monitoring well owned by Unocal

- ABBREVIATIONS**
- mg/l milligrams per liter
  - VC Vinyl Chloride
  - UST Underground Storage Tank

<b>GW-5</b>	Location ID
8/27/99 <0.001	Concentration in milligrams per liter (mg/l)
1/20/00 <0.0005	Sample collection date



**Concentrations of Vinyl Chloride (mg/l) in Groundwater Samples Collected by LFR**  
 Former Glovatorium, Oakland, California

**LFR**  
 LEVINE • FRICKE

**Figure 17**

**Appendix A**

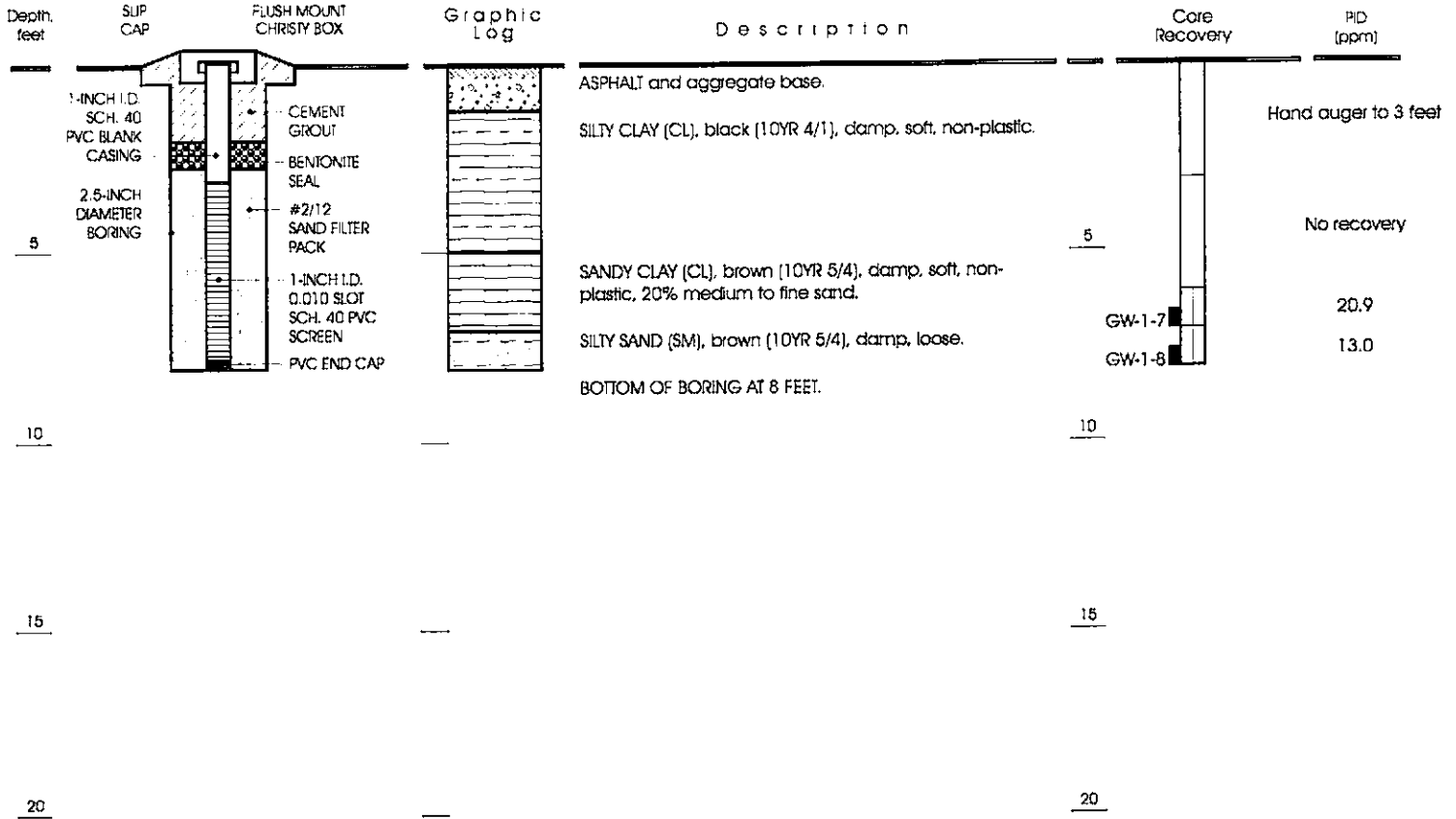
**Boring Logs and Well Construction Details**

**WELL CONSTRUCTION**

**LITHOLOGY**





**SAMPLE DATA**



HEADSPACE MEASUREMENTS



Well Permit No. 99WR340  
 Date Well Drilled: July 16, 1999  
 Drilling Company: Precision  
 Driller: Ken Perez  
 Drilling Method: Direct push  
 Sampling Method: Hydraulic, continuous core  
 LFR Geologist: Christopher J. Voci

**EXPLANATION**

-  Clay
-  Silt
-  Sand
-  Gravel

-  Interval sampled using continuous core barrel
-  Soil sample collected for analysis

Approved by: *Taylor Bennett* R.G.#6595

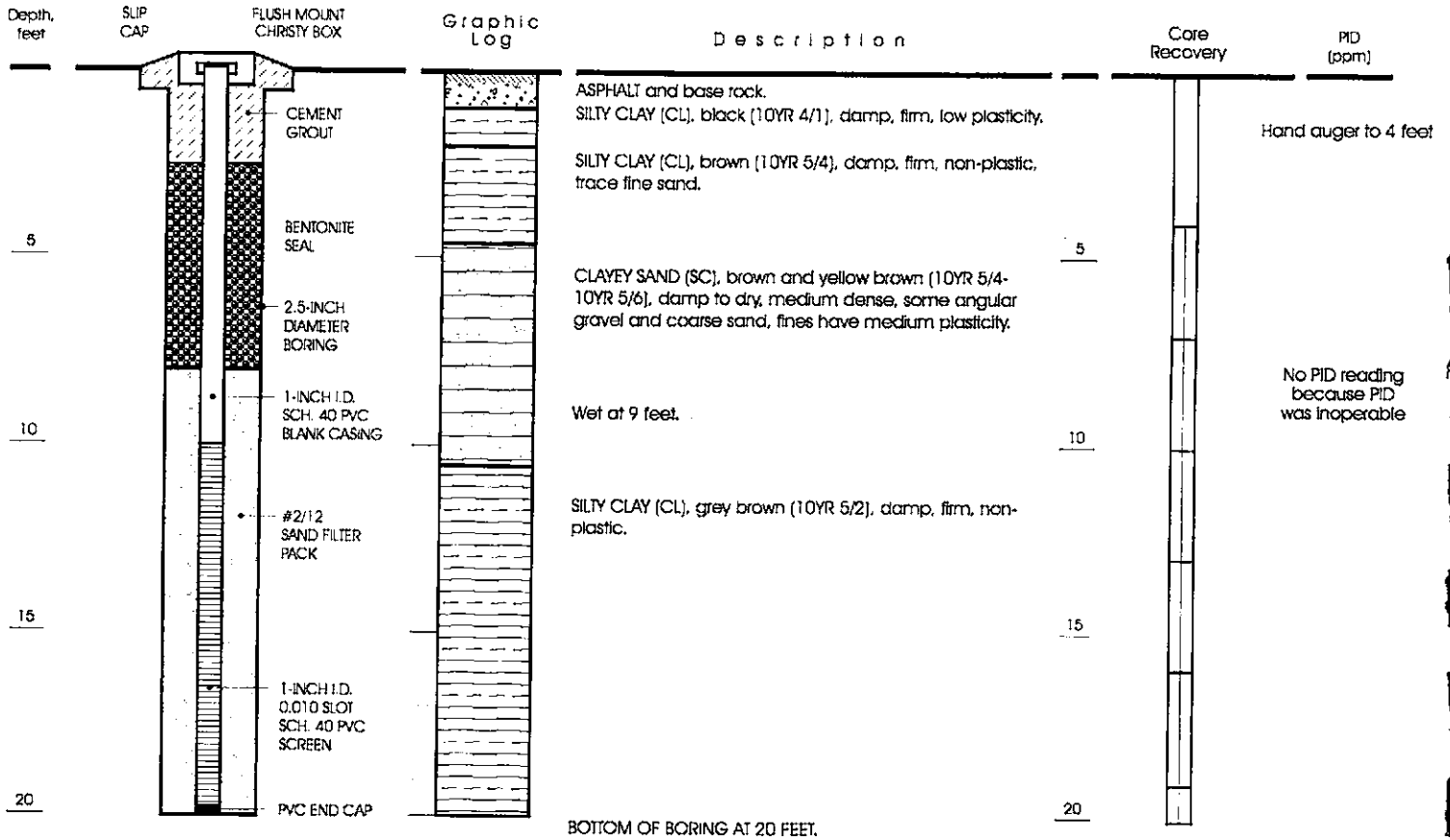
**CONSTRUCTION AND LITHOLOGY FOR GW-1**

**WELL CONSTRUCTION**

**LITHOLOGY**





**SAMPLE DATA**


**HEADSPACE MEASUREMENTS**



Well Permit No. 99WR340  
 Date Well Drilled: July 16, 1999  
 Drilling Company: Precision  
 Driller: Ken Perez  
 Drilling Method: Direct push  
 Sampling Method: Hydraulic, continuous core  
 LFR Geologist: Chris Vocci

**EXPLANATION**

-  Clay
-  Silt
-  Sand
-  Gravel

 Interval sampled using continuous core barrel

Approved by: *Taylor Bennett* R.G. #6595

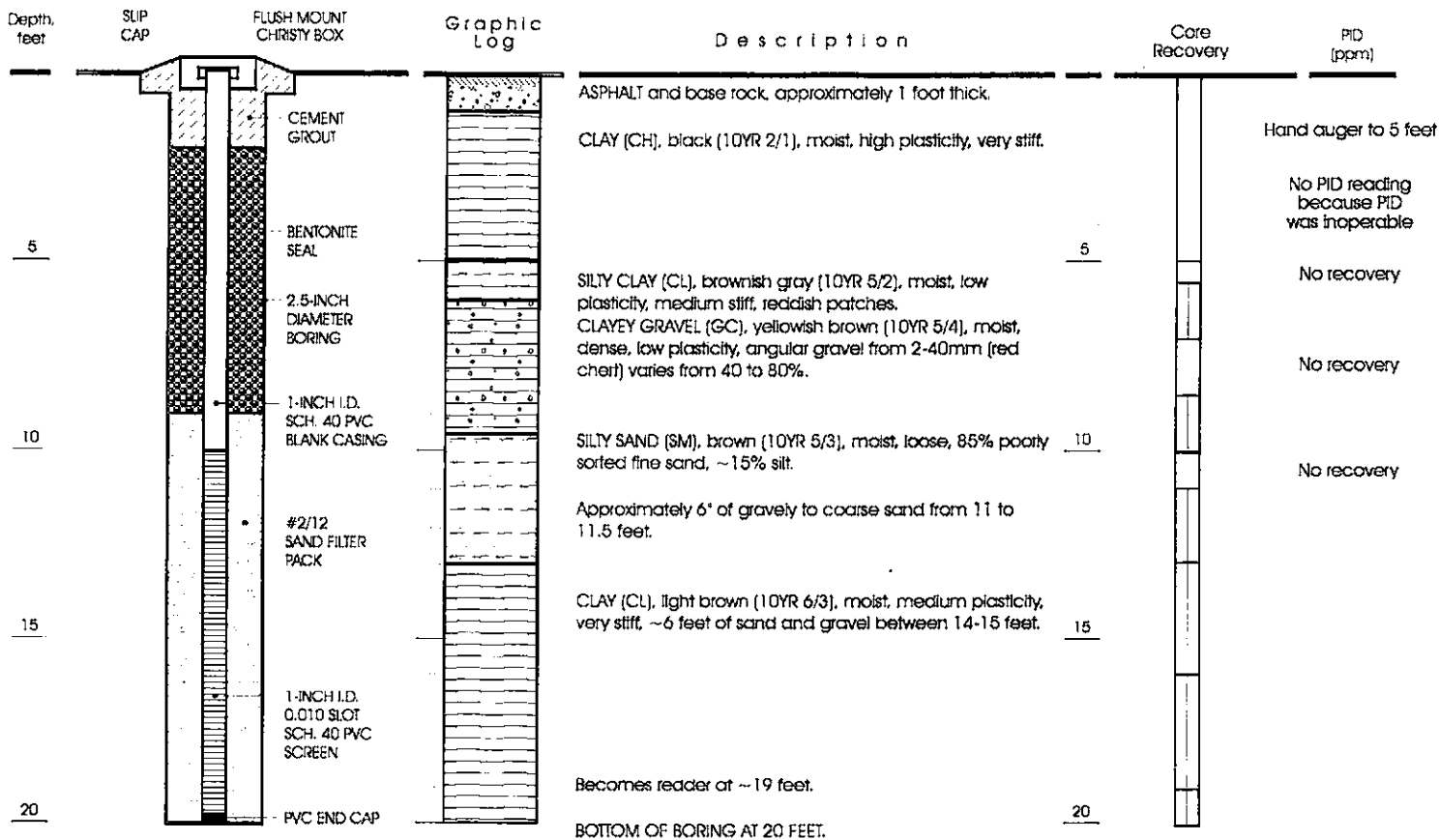
**CONSTRUCTION AND LITHOLOGY FOR GW-2**

**WELL CONSTRUCTION**

**LITHOLOGY**





**SAMPLE DATA**


HEADSPACE MEASUREMENTS



Well Permit No. 99WR340  
 Date Well Drilled: July 15, 1999  
 Drilling Company: Precision  
 Driller: Ken Perez  
 Drilling Method: Direct push  
 Sampling Method: Hydraulic, continuous core  
 LFR Geologist: Jim Burke

EXPLANATION

-  Clay
-  Silt
-  Sand
-  Gravel

 Interval sampled using continuous core barrel

Approved by: *Taylor Bennett R.G.#6595*

**CONSTRUCTION AND LITHOLOGY FOR GW-3**

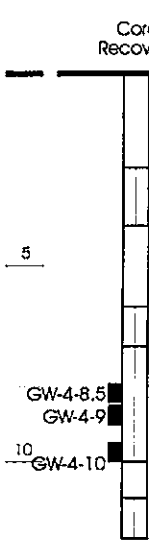
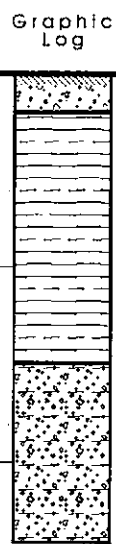
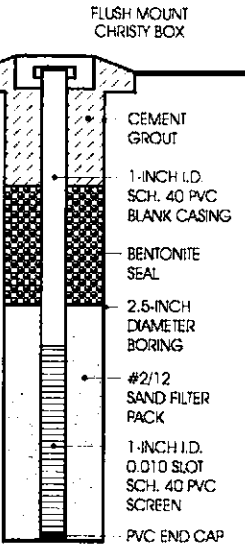
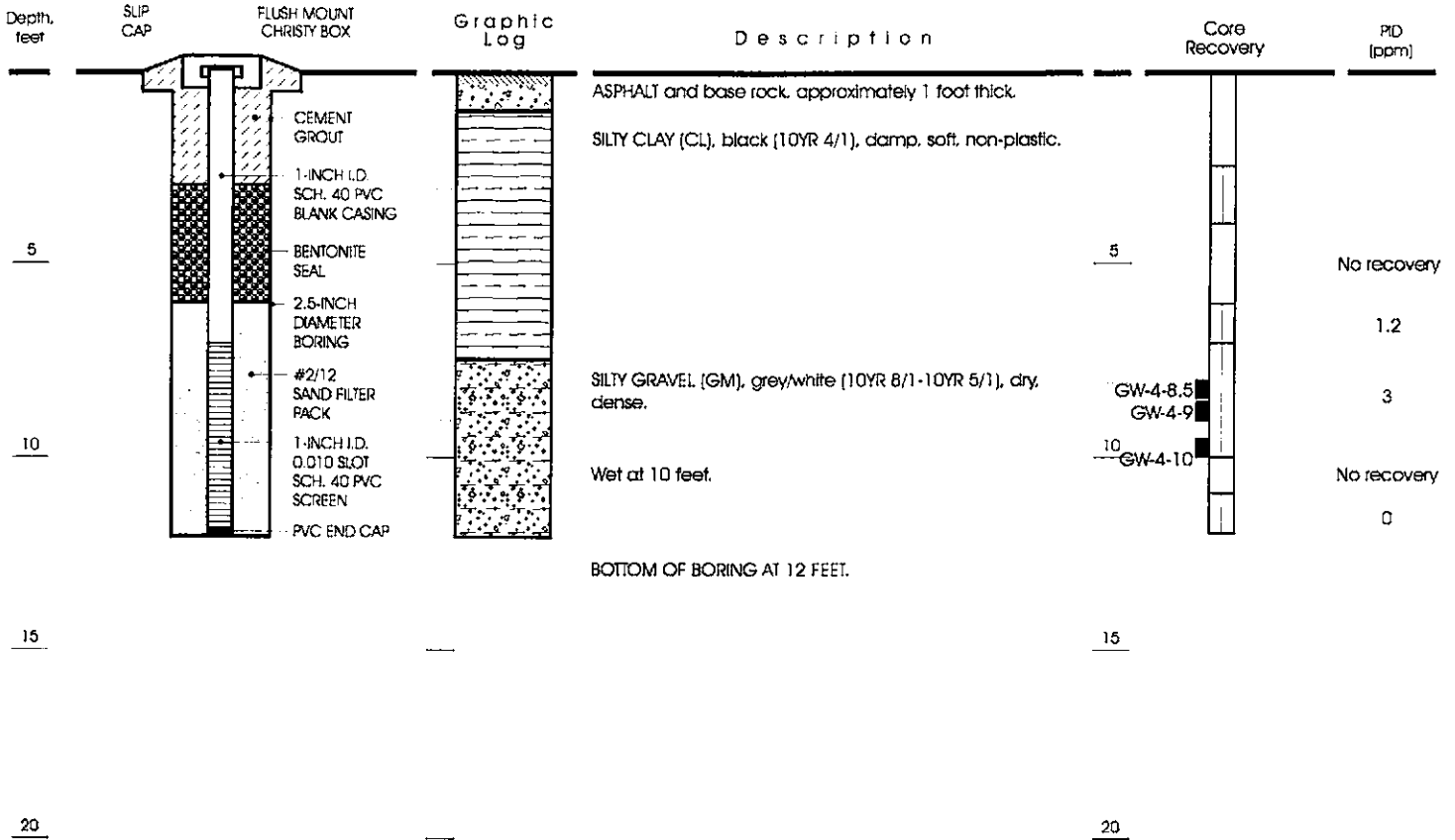


**WELL CONSTRUCTION**

**LITHOLOGY**

**SAMPLE DATA**

HEADSPACE MEASUREMENTS



BOTTOM OF BORING AT 12 FEET.

Well Permit No. 99WR342  
 Date Well Drilled: July 16, 1999  
 Drilling Company: Precision  
 Driller: Ken Perez  
 Drilling Method: Direct push  
 Sampling Method: Hydraulic, continuous core  
 LFR Geologist: Chris Voel

**EXPLANATION**

	Clay		Interval sampled using continuous core barrel
	Silt		
	Sand		
	Gravel		

Approved by: *Taylor Bennett R.G.#6595*

**CONSTRUCTION AND LITHOLOGY FOR GW-4**



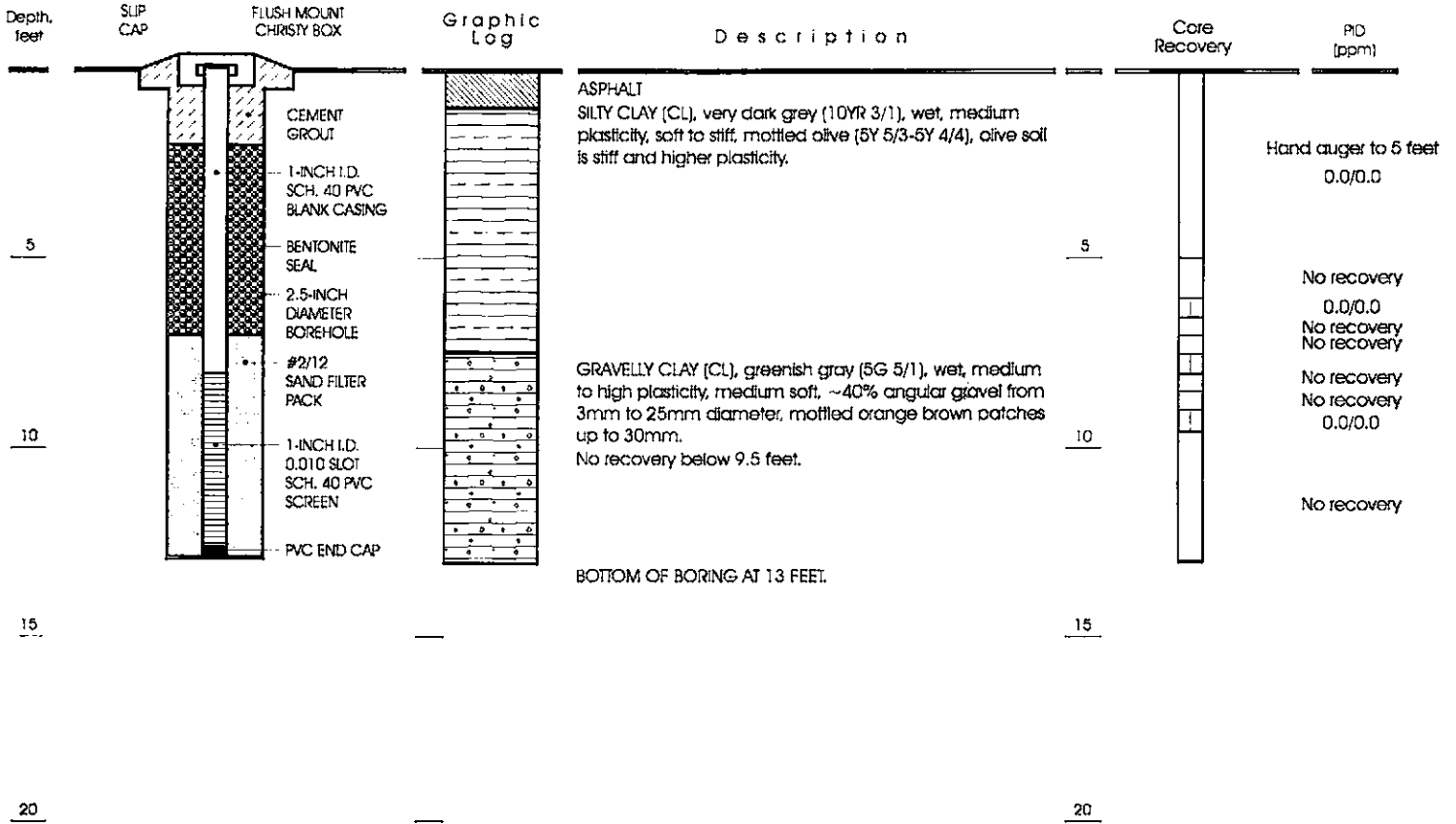
FORMER GLOVATORIUM

**WELL CONSTRUCTION**

**LITHOLOGY**





**SAMPLE DATA**


HEADSPACE MEASUREMENTS



Well Permit No. 99WR341  
 Date Well Drilled: July 15, 1999  
 Drilling Company: Precision  
 Driller: Ken Perez  
 Drilling Method: Direct push  
 Sampling Method: Hydraulic, continuous core  
 LFR Geologist: Jim Burke

**EXPLANATION**

-  Clay
-  Silt
-  Sand
-  Gravel

 Interval sampled using continuous core barrel

Approved by: *Taylor Bennett* R.G.#6595

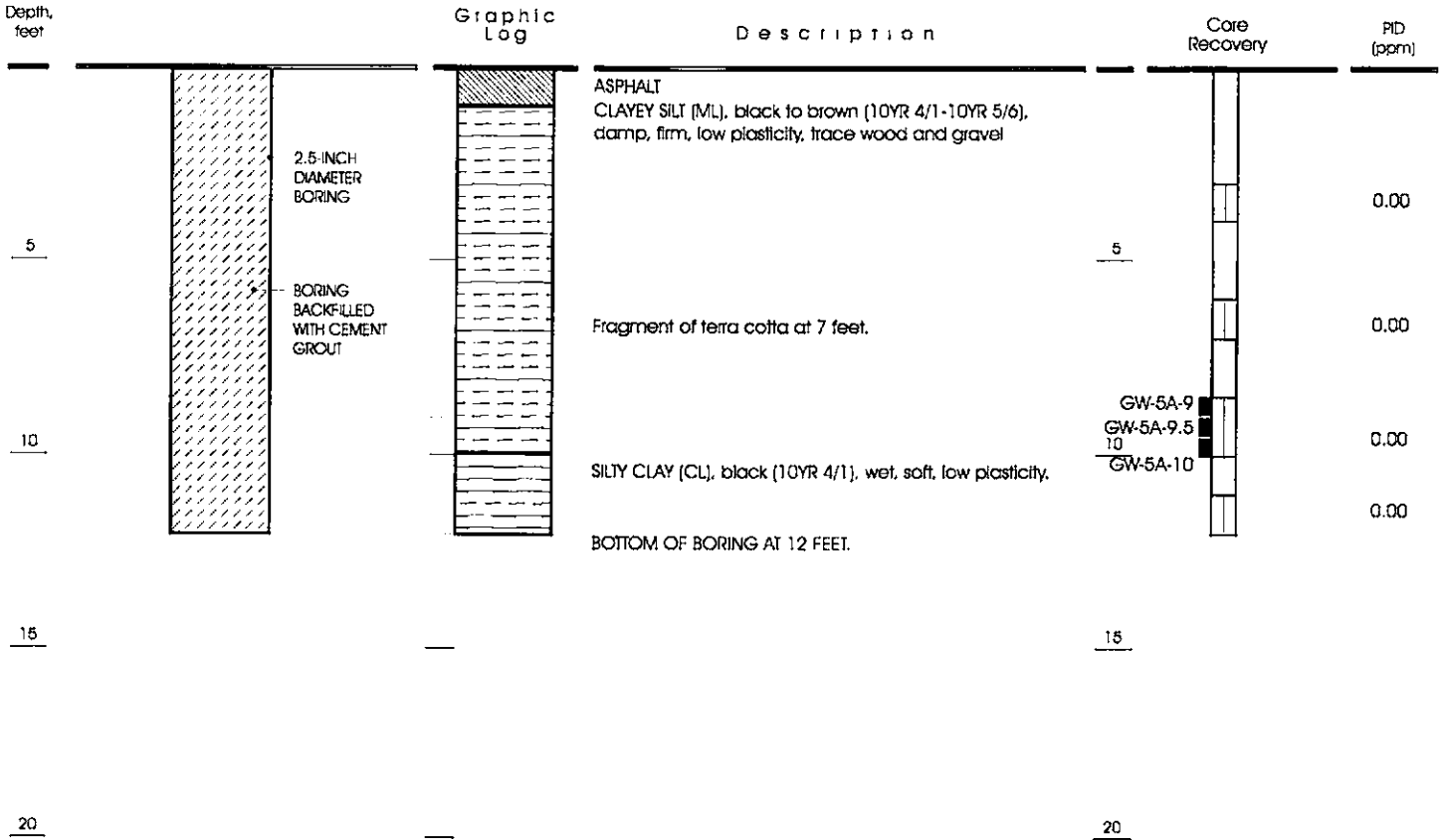
**CONSTRUCTION AND LITHOLOGY FOR GW-5**

WELL CONSTRUCTION

LITHOLOGY

SAMPLE DATA

HEADSPACE MEASUREMENTS



Well Permit No. 99WR341  
 Date Well Drilled: July 16, 1999  
 Drilling Company: Precision  
 Driller: Ken Perez  
 Drilling Method: Direct push  
 Sampling Method: Hydraulic, continuous core  
 LFR Geologist: Chris Voci

- EXPLANATION
- Clay
  - Silt
  - Sand
  - Gravel

Interval sampled using continuous core barrel  
 Soil sample collected for analysis

Approved by: *Taylor Bennett R.G.#6595*

CONSTRUCTION AND LITHOLOGY FOR GW-5A



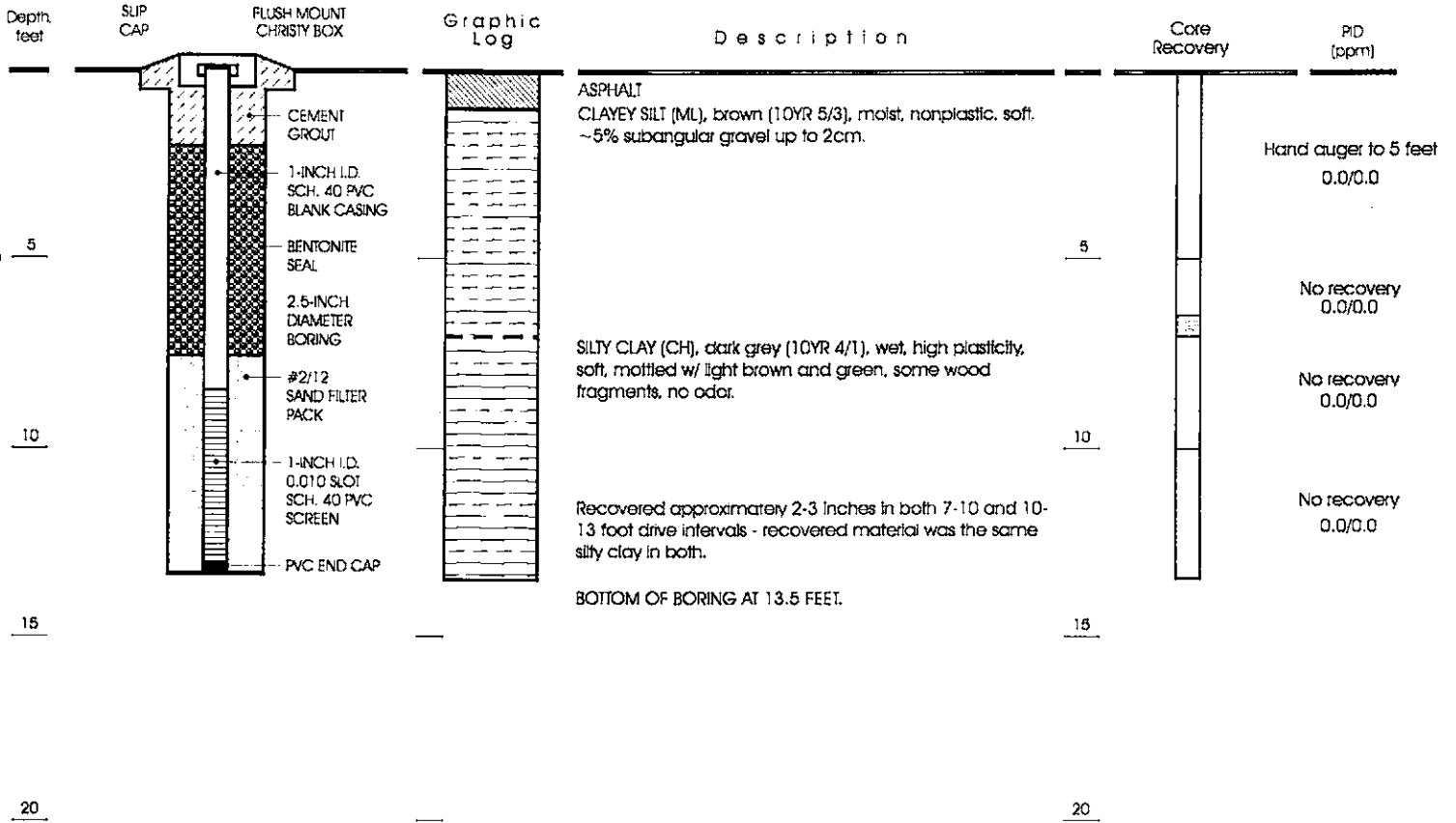
FORMER GLOVATORIUM

**WELL CONSTRUCTION**

**LITHOLOGY**

**SAMPLE DATA**

HEADSPACE MEASUREMENTS



Well Permit No. 99WR341  
 Date Well Drilled: July 15, 1999  
 Drilling Company: Precision  
 Driller: Ken Perez  
 Drilling Method: Direct push  
 Sampling Method: Hydraulic, continuous core  
 LFR Geologist: Jim Burke

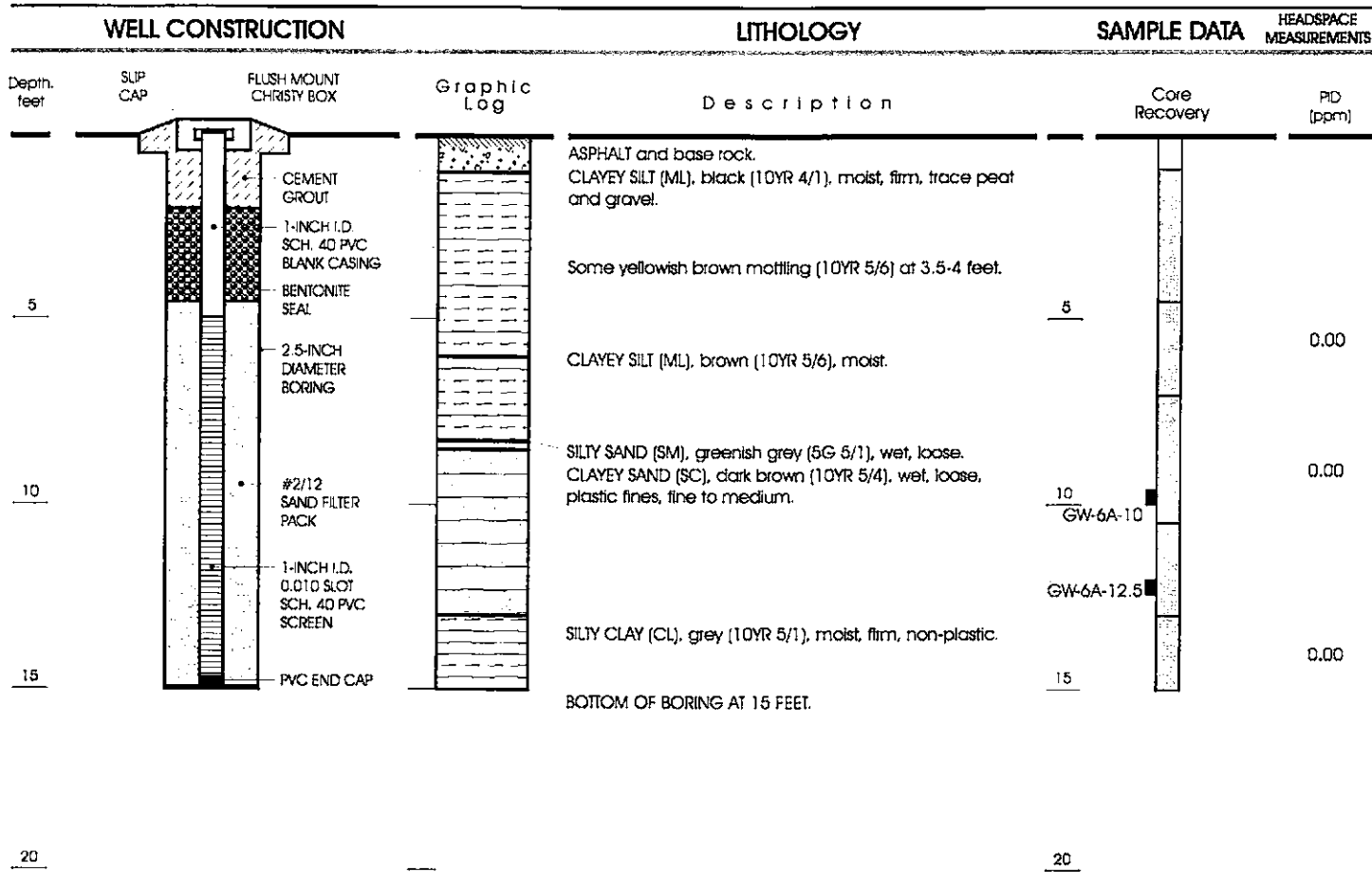
EXPLANATION

- Clay
- Silt
- Sand
- Gravel

Interval sampled using continuous core barrel

Approved by: *Taylor Bennett* R.G. #6595

**CONSTRUCTION AND LITHOLOGY FOR GW-6**



Well Permit No. 99WR341  
 Date Well Drilled: July 16, 1999  
 Drilling Company: Precision  
 Driller: Ken Perez  
 Drilling Method: Direct push  
 Sampling Method: Hydraulic, continous core  
 LFR Geologist: Chris Vocci

- EXPLANATION
- Clay
  - Silt
  - Sand
  - Gravel

Interval sampled using continuous core barrel  
 Soil sample collected for analysis

Approved by: *Taylor Bennett* R.G.#6595

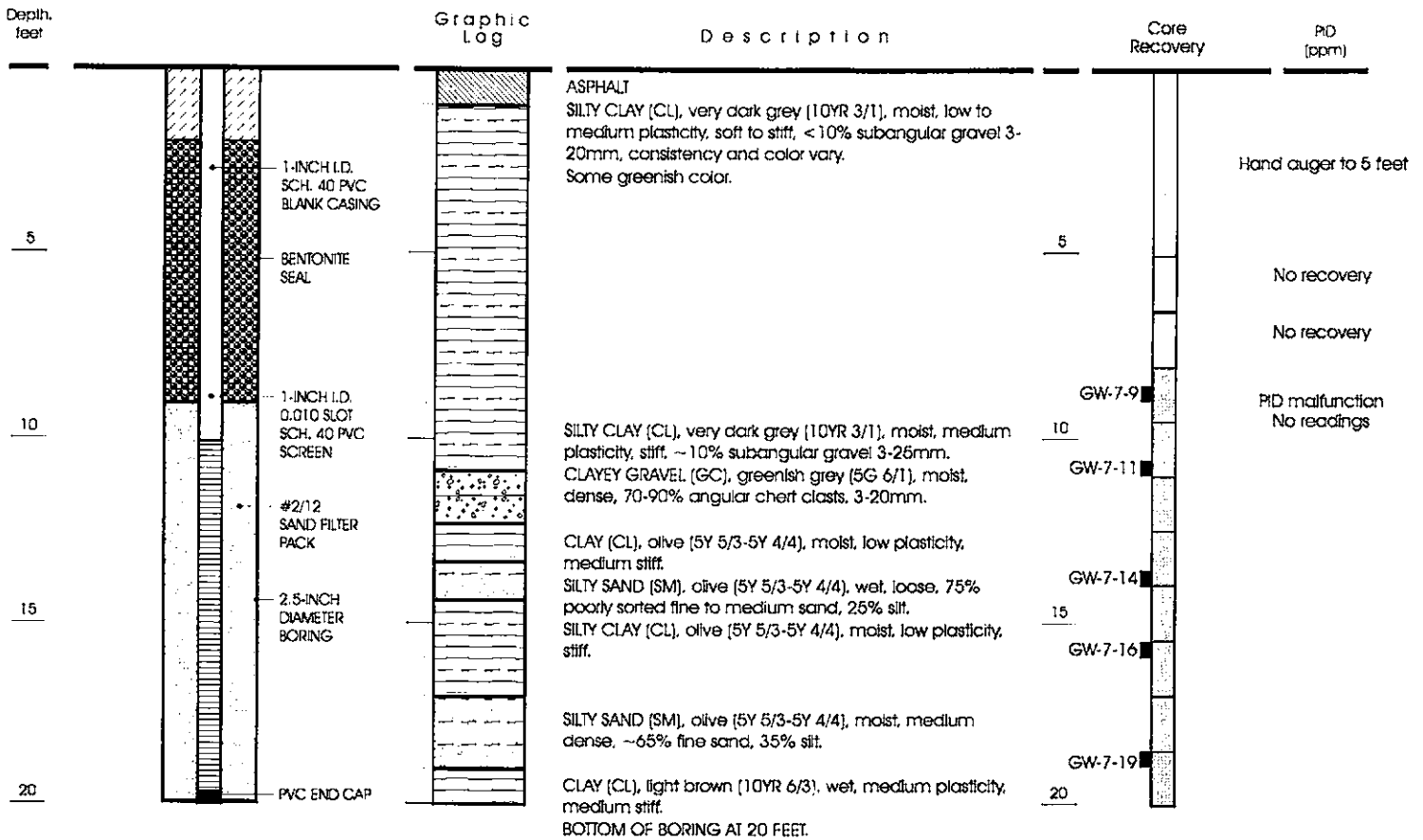
**CONSTRUCTION AND LITHOLOGY FOR GW-6A**

**WELL CONSTRUCTION**

**LITHOLOGY**

**SAMPLE DATA**

**HEADSPACE MEASUREMENTS**









**NOTE:**

A GRAB GROUNDWATER SAMPLE WAS COLLECTED ON JULY 15, 1999. THE PVC CASING AND SCREEN WERE THEN REMOVED AND THE BORING WAS BACKFILLED WITH CEMENT GROUT FROM THE BOTTOM TO THE GROUND SURFACE.

Well Permit No. 99WR341  
 Date Well Drilled: July 15, 1999  
 Drilling Company: Precision  
 Driller: Ken Perez  
 Drilling Method: Direct push  
 Sampling Method: Hydraulic, continuous core  
 LFR Geologist: Jim Burke

**EXPLANATION**

-  Clay
-  Silt
-  Sand
-  Gravel

-  Interval sampled using continuous core barrel
-  Soil sample collected for analysis

Approved by: *Taylor Bennett R.G. #6595*

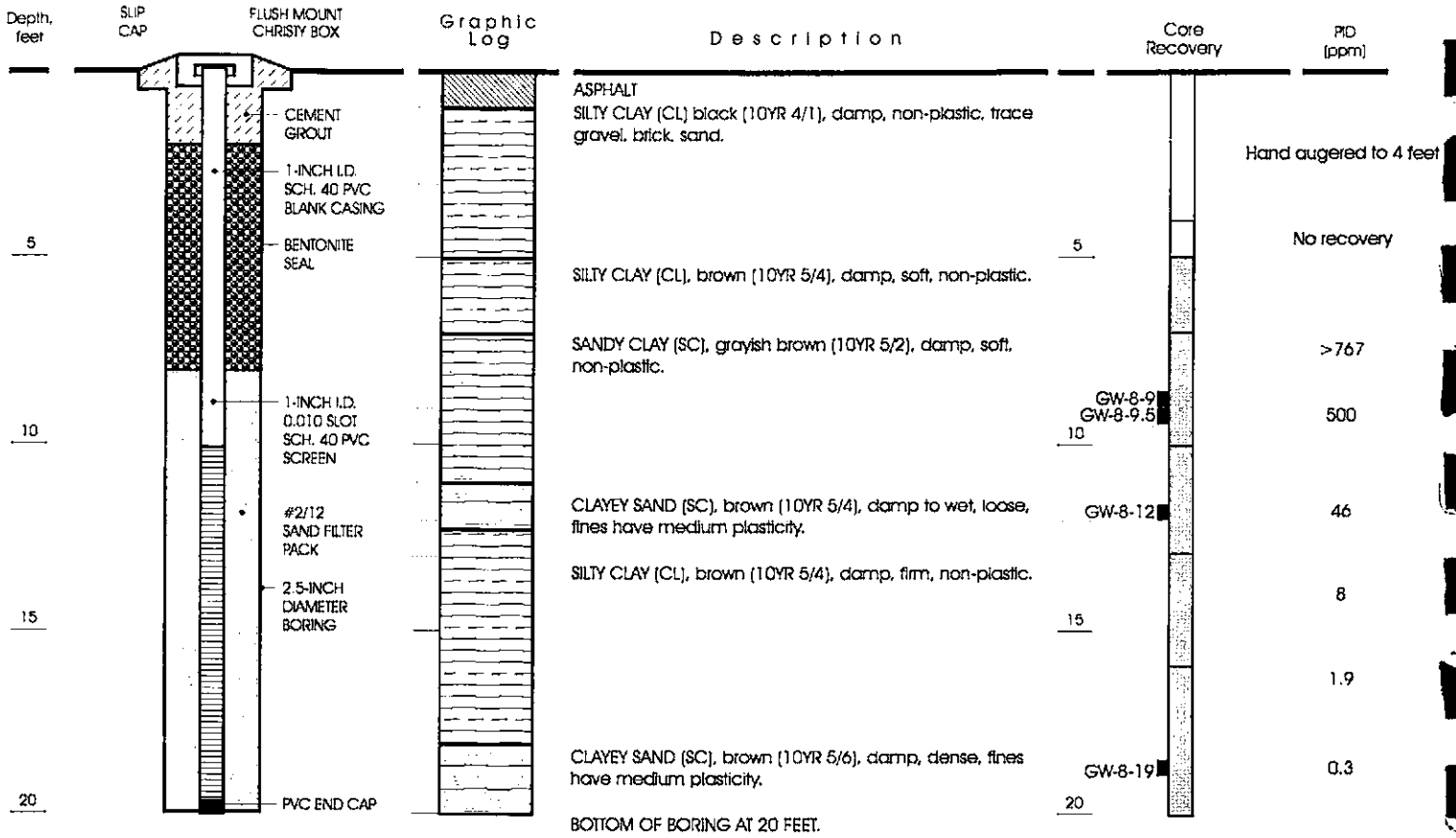
**CONSTRUCTION AND LITHOLOGY FOR GW-7**

**WELL CONSTRUCTION**

**LITHOLOGY**

**SAMPLE DATA**

**HEADSPACE MEASUREMENTS**



Well Permit No. 99WR340  
 Date Well Drilled: July 16, 1999  
 Drilling Company: Precision  
 Driller: Ken Perez  
 Drilling Method: Direct push  
 Sampling Method: Hydraulic, continuous core  
 LFR Geologist: Chris Voci

**EXPLANATION**

- Clay
- Silt
- Sand
- Gravel

- Interval sampled using continuous core barrel
- Soil sample collected for analysis

Approved by: *Taylor Bennett R.G.#6595*

**CONSTRUCTION AND LITHOLOGY FOR GW-8**

**Appendix B**

**Survey Report by Carlson, Barbee & Gibson of San Ramon, California**



3815 Broadway

Project: 940

Fri Jan 21 15:28:52 2000

Point statistics:

Starting point number: 1

Current point number: 212

('L' indicates locked point)

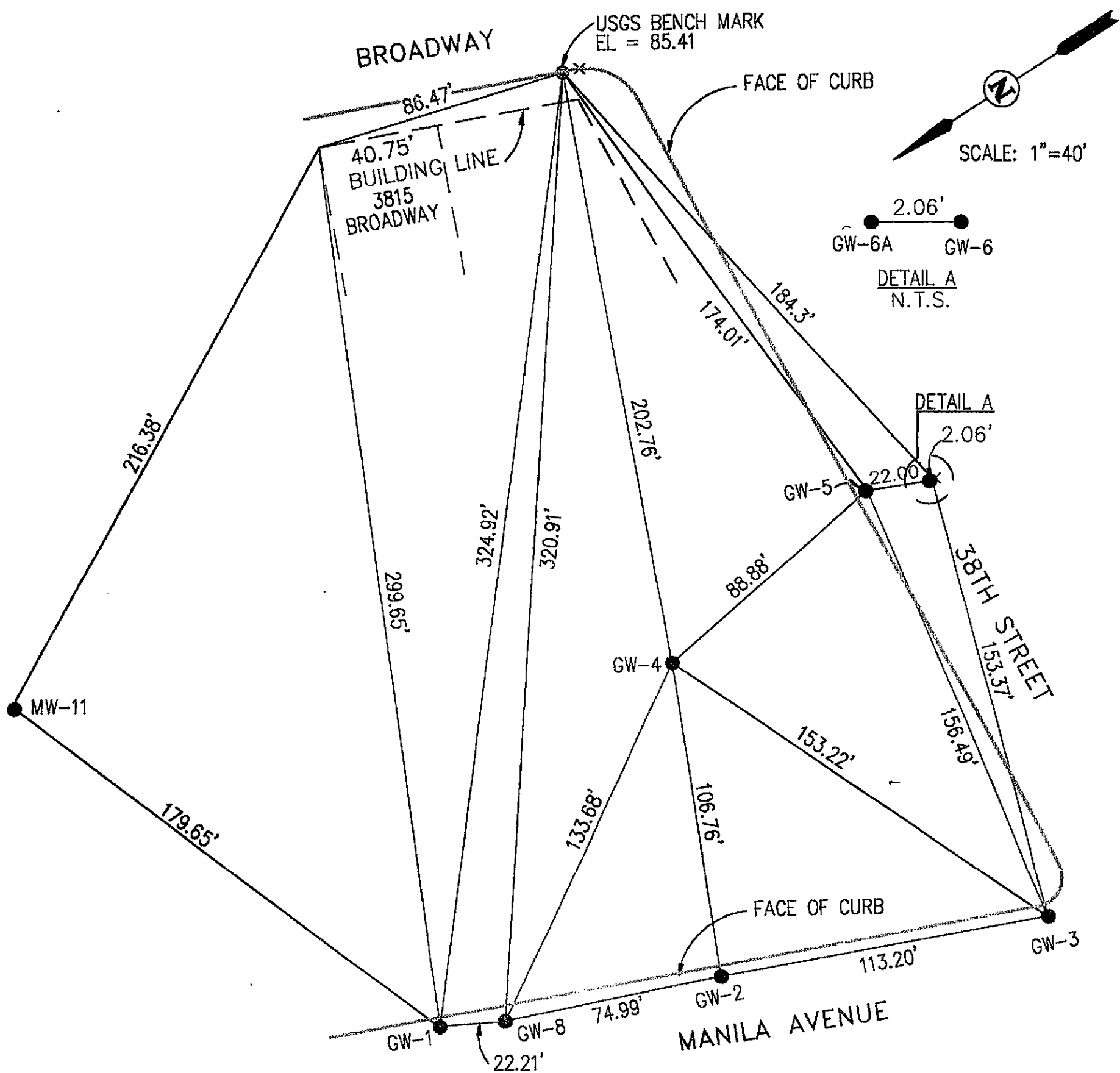
Current Coordinate Listing by Point Range

Point	Northing	Easting	Elevation	Description
201	321.4829	988.2940	79.94	80.24 GW-1
202	338.7645	1083.9399	79.14	79.44 GW-2
203	359.2334	1195.2729	77.92	78.48 GW-3
204	444.2052	1067.5410	82.37	82.55 GW-4
205	503.2258	1133.4961	81.01	81.31 GW-5
206	507.5104	1157.0532	81.65	81.91 GW-6
208	323.3517	1010.4271	80.10	80.28 GW-8
211	429.0253	843.9227	84.21	84.47 MW-11
306	506.6038	1155.1739	81.61	81.93 GW-6A

B-3 EL. = 82.57

EL. NORTH SIDE  
TOP/CASING

ELEV.  
TOP/LID



## LOCATION OF SAMPLING POINTS

FOR  
3815 BROADWAY  
OAKLAND, CALIFORNIA  
JANUARY, 2000

### Carlson, Barbee, & Gibson, Inc.

CIVIL ENGINEERS • SURVEYORS • PLANNERS  
2603 CAMINO, SUITE 100 SAN RAMON, CALIFORNIA 94583  
TELEPHONE: (925) 866-0322 FAX: (925) 866-8575

**Appendix C**

**Field and Laboratory Methods for Soil and Groundwater  
Investigations**

## FIELD AND LABORATORY METHODS FOR SOIL AND GROUNDWATER INVESTIGATIONS

The following sections describe the field and laboratory methods used during soil and groundwater investigations conducted by LFR.

### C1.0 SCOPE OF WORK

The scope of work performed in July and August 1999 consisted of the following activities:

- Drilling ten soil borings (GW-1 through GW-8, GW-5A, and GW-6A) using the direct-push method and collecting soil samples for laboratory analysis and/or lithologic description
- Installing nine temporary groundwater sampling points in the borings (GW-1 through GW-8, and GW-6A)
- Collecting grab groundwater samples for laboratory analysis from the temporary groundwater sampling points
- Abandoning and sealing temporary sampling point GW-7

The scope of work performed in January 2000 consisted of the following activities:

- Inspecting seven temporary sampling points installed by GeoSolv and removing the concrete caps and bentonite seals to allow access to measure groundwater levels and collect groundwater samples
- Measuring groundwater levels in the temporary sampling points installed by GeoSolv and LFR and in one monitoring well (MW-11) owned by Unocal
- Collecting and analyzing groundwater samples from the temporary sampling points and monitoring well
- Installing well boxes over the temporary sampling points installed by GeoSolv
- Surveying the locations and elevations of monitoring well MW-11 and temporary sampling points installed by LFR, and surveying the elevation of temporary sampling point B-3, which was broken

These activities are described in more detail below.

### C2.0 PERMITS

Before field work began, permits to drill the soil borings and install temporary groundwater sampling points were obtained from the Alameda County Department of

Public Works. In addition, two excavation permits (one for the borings on 38<sup>th</sup> Street, and one for the borings on Manila Avenue) were obtained by the Site owner from the City of Oakland. An access agreement was obtained to drill at location GW-4, which is located on private property.

### **C3.0 UTILITY LOCATING**

The proposed drilling locations were marked using white paint and cleared for underground utilities by a subcontracted utility locator using geophysical methods. Underground Services Alert (USA) was notified of drilling activities.

### **C4.0 HEALTH AND SAFETY**

A Health and Safety Plan (HSP) was prepared and distributed to on-site field personnel. Personnel engaged in field activities were briefed on the contents and procedures of the HSP. Field activities were monitored to ensure that appropriate health and safety procedures were followed.

### **C5.0 DRILLING OF SOIL BORINGS, SOIL SAMPLING, AND INSTALLATION OF TEMPORARY GROUNDWATER SAMPLING POINTS**

On July 15 and 16, 1999, LFR oversaw Precision Sampling, Inc. of Richmond, California ("Precision"), an LFR subcontractor, to drill a total of ten soil borings, and install nine temporary groundwater sampling points in the borings.

The soil borings were drilled using a hydraulically operated, direct-push rig using the Envirocore™ sampling system. The Envirocore™ sampler simultaneously advanced an outer conductor casing with an inner, continuous-core sampler to collect soil samples for laboratory analysis and lithologic description. The outer drive casing prevents potential sloughing of the borehole and cross-contamination of the inner sampler while the sampler is advanced to greater depths. The soil samples were collected in clean, stainless steel liners placed inside the continuous-core sampler.

A photoionization detector (PID) was used to screen soil samples in the field for possible laboratory analysis. However, the PID malfunctioned while borings GW-2, GW-3, and GW-7 were drilled, and no PID measurements were made for these borings.

The locations of the soil borings and temporary groundwater sampling points are shown on Figure 2. The following table summarizes the samples that were collected from each of the soil borings.

Boring Location	Total Depth (feet bgs)	Depths of Soil Samples Collected for Analysis (feet bgs)	Depths of Groundwater Sampling Point Screened Intervals (feet bgs)
GW-1	8	6.5 to 7 7.5 to 8	3 to 8
GW-2	20	None proposed or collected	10 to 20
GW-3	20	None proposed or collected	10 to 20
GW-4	12	8.5 to 9	7 to 12
GW-5	13	None (due to insufficient sample recovery)	8 to 13
GW-5A	12	8.5 to 9	None
GW-6	13.5	None (due to insufficient sample recovery)	8.5 to 13.5
GW-6A	15	9.5 to 10	5 to 15
GW-7	20	8.5 to 9 10.5 to 11 13.5 to 14 15.5 to 16	10 to 20
GW-8	20	8.5 to 9 11.5 to 12	10 to 20

In the Work Plan dated May 6, 1999, LFR proposed to drill a total of eight soil borings and install eight temporary groundwater sampling points. In addition to these proposed borings, LFR drilled soil borings GW-5A and GW-6A approximately 2 feet east and north of the locations of borings GW-5 and GW-6, respectively. These borings were drilled primarily because of poor soil sample recovery within the intervals of interest in borings GW-5 and GW-6, which were intended to be within the backfill material adjacent to the storm drain (Figure 2). Another reason for drilling boring GW-6A was that a small amount (less than 10 milliliters) of hydraulic oil from a leaking hydraulic line on the drill rig had spilled on the ground and entered the boring. To ensure that the soil and groundwater samples would not be contaminated by the hydraulic oil, LFR drilled boring GW-6A. LFR later determined that the hydraulic oil used by Precision's

drill rigs contains only vegetable oil, which does not contain chemicals of concern. Boring GW-5A was backfilled with cement grout after soil samples were collected.

The temporary groundwater sampling points were constructed of 1-inch-diameter, Schedule 40, factory-slotted (with 0.010-inch slots), polyvinyl chloride (PVC) casing. To install the groundwater sampling points, the inner sample barrel was removed from the outer drive casing, and the PVC casing was installed through the drive casing. Sand filter pack consisting of No. 2/12 sand was placed in the annulus between the borehole and the PVC screen as the outer drive casing was slowly withdrawn. A bentonite seal was placed from the top of the sand pack to approximately 2 feet below ground surface, to provide a surface seal.

The Work Plan specified that the temporary sampling points were to be abandoned and sealed after grab groundwater samples were collected. If grab groundwater samples could not be collected from any temporary sampling point the same day that it was installed, a well box was installed for security. Only one temporary sampling point, GW-7, could be sampled the same day it was installed. This temporary sampling point was abandoned and sealed on July 15, after grab groundwater samples were collected, by removing the PVC casing and backfilling the borehole with cement grout.

Flush-mounted, traffic-rated well boxes were installed on temporary sampling points GW-1 through GW-6, GW-6A, and GW-8.

Before use, all downhole equipment used for soil sampling and construction of temporary groundwater sampling points was new or decontaminated by washing with high-pressure, hot water (steam cleaned) and/or a solution of laboratory-grade detergent and tap water, followed by rinsing with tap water.

The ends of the stainless steel liners containing the soil samples were covered with Teflon™ sheets and capped with plastic caps. The soil samples were labeled with the location identification number and depth of the sample, the time and date of sample collection, the analysis requested, and the name of the sampler. The soil samples were placed in a cooler chilled with ice for transport to the analytical laboratory under standard chain-of-custody protocol.

Soil samples that were not retained for analysis were placed in 5-gallon buckets with tight-fitting lids and stored at the Site, pending selection of an appropriate disposal method. Water generated from decontaminating the drilling equipment was stored at the Site in a 55-gallon drum.

## **C6.0 GROUNDWATER SAMPLING**

Grab groundwater samples were collected using either a disposable polyethylene bailer or a peristaltic pump with polyethylene and Tygon™ tubing. For temporary sampling points that were sampled using a bailer, a new disposable polyethylene bailer fitted with a new nylon rope was lowered below the groundwater surface in the casing to

retrieve grab groundwater samples. The grab groundwater samples were then slowly poured from the bailer into laboratory-supplied, 40-milliliter (ml) volatile organic analysis (VOA) vials with Teflon septa. Grab groundwater samples that were collected from temporary sampling points using the peristaltic pump were pumped directly through polyethylene and Tygon™ tubing into VOA vials. The VOA containers were filled to eliminate headspace after the containers were sealed.

A groundwater sample was collected from well MW-11, which is owned by Unocal, by using a centrifugal pump to purge approximately 3 well volumes of groundwater from the casing to remove stagnant water so that a representative groundwater sample could be collected. Observations regarding the quantity and clarity of water withdrawn were recorded on a water-quality sampling information form (Appendix D) during this process. Specific conductance, pH, and temperature were measured during the purging process to help determine when to collect a sample. Sampling was conducted after measured indicator parameters had stabilized. A groundwater sample was collected using a disposable Teflon bailer and poured into laboratory-supplied 40-ml VOA vials for analysis. Sampling equipment was cleaned with a solution of Alconox (a laboratory-grade detergent) and tap water and/or washed with high-pressure hot water before use.

The sample containers were placed in a chilled cooler for transportation to the laboratory, following chain-of-custody protocol. A laboratory-prepared trip blank was placed in the cooler with the samples to check for possible contamination of the samples during shipment. Duplicate and field blank (equipment rinse) samples were also submitted for analysis. The field QC samples were collected and analyzed in addition to the quality assurance/QC procedures that are part of the standard program followed by certified laboratories.

The VOA vials were capped; labeled with the groundwater sampling point identification number, the time and date of sample collection, the analysis requested, and the name of the sampler; and placed in a cooler chilled with ice for transport to the analytical laboratory under standard chain-of-custody protocol. For quality control (QC) purposes, duplicate grab groundwater samples were collected from at least one of the temporary groundwater sampling points during each sampling event, for each analysis. Laboratory-prepared trip (travel) blanks were also placed in the coolers used to transport grab groundwater samples to the laboratory, as a QC check for possible contamination of samples during transport.

Water-quality sampling information forms were not filled out for grab groundwater samples collected on July 15, 19, and 21, 1999. Water-quality sampling information forms for groundwater sampling performed on August 27, 1999 and January 20 through 25, 2000 are presented in Appendix D.



## **C7.0 LABORATORY ANALYSIS OF SOIL AND GRAB GROUNDWATER SAMPLES**

The soil and grab groundwater samples were submitted to Curtis & Tompkins (C&T), of Berkeley, California, and Sequoia Analytical of Morgan Hill, California ("Sequoia"), state-certified laboratories, for analysis.

Soil samples were analyzed for total petroleum hydrocarbons as Stoddard solvent (TPHss) and gasoline (TPHg) using modified EPA method 8015, for volatile organic compounds (VOCs) using EPA method 8010, and for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and methyl tertiary-butyl ether (MTBE) using EPA method 8020.

Grab groundwater samples were analyzed for TPHss using modified EPA method 8015, for VOCs using EPA method 8010 and/or EPA method 8260, and for BTEX and MTBE using EPA method 8020 and/or EPA method 8260.

## **C8.0 SURVEYING**

Carlson, Barbee & Gibson of San Ramon, California, an LFR subcontractor, surveyed the locations and elevations of monitoring well MW-11 and temporary sampling points installed by LFR. The elevation of the top-of-casing of temporary sampling point B-3, installed by GeoSolv, was surveyed, because the casing was broken. The survey report is presented in Appendix B.

**Appendix D**

**Water-Quality Sampling Information Forms**

# WATER-QUALITY SAMPLING INFORMATION

Project No.: 6895.00-014  
 Project Name: Glovatorium  
 Sample Location: GW-6A  
 Samplers Name: THB  
 Sampling Plan Prepared By: THB  
 Sampling Method:  Grab sample; no purge

Date: 8/27/99  
 Sample No.: GW-6A-A, GW-6A-B  
 FB: \_\_\_\_\_  
 DUP: GW-6 GW-106A-C  
GW-106A-D

- Centrifugal Pump
- Submersible Pump
- Hand Bail
- Extraction Well Port
- Disposable Bailer
- Teflon Bailer
- \_\_\_\_\_ (Other)

Analyses Requested: EPA 8015M TPH Standard Number and Types of Bottle used: GW-6A 2 VOA  
EPA 8020 BTEX, MTBE GW-106A 2 VOA  
EPA 8010 VOCs

Method of Shipment: hand deliver  Courier \_\_\_\_\_  
 (Lab Name) Curtis & Tompkins  Hand Deliver: Berkeley

Well Number: GW-6A Well Diameter: 1"  
 Depth to Water: 13.90  2" (0.16 Gallon/Feet)  
 Well Depth: 14.90  4" (0.6 Gallon/Feet)  
 Height of Water Column: 1.00 ft.  5" (1.02 Gallon/Feet)  
 Volume in Well: \_\_\_\_\_  6" (1.47 Gallon/Feet)

80% DTW \_\_\_\_\_

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
<u>1:15</u>	<u>13.90</u>							
<u>2:00</u>							<u>clear</u>	<u>sampled GW-6A, 2 VOAs (A+B)</u>
<u>3:00</u>							<u>Slightly Turbid</u>	<u>sampled GW-106A (C+D), 2 VOAs</u>
<u>2:45</u>	<u>14.43</u>							<u>Grab samples, no purging.</u>
								<u>Sampled GW-106A has slightly higher turbidity than GW-6A.</u>
								<u>Specified lab to analyze GW-6A-B and GW-106-C</u>

Inlet Depth: \_\_\_\_\_

Comments: \_\_\_\_\_  
(Recommended Method For Purging Well)

WTR.QTY.SAMPLING.INFO.28NOV99.R1L

# WATER-QUALITY SAMPLING INFORMATION

Project No.: 6895.00-014  
 Project Name: Glovatorium  
 Sample Location: GW-5  
 Samplers Name: THB  
 Sampling Plan Prepared By: THB  
 Sampling Method: Grab sample; no purge

Date: 8/27/99  
 Sample No.: GW-5-A, GW-5-B  
 FB: \_\_\_\_\_  
 DUP: \_\_\_\_\_

- Centrifugal Pump
- Submersible Pump
- Hand Bail
- Extraction Well Port
- Disposable Bailer
- Teflon Bailer
- \_\_\_\_\_ (Other)

Analyses Requested: EPA 8015M TPH Stoddard  
EPA 8020 BTEX, MTBE  
EPA 8010 VOCs

Number and Types of Bottle used: GW-5-A 2 VOA(A+B)

Method of Shipment: Artis & Tompkins  
 (Lab Name)  Courier \_\_\_\_\_  
 Hand Deliver: THB

Well Number: GW-5  
 Depth to Water: 12.30  
 Well Depth: 13.0  
 Height of Water Column: \_\_\_\_\_  
 Volume in Well: \_\_\_\_\_

Well Diameter: 1"  
 2" (0.16 Gallon/Feet)  
 4" (0.65 Gallon/Feet)  
 5" (1.02 Gallon/Feet)  
 6" (1.47 Gallon/Feet)

80% DTW \_\_\_\_\_

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
12:07	12.30							No purge; grab samples
12:30							Clear	Sampled GW-5-A, GW-5-B
12:45	12.59							GW-5-B has slightly higher turbidity than GW-5-A. Specified lab to analyze GW-5-A

Inlet Depth: \_\_\_\_\_

Comments: \_\_\_\_\_  
 Recommended Method For Purging Well) \_\_\_\_\_

WTRCITY.SAMPLING.INFO.28NOV94R1L



# WATER-QUALITY SAMPLING INFORMATION

Project No.: 6895.00  
 Project Name: Glovepetarium  
 Sample Location: Oakland, CA  
 Samplers Name: MXD  
 Sampling Plan Prepared By: THB  
 Sampling Method: \_\_\_\_\_

Date: 1/24/00  
 Sample No.: B-3  
 FB: 1/1  
 DUP: \_\_\_\_\_

- |   |   |
|---|---|
| <input type="checkbox"/> Centrifugal Pump     | <input checked="" type="checkbox"/> Disposable Bailer |
| <input type="checkbox"/> Submersible Pump     | <input type="checkbox"/> Teflon Bailer                |
| <input type="checkbox"/> Hand Bail            | <input type="checkbox"/> _____                        |
| <input type="checkbox"/> Extraction Well Port | (Other)   |

Analyses Requested <u>8015 m; 8260A</u>	Number and Types of Bottle used <u>1 + 9 VOAs w/ HCl</u>
<u>8020 8010</u>	

13.71  
6.74  
-----  
6.37

80% DTW \_\_\_\_\_

Method of Shipment  
C+T  
 (Lab Name)  Courier \_\_\_\_\_  
 Hand Deliver \_\_\_\_\_

Well Number: B-3 Well Diameter: 1"  
 Depth to Water: 6.74  2" (0.16 Gallon/Feet)  
 Well Depth: 13.11  4" (0.65 Gallon/Feet)  
 Height of Water Column: 6.37  5" (1.02 Gallon/Feet)  
 Volume in Well: \_\_\_\_\_  6" (1.47 Gallon/Feet)

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
<u>1345</u>		<u>0</u>	<u>NA</u>					<u>GRAB SAMPLE PRODUCT</u>

Inlet Depth: \_\_\_\_\_

Comments: \_\_\_\_\_  
 (Recommended Method For Purging Well)

TRACER INFO



# WATER-QUALITY SAMPLING INFORMATION

Project No.: 6895.00  
 Project Name: Glovepetarium  
 Sample Location: Oakland, CA  
 Samplers Name: MXS  
 Sampling Plan Prepared By: TAB  
 Sampling Method: \_\_\_\_\_

Date: 1/24/00  
 Sample No.: B-B  
 FB: \_\_\_\_\_  
 DUP: ///

- |   |  |
|---|--|
| <input type="checkbox"/> Centrifugal Pump     | <input type="checkbox"/> Disposable Bailer |
| <input type="checkbox"/> Submersible Pump     | <input type="checkbox"/> Teflon Bailer     |
| <input type="checkbox"/> Hand Bail            | <input type="checkbox"/> _____             |
| <input type="checkbox"/> Extraction Well Port | (Other)                                    |

~~21.01~~  
8.98  


---

12.03

80% DTW

Analyses Requested: 8015 m; 8260A  
8020 8010       $\rightarrow$       Number and Types of Bottle used: 1+9 VOA's w/HCl

Method of Shipment: C+T  
(Lab Name)       Courier \_\_\_\_\_  
 Hand Deliver: \_\_\_\_\_

Well Number: B-B      Well Diameter: 1"  
 Depth to Water: 8.98       2" (0.16 Gallon/Feet)  
 Well Depth: 21.01       4" (0.65 Gallon/Feet)  
 Height of Water Column: 12.03       5" (1.02 Gallon/Feet)  
 Volume in Well: \_\_\_\_\_       6" (1.47 Gallon/Feet)

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
<u>1245</u>		<u>0</u>	<u>—</u>					<u>GRAB SAMPLE PRODUCT</u>

Inlet Depth: \_\_\_\_\_

Comments: \_\_\_\_\_  
(Recommended Method For Purging Well)

CONTROL INFORMATION









# WATER-QUALITY SAMPLING INFORMATION

Project No.: 6895  
 Project Name: Glousterium  
 Sample Location: \_\_\_\_\_  
 Samplers Name: KAG  
 Sampling Plan Prepared By: THB  
 Sampling Method: \_\_\_\_\_

Date: 1-21-99 THB  
 Sample No.: ~~\_\_\_\_\_~~ 6895  
 FB: GW-2  
 DUP: \_\_\_\_\_

- |   |  |
|---|--|
| <input type="checkbox"/> Centrifugal Pump     | <input type="checkbox"/> Disposable Bailer                             |
| <input type="checkbox"/> Submersible Pump     | <input type="checkbox"/> Teflon Bailer                                 |
| <input type="checkbox"/> Hand Bail            | <input checked="" type="checkbox"/> <u>peristaltic pump</u><br>(Other) |
| <input type="checkbox"/> Extraction Well Port |  |

Analyses Requested	Number and Types of Bottle used

Method of Shipment  
 \_\_\_\_\_  
 (Lab Name)  Courier \_\_\_\_\_  
 Hand Deliver: \_\_\_\_\_

Well Number: ~~GW-4~~ GW-2 Well Diameter: 1"  
 Depth to Water: 10.82  2" (0.16 Gallon/Feet)  
 Well Depth: 1.94  4" (0.65 Gallon/Feet)  
 Height of Water Column: \_\_\_\_\_  5" (1.02 Gallon/Feet)  
 Volume in Well: \_\_\_\_\_  6" (1.47 Gallon/Feet)

80% DTW \_\_\_\_\_

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
								<u>purge directly into containers</u>
<u>1530</u>								<u>Sample</u>
<u>1440</u>								<u>duplicate</u>
<u>1445</u>								

Inlet Depth: \_\_\_\_\_

Comments: \_\_\_\_\_  
 (Recommended Method For Purging Well)

WQI D.T.Y. SUBLING. INFO 28/NOV/99.DTL

# WATER-QUALITY SAMPLING INFORMATION

Project No.: 6875  
 Project Name: Quaternium  
 Sample Location: \_\_\_\_\_  
 Samplers Name: KAG  
 Sampling Plan Prepared By: THB  
 Sampling Method: \_\_\_\_\_

Date: 1-20-00  
 Sample No.: GW-3  
 FB: \_\_\_\_\_  
 DUP: \_\_\_\_\_

- |   |  |
|---|--|
| <input type="checkbox"/> Centrifugal Pump | <input type="checkbox"/> Disposable Bailer                             |
| <input type="checkbox"/> Submersible Pump | <input type="checkbox"/> Teflon Bailer                                 |
| <input type="checkbox"/> Hand Bail        | <input checked="" type="checkbox"/> <u>peristaltic pump</u><br>(Other) |
- Analyses Requested \_\_\_\_\_ Number and Types of Bottle used \_\_\_\_\_

*Purge*

Method of Shipment  
C.T.  
 (Lab Name)  Courier \_\_\_\_\_  
 Hand Deliver: \_\_\_\_\_

Well Number: GW-3 Well Diameter: 1"  
 Depth of Water: 9.99  2" (0.16 Gallon/Feet)  
 Well Depth: 19.94  4" (0.65 Gallon/Feet)  
 Height of Water Column: \_\_\_\_\_  5" (1.02 Gallon/Feet)  
 Volume in Well: \_\_\_\_\_  6" (1.47 Gallon/Feet)

80% DTW

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
								<i>purge directly into containers</i>
<i>130</i>								<i>sample</i>

Inlet Depth: \_\_\_\_\_

Comments: \_\_\_\_\_  
 (Recommended Method For Purging Well)

# WATER-QUALITY SAMPLING INFORMATION

Project No.: 6895  
 Project Name: Glovarium  
 Sample Location: GW-4  
 Samplers Name: KAG  
 Sampling Plan Prepared By: THB

Date: 1-21-2000  
 Sample No.: GW-4, GW-104  
 FB: \_\_\_\_\_  
 DUP: \_\_\_\_\_

- Sampling Method:
- Centrifugal Pump
  - Submersible Pump
  - Hand Bail
  - Extraction Well Port
  - Disposable Bailer 3-oz
  - Teflon Bailer
  - \_\_\_\_\_  
(Other)

Analyses Requested \_\_\_\_\_  
 Number and Types of Bottle used \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Method of Shipment

\_\_\_\_\_ (Lab Name)  Courier \_\_\_\_\_  
 Hand Deliver: \_\_\_\_\_

Well Number: \_\_\_\_\_ Well Diameter: \_\_\_\_\_  
 Depth to Water: 3.04  2" (0.16 Gallon/Feet)  
 Well Depth: 11.87  4" (0.65 Gallon/Feet)  
 Height of Water Column: \_\_\_\_\_  5" (1.02 Gallon/Feet)  
 Volume in Well: \_\_\_\_\_  6" (1.47 Gallon/Feet)

80% DTW \_\_\_\_\_

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
<u>1440</u>								<u>Sample</u>
<u>1445</u>								<u>Duplicate</u>
								<u>purge directly into container</u>

Inlet Depth: \_\_\_\_\_

Comments: \_\_\_\_\_  
 (Recommended Method For Purging Well)

WATER QUALITY SAMPLING INFO 28NOV00/01/02

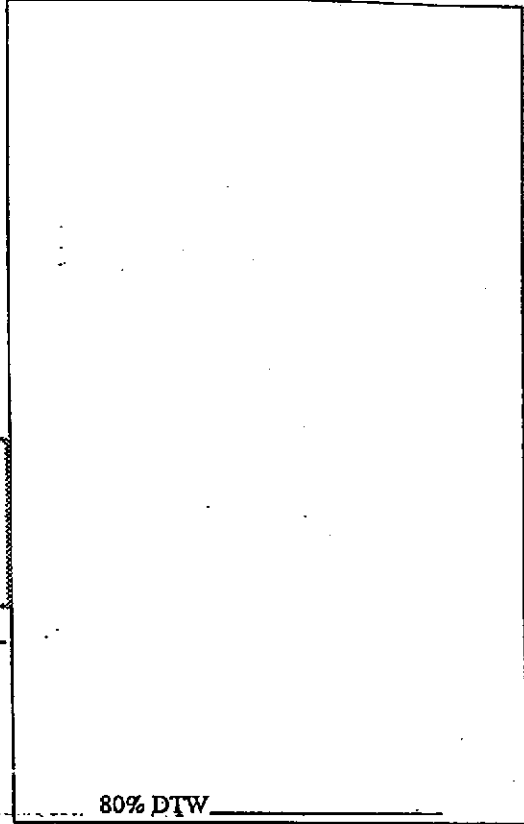
# WATER-QUALITY SAMPLING INFORMATION

Project No.: 6875  
 Project Name: Clowatorium  
 Sample Location: \_\_\_\_\_  
 Samplers Name: KAG  
 Sampling Plan Prepared By: THB  
 Sampling Method: \_\_\_\_\_

Date: 1-20-00  
 Sample No.: GW-5  
 FB: \_\_\_\_\_  
 DUP: \_\_\_\_\_

- |   |  |
|---|--|
| <input type="checkbox"/> Centrifugal Pump | <input checked="" type="checkbox"/> Disposable Bailer                  |
| <input type="checkbox"/> Submersible Pump | <input type="checkbox"/> Teflon Bailer                                 |
| <input type="checkbox"/> Hand Bail        | <input checked="" type="checkbox"/> <u>peristaltic pump</u><br>(Other) |

Analyses Requested \_\_\_\_\_ Number and Types of Bottle used \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



Method of Shipment  
C 3 T  
 (Lab Name)  Courier \_\_\_\_\_  
 Hand Deliver: \_\_\_\_\_

Well Number: GW-5 Well Diameter: 1"  
 Depth of Water: 12.40  2" (0.16 Gallon/Feet)  
 Well Depth: 12.92  4" (0.65 Gallon/Feet)  
 Height of Water Column: \_\_\_\_\_  5" (1.02 Gallon/Feet)  
 Volume in Well: \_\_\_\_\_  6" (1.47 Gallon/Feet)

80% DTW \_\_\_\_\_

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
<u>1445-1500</u>								<u>bailed ≈ 1/2 UOA, dry</u>
<u>1510-1530</u>								<u>peristaltic pump 1.5 UOA; dry</u>
<u>1-18-00</u>								

Net Depth: \_\_\_\_\_

Comments: \_\_\_\_\_  
 (Recommended Method For Purging Well)

# WATER-QUALITY SAMPLING INFORMATION

Project No.: 6895.00  
 Project Name: Gloveatocium  
 Sample Location: Oakland, CA  
 Samplers Name: MXD  
 Sampling Plan Prepared By: THB  
 Sampling Method: \_\_\_\_\_

Date: 1/24/00  
 Sample No.: GW-6A  
 FB: \_\_\_\_\_  
 DUP: 11

- Centrifugal Pump
- Submersible Pump
- Hand Bail
- Extraction Well Port
- Disposable Bailer
- Teflon Bailer
- \_\_\_\_\_  
(Other)

Analyses Requested

Number and Types of Bottle used

8015 m, 8260A

8020 8010

9 VOA's w/ HCL

Method of Shipment

C+T  
(Lab Name)

- Courier \_\_\_\_\_
- Hand Deliver:

Well Number: GW-6A

Well Diameter: 1"

Depth to Water: \_\_\_\_\_

2" (0.16 Gallon/Feet)

Well Depth: \_\_\_\_\_

4" (0.65 Gallon/Feet)

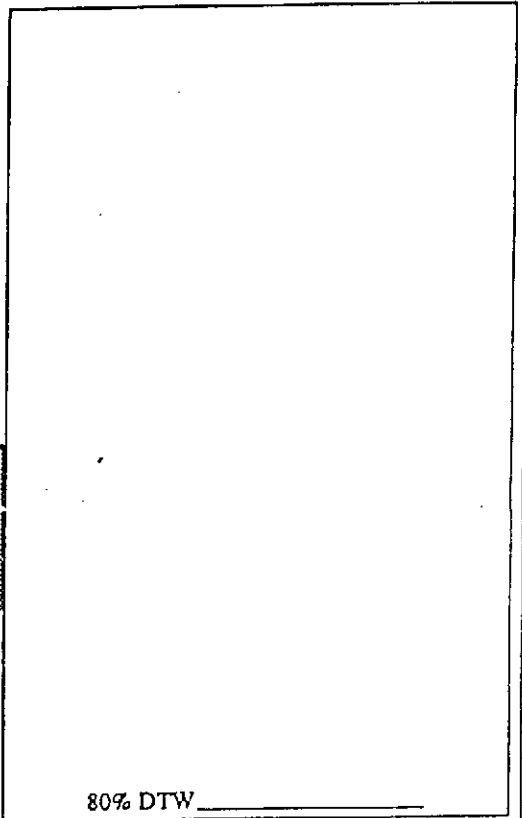
Height of Water Column: \_\_\_\_\_

5" (1.02 Gallon/Feet)

Volume in Well: \_\_\_\_\_

6" (1.47 Gallon/Feet)

80% DTW \_\_\_\_\_



TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
<u>1500</u>								<u>GRAB - 5 VOA</u>
<u>0810 (1/25/00)</u>								<u>GRAB - 4 VOA</u>

Inlet Depth: \_\_\_\_\_

Comments: \_\_\_\_\_  
(Recommended Method For Purging Well)



# WATER-QUALITY SAMPLING INFORMATION

Project No.: 6875  
 Project Name: Quaternium  
 Sample Location: \_\_\_\_\_  
 Samplers Name: KAG  
 Sampling Plan Prepared By: THB  
 Sampling Method: \_\_\_\_\_

Date: 1-20-00  
 Sample No.: FW-8  
 FB: \_\_\_\_\_  
 DUP: \_\_\_\_\_

- |   |   |
|---|---|
| <input type="checkbox"/> Centrifugal Pump | <input checked="" type="checkbox"/> Disposable Bailer |
| <input type="checkbox"/> Submersible Pump | <input type="checkbox"/> Teflon Bailer                |
| <input type="checkbox"/> Hand Bail        | <input type="checkbox"/> _____                        |

(Other)

Analyses Requested \_\_\_\_\_  
 Number and Types of Bottle used \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Method of Shipment  
C ? T  
 (Lab Name)  Courier \_\_\_\_\_  
 Hand Deliver: \_\_\_\_\_

Well Number: GW-8 Well Diameter: 1"  
 Depth of Water: 9.68  2" (0.16 Gallon/Feet)  
 Well Depth: 19.84  4" (0.65 Gallon/Feet)  
 Height of Water Column: \_\_\_\_\_  5" (1.02 Gallon/Feet)  
 Volume in Well: \_\_\_\_\_  6" (1.47 Gallon/Feet)

80% DTW

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
								<i>bail directly into containers</i>
<i>1400</i>								<i>sample duplicate</i>
<i>1405</i>								

Outlet Depth: \_\_\_\_\_

Comments: \_\_\_\_\_  
 (Recommended Method For Purging Well)

# WATER-QUALITY SAMPLING INFORMATION

Project No.: 6895.00  
 Project Name: Glovepetarium  
 Sample Location: Oakland, CA  
 Samplers Name: MXD  
 Sampling Plan Prepared By: THB  
 Sampling Method: \_\_\_\_\_

Date: 1/25/00  
 Sample No.: MW-11  
 FB: \_\_\_\_\_  
 DUP: \_\_\_\_\_

- |   |   |
|---|---|
| <input type="checkbox"/> Centrifugal Pump     | <input checked="" type="checkbox"/> Disposable Bailer |
| <input type="checkbox"/> Submersible Pump     | <input type="checkbox"/> Teflon Bailer                |
| <input checked="" type="checkbox"/> Hand Bail | <input type="checkbox"/> _____ (Other)                |
| <input type="checkbox"/> Extraction Well Port |   |

Analyses Requested  
8015 M; 8260A  
8020 8010

Number and Types of Bottle used  
9 VOAS w/HCl

Method of Shipment

C+T  
 (Lab Name)  Courier \_\_\_\_\_  
 Hand Deliver \_\_\_\_\_

Well Number: MW-11  
 Depth to Water: 10.73  
 Well Depth: 20.10  
 Height of Water Column: 9.37  
 Volume in Well: 1.5

- Well Diameter: \_\_\_\_\_
- 2" (0.16 Gallon/Feet)
  - 4" (0.65 Gallon/Feet)
  - 5" (1.02 Gallon/Feet)
  - 6" (1.47 Gallon/Feet)

20.10  
 10.73  
 -----  
 9.37  
 .16  
 -----  
 5622  
 9370  
 -----  
 14.992  
 1.87  
 -----  
 10.73  
 9.37  
 -----  
 12.60  
 -----  
 1874  
 80% DTW 12.60

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temperature °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
0830		0	NA					START
0833		1.5		18.5	6.43	942	-	clear stop meet
								Drill's
0838		1.5						Restart
0842		3.0		18.6	6.48	925	-	clear
0848		4.5		19.3	6.42	926	-	clear
0850	11.62							sample

Inlet Depth: \_\_\_\_\_

Comments: \_\_\_\_\_  
 (Recommended Method For Purging Well)

WATER QUALITY SAMPLING INFO 09/05/97/1

**Appendix E**

**Laboratory Certificates**



# Sequoia Analytical

885 Jarvis Drive  
Morgan Hill, CA 95037  
(408) 776-9600  
FAX (408) 782-6308

July 21, 1999

Taylor Bennett  
LFR Levine-Fricke - Emeryville  
1900 Powell St, 12th Floor  
Emeryville, CA 94608

RE: 6895.00.014/M907605

Dear Taylor Bennett

Enclosed are the results of analyses for sample(s) received by the laboratory on July 15, 1999. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ron Chew  
Project Manager

CA ELAP Certificate Number 1210



LFR Levine-Fricke - Emeryville  
1900 Powell St, 12th Floor  
Emeryville, CA 94608

Project: -  
Project Number: 6895.00.014  
Project Manager: Taylor Bennett

Sampled: 7/15/99  
Received: 7/15/99  
Reported: 7/21/99

## ANALYTICAL REPORT FOR M907605

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
GW-07	M907605-01	Water	7/15/99
GW-107	M907605-02	Water	7/15/99



LFR Levine-Fricke - Emeryville 1900 Powell St, 12th Floor Emeryville, CA 94608	Project: - Project Number: 6895.00.014 Project Manager: Taylor Bennett	Sampled: 7/15/99 Received: 7/15/99 Reported: 7/21/99
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**Diesel Hydrocarbons (C9-C24) by DHS LUFT  
Sequoia Analytical - Morgan Hill**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>GW-07</b>				<b>M907605-01</b>			<b>Water</b>	
Diesel Range Hydrocarbons	9070560	7/16/99	7/18/99		0.0500	<b>0.566</b>	mg/l	1
Surrogate: n-Pentacosane	"	"	"	50.0-150		32.3	%	2
Stoddard Solvent (C9-C13)	"	"	"			<b>0.205</b>	mg/l	3
Surrogate: n-Pentacosane	"	"	"	50.0-150		32.3	%	2
Stoddard Solvent (C9-C13)	9070639	7/20/99	7/20/99			<b>0.697</b>	mg/l	3
Surrogate: n-Pentacosane	"	"	"	50.0-150		105	%	
Diesel Range Hydrocarbons	"	"	"		0.0500	<b>1.79</b>	mg/l	1
Surrogate: n-Pentacosane	"	"	"	50.0-150		105	%	
<b>GW-107</b>				<b>M907605-02</b>			<b>Water</b>	
Diesel Range Hydrocarbons	9070560	7/16/99	7/19/99		0.100	<b>3.10</b>	mg/l	1
Surrogate: n-Pentacosane	"	"	"	50.0-150		100	%	
Stoddard Solvent (C9-C13)	"	"	"			<b>1.42</b>	mg/l	3
Surrogate: n-Pentacosane	"	"	"	50.0-150		100	%	



LFR Levine-Fricke - Emeryville 1900 Powell St, 12th Floor Emeryville, CA 94608	Project: - Project Number: 6895.00.014 Project Manager: Taylor Bennett	Sampled: 7/15/99 Received: 7/15/99 Reported: 7/21/99
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**MTBE by DHS LUFT  
Sequoia Analytical - Morgan Hill**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>GW-07</b>				<b>M907605-01</b>			<b>Water</b>	
Methyl tert-butyl ether	9070547	7/16/99	7/16/99		2.50	ND	ug/l	
<b>Benzene</b>	"	"	"		0.500	<b>50.0</b>	"	
Toluene	"	"	"		0.500	ND	"	
<b>Ethylbenzene</b>	"	"	"		0.500	<b>0.727</b>	"	
<b>Xylenes (total)</b>	"	"	"		0.500	<b>3.13</b>	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	"	"	70.0-130		198	%	4



LFR Levine-Fricke - Emeryville 1900 Powell St, 12th Floor Emeryville, CA 94608	Project: - Project Number: 6895.00.014 Project Manager: Taylor Bennett	Sampled: 7/15/99 Received: 7/15/99 Reported: 7/21/99
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**Volatile Organic Compounds by EPA Method 8010B  
Sequoia Analytical - Morgan Hill**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>W-07</b>				<b>M907605-01</b>			<b>Water</b>	
Bromodichloromethane	9070500	7/16/99	7/16/99		0.500	ND	ug/l	
Bromoform	"	"	"		0.500	ND	"	
Bromomethane	"	"	"		1.00	ND	"	
Carbon tetrachloride	"	"	"		0.500	ND	"	
Chlorobenzene	"	"	"		0.500	ND	"	
Chloroethane	"	"	"		0.500	ND	"	
Chloroform	"	"	"		0.500	ND	"	
Chloromethane	"	"	"		0.500	ND	"	
Dibromochloromethane	"	"	"		0.500	ND	"	
1,3-Dichlorobenzene	"	"	"		0.500	ND	"	
1,4-Dichlorobenzene	"	"	"		0.500	ND	"	
1,2-Dichlorobenzene	"	"	"		0.500	ND	"	
1,1-Dichloroethane	"	"	"		0.500	ND	"	
1,2-Dichloroethane	"	"	"		0.500	ND	"	
1,1-Dichloroethene	"	"	"		0.500	ND	"	
cis-1,2-Dichloroethene	"	"	"		0.500	3.58	"	
trans-1,2-Dichloroethene	"	"	"		0.500	ND	"	
1,2-Dichloropropane	"	"	"		0.500	0.632	"	
cis-1,3-Dichloropropene	"	"	"		0.500	ND	"	
trans-1,3-Dichloropropene	"	"	"		0.500	ND	"	
Tetrachloroethene	"	"	"		5.00	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		0.500	ND	"	
Tetrachloroethene	"	"	"		0.500	ND	"	
1,1,1-Trichloroethane	"	"	"		0.500	ND	"	
1,1,2-Trichloroethane	"	"	"		0.500	ND	"	
1,1,2-Trichlorotrifluoroethane	"	"	"		0.500	ND	"	
Trichloroethene	"	"	"		0.500	ND	"	
Trichlorofluoromethane	"	"	"		0.500	ND	"	
Vinyl chloride	"	"	"		0.500	ND	"	
Surrogate: 4-Bromofluorobenzene	"	"	"	70.0-130		113	%	





LFR Levine-Fricke - Emeryville 1900 Powell St, 12th Floor Emeryville, CA 94608	Project: - Project Number: 6895.00.014 Project Manager: Taylor Bennett	Sampled: 7/15/99 Received: 7/15/99 Reported: 7/21/99
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## Diesel Hydrocarbons (C9-C24) by DHS LUFT/Quality Control Sequoia Analytical - Morgan Hill

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 9070560</b>			<b>Date Prepared: 7/16/99</b>			<b>Extraction Method: EPA 3510B</b>				
<b>Blank</b>			<b>9070560-BLK1</b>							
Diesel Range Hydrocarbons	7/18/99			ND	mg/l	0.0500				
Diesel Range Hydrocarbons	"			ND	"	0.0500				
Surrogate: n-Pentacosane	"	0.100		0.0702	"	50.0-150	70.2			
Surrogate: n-Pentacosane	"	0.100		0.0702	"	50.0-150	70.2			
<b>LCS</b>			<b>9070560-BS1</b>							
Diesel Range Hydrocarbons	7/18/99	1.00		0.778	mg/l	60.0-140	77.8			
Diesel Range Hydrocarbons	"	1.00		0.778	"	60.0-140	77.8			
Surrogate: n-Pentacosane	"	0.100		0.0851	"	50.0-150	85.1			
Surrogate: n-Pentacosane	"	0.100		0.0851	"	50.0-150	85.1			
<b>LCS Dup</b>			<b>9070560-BSD1</b>							
Diesel Range Hydrocarbons	7/18/99	1.00		0.767	mg/l	60.0-140	76.7	50.0	1.42	
Diesel Range Hydrocarbons	"	1.00		0.767	"	60.0-140	76.7	50.0	1.42	
Surrogate: n-Pentacosane	"	0.100		0.0811	"	50.0-150	81.1			
Surrogate: n-Pentacosane	"	0.100		0.0811	"	50.0-150	81.1			
<b>Matrix Spike</b>			<b>9070560-MS1</b>		<b>M907581-02</b>					
Diesel Range Hydrocarbons	7/18/99	1.00	ND	0.553	mg/l	50.0-150	55.3			
Diesel Range Hydrocarbons	"	1.00	ND	0.553	"	50.0-150	55.3			
Surrogate: n-Pentacosane	"	0.100		0.0721	"	50.0-150	72.1			
Surrogate: n-Pentacosane	"	0.100		0.0721	"	50.0-150	72.1			
<b>Matrix Spike Dup</b>			<b>9070560-MSD1</b>		<b>M907581-02</b>					
Diesel Range Hydrocarbons	7/18/99	1.00	ND	1.05	mg/l	50.0-150	105	50.0	62.0	5
Diesel Range Hydrocarbons	"	1.00	ND	1.05	"	50.0-150	105	50.0	62.0	5
Surrogate: n-Pentacosane	"	0.100		0.0877	"	50.0-150	87.7			
Surrogate: n-Pentacosane	"	0.100		0.0877	"	50.0-150	87.7			
<b>Batch: 9070639</b>			<b>Date Prepared: 7/20/99</b>			<b>Extraction Method: EPA 3510B</b>				
<b>Blank</b>			<b>9070639-BLK1</b>							
Diesel Range Hydrocarbons	7/20/99			ND	mg/l	0.0500				
Diesel Range Hydrocarbons	"			ND	"	0.0500				
Surrogate: n-Pentacosane	"	0.100		0.102	"	50.0-150	102			
Surrogate: n-Pentacosane	"	0.100		0.102	"	50.0-150	102			
<b>LCS</b>			<b>9070639-BS1</b>							
Diesel Range Hydrocarbons	7/20/99	1.00		0.919	mg/l	60.0-140	91.9			
Diesel Range Hydrocarbons	"	1.00		0.919	"	60.0-140	91.9			
Surrogate: n-Pentacosane	"	0.100		0.111	"	50.0-150	111			



LFR Levine-Frick - Emeryville 1900 Powell St, 12th Floor Emeryville, CA 94608	Project: - Project Number: 6895.00.014 Project Manager: Taylor Bennett	Sampled: 7/15/99 Received: 7/15/99 Reported: 7/21/99
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**Diesel Hydrocarbons (C9-C24) by DHS LUFT/Quality Control**  
**Sequoia Analytical - Morgan Hill**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>CS (continued)</b>	<b>9070639-BS1</b>									
Surrogate: <i>n</i> -Pentacosane	7/20/99	0.100		0.111	mg/l	50.0-150	111			
<b>CS Dup</b>	<b>9070639-BSD1</b>									
Diesel Range Hydrocarbons	7/20/99	1.00		0.926	mg/l	60.0-140	92.6	50.0	0.759	
Diesel Range Hydrocarbons	"	1.00		0.926	"	60.0-140	92.6	50.0	0.759	
Surrogate: <i>n</i> -Pentacosane	"	0.100		0.106	"	50.0-150	106			
Surrogate: <i>n</i> -Pentacosane	"	0.100		0.106	"	50.0-150	106			



LFR Levine-Fricke - Emeryville	Project: -	Sampled: 7/15/99
1900 Powell St, 12th Floor	Project Number: 6895.00.014	Received: 7/15/99
Emeryville, CA 94608	Project Manager: Taylor Bennett	Reported: 7/21/99

**MTBE by DHS LUFT/Quality Control**  
**Sequoia Analytical - Morgan Hill**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 9070547</b>		<b>Date Prepared: 7/16/99</b>			<b>Extraction Method: EPA 5030B [P/T]</b>					
<b>Blank</b>		<b>9070547-BLK1</b>								
Methyl tert-butyl ether	7/16/99			ND	ug/l	2.50				
Benzene	"			ND	"	0.500				
Toluene	"			ND	"	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	0.500				
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	10.0		9.48	"	70.0-130	94.8			
<b>LCS</b>		<b>9070547-BS1</b>								
Benzene	7/16/99	10.0		8.77	"	70.0-130	87.7			
Toluene	"	10.0		8.82	"	70.0-130	88.2			
Ethylbenzene	"	10.0		8.82	"	70.0-130	88.2			
Xylenes (total)	"	30.0		26.6	"	70.0-130	88.7			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	10.0		8.69	"	70.0-130	86.9			
<b>Matrix Spike</b>		<b>9070547-MS1</b>	<b>M907294-07</b>							
Benzene	7/16/99	10.0	ND	8.96	ug/l	60.0-140	89.6			
Toluene	"	10.0	ND	9.09	"	60.0-140	90.9			
Ethylbenzene	"	10.0	ND	9.16	"	60.0-140	91.6			
Xylenes (total)	"	30.0	ND	27.6	"	60.0-140	92.0			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	10.0		7.95	"	70.0-130	79.5			
<b>Matrix Spike Dup</b>		<b>9070547-MSD1</b>	<b>M907294-07</b>							
Benzene	7/16/99	10.0	ND	7.83	ug/l	60.0-140	78.3	25.0	13.5	
Toluene	"	10.0	ND	8.21	"	60.0-140	82.1	25.0	10.2	
Ethylbenzene	"	10.0	ND	8.24	"	60.0-140	82.4	25.0	10.6	
Xylenes (total)	"	30.0	ND	24.8	"	60.0-140	82.7	25.0	10.6	
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	10.0		7.68	"	70.0-130	76.8			



LFR Levine-Fricke - Emeryville  
1900 Powell St, 12th Floor  
Emeryville, CA 94608

Project: -  
Project Number: 6895.00.014  
Project Manager: Taylor Bennett

Sampled: 7/15/99  
Received: 7/15/99  
Reported: 7/21/99

## Volatile Organic Compounds by EPA Method 8010B/Quality Control Sequoia Analytical - Morgan Hill

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recover. Limits	Recover. %	RPD Limit	RPD %	Notes*
<b>Batch: 9070500</b>		<b>Date Prepared: 7/15/99</b>			<b>Extraction Method: EPA 5030B [P/T]</b>					
<b>Blank</b>		<b>9070500-BLK1</b>								
Bromodichloromethane	7/15/99			ND	ug/l	0.500				
Bromoform	"			ND	"	0.500				
Bromomethane	"			ND	"	1.00				
Carbon tetrachloride	"			ND	"	0.500				
Chlorobenzene	"			ND	"	0.500				
Chloroethane	"			ND	"	1.00				
Chloroform	"			ND	"	0.500				
Chloromethane	"			ND	"	1.00				
Dibromochloromethane	"			ND	"	0.500				
1,3-Dichlorobenzene	"			ND	"	0.500				
1,4-Dichlorobenzene	"			ND	"	0.500				
1,2-Dichlorobenzene	"			ND	"	0.500				
1,1-Dichloroethane	"			ND	"	0.500				
1,2-Dichloroethane	"			ND	"	0.500				
1,1-Dichloroethene	"			ND	"	0.500				
cis-1,2-Dichloroethene	"			ND	"	0.500				
trans-1,2-Dichloroethene	"			ND	"	0.500				
1,2-Dichloropropane	"			ND	"	0.500				
cis-1,3-Dichloropropene	"			ND	"	0.500				
trans-1,3-Dichloropropene	"			ND	"	0.500				
Methylene chloride	"			ND	"	5.00				
1,1,2,2-Tetrachloroethane	"			ND	"	0.500				
Tetrachloroethene	"			ND	"	0.500				
1,1,1-Trichloroethane	"			ND	"	0.500				
1,1,2-Trichloroethane	"			ND	"	0.500				
1,1,2-Trichlorotrifluoroethane	"			ND	"	1.00				
Trichloroethene	"			ND	"	0.500				
Trichlorofluoromethane	"			ND	"	0.500				
Vinyl chloride	"			ND	"	1.00				
Surrogate: 4-Bromofluorobenzene	"	10.0		10.0	"	70.0-130	100			
<b>Blank</b>		<b>9070500-BLK2</b>								
Bromodichloromethane	7/16/99			ND	ug/l	0.500				
Bromoform	"			ND	"	0.500				
Bromomethane	"			ND	"	1.00				
Carbon tetrachloride	"			ND	"	0.500				
Chlorobenzene	"			ND	"	0.500				
Chloroethane	"			ND	"	1.00				
Chloroform	"			ND	"	0.500				
Chloromethane	"			ND	"	1.00				



LFR Levine-Fricke - Emeryville 1900 Powell St, 12th Floor Emeryville, CA 94608	Project: - Project Number: 6895.00.014 Project Manager: Taylor Bennett	Sampled: 7/15/99 Received: 7/15/99 Reported: 7/21/99
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**Volatile Organic Compounds by EPA Method 8010B/Quality Control  
Sequoia Analytical - Morgan Hill**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Blank (continued)</b>										
<u>9070500-BLK2</u>										
Dibromochloromethane	7/16/99			ND	ug/l	0.500				
1,3-Dichlorobenzene	"			ND	"	0.500				
1,4-Dichlorobenzene	"			ND	"	0.500				
1,2-Dichlorobenzene	"			ND	"	0.500				
1,1-Dichloroethane	"			ND	"	0.500				
1,2-Dichloroethane	"			ND	"	0.500				
1,1-Dichloroethene	"			ND	"	0.500				
cis-1,2-Dichloroethene	"			ND	"	0.500				
trans-1,2-Dichloroethene	"			ND	"	0.500				
1,2-Dichloropropane	"			ND	"	0.500				
cis-1,3-Dichloropropene	"			ND	"	0.500				
trans-1,3-Dichloropropene	"			ND	"	0.500				
Methylene chloride	"			ND	"	5.00				
1,1,2,2-Tetrachloroethane	"			ND	"	0.500				
Tetrachloroethene	"			ND	"	0.500				
1,1,1-Trichloroethane	"			ND	"	0.500				
1,1,2-Trichloroethane	"			ND	"	0.500				
1,1,2-Trichlorotrifluoroethane	"			ND	"	1.00				
Trichloroethene	"			ND	"	0.500				
Trichlorofluoromethane	"			ND	"	0.500				
Vinyl chloride	"			ND	"	1.00				
Surrogate: 4-Bromofluorobenzene	"	10.0		8.94	"	70.0-130	89.4			
<b>LCS</b>										
<u>9070500-BS1</u>										
Chlorobenzene	7/15/99	25.0		19.7	ug/l	70.0-130	78.8			
1,1-Dichloroethene	"	25.0		19.1	"	65.0-135	76.4			
Trichloroethene	"	25.0		20.8	"	70.0-130	83.2			
Surrogate: 4-Bromofluorobenzene	"	10.0		9.42	"	70.0-130	94.2			
<b>LCS</b>										
<u>9070500-BS2</u>										
Chlorobenzene	7/16/99	25.0		18.5	ug/l	70.0-130	74.0			
1,1-Dichloroethene	"	25.0		17.2	"	65.0-135	68.8			
Trichloroethene	"	25.0		19.1	"	70.0-130	76.4			
Surrogate: 4-Bromofluorobenzene	"	10.0		10.3	"	70.0-130	103			
<b>Matrix Spike</b>										
<u>9070500-MS1</u> <u>M907554-02</u>										
Chlorobenzene	7/16/99	25.0	ND	19.3	ug/l	60.0-140	77.2			
1,1-Dichloroethene	"	25.0	ND	17.5	"	60.0-140	70.0			
Trichloroethene	"	25.0	ND	19.3	"	60.0-140	77.2			
Surrogate: 4-Bromofluorobenzene	"	10.0		10.7	"	70.0-130	107			



LFR Levine-Fricke - Emeryville 1900 Powell St, 12th Floor Emeryville, CA 94608	Project: - Project Number: 6895.00.014 Project Manager: Taylor Bennett	Sampled: 7/15/99 Received: 7/15/99 Reported: 7/21/99
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**Volatile Organic Compounds by EPA Method 8010B/Quality Control  
Sequoia Analytical - Morgan Hill**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Matrix Spike Dup</b>	<b>9070500-MSD1</b>	<b>M907554-02</b>								
Chlorobenzene	7/15/99	25.0	ND	20.4	ug/l	60.0-140	81.6	25.0	5.54	
1,1-Dichloroethene	"	25.0	ND	18.3	"	60.0-140	73.2	25.0	4.47	
Trichloroethene	"	25.0	ND	20.3	"	60.0-140	81.2	25.0	5.05	
Surrogate: 4-Bromofluorobenzene	"	10.0		12.1	"	70.0-130	121			



LFR Levine-Fricke - Emeryville 1900 Powell St, 12th Floor Emeryville, CA 94608	Project: - Project Number: 6895.00.014 Project Manager: Taylor Bennett	Sampled: 7/15/99 Received: 7/15/99 Reported: 7/21/99
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### Notes and Definitions

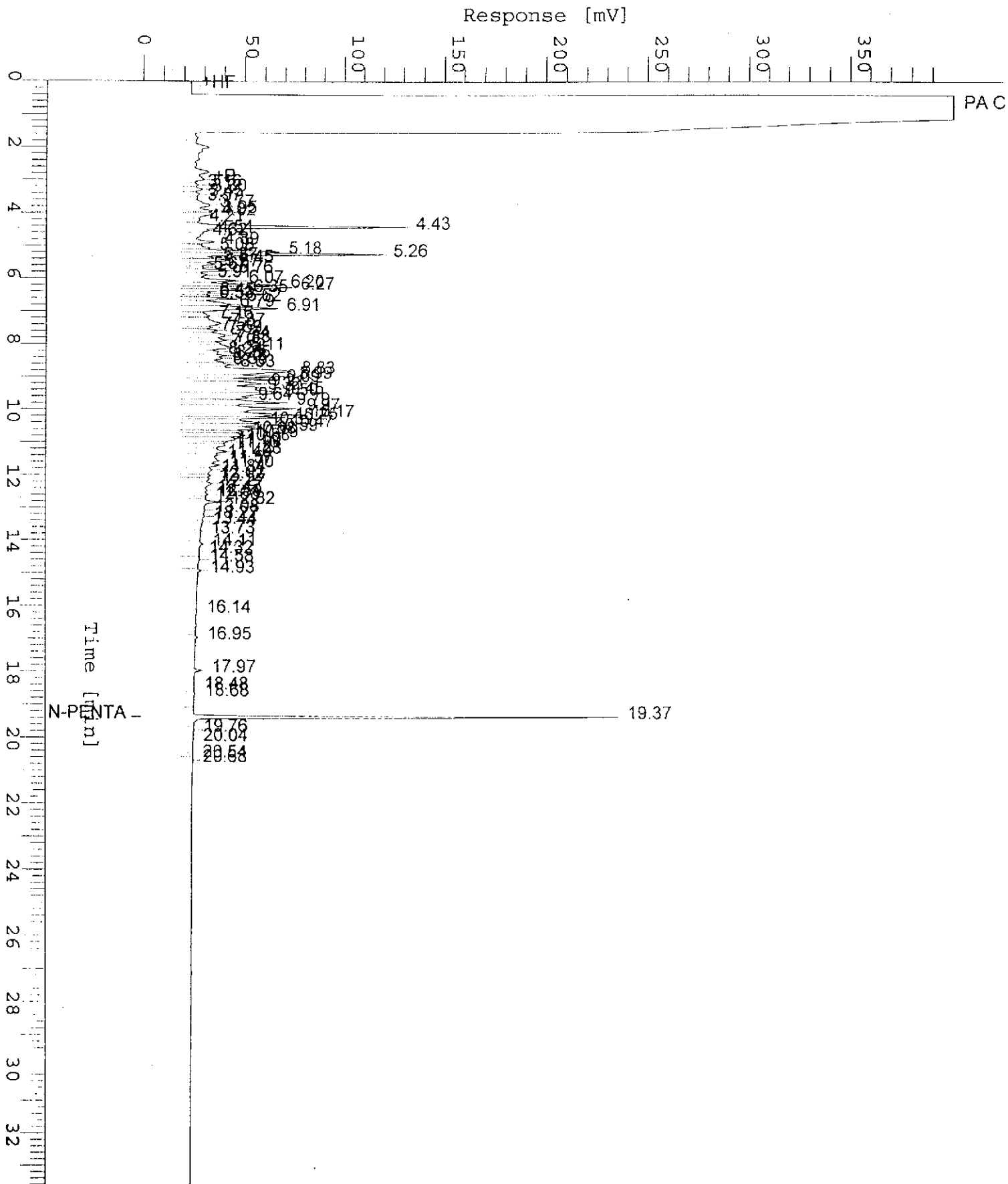
#	Note
---	------

- 1 Chromatogram Pattern: Unidentified Hydrocarbons C9-C24
  - 2 The surrogate recovery for this sample is outside of established control limits. Review of associated QC indicates the recovery for this surrogate does not represent an out-of-control condition.
  - 3 Chromatogram Pattern: {Unidentified Hydrocarbons C9-C13}.
  - 4 The surrogate recovery for this sample is outside of established control limits.
  - 5 The RPD value for this QC sample is above the established control limit. Review of associated QC indicates the high RPD does not represent an out-of-control condition for the batch.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- Recov. Recovery
- RPD Relative Percent Difference

# Chromatogram

Sample Name : M907605-01 (500:1)  
FileName : S:\GHP\_04\0718\716A002.raw  
Method : TPH04A  
Start Time : 0.00 min  
Scale Factor: 0.0

Sample #: NO QC  
Date : 7/16/99 17:31  
Time of Injection: 7/16/99 16:57  
End Time : 33.65 min  
Plot Offset: 0 mV  
Low Point : 0.00 mV  
High Point : 400.00 mV  
Plot Scale: 400.0 mV





# Chromatogram

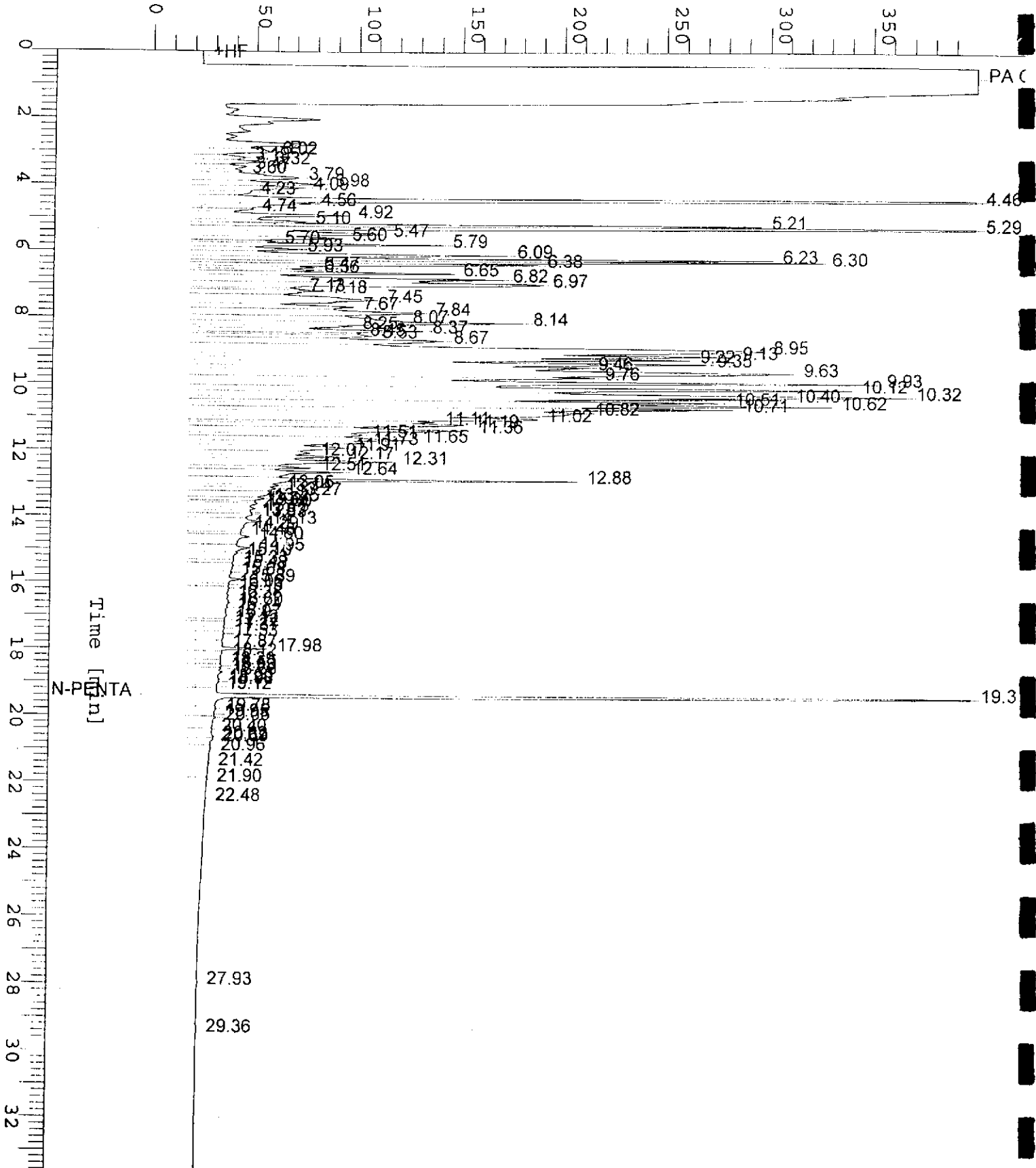
Sample Name : M907605-02 (500:1)  
FileName : S:\GHP\_04\0718\716A001.raw  
Method : TPH04A  
Start Time : 0.00 min  
Scale Factor: 0.0

End Time : 33.65 min  
Plot Offset: 0 mV

Sample #: NO QC  
Date : 7/16/99 16:49  
Time of Injection: 7/16/99 16:16  
Low Point : 0.00 mV  
High Point : 400.00 mV  
Plot Scale: 400.0 mV

Page 1 of 1

Response [mV]



## CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: <b>6895.00.014</b>		Project Location: <b>Oakland, CA</b>			Date: <b>7/15/99</b>		Serial No: <b>5672</b>									
Project Name: <b>Former Glovatorium</b>		Field Logbook No.: _____			Sample Event Name: _____											
Sampler (Signature): <b>James R. Bink</b>		ANALYSES <b>M907605</b>					Samplers: _____									
SAMPLE INFORMATION (Print Clearly)																
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CON-TAINERS	SAMPLE TYPE	VOCT	8010	8015	8020	8015 TPH	Stoddard Solvent	HOLD	RUSH	REMARKS		
TB-071599	7/15/99	7:45		3	water	X	X					X		* TPH fingerprint		
GW-07	↓	2:45		5	↓	X	X	X					X	must include Stoddard		
GW-107	↓	2:50		5	↓	X	X	X					X	solvent as a standard		
RELINQUISHED BY: (Signature) <b>James R. Bink</b>		DATE	TIME	RECEIVED BY: (Signature) <b>Pete Gomez II</b>		DATE	TIME									
RELINQUISHED BY: (Signature) <b>Pete Gomez</b>		DATE	TIME	RECEIVED BY: (Signature) <b>David Chung</b>		DATE	TIME									
RELINQUISHED BY: (Signature) _____		DATE	TIME	RECEIVED BY: (Signature) _____		DATE	TIME									
METHOD OF SHIPMENT: _____		DATE	TIME	LAB COMMENTS: _____												
Sample Collector: <b>LEVINE•FRICKE•RECON</b> 1900 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 652-4500				Analytical Laboratory: <b>Sequoia</b>												



August 12, 1999

~~John Keeler~~ *Taylor Bennett*  
Levine-Fricke-Recon  
1900 Powell St. 12th Floor  
Emeryville, CA 94608

RE: LFR/L908050

Dear John Keeler

Enclosed are the results of analyses for sample(s) received by the laboratory on ~~August 10~~ <sup>July 15 THB</sup>, 1999. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Wayne Stevenson  
Project Manager





Levine-Fricke-Recon 900 Powell St. 12th Floor Emeryville, CA 94608	Project: LFR Project Number: 6895.00.014 Project Manager: John Keeler	Sampled: 7/15/99 Received: 8/10/99 Reported: 8/12/99 12:44
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## ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
GW-07	L908050-01	Water	7/15/99
GW-107	L908050-02	Water	7/15/99





Levine-Fricke-Recon  
1900 Powell St. 12th Floor  
Emeryville, CA 94608

Project: LFR  
Project Number: 6895.00.014  
Project Manager: John Keeler

Sampled: 7/15/99  
Received: 8/10/99  
Reported: 8/12/99 12:44

**GW-07  
[L908050-01]**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
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**Sequoia Analytical - San Carlos**

**Volatile Organic Compounds by EPA Method 8260A**

1

Acetone	9080043	8/11/99	8/11/99		20.0	ND	ug/l	
Methyl ethyl ketone	"	"	"		20.0	ND	"	
Methyl isobutyl ketone	"	"	"		20.0	ND	"	
<b>Benzene</b>	"	"	"		2.00	56.7	"	
Bromobenzene	"	"	"		2.00	ND	"	
Bromochloromethane	"	"	"		2.00	ND	"	
Bromodichloromethane	"	"	"		2.00	ND	"	
Bromoform	"	"	"		2.00	ND	"	
Bromomethane	"	"	"		5.00	ND	"	
n-Butylbenzene	"	"	"		2.00	ND	"	
sec-Butylbenzene	"	"	"		2.00	ND	"	
<b>tert-Butylbenzene</b>	"	"	"		2.00	3.07	"	
Carbon tetrachloride	"	"	"		2.00	ND	"	
Chlorobenzene	"	"	"		2.00	ND	"	
Chloroethane	"	"	"		5.00	ND	"	
Chloroform	"	"	"		2.00	ND	"	
Chloromethane	"	"	"		5.00	ND	"	
2-Chlorotoluene	"	"	"		2.00	ND	"	
4-Chlorotoluene	"	"	"		2.00	ND	"	
Dibromochloromethane	"	"	"		2.00	ND	"	
1,2-Dibromoethane	"	"	"		2.00	ND	"	
Dibromomethane	"	"	"		2.00	ND	"	
1,2-Dibromo-3-chloropropane	"	"	"		5.00	ND	"	
1,2-Dichlorobenzene	"	"	"		2.00	ND	"	
1,3-Dichlorobenzene	"	"	"		2.00	ND	"	
1,4-Dichlorobenzene	"	"	"		2.00	ND	"	
Dichlorodifluoromethane	"	"	"		5.00	ND	"	
1,1-Dichloroethane	"	"	"		2.00	ND	"	
1,2-Dichloroethane	"	"	"		2.00	ND	"	
1,1-Dichloroethene	"	"	"		2.00	ND	"	
<b>cis-1,2-Dichloroethene</b>	"	"	"		2.00	3.98	"	
trans-1,2-Dichloroethene	"	"	"		2.00	ND	"	
1,2-Dichloropropane	"	"	"		2.00	ND	"	
1,3-Dichloropropane	"	"	"		2.00	ND	"	
2,2-Dichloropropane	"	"	"		2.00	ND	"	
1,1-Dichloropropene	"	"	"		2.00	ND	"	
Ethylbenzene	"	"	"		2.00	ND	"	
Hexachlorobutadiene	"	"	"		2.00	ND	"	
Isopropylbenzene	"	"	"		2.00	ND	"	
n-Isopropyltoluene	"	"	"		2.00	ND	"	





Levine-Fricke-Recon	Project: LFR	Sampled: 7/15/99
900 Powell St. 12th Floor	Project Number: 6895.00.014	Received: 8/10/99
Emeryville, CA 94608	Project Manager: John Keeler	Reported: 8/12/99 12:44

**GW-07**  
**[L908050-01]**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>Volatile Organic Compounds by EPA Method 8260A (continued)</b>								
Methylene chloride	9080043	8/11/99	8/11/99		5.00	ND	ug/l	<u>1</u>
Naphthalene	"	"	"		5.00	ND	"	
n-Propylbenzene	"	"	"		2.00	ND	"	
Styrene	"	"	"		2.00	ND	"	
1,1,1,2-Tetrachloroethane	"	"	"		2.00	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		2.00	ND	"	
Tetrachloroethene	"	"	"		2.00	ND	"	
Toluene	"	"	"		2.00	ND	"	
1,2,3-Trichlorobenzene	"	"	"		2.00	ND	"	
1,2,4-Trichlorobenzene	"	"	"		2.00	ND	"	
1,1,1-Trichloroethane	"	"	"		2.00	ND	"	
1,1,2-Trichloroethane	"	"	"		2.00	ND	"	
Trichloroethene	"	"	"		2.00	ND	"	
Trichlorofluoromethane	"	"	"		5.00	ND	"	
2,3-Trichloropropane	"	"	"		2.00	ND	"	
1,2,4-Trimethylbenzene	"	"	"		2.00	ND	"	
1,3,5-Trimethylbenzene	"	"	"		2.00	ND	"	
Vinyl chloride	"	"	"		2.00	ND	"	
Total Xylenes	"	"	"		2.00	ND	"	
Surrogate: 1,2-Dichloroethane-d4	"	"	"	76.0-114		80.4	%	
Surrogate: Toluene-d8	"	"	"	88.0-110		101	"	
Surrogate: 4-BFB	"	"	"	86.0-115		94.0	"	





Levine-Fricke-Recon 1900 Powell St. 12th Floor Emeryville, CA 94608	Project: LFR Project Number: 6895.00.014 Project Manager: John Keeler	Sampled: 7/15/99 Received: 8/10/99 Reported: 8/12/99 12:44
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**GW-107  
[L908050-02]**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
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**Sequoia Analytical - San Carlos**

**Volatile Organic Compounds by EPA Method 8260A**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
Acetone	9080043	8/11/99	8/11/99		20.0	ND	ug/l	<u>1</u>
Methyl ethyl ketone	"	"	"		20.0	ND	"	
Methyl isobutyl ketone	"	"	"		20.0	ND	"	
<b>Benzene</b>	"	"	"		2.00	<b>75.5</b>	"	
Bromobenzene	"	"	"		2.00	ND	"	
Bromochloromethane	"	"	"		2.00	ND	"	
Bromodichloromethane	"	"	"		2.00	ND	"	
Bromoform	"	"	"		2.00	ND	"	
Bromomethane	"	"	"		5.00	ND	"	
n-Butylbenzene	"	"	"		2.00	ND	"	
<b>sec-Butylbenzene</b>	"	"	"		2.00	<b>2.06</b>	"	
<b>tert-Butylbenzene</b>	"	"	"		2.00	<b>3.10</b>	"	
<b>Carbon tetrachloride</b>	"	"	"		2.00	<b>7.86</b>	"	
Chlorobenzene	"	"	"		2.00	ND	"	
Chloroethane	"	"	"		5.00	ND	"	
Chloroform	"	"	"		2.00	ND	"	
Chloromethane	"	"	"		5.00	ND	"	
2-Chlorotoluene	"	"	"		2.00	ND	"	
4-Chlorotoluene	"	"	"		2.00	ND	"	
Dibromochloromethane	"	"	"		2.00	ND	"	
1,2-Dibromoethane	"	"	"		2.00	ND	"	
Dibromomethane	"	"	"		2.00	ND	"	
1,2-Dibromo-3-chloropropane	"	"	"		5.00	ND	"	
1,2-Dichlorobenzene	"	"	"		2.00	ND	"	
1,3-Dichlorobenzene	"	"	"		2.00	ND	"	
1,4-Dichlorobenzene	"	"	"		2.00	ND	"	
Dichlorodifluoromethane	"	"	"		5.00	ND	"	
1,1-Dichloroethane	"	"	"		2.00	ND	"	
1,2-Dichloroethane	"	"	"		2.00	ND	"	
1,1-Dichloroethene	"	"	"		2.00	ND	"	
<b>cis-1,2-Dichloroethene</b>	"	"	"		2.00	<b>3.83</b>	"	
trans-1,2-Dichloroethene	"	"	"		2.00	ND	"	
1,2-Dichloropropane	"	"	"		2.00	ND	"	
1,3-Dichloropropane	"	"	"		2.00	ND	"	
2,2-Dichloropropane	"	"	"		2.00	ND	"	
1,1-Dichloropropene	"	"	"		2.00	ND	"	
Ethylbenzene	"	"	"		2.00	ND	"	
Hexachlorobutadiene	"	"	"		2.00	ND	"	
Isopropylbenzene	"	"	"		2.00	ND	"	
n-Isopropyltoluene	"	"	"		2.00	ND	"	





Levine-Fricke-Recon 900 Powell St. 12th Floor Emeryville, CA 94608	Project: LFR Project Number: 6895.00.014 Project Manager: John Keeler	Sampled: 7/15/99 Received: 8/10/99 Reported: 8/12/99 12:44
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**GW-107  
[L908050-02]**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>Volatile Organic Compounds by EPA Method 8260A (continued)</b>								
Methylene chloride	9080043	8/11/99	8/11/99		5.00	ND	ug/l	<u>1</u>
Naphthalene	"	"	"		5.00	ND	"	
n-Propylbenzene	"	"	"		2.00	ND	"	
Styrene	"	"	"		2.00	ND	"	
1,1,1,2-Tetrachloroethane	"	"	"		2.00	ND	"	
1,1,1,2-Tetrachloroethane	"	"	"		2.00	ND	"	
Tetrachloroethene	"	"	"		2.00	ND	"	
Toluene	"	"	"		2.00	ND	"	
1,2,3-Trichlorobenzene	"	"	"		2.00	ND	"	
1,2,4-Trichlorobenzene	"	"	"		2.00	ND	"	
1,1,1-Trichloroethane	"	"	"		2.00	ND	"	
1,1,2-Trichloroethane	"	"	"		2.00	ND	"	
Trichloroethene	"	"	"		2.00	ND	"	
Trichlorofluoromethane	"	"	"		5.00	ND	"	
1,2,3-Trichloropropane	"	"	"		2.00	ND	"	
1,2,4-Trimethylbenzene	"	"	"		2.00	ND	"	
1,3,5-Trimethylbenzene	"	"	"		2.00	ND	"	
Vinyl chloride	"	"	"		2.00	ND	"	
Total Xylenes	"	"	"		2.00	ND	"	
Surrogate: 1,2-Dichloroethane-d4	"	"	"	76.0-114		79.2	%	
Surrogate: Toluene-d8	"	"	"	88.0-110		100	"	
Surrogate: 4-BFB	"	"	"	86.0-115		94.6	"	







Levine-Fricke-Recon  
1900 Powell St. 12th Floor  
Emeryville, CA 94608

Project: LFR  
Project Number: 6895.00.014  
Project Manager: John Keeler

Sampled: 7/15/99  
Received: 8/10/99  
Reported: 8/12/99 12:44

**Volatile Organic Compounds by EPA Method 8260A/Quality Control  
Sequoia Analytical - San Carlos**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Reporting Limit Units	Recov. %	RPD Limit	RPD %	Notes*
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**Batch: 9080043**

**Date Prepared: 8/10/99**

**Extraction Method: EPA 5030B [P/T]**

**Blank**

**9080043-BLK1**

Benzene	8/10/99			ND	ug/l	2.00			
Bromobenzene	"			ND	"	2.00			
Bromochloromethane	"			ND	"	2.00			
Bromodichloromethane	"			ND	"	2.00			
Bromoform	"			ND	"	2.00			
Bromomethane	"			ND	"	5.00			
n-Butylbenzene	"			ND	"	2.00			
sec-Butylbenzene	"			ND	"	2.00			
tert-Butylbenzene	"			ND	"	2.00			
Carbon tetrachloride	"			ND	"	2.00			
Chlorobenzene	"			ND	"	2.00			
Chloroethane	"			ND	"	5.00			
Chloroform	"			ND	"	2.00			
Chloromethane	"			ND	"	5.00			
2-Chlorotoluene	"			ND	"	2.00			
4-Chlorotoluene	"			ND	"	2.00			
Dibromochloromethane	"			ND	"	2.00			
1,2-Dibromoethane	"			ND	"	2.00			
Dibromomethane	"			ND	"	2.00			
1,2-Dibromo-3-chloropropane	"			ND	"	5.00			
1,2-Dichlorobenzene	"			ND	"	2.00			
1,3-Dichlorobenzene	"			ND	"	2.00			
1,4-Dichlorobenzene	"			ND	"	2.00			
Dichlorodifluoromethane	"			ND	"	5.00			
1,1-Dichloroethane	"			ND	"	2.00			
1,2-Dichloroethane	"			ND	"	2.00			
1,1-Dichloroethene	"			ND	"	2.00			
cis-1,2-Dichloroethene	"			ND	"	2.00			
trans-1,2-Dichloroethene	"			ND	"	2.00			
1,2-Dichloropropane	"			ND	"	2.00			
1,3-Dichloropropane	"			ND	"	2.00			
2,2-Dichloropropane	"			ND	"	2.00			
1,1-Dichloropropene	"			ND	"	2.00			
Ethylbenzene	"			ND	"	2.00			
Hexachlorobutadiene	"			ND	"	2.00			
Isopropylbenzene	"			ND	"	2.00			
p-Isopropyltoluene	"			ND	"	2.00			
Methylene chloride	"			ND	"	5.00			
Naphthalene	"			ND	"	5.00			
n-Propylbenzene	"			ND	"	2.00			





Levine-Fricke-Recon 900 Powell St. 12th Floor Emeryville, CA 94608	Project: LFR Project Number: 6895.00.014 Project Manager: John Keeler	Sampled: 7/15/99 Received: 8/10/99 Reported: 8/12/99 12:44
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## Volatile Organic Compounds by EPA Method 8260A/Quality Control Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Blank (continued) 9080043-BLK1</b>										
Styrene	8/10/99			ND	ug/l	2.00				
1,1,1,2-Tetrachloroethane	"			ND	"	2.00				
1,1,2,2-Tetrachloroethane	"			ND	"	2.00				
Tetrachloroethene	"			ND	"	2.00				
Toluene	"			ND	"	2.00				
1,2,3-Trichlorobenzene	"			ND	"	2.00				
1,2,4-Trichlorobenzene	"			ND	"	2.00				
1,1,1-Trichloroethane	"			ND	"	2.00				
1,1,2-Trichloroethane	"			ND	"	2.00				
Trichloroethene	"			ND	"	2.00				
Trichlorofluoromethane	"			ND	"	5.00				
1,2,3-Trichloropropane	"			ND	"	2.00				
1,2,4-Trimethylbenzene	"			ND	"	2.00				
1,3,5-Trimethylbenzene	"			ND	"	2.00				
vinyl chloride	"			ND	"	2.00				
Total Xylenes	"			ND	"	2.00				
Surrogate: 1,2-Dichloroethane-d4	"	50.0		44.2	"	76.0-114	88.4			
Surrogate: Toluene-d8	"	50.0		48.9	"	88.0-110	97.8			
Surrogate: 4-BFB	"	50.0		44.0	"	86.0-115	88.0			
<b>Blank 9080043-BLK2</b>										
Acetone	8/11/99			ND	ug/l					
Methyl ethyl ketone	"			ND	"					
Methyl isobutyl ketone	"			ND	"	20.0				
Benzene	"			ND	"	2.00				
Bromobenzene	"			ND	"	2.00				
Bromochloromethane	"			ND	"	2.00				
Bromodichloromethane	"			ND	"	2.00				
Bromoform	"			ND	"	2.00				
Bromomethane	"			ND	"	5.00				
n-Butylbenzene	"			ND	"	2.00				
sec-Butylbenzene	"			ND	"	2.00				
tert-Butylbenzene	"			ND	"	2.00				
Carbon tetrachloride	"			ND	"	2.00				
Chlorobenzene	"			ND	"	2.00				
Chloroethane	"			ND	"	5.00				
Chloroform	"			ND	"	2.00				
Chloromethane	"			ND	"	5.00				
2-Chlorotoluene	"			ND	"	2.00				
3-Chlorotoluene	"			ND	"	2.00				
Dibromochloromethane	"			ND	"	2.00				





Levine-Fricke-Recon  
1900 Powell St. 12th Floor  
Emeryville, CA 94608

Project: LFR  
Project Number: 6895.00.014  
Project Manager: John Keeler

Sampled: 7/15/99  
Received: 8/10/99  
Reported: 8/12/99 12:44

### Volatile Organic Compounds by EPA Method 8260A/Quality Control Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Blank (continued)</b>	<b>9080043-BLK2</b>									
1,2-Dibromoethane	8/11/99			ND	ug/l	2.00				
Dibromomethane	"			ND	"	2.00				
1,2-Dibromo-3-chloropropane	"			ND	"	5.00				
1,2-Dichlorobenzene	"			ND	"	2.00				
1,3-Dichlorobenzene	"			ND	"	2.00				
1,4-Dichlorobenzene	"			ND	"	2.00				
Dichlorodifluoromethane	"			ND	"	5.00				
1,1-Dichloroethane	"			ND	"	2.00				
1,2-Dichloroethane	"			ND	"	2.00				
1,1-Dichloroethene	"			ND	"	2.00				
cis-1,2-Dichloroethene	"			ND	"	2.00				
trans-1,2-Dichloroethene	"			ND	"	2.00				
1,2-Dichloropropane	"			ND	"	2.00				
1,3-Dichloropropane	"			ND	"	2.00				
2-Dichloropropane	"			ND	"	2.00				
1,1-Dichloropropene	"			ND	"	2.00				
Ethylbenzene	"			ND	"	2.00				
Hexachlorobutadiene	"			ND	"	2.00				
Isopropylbenzene	"			ND	"	2.00				
p-Isopropyltoluene	"			ND	"	2.00				
Methylene chloride	"			ND	"	5.00				
Naphthalene	"			ND	"	5.00				
n-Propylbenzene	"			ND	"	2.00				
Styrene	"			ND	"	2.00				
1,1,1,2-Tetrachloroethane	"			ND	"	2.00				
1,1,2,2-Tetrachloroethane	"			ND	"	2.00				
Tetrachloroethene	"			ND	"	2.00				
Toluene	"			ND	"	2.00				
1,2,3-Trichlorobenzene	"			ND	"	2.00				
1,2,4-Trichlorobenzene	"			ND	"	2.00				
1,1,1-Trichloroethane	"			ND	"	2.00				
1,1,2-Trichloroethane	"			ND	"	2.00				
Trichloroethene	"			ND	"	2.00				
Trichlorofluoromethane	"			ND	"	5.00				
1,2,3-Trichloropropane	"			ND	"	2.00				
1,2,4-Trimethylbenzene	"			ND	"	2.00				
1,3,5-Trimethylbenzene	"			ND	"	2.00				
Vinyl chloride	"			ND	"	2.00				
Total Xylenes	"			ND	"	2.00				
Surrogate: 1,2-Dichloroethane-d4	"	50.0		45.0	"	76.0-114	90.0			
Surrogate: Toluene-d8	"	50.0		50.6	"	88.0-110	101			





Levine-Fricke-Recon 1900 Powell St. 12th Floor Emeryville, CA 94608	Project: LFR Project Number: 6895.00.014 Project Manager: John Keeler	Sampled: 7/15/99 Received: 8/10/99 Reported: 8/12/99 12:44
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### Volatile Organic Compounds by EPA Method 8260A/Quality Control Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Blank (continued)</b>										
<b>9080043-BLK2</b>										
Surrogate: 4-BFB	8/11/99	50.0		44.9	ug/l	86.0-115	89.8			
<b>LCS</b>										
<b>9080043-BS1</b>										
Benzene	8/10/99	50.0		47.1	ug/l	60.0-140	94.2			
Chlorobenzene	"	50.0		47.0	"	60.0-140	94.0			
1,1-Dichloroethene	"	50.0		46.7	"	60.0-140	93.4			
Toluene	"	50.0		46.1	"	60.0-140	92.2			
Trichloroethene	"	50.0		47.2	"	60.0-140	94.4			
Surrogate: 1,2-Dichloroethane-d4	"	50.0		45.2	"	76.0-114	90.4			
Surrogate: Toluene-d8	"	50.0		49.4	"	88.0-110	98.8			
Surrogate: 4-BFB	"	50.0		43.3	"	86.0-115	86.6			
<b>LCS</b>										
<b>9080043-BS2</b>										
Benzene	8/11/99	50.0		46.0	ug/l	60.0-140	92.0			
Chlorobenzene	"	50.0		45.4	"	60.0-140	90.8			
1,1-Dichloroethene	"	50.0		44.2	"	60.0-140	88.4			
Toluene	"	50.0		44.4	"	60.0-140	88.8			
Trichloroethene	"	50.0		45.4	"	60.0-140	90.8			
Surrogate: 1,2-Dichloroethane-d4	"	50.0		44.0	"	76.0-114	88.0			
Surrogate: Toluene-d8	"	50.0		48.6	"	88.0-110	97.2			
Surrogate: 4-BFB	"	50.0		43.1	"	86.0-115	86.2			
<b>Matrix Spike</b>										
<b>9080043-MS1 L908011-08</b>										
Benzene	8/10/99	417	ND	373	ug/l	70.0-130	89.4			
Chlorobenzene	"	417	ND	375	"	70.0-130	89.9			
1,1-Dichloroethene	"	417	ND	382	"	70.0-130	91.6			
Toluene	"	417	ND	366	"	70.0-130	87.8			
Trichloroethene	"	417	793	1130	"	70.0-130	80.8			
Surrogate: 1,2-Dichloroethane-d4	"	50.0		46.6	"	76.0-114	93.2			
Surrogate: Toluene-d8	"	50.0		49.2	"	88.0-110	98.4			
Surrogate: 4-BFB	"	50.0		44.1	"	86.0-115	88.2			
<b>Matrix Spike Dup</b>										
<b>9080043-MSD1 L908011-08</b>										
Benzene	8/10/99	417	ND	373	ug/l	70.0-130	89.4	25.0	0	
Chlorobenzene	"	417	ND	376	"	70.0-130	90.2	25.0	0.333	
1,1-Dichloroethene	"	417	ND	385	"	70.0-130	92.3	25.0	0.761	
Toluene	"	417	ND	365	"	70.0-130	87.5	25.0	0.342	
Trichloroethene	"	417	793	1120	"	70.0-130	78.4	25.0	3.02	
Surrogate: 1,2-Dichloroethane-d4	"	50.0		47.2	"	76.0-114	94.4			
Surrogate: Toluene-d8	"	50.0		48.6	"	88.0-110	97.2			
Surrogate: 4-BFB	"	50.0		43.5	"	86.0-115	87.0			





Levine-Fricke-Recon 1900 Powell St. 12th Floor Emeryville, CA 94608	Project: LFR Project Number: 6895.00.014 Project Manager: John Keeler	Sampled: 7/15/99 Received: 8/10/99 Reported: 8/12/99 12:44
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### Notes and Definitions

#	Note
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- 1 This sample was analyzed outside the EPA recommended holding time.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- Recov. Recovery
- RPD Relative Percent Difference



L908050

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

JUL 21 '99 15:01

JUL 21 1999 2:41 PM

Project No.: 6895.00.014			Project Location: Oakland, CA			Date: 7/15/99			Serial No: 5672					
Project Name: Former Gloratorium			Field Logbook No.:			Sample Event Name:			Samplers:					
Sampler (Signature): James R. Bink			ANALYSES						M907605					
SAMPLE INFORMATION (Print Clearly)														
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CON-TAINERS	SAMPLE TYPE	VOC	8010	8020	8030	8040	8050	HOLD	RUSH	REMARKS
TB-071599	7/15/99	2:45		3	Water	X	X					X		* TPH fingerprint
GW-07	↓	2:45		5	↓	X	X	X				X		must include standard
GW-107	↓	2:50		5	↓	X	X	X				X		solvent as a standard
														8/6/99 Please analyze
														GW-07 and GW-107
														for EPA 8260 to include
														acetone, MEK, and MIBK.
														THB
RELINQUISHED BY: (Signature) James R. Bink			DATE	TIME	RECEIVED BY: (Signature) Pete Gomez			DATE	TIME					
RELINQUISHED BY: (Signature) Pete Gomez			DATE	TIME	RECEIVED BY: (Signature) David [unclear]			DATE	TIME					
RELINQUISHED BY: (Signature)			DATE	TIME	RECEIVED BY: (Signature)			DATE	TIME					
METHOD OF SHIPMENT:			DATE	TIME	LAB COMMENTS:			DATE	TIME					
Sample Collector: LEVINE•FRICKE•RECON 1800 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 852-4500					Analytical Laboratory: Sequoia									

Original Copy (White) Lab Copy (Yellow) File Copy (Pink) Field Copy (Goldenrod)

NO. 3410 P. 10/10



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L   R E P O R T

Prepared for:

LFR-Levine-Fricke  
1900 Powell Street  
12th Floor  
Emeryville, CA 94608

Date: 27-JUL-99  
Lab Job Number: 140518  
Project ID: 6895.00.014  
Location: Former Glovatorium

Reviewed by:

Trag B. B. 4

Reviewed by:

[Signature]

This package may be reproduced only in its entirety.

Laboratory Numbers: **140518**  
Client: **LFR-Levine-Fricke**  
Project #: **6895.00.014**  
Location: **Former Glovatorium**  
COC#: **5670**

Sampled Date: **07/19/99**  
Received Date: **07/19/99**

### CASE NARRATIVE

This hardcopy data package contains sample and QC results for five water samples, which were received from the site referenced above on July 19, 1999. The samples were received cold and intact. One water sample was placed on hold by Taylor Bennett on July 20, 1999. All data were faxed to Taylor Bennett on July 27, 1999.

#### **TVH/BTXE:**

The relative percent difference (RPD) for MTBE was outside QC limits. This outlier should not affect the quality of the data as the spike recoveries are within QC limits and the samples were non-detect for this compound. No other analytical problems were encountered.

#### **VOCs (EPA 8260):**

No analytical problems were encountered.



## TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
 Project#: 6895.00.014  
 Location: Former Glovatorium

Analysis Method: EPA 8015M  
 Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
140518-001	TB 071999	49463	07/19/99	07/21/99	07/21/99	
140518-002	GW3-071999	49463	07/19/99	07/21/99	07/21/99	
140518-003	GW2-071999	49463	07/19/99	07/21/99	07/21/99	
140518-004	GW8-071999	49463	07/19/99	07/21/99	07/21/99	

Matrix: Water

Analyte	Units	140518-001	140518-002	140518-003	140518-004
Diln Fac:		1	1	1	1
Gasoline C7-C12	ug/L	<50	100 Z	<50	<50
Stoddard Solvent	ug/L	<50	70 Z	<50	<50
Surrogate					
Trifluorotoluene	%REC	111	111	112	113
Bromofluorobenzene	%REC	117	114	116	116

Z: Sample exhibits unknown single peak or peaks

BTXE

Client: LFR-Levine-Fricke	Analysis Method: EPA 8021B
Project#: 6895.00.014	Prep Method: EPA 5030
Location: Former Glovatorium	

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
140518-001	TB 071999	49463	07/19/99	07/21/99	07/21/99	
140518-002	GW3-071999	49514	07/19/99	07/23/99	07/23/99	
140518-003	GW2-071999	49514	07/19/99	07/23/99	07/23/99	
140518-004	GW8-071999	49514	07/19/99	07/23/99	07/23/99	

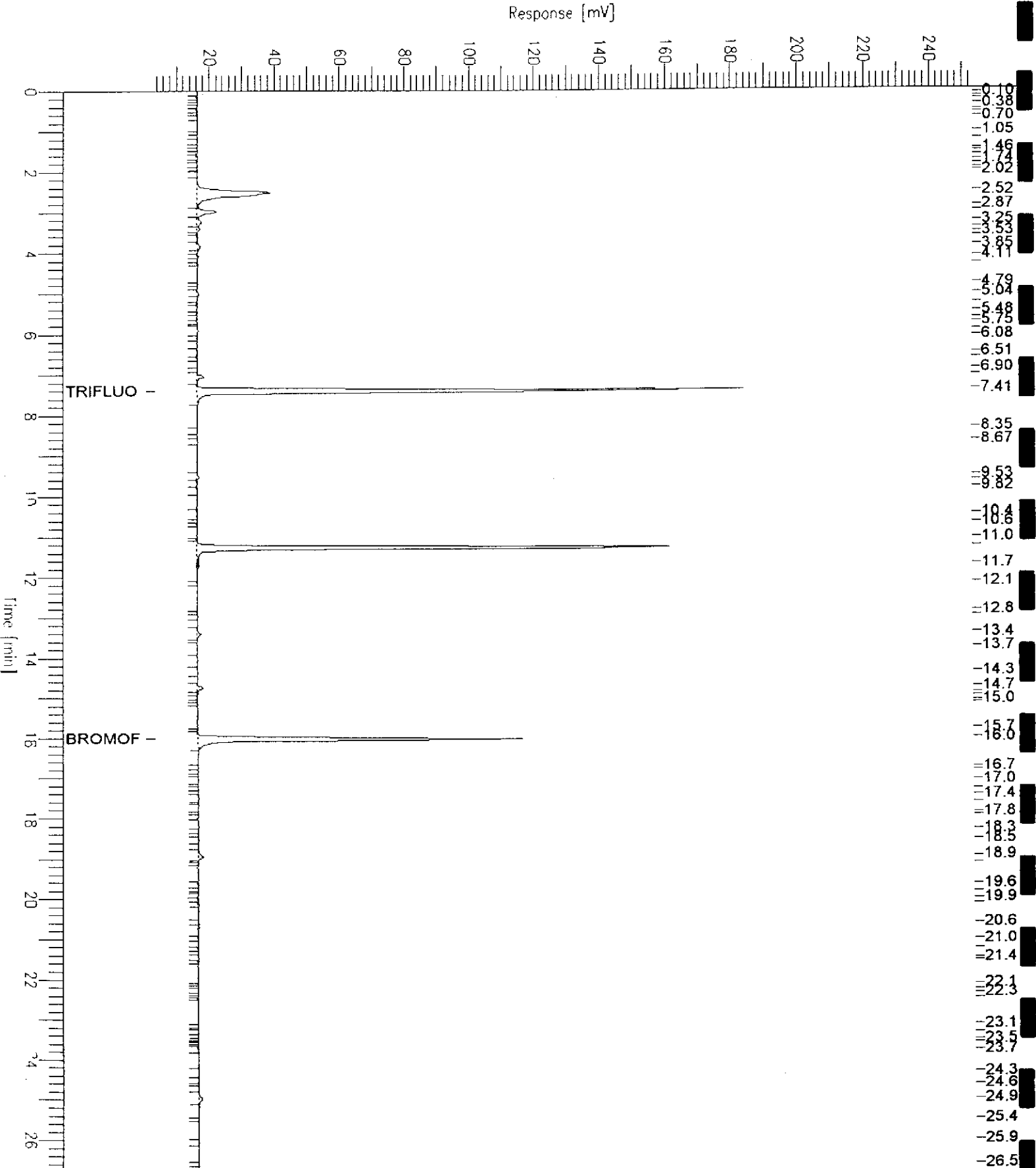
Matrix: Water

Analyte	Units	140518-001	140518-002	140518-003	140518-004
Diln Fac:		1	1	1	1
MTBE	ug/L	<2	<2	2.5	7.8
Benzene	ug/L	<0.5	<0.5	<0.5	<0.5
Toluene	ug/L	<0.5	<0.5	0.71	0.64
Ethylbenzene	ug/L	<0.5	<0.5	<0.5	<0.5
m,p-Xylenes	ug/L	<0.5	<0.5	0.74	0.84
o-Xylene	ug/L	<0.5	0.64	<0.5	0.67
Surrogate					
Trifluorotoluene	%REC	127	65	94	92
Bromofluorobenzene	%REC	131	68	97	97

# GC19 TVH 'X' Data File (FID)

Sample Name : 140518-002a,49463  
 FileName : G:\GC19\DATA\202X008.raw  
 Method : TVHBTXE  
 Start Time : 0.00 min  
 Scale Factor : -1.0

Sample #: ph<2  
 Date : 7/22/99 03:44 PM  
 Time of Injection: 7/21/99 08:31 PM  
 Low Point : 3.61 mV  
 High Point : 253.61 mV  
 Plot Scale: 250.0 mV



Sample Name : CCV/LCS, QC03238, 99WS7780, 49463

Sample #: GAS

File Name : G:\GC19\DATA\202X001.raw

Date : 7/21/99 02:05 PM

Method : TVHBTXE

Time of Injection: 7/21/99 01:38 PM

Start Time : 0.00 min

End Time : 26.80 min

Low Point : 3.95 mV

High Point : 253.95 mV

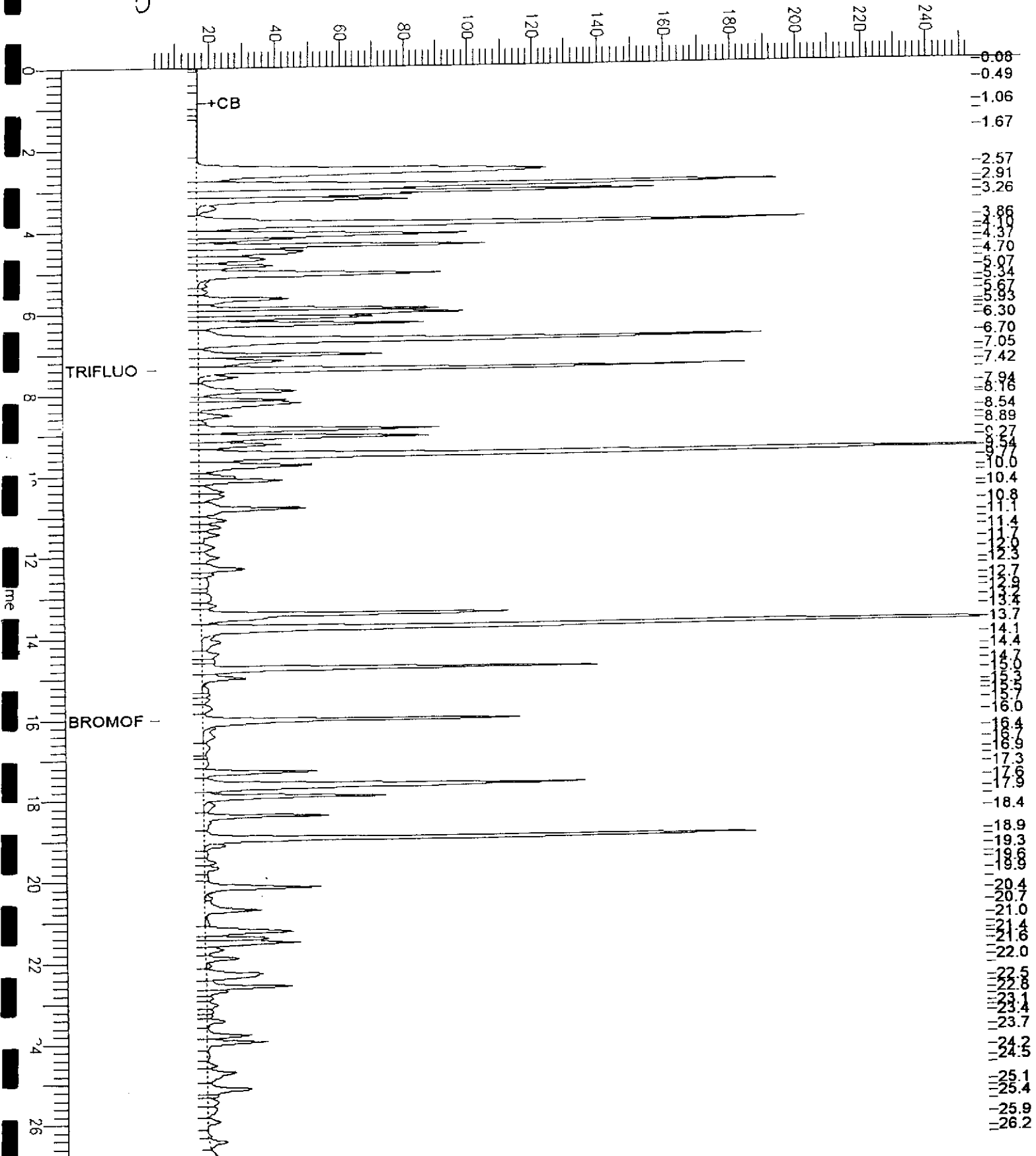
Gain Factor: -1.0

Plot Offset: 4 mV

Plot Scale: 250.0 mV

*gasoline*

Response [mV]



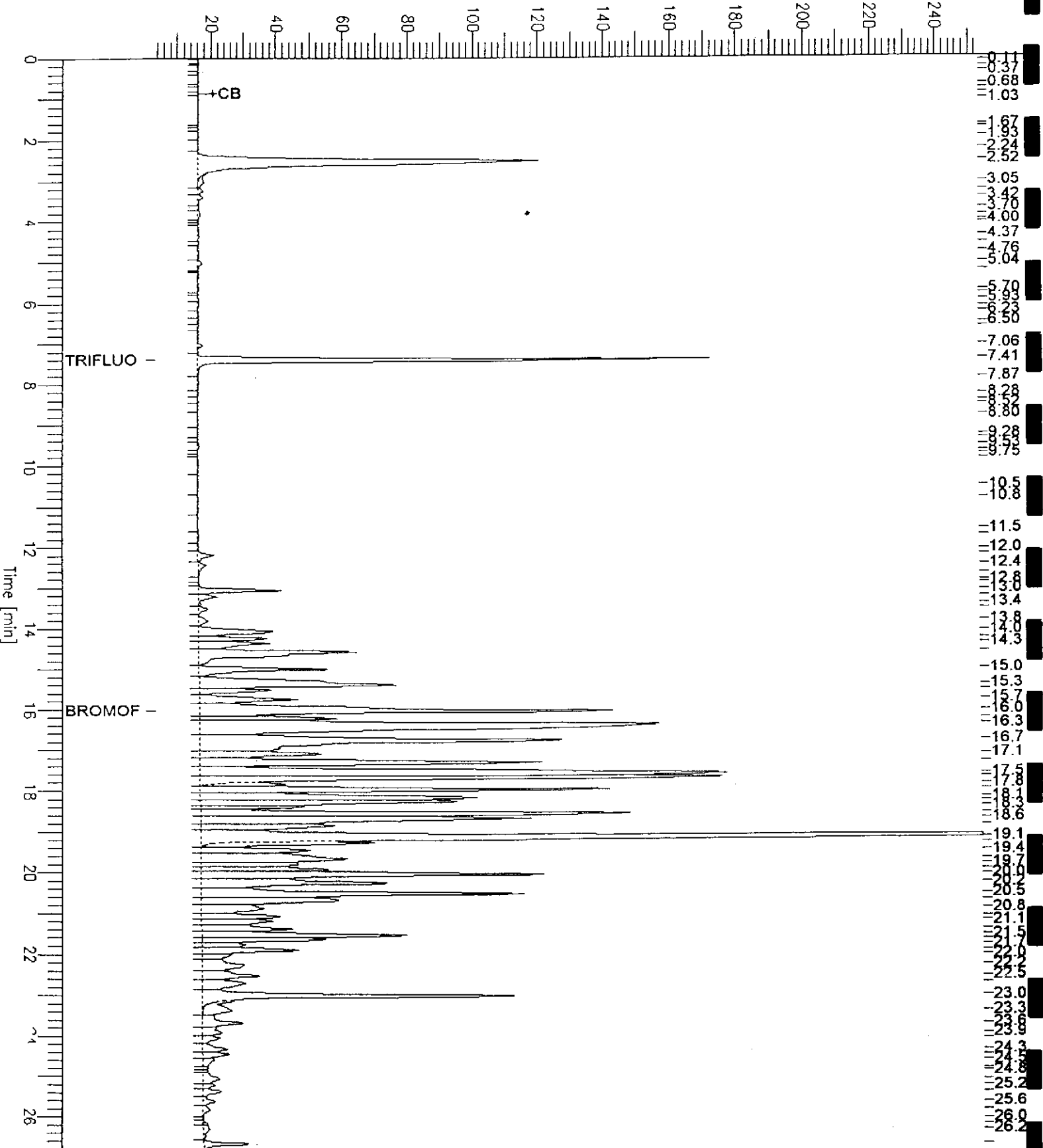
Sample Name : CCV,99WS7145,49463  
FileName : G:\GC19\DATA\202X003.raw  
Method : TVHBTXE  
Start Time : 0.00 min  
ale Factor: -1.0

End Time : 26.80 min  
Plot Offset: 3 mV

Sample #: STODD.  
Date : 7/21/99 05:05 PM  
Time of Injection: 7/21/99 04:38 PM  
Low Point : 3.41 mV  
Plot Scale: 250.0 mV  
High Point : 253.41 mV

Stoddard solvent

Response [mV]



TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
 Project#: 6895.00.014  
 Location: Former Glovatorium

Analysis Method: EPA 8015M  
 Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
 Batch#: 49463  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 07/21/99  
 Analysis Date: 07/21/99

MB Lab ID: QC03237

Analyte	Result	
Gasoline C7-C12	<50	
Stoddard Solvent	<50	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	101	53-150
Bromofluorobenzene	101	53-149



## BTXE

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

## METHOD BLANK

Matrix: Water  
Batch#: 49463  
Units: ug/L  
Diln Fac: 1

Prep Date: 07/21/99  
Analysis Date: 07/21/99

MB Lab ID: QC03237

Analyte	Result	
MTBE	<2.0	
Benzene	<0.5	
Toluene	<0.5	
Ethylbenzene	<0.5	
m,p-Xylenes	<0.5	
o-Xylene	<0.5	

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	119	51-143
Bromofluorobenzene	119	37-146



## BTXE

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

## METHOD BLANK

Matrix: Water  
Batch#: 49514  
Units: ug/L  
Diln Fac: 1

Prep Date: 07/23/99  
Analysis Date: 07/23/99

MB Lab ID: QC03438

Analyte	Result	
MTBE	<2.0	
Benzene	<0.5	
Toluene	<0.5	
Ethylbenzene	<0.5	
m,p-Xylenes	<0.5	
o-Xylene	<0.5	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	99	51-143
Bromofluorobenzene	98	37-146





TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke	Analysis Method: EPA 8015M
Project#: 6895.00.014	Prep Method: EPA 5030
Location: Former Glovatorium	
LABORATORY CONTROL SAMPLE	
Matrix: Water	Prep Date: 07/21/99
Batch#: 49463	Analysis Date: 07/21/99
Units: ug/L	
Diln Fac: 1	

LCS Lab ID: QC03238

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	1709	2000	85	77-117
Surrogate	%Rec	Limits		
Trifluorotoluene	113	53-150		
Bromofluorobenzene	124	53-149		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

BTXE

Client: LFR-Levine-Fricke  
 Project#: 6895.00.014  
 Location: Former Glovatorium

Analysis Method: EPA 8021B  
 Prep Method: EPA 5030

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water  
 Batch#: 49463  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 07/21/99  
 Analysis Date: 07/21/99

BS Lab ID: QC03289

Analyte	Spike Added	BS	%Rec #	Limits
MTBE	20	14.41	72	66-126
Benzene	20	18.85	94	65-111
Toluene	20	19.49	97	76-117
Ethylbenzene	20	20.61	103	71-121
m,p-Xylenes	40	41.1	103	80-123
o-Xylene	20	20.59	103	75-127
Surrogate	%Rec	Limits		
Trifluorotoluene	125	51-143		
Bromofluorobenzene	126	37-146		

BSD Lab ID: QC03290

Analyte	Spike Added	BSL	%Rec #	Limits	RPD #	Limit
MTBE	20	16.38	82	66-126	13 *	12
Benzene	20	19.59	98	65-111	4	10
Toluene	20	20.21	101	76-117	4	10
Ethylbenzene	20	20.69	103	71-121	0	11
m,p-Xylenes	40	41.97	105	80-123	2	10
o-Xylene	20	21.45	107	75-127	4	11
Surrogate	%Rec	Limits				
Trifluorotoluene	120	51-143				
Bromofluorobenzene	121	37-146				

# Column to be used to flag recovery and RPD values with an asterisk

Values outside of QC limits

RPD: 1 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits

TVH-Total Volatile Hydrocarbons	
Client: LFR-Levine-Fricke	Analysis Method: EPA 8015M
Project#: 6895.00.014	Prep Method: EPA 5030
Location: Former Glovatorium	
MATRIX SPIKE/MATRIX SPIKE DUPLICATE	
Field ID: ZZZZZZ	Sample Date: 07/11/99
Lab ID: 140470-003	Received Date: 07/15/99
Matrix: Water	Prep Date: 07/22/99
Batch#: 49463	Analysis Date: 07/22/99
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC03291

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline C7-C12	2000	<50	1881	94	69-131
Surrogate	%Rec	Limits			
Trifluorotoluene	118	53-150			
Bromofluorobenzene	136	53-149			

MSD Lab ID: QC03292

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	2000	1921	96	69-131	2	13
Surrogate	%Rec	Limits				
Trifluorotoluene	121	53-150				
Bromofluorobenzene	148	53-149				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



## BTXE

Client: LFR-Levine-Fricke  
 Project#: 6895.00.014  
 Location: Former Glovatorium

Analysis Method: EPA 8021B  
 Prep Method: EPA 5030

## LABORATORY CONTROL SAMPLE

Matrix: Water  
 Batch#: 49514  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 07/23/99  
 Analysis Date: 07/23/99

LCS Lab ID: QC03462

Analyte	Result	Spike Added	%Rec #	Limits
MTBE	16.34	20	82	66-126
Benzene	16.61	20	83	65-111
Toluene	17.08	20	85	76-117
Ethylbenzene	17.43	20	87	71-121
m,p-Xylenes	36.41	40	91	80-123
o-Xylene	17.76	20	89	75-127
Surrogate	%Rec	Limits		
Trifluorotoluene	101	51-143		
Bromofluorobenzene	103	37-146		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 6 outside limits



BTXE	
Client: LFR-Levine-Fricke	Analysis Method: EPA 8021B
Project#: 6895.00.014	Prep Method: EPA 5030
Location: Former Glovatorium	
MATRIX SPIKE/MATRIX SPIKE DUPLICATE	
Field ID: ZZZZZZ	Sample Date: 07/22/99
Lab ID: 140601-003	Received Date: 07/22/99
Matrix: Water	Prep Date: 07/23/99
Batch#: 49514	Analysis Date: 07/23/99
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC03463

Analyte	Spike Added	Sample	MS	%Rec #	Limits
MTBE	20	<2	18.3	92	49-136
Benzene	20	<0.5	17.49	87	55-122
Toluene	20	<0.5	17.99	90	63-139
Ethylbenzene	20	<0.5	18.23	91	61-137
m,p-Xylenes	40	<0.5	38.1	95	57-148
o-Xylene	20	<0.5	18.93	95	70-141
Surrogate	%Rec	Limits			
Trifluorotoluene	96	51-143			
Bromofluorobenzene	101	37-146			

MSD Lab ID: QC03464

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
MTBE	20	18.97	95	49-136	4	11
Benzene	20	19.12	96	55-122	9	10
Toluene	20	19.38	97	63-139	7	10
Ethylbenzene	20	19.86	99	61-137	9	10
m,p-Xylenes	40	41.53	104	57-148	9	10
o-Xylene	20	20.54	103	70-141	8	10
Surrogate	%Rec	Limits				
Trifluorotoluene	95	51-143				
Bromofluorobenzene	102	37-146				

\* Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits





Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke	Analysis Method: EPA 8260A
Project#: 6895.00.014	Prep Method: EPA 5030
Location: Former Glovatorium	

Field ID: GW3-071999	Sampled: 07/19/99
Lab ID: 140518-002	Received: 07/19/99
Matrix: Water	Extracted: 07/24/99
Batch#: 49507	Analyzed: 07/24/99
Units: ug/L	
Diln Fac: 2	

Analyte	Result	Reporting Limit
Freon 12	ND	4.0
Chloromethane	ND	2.0
Vinyl Chloride	ND	1.0
Bromomethane	ND	2.0
Chloroethane	ND	2.0
Trichlorofluoromethane	ND	1.0
Freon 113	ND	10
1,1-Dichloroethene	ND	1.0
Methylene Chloride	ND	10
trans-1,2-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
1,2-Dichloroethane	ND	1.0
Trichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
Bromodichloromethane	ND	1.0
2-Chloroethylvinylether	ND	20
cis-1,3-Dichloropropene	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
Tetrachloroethene	220	1.0
Dibromochloromethane	ND	1.0
Chlorobenzene	ND	1.0
Bromoform	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	95	76-127
Toluene-d8	101	90-109
Bromofluorobenzene	89	82-118



Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: GW2-071999  
Lab ID: 140518-003  
Matrix: Water  
Batch#: 49507  
Units: ug/L  
Diln Fac: 1

Sampled: 07/19/99  
Received: 07/19/99  
Extracted: 07/23/99  
Analyzed: 07/23/99

Analyte	Result	Reporting Limit
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	1.4	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
2-Chloroethylvinylether	ND	10
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	14	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	91	76-127
Toluene-d8	100	90-109
Bromofluorobenzene	90	82-118





Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: GW8-071999  
Lab ID: 140518-004  
Matrix: Water  
Batch#: 49488  
Units: ug/L  
Diln Fac: 1

Sampled: 07/19/99  
Received: 07/19/99  
Extracted: 07/23/99  
Analyzed: 07/23/99

Analyte	Result	Reporting Limit
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	1.2	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	1.7	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	3.8	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	15	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
2-Chloroethylvinylether	ND	10
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	24	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	102	76-127
Toluene-d8	101	90-109
Bromofluorobenzene	115	82-118

Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: GW4-071999  
Lab ID: 140518-005  
Matrix: Water  
Batch#: 49488  
Units: ug/L  
Diln Fac: 1

Sampled: 07/19/99  
Received: 07/19/99  
Extracted: 07/22/99  
Analyzed: 07/22/99

Analyte	Result	Reporting Limit
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	3.5	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	1.7	0.5
Bromodichloromethane	ND	0.5
2-Chloroethylvinylether	ND	10
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	99	76-127
Toluene-d8	101	90-109
Bromofluorobenzene	95	82-118



Lab #: 140518

BATCH QC REPORT

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Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
Batch#: 49507  
Units: ug/L  
Diln Fac: 1

Prep Date: 07/23/99  
Analysis Date: 07/23/99

MB Lab ID: QC03410

Analyte	Result	Reporting Limit
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
2-Chloroethylvinylether	ND	10
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	90	76-127
Toluene-d8	101	90-109
Bromofluorobenzene	90	82-118



Lab #: 140518

BATCH QC REPORT

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Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
Batch#: 49507  
Units: ug/L  
Diln Fac: 1

Prep Date: 07/23/99  
Analysis Date: 07/23/99

MB Lab ID: QC03453

Analyte	Result	Reporting Limit
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
2-Chloroethylvinylether	ND	10
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	93	76-127
Toluene-d8	102	90-109
Bromofluorobenzene	90	82-118



## Halogenated Volatile Organics

Client: LFR-Levine-Fricke  
 Project#: 6895.00.014  
 Location: Former Glovatorium

Analysis Method: EPA 8260A  
 Prep Method: EPA 5030

## LABORATORY CONTROL SAMPLE

Matrix: Water  
 Batch#: 49507  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 07/23/99  
 Analysis Date: 07/23/99

LCS Lab ID: QC03411

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	49.33	50	99	64-139
Trichloroethene	52.93	50	106	72-129
Chlorobenzene	53.77	50	108	77-126
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	89	76-127		
Toluene-d8	101	90-109		
Bromofluorobenzene	90	82-118		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 3 outside limits



Halogenated Volatile Organics

Client: LFR-Levine-Fricke  
 Project#: 6895.00.014  
 Location: Former Glovatorium

Analysis Method: EPA 8260A  
 Prep Method: EPA 5030

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water  
 Batch#: 49488  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 07/22/99  
 Analysis Date: 07/22/99

BS Lab ID: QC03335

Analyte	Spike Added	BS	%Rec #	Limits
1,1-Dichloroethene	50	48.09	96	64-139
Trichloroethene	50	52.37	105	72-129
Chlorobenzene	50	52.8	106	77-126
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	93	76-127		
Toluene-d8	99	90-109		
Bromofluorobenzene	96	82-118		

BSD Lab ID: QC03336

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	47.45	95	64-139	1	13
Trichloroethene	50	50.75	101	72-129	3	10
Chlorobenzene	50	51.12	102	77-126	3	10
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	99	76-127				
Toluene-d8	100	90-109				
Bromofluorobenzene	95	82-118				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits



## CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: <b>6895.00.014</b>		Project Location: <b>Oakland, CA</b>		Date: <b>7/19/99</b>		Serial No: <b>5670</b>					
Project Name: <b>Former Crivatorium</b>		Field Logbook No.: _____		Sample Event Name: <b>Soil &amp; groundwater investigation</b>		Samplers: <b>JRB</b>					
Sampler (Signature): <i>James R. Burke</i>		ANALYSES									
SAMPLE INFORMATION (Print Clearly)											
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	VOC 8010	TPH 8015	GREASE 8020	HOLD	RUSH	REMARKS
1 TB-071999	7/19/99	15:00		3	water	X		X	X		Include standard solvent standard as TPH fingerprint
2 GW2-0719		15:25		3	↓	X	X	X			
3 GW2-0719		15:45		3	↓	X	X	X			
4 GW3-0719		16:10		3	↓	X	X	X			
5 GW4-0719		16:30		1	↓	X	X	X			Normal turn around time
6 GW4-0719 - FB <i>on 7/20/99</i>	7/19/99	14:50		3	water	X	X	X			
RELINQUISHED BY: (Signature) <i>James R. Burke</i>		DATE	TIME	RECEIVED BY: (Signature) <i>JRB</i>		DATE	TIME				
RELINQUISHED BY: (Signature)		DATE	TIME	RECEIVED BY: (Signature)		DATE	TIME				
RELINQUISHED BY: (Signature)		DATE	TIME	RECEIVED BY: (Signature)		DATE	TIME				
METHOD OF SHIPMENT:		DATE	TIME	LAB COMMENTS:							
Sample Collector: <b>LEVINE•FRICKE•RECON</b> 1900 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 652-4500				Analytical Laboratory:							





1900 Powell Street, 12th Floor  
Emeryville, California 94608-1827  
(510) 652-4500, FAX (510) 652-4906

FAX TRANSMISSION: This cover page plus 2 pages.

Date	July 20, 1999
Time	4:45PM
From	Taylor Bennett

Deliver To	Tracy Babjar		
Name of Firm	Curtis & Tompkins		
FAX Number	486-0532	Project No.	6895.00-017

THE INFORMATION CONTAINED IN THIS FACSIMILE IS CONFIDENTIAL AND IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED. IF YOU ARE NOT THE INTENDED RECIPIENT, OR THE PERSON RESPONSIBLE FOR DELIVERING IT TO THE INTENDED RECIPIENT, DO NOT USE OR DISCLOSE THIS FACSIMILE. IF YOU HAVE RECEIVED THIS FACSIMILE IN ERROR, PLEASE NOTIFY US IMMEDIATELY BY TELEPHONE AND RETURN THE ORIGINAL TO LFR LEVINE-FRICKE VIA THE U.S. POSTAL SERVICE. THANK YOU.

**Comments:** I'm sending you the login request and revised C.O.C. #3670 to confirm our telephone conversation today for project 6895.00-017. This is just a confirmation, not a new request.

## CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: <b>6895.00.014</b>		Project Location: <b>Oakland, CA</b>		Date: <b>7/19/99</b>		Serial No: <b>5670</b>								
Project Name: <b>Farmer Observatory</b>		Field Logbook No.: _____		Sample Event Name: <b>Soil &amp; groundwater investigation</b>		Serial No: <b>5670</b>								
Sampler (Signature): <i>James R. Burke</i>		ANALYSES				Samplers: <b>JRB</b>								
SAMPLE INFORMATION (Print Clearly)														
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CON. TAINERS	SAMPLE TYPE	ANALYSES						REMARKS		
						SOIL	TPH	SOIL	TPH	SOIL	TPH		HOLD	RUSH
1 2 3 4 5 6 TB-071999	7/19/99	15:00		3	water	X							X	Include standard solvent standard as TPH fingerprint
GW2-0719		15:25		3		X	X	X						
GW2-0719		15:45		3		X	X	X						
GW4-0719		16:10		3		X	X	X						
GW4-0719		16:30		1		X	X	X						
GW4-0719 - FB <i>on 7/19/99</i>	7/19/99	14:50		3	water	X	X	X					X	Normal turn around time. 7/20/99 (TPH) Analyze TB-071999; Place GW4-0719 on hold.
RELINQUISHED BY: (Signature) <i>James R. Burke</i>		DATE	TIME	RECEIVED BY: (Signature) <i>JRB</i>		DATE	TIME			DATE	TIME			
RELINQUISHED BY: (Signature)		DATE	TIME	RECEIVED BY: (Signature)		DATE	TIME			DATE	TIME			
RELINQUISHED BY: (Signature)		DATE	TIME	RECEIVED BY: (Signature)		DATE	TIME			DATE	TIME			
METHOD OF SHIPMENT:		DATE	TIME	LAB COMMENTS:										
Sample Collector: <b>LEVINE-FRICKE-RECON</b> 1900 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 652-4500				Analytical Laboratory:										

Shipping Copy (White)

Lab Copy (Yellow)

File Copy (Pink)

Field Copy (Goldenrod)

66991.CCCTMP.CDR 042993



Laboratory Numbers: **140537**  
Client: **LFR-Levine-Fricke**  
Project #: **6895.00.014**  
Location: **Former Glovatorium**  
COC#: **3502**

Sampled Date: **07/21/99**  
Received Date: **07/21/99**

### **CASE NARRATIVE**

This hardcopy data package contains sample and QC results for one water sample, which was received from the site referenced above on July 21, 1999. The trip blank was placed on hold upon receipt. The samples were received cold and intact. All data were faxed to Taylor Bennett on July 27, 1999.

#### **TVH (EPA 8015M):**

Bromofluorobenzene failed high for sample GW4-0721 (CT# 140543-002) due to co-elution with hydrocarbons. No other analytical problems were encountered.

#### **VOCs (EPA 8260):**

No analytical problems were encountered.



TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
140543-002	GW4-0721	49463	07/21/99	07/21/99	07/21/99	

Matrix: Water

Analyte	Units	140543-002	
Diln Fac:		5	
Gasoline C7-C12	ug/L	10000	YH
Stoddard Solvent	ug/L	6800	
Surrogate			
Trifluorotoluene	%REC	117	
Bromofluorobenzene	%REC	257	*

\* Values outside of QC limits  
Y: Sample exhibits fuel pattern which does not resemble standard  
H: Heavier hydrocarbons than indicated standard

# GC19 TVH 'X' Data File (FID)

Sample Name : d,140543-002a,49463,tvh+stodd.only

Sample #: ph<2, 5x

Page 1 of 1

FileName : G:\GC19\DATA\202X013.raw

Date : 7/22/99 03:44 PM

Method : TVHBTXE

Time of Injection: 7/21/99 11:49 PM

Start Time : 0.00 min

End Time : 26.80 min

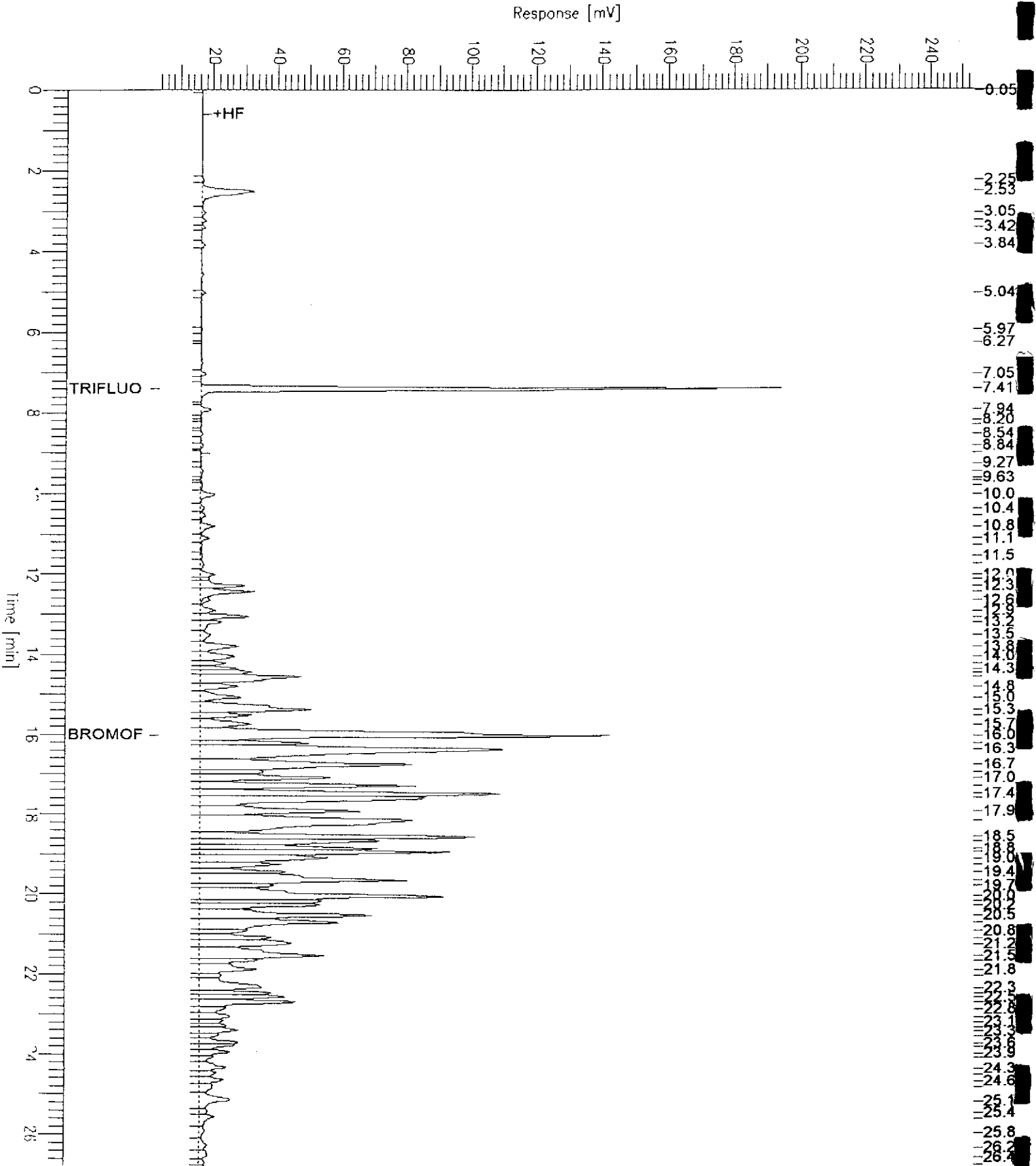
Low Point : 3.77 mV

High Point : 253.77 mV

e Factor: -1.0

Plot Offset: 4 mV

Plot Scale: 250.0 mV



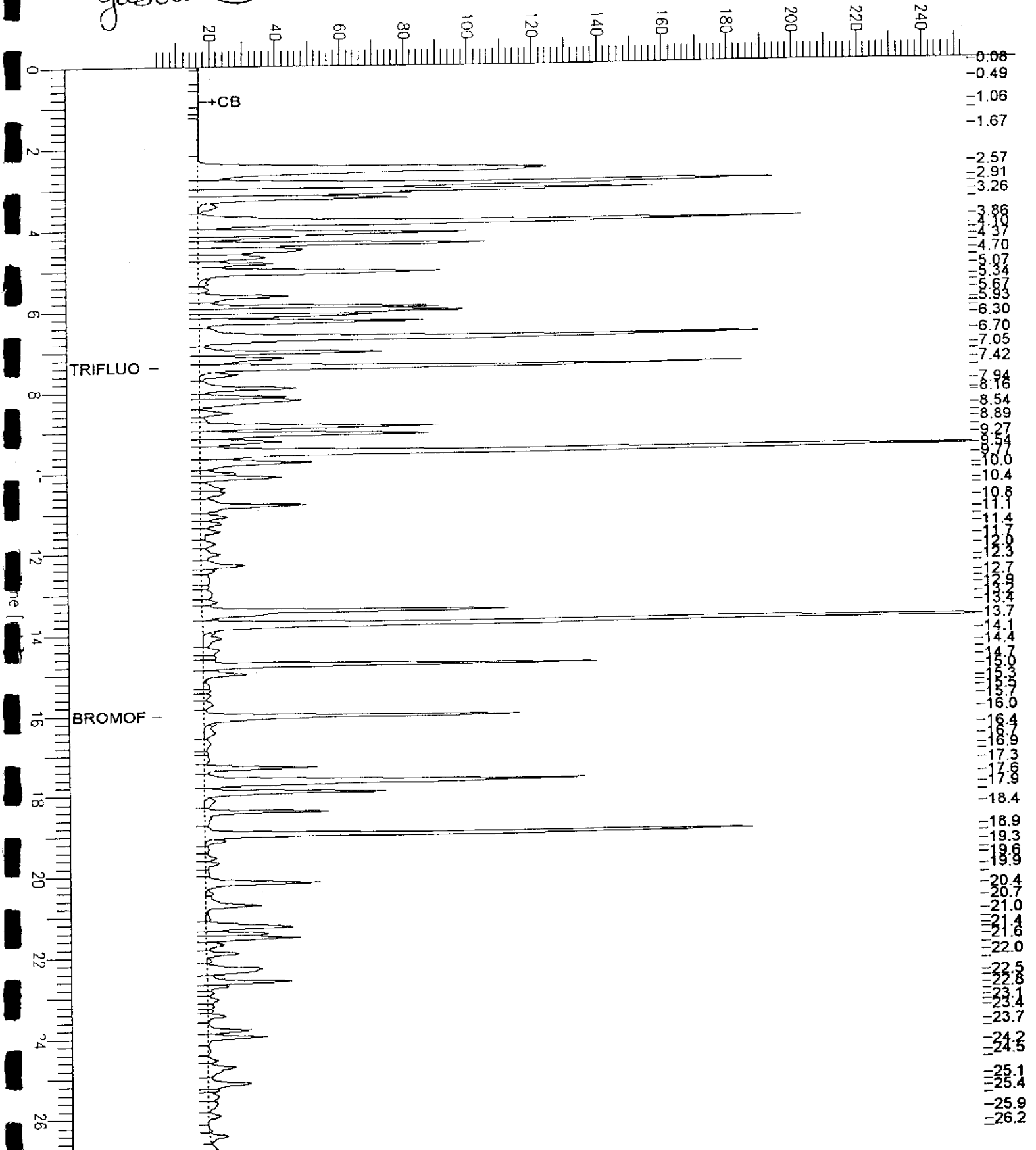
Sample Name : CCV/LCS, QC03238, 99WS7780, 49463  
File Name : G:\GC19\DATA\202X001.raw  
Method : TVHBTXE  
Start Time : 0.00 min  
Factor : -1.0

End Time : 26.80 min  
Plot Offset : 4 mV

Page 1 of 1  
Sample #: GAS  
Date : 7/21/99 02:05 PM  
Time of Injection: 7/21/99 01:38 PM  
Low Point : 3.95 mV  
High Point : 253.95 mV  
Plot Scale: 250.0 mV

*gasoline*

Response [mV]



Sample Name : CCV,99WS7145,49463  
FileName : G:\GC19\DATA\202X003.raw  
Method : TVHBTXE  
Start Time : 0.00 min  
le Factor : -1.0

End Time : 26.80 min  
Plot Offset: 3 mV

Sample #: STODD.

Date : 7/21/99 05:05 PM

Time of Injection: 7/21/99 04:38 PM

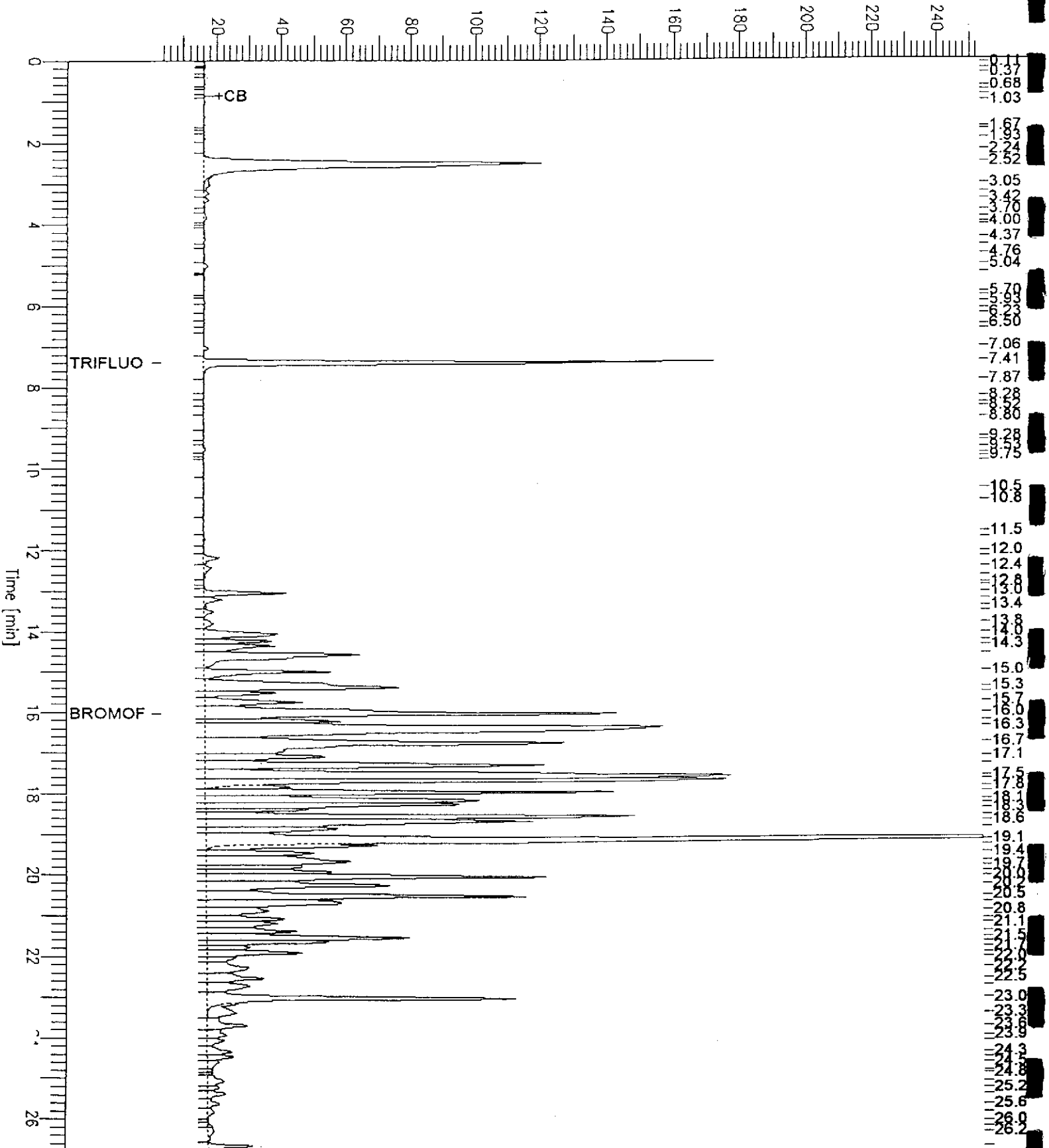
Low Point : 3.41 mV

Plot Scale: 250.0 mV

Page 1 of 1

*Stoddard solvent*

Response [mV]



Lab #: 140543

BATCH QC REPORT



Curtis & Tompkins Ltd.  
Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
Batch#: 49463  
Units: ug/L  
Diln Fac: 1

Prep Date: 07/21/99  
Analysis Date: 07/21/99

MB Lab ID: QC03237

Analyte	Result	
Gasoline C7-C12	<50	
Stoddard Solvent	<50	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	101	53-150
Bromofluorobenzene	101	53-149





Aromatic Volatile Organics  
EPA 8020 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: GW4-0721  
Lab ID: 140543-002  
Matrix: Water  
Batch#: 49539  
Units: ug/L  
Diln Fac: 1

Sampled: 07/21/99  
Received: 07/21/99  
Extracted: 07/26/99  
Analyzed: 07/26/99

Analyte	Result	Reporting Limit
MTBE	2.2	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	1.4	0.5
o-Xylene	1.5	0.5
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	103	76-127
Toluene-d8	100	90-109
Bromofluorobenzene	99	82-118



Purgeable Aromatics by GC/MS  
EPA 8020 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

## METHOD BLANK

Matrix: Water  
Batch#: 49539  
Units: ug/L  
Diln Fac: 1

Prep Date: 07/26/99  
Analysis Date: 07/26/99

MB Lab ID: QC03519

Analyte	Result	Reporting Limit
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	100	76-127
Toluene-d8	99	90-109
Bromofluorobenzene	104	82-118



Purgeable Aromatics by GC/MS  
EPA 8020 Analyte List

Client: LFR-Levine-Fricke	Analysis Method: EPA 8260A
Project#: 6895.00.014	Prep Method: EPA 5030
Location: Former Glovatorium	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 07/26/99
Batch#: 49539	Analysis Date: 07/26/99
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC03516

Analyte	Spike Added	BS	%Rec #	Limits
Benzene	50	49.65	99	71-127
Toluene	50	52.56	105	73-129
Chlorobenzene	50	48.35	97	77-126
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	95	76-127		
Toluene-d8	99	90-109		
Bromofluorobenzene	102	82-118		

BSD Lab ID: QC03517

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Benzene	50	51.58	103	71-127	4	10
Toluene	50	53.87	108	73-129	2	10
Chlorobenzene	50	49.83	100	77-126	3	10
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	95	76-127				
Toluene-d8	101	90-109				
Bromofluorobenzene	99	82-118				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits

140343

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: 6895.00.014			Project Location: Oakland, CA			Date: 7/21/99		Serial No.: N° 3502			
Project Name: Former gloveorium			Field Logbook No.: _____						Samplers: JRB		
Sampler (Signature): James R. Burke			ANALYSES								
SAMPLES						HOLD			RUSH		
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CON-TAINERS	SAMPLE TYPE	2010	TPHs 8015 *	8020			REMARKS
-1 TB-072199	7/21/99	9:00		3	water	X	X			X	* TPH fingerprint
-2 GWH-0721	7/21/99	10:00		3	water		X	X			include Sioderck Solvent as a standard
RELINQUISHED BY: James R. Burke			DATE: 7/21/99	TIME: 10:50	RECEIVED BY: [Signature]			DATE: 7/21/99	TIME: 10:50		
RELINQUISHED BY: [Signature]			DATE:	TIME:	RECEIVED BY: [Signature]			DATE:	TIME:		
RELINQUISHED BY: [Signature]			DATE:	TIME:	RECEIVED BY: [Signature]			DATE:	TIME:		
METHOD OF SHIPMENT:			DATE:	TIME:	LAB COMMENTS:						
Sample Collector: LEVINE•FRICKE•RECON 1900 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 652-4500					Analytical Laboratory:						



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L   R E P O R T

Prepared for:

LFR-Levine-Fricke  
1900 Powell Street  
12th Floor  
Emeryville, CA 94608

Date: 28-JUL-99  
Lab Job Number: 140466  
Project ID: 6895.00.014  
Location: Former Glovatorium

Reviewed by:

*Tracy Bekjan*

Reviewed by:

This package may be reproduced only in its entirety.



Laboratory Numbers: **140466**  
Client: **LFR-Levine-Fricke**  
Project #: **6895.00.014**  
Location: **Former Glovatorium**  
COC#: **5669**

Sampled Date: **07/15/99**  
Received Date: **07/15/99**

### CASE NARRATIVE

This hardcopy data package contains sample and QC results for four soil samples, which were received from the site referenced above on July 15, 1999. Four samples were placed on hold upon receipt. The samples were received cold and intact. Three soil samples were taken off hold by Taylor Bennett on July 19, 1999. All data were faxed to Taylor Bennett on July 28, 1999.

**TVH/B, XE:**

No analytical problems were encountered.

**VOCs (EPA 8260):**

No analytical problems were encountered.



TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
140466-001	GW7-9	49395	07/15/99	07/18/99	07/18/99	
140466-002	GW7-11	49442	07/15/99	07/21/99	07/21/99	
140466-003	GW7-14	49442	07/15/99	07/21/99	07/21/99	
140466-004	GW7-16	49442	07/15/99	07/21/99	07/21/99	

Matrix: Soil

Analyte	Units	140466-001	140466-002	140466-003	140466-004
Diln Fac:		1	1	1	1
Gasoline C7-C12	mg/Kg	1.4YH	<1	<1	<1
Stoddard Solvent	mg/Kg	<1	<1	<1	<1
Surrogate					
Trifluorotoluene	%REC	107	105	105	106
Bromofluorobenzene	%REC	138	119	117	114

Y: Sample exhibits fuel pattern which does not resemble standard  
H: Heavier hydrocarbons than indicated standard

# Chromatogram

Sample Name : 140466-001,49395,+stoddard

Sample #:

Page 1 of 1

File Name : G:\GC05\DATA\199G007.raw

Date : 7/18/99 11:02 PM

Method : TVHBTXE

Time of Injection: 7/18/99 10:35 PM

Start Time : 0.00 min

End Time : 26.80 min

Low Point : 5.88 mV

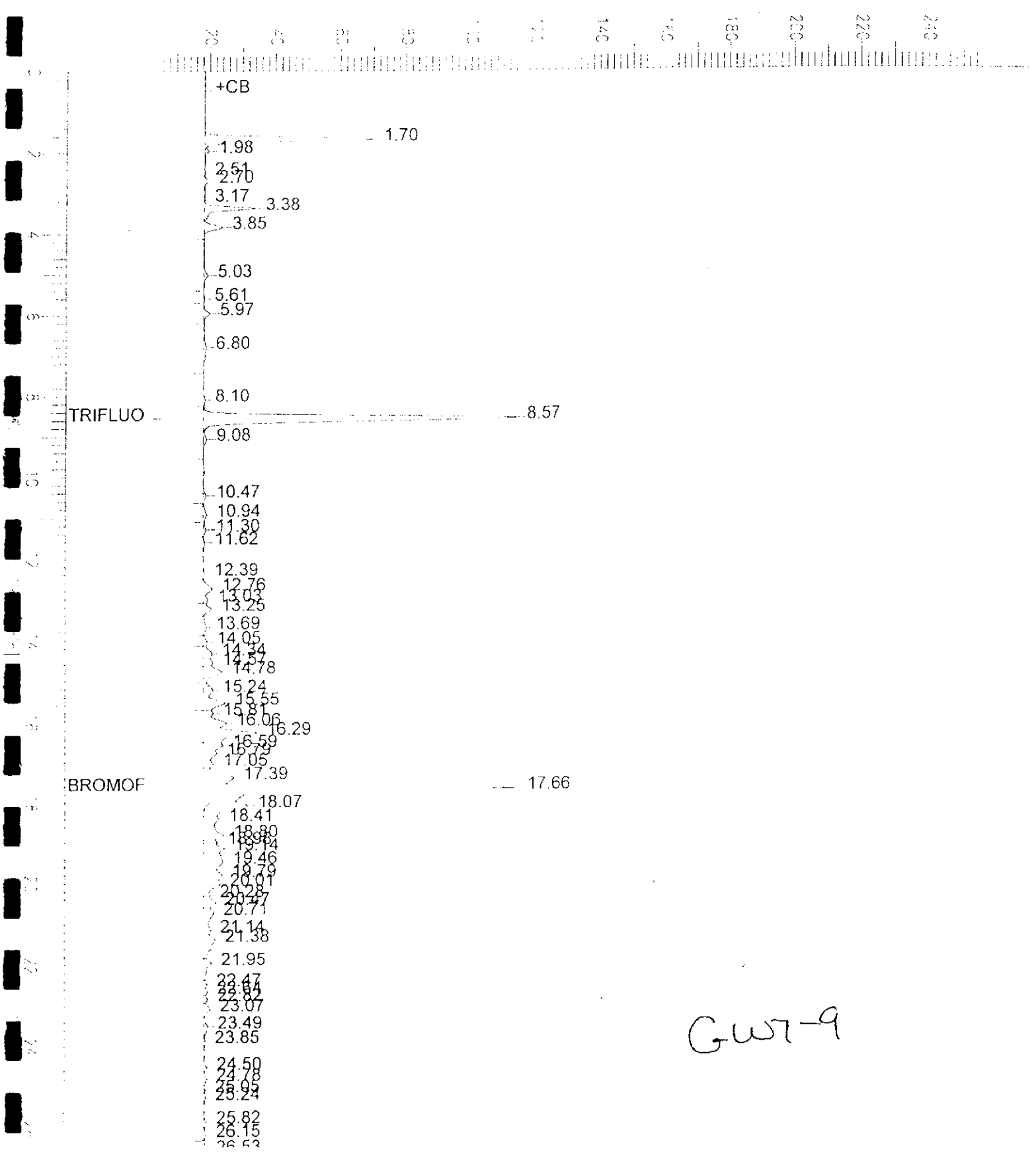
High Point : 255.88 mV

Scale Factor: -1.0

Plot Offset: 6 mV

Plot Scale: 250.0 mV

Response [mV]



GW7-9

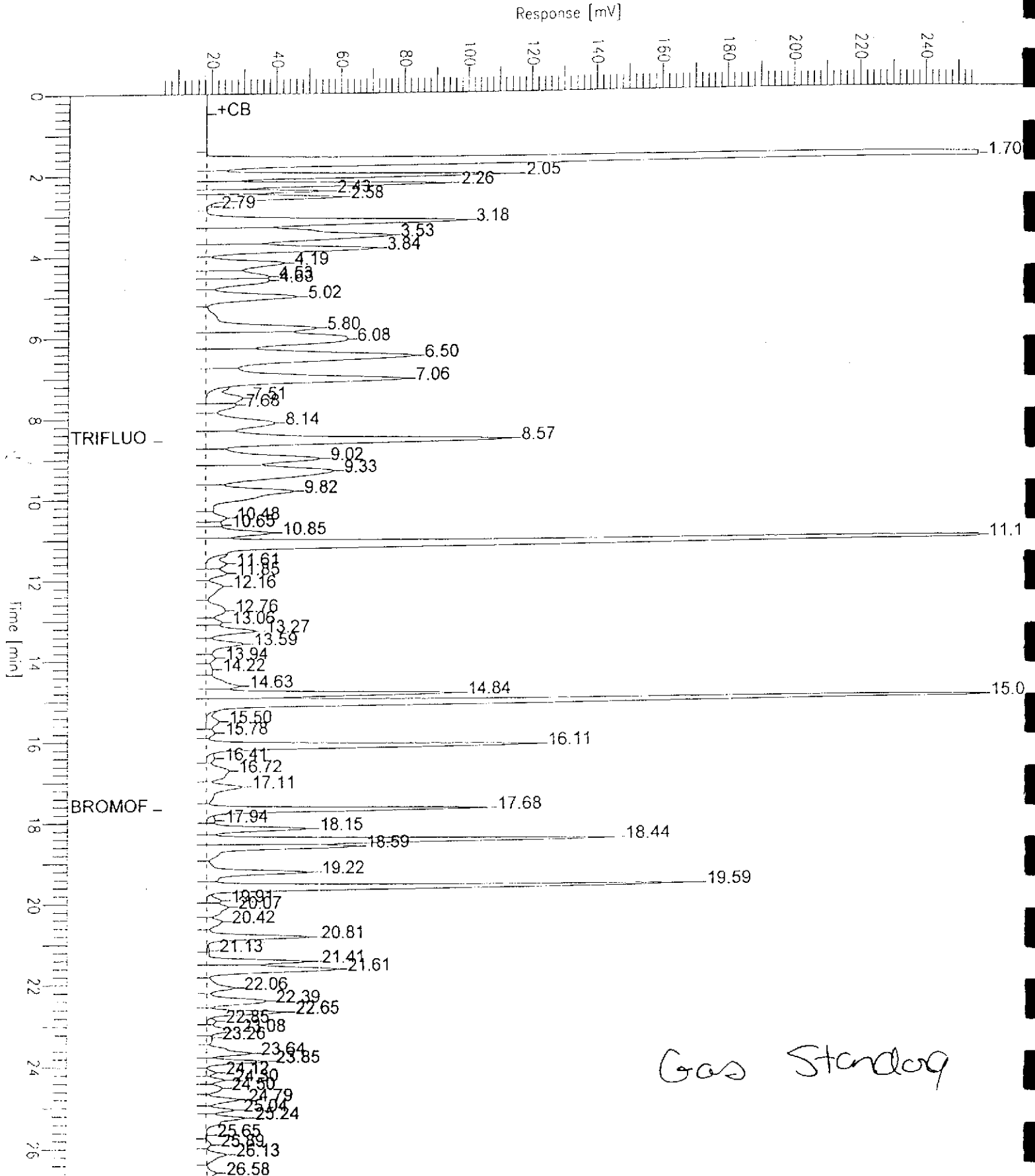


# Chromatogram

Sample Name : ccv/lcs,qc02979,99ws7780,49395  
FileName : G:\GC05\DATA\199G001.raw  
hod : TVHBTXE  
rt Time : 0.00 min  
Scale Factor: -1.0

End Time : 26.80 min  
Plot Offset: 6 mV

Sample #: 199gh,gas  
Date : 7/18/99 06:40 PM  
Time of Injection: 7/18/99 06:13 PM  
Low Point : 5.93 mV  
Plot Scale: 250.0 mV  
High Point : 255.93 mV



# Chromatogram

Sample Name : ccv,99ws7145,49395

Sample #: stoddard

Page 1 of 1

FileName : G:\GC05\DATA\199G003.raw

Date : 7/18/99 08:01 PM

Method : TVHBTXE

Time of Injection: 7/18/99 07:33 PM

Start Time : 0.00 min

End Time : 26.80 min

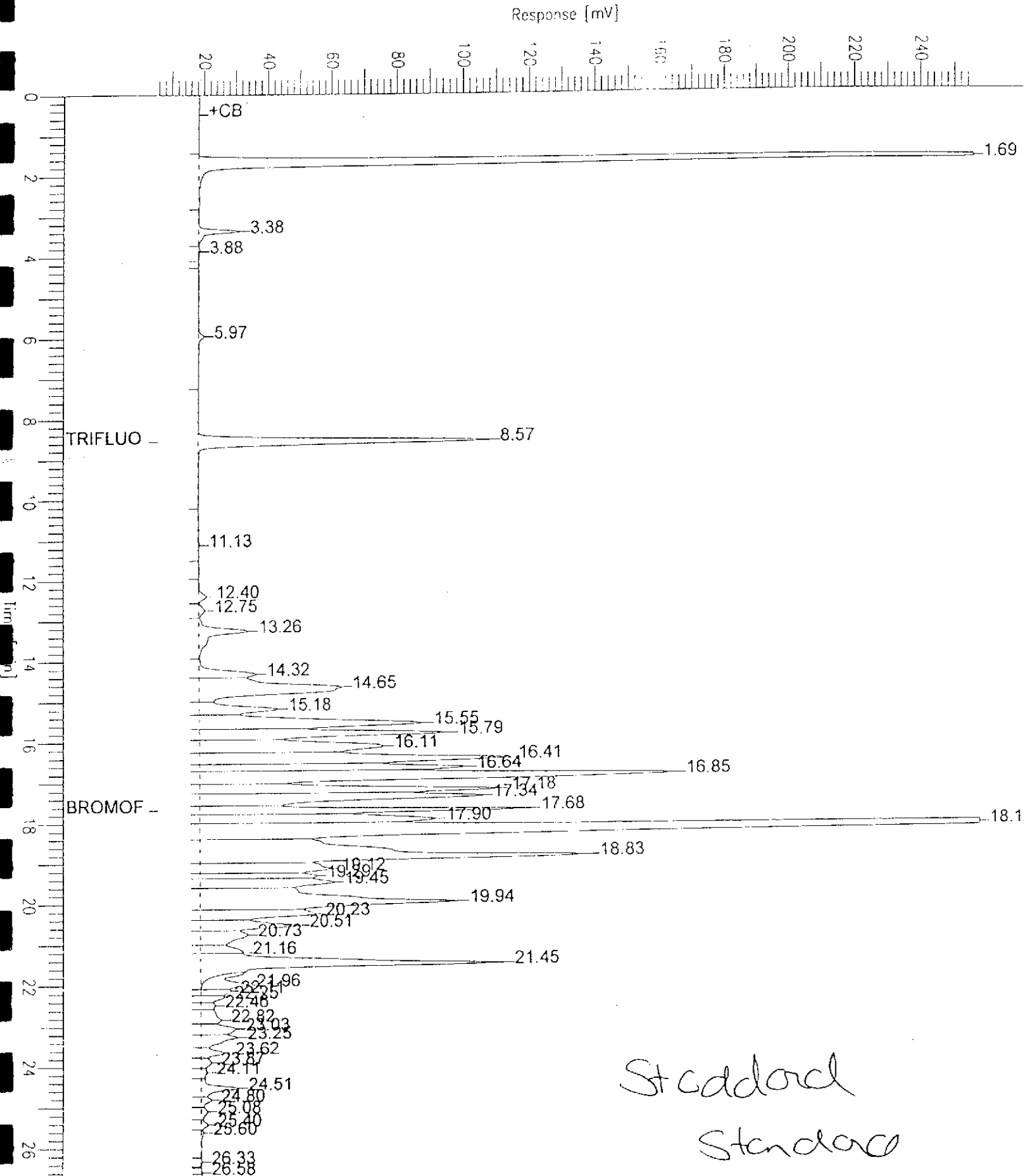
Low Point : 5.85 mV

High Point : 255.85 mV

Scale Factor: -1.0

Plot Offset: 6 mV

Plot Scale: 250.0 mV





BTXE

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
140466-001	GW7-9	49395	07/15/99	07/18/99	07/18/99	
140466-002	GW7-11	49442	07/15/99	07/21/99	07/21/99	
140466-003	GW7-14	49442	07/15/99	07/21/99	07/21/99	
140466-004	GW7-16	49442	07/15/99	07/21/99	07/21/99	

Matrix: Soil

Analyte	Units	140466-001	140466-002	140466-003	140466-004
Diln Fac:		1	1	1	1
MTBE	ug/Kg	<20	<20	<20	<20
Benzene	ug/Kg	<5	<5	<5	<5
Toluene	ug/Kg	<5	<5	<5	<5
Ethylbenzene	ug/Kg	<5	<5	<5	<5
m,p-Xylenes	ug/Kg	<5	<5	<5	<5
o-Xylene	ug/Kg	<5	<5	<5	<5
Surrogate					
Trifluorotoluene	%REC	97	93	94	94
Bromofluorobenzene	%REC	107	99	99	98

Lab #: 140466

BATCH QC REPORT



Curtis & Tompkins, Ltd.  
Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Soil  
Batch#: 49395  
Units: mg/Kg  
Diln Fac: 1

Prep Date: 07/18/99  
Analysis Date: 07/18/99

MB Lab ID: QC02978

Analyte	Result		
Gasoline C7-C12	<1.0		
Stoddard Solvent	<1.0		
Surrogate	%Rec	Recovery Limits	
Trifluorotoluene	100	62-143	
Bromofluorobenzene	102	59-150	

Lab #: 140466

BATCH QC REPORT



Curtis & Tompkins, Ltd.  
Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Soil  
Batch#: 49442  
Units: mg/Kg  
Diln Fac: 1

Prep Date: 07/20/99  
Analysis Date: 07/20/99

MB Lab ID: QC03153

Analyte	Result		
Gasoline C7-C12	<1.0		
Stoddard Solvent	<1.0		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	103		62-143
Bromofluorobenzene	114		59-150

Lab #: 140466

BATCH QC REPORT



Curtis & Tompkins, Ltd.  
Page 1 of 1

BTXE

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Soil  
Batch#: 49395  
Units: ug/Kg  
Diln Fac: 1

Prep Date: 07/18/99  
Analysis Date: 07/18/99

MB Lab ID: QC02978

Analyte	Result		
MTBE	<20		
Benzene	<5.0		
Toluene	<5.0		
Ethylbenzene	<5.0		
m,p-Xylenes	<5.0		
o-Xylene	<5.0		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	89		59-134
Bromofluorobenzene	90		38-150

Lab #: 140466

BATCH QC REPORT



Curtis & Tompkins, Ltd.  
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BTXE

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Soil  
Batch#: 49442  
Units: ug/Kg  
Diln Fac: 1

Prep Date: 07/20/99  
Analysis Date: 07/20/99

MB Lab ID: QC03153

Analyte	Result
MTBE	<20
Benzene	<5.0
Toluene	<5.0
Ethylbenzene	<5.0
m,p-Xylenes	<5.0
o-Xylene	<5.0

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	89	59-134
Bromofluorobenzene	93	38-150

Lab #: 140466

BATCH QC REPORT



TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil  
Batch#: 49395  
Units: mg/Kg  
Diln Fac: 1

Prep Date: 07/18/99  
Analysis Date: 07/18/99

LCS Lab ID: QC02979

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	10.08	10	101	77-122
Surrogate	%Rec	Limits		
Trifluorotoluene	126	62-143		
Bromofluorobenzene	101	59-150		

# Column to be used to flag recovery and RPD values with an asterisk  
\* Values outside of QC limits  
Spike Recovery: 0 out of 1 outside limits



Lab #: 140466

BATCH QC REPORT



Curtis & Tompkins, Ltd.  
Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil  
Batch#: 49442  
Units: mg/Kg  
Diln Fac: 1

Prep Date: 07/20/99  
Analysis Date: 07/20/99

LCS Lab ID: QC03154

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	10.38	10	104	77-122
Surrogate	%Rec	Limits		
Trifluorotoluene	130	62-143		
Bromofluorobenzene	108	59-150		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits

Lab #: 140466

BATCH QC REPORT



Curtis & Tompkins, Ltd.  
Page 1 of 1

BTXE

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil  
Batch#: 49395  
Units: ug/Kg  
Diln Fac: 1

Prep Date: 07/18/99  
Analysis Date: 07/18/99

LCS Lab ID: QC02980

Analyte	Result	Spike Added	%Rec #	Limits
MTBE	82.58	100	83	59-135
Benzene	95.7	100	96	67-116
Toluene	89.23	100	89	77-122
Ethylbenzene	94.63	100	95	70-124
m,p-Xylenes	189.7	200	95	75-125
o-Xylene	97.16	100	97	75-126

Surrogate	%Rec	Limits
Trifluorotoluene	94	59-134
Bromofluorobenzene	99	38-150

# Column to be used to flag recovery and RPD values with an asterisk  
\* Values outside of QC limits  
Spike Recovery: 0 out of 6 outside limits

Lab #: 140466

BATCH QC REPORT



Curtis & Tompkins, Ltd.  
Page 1 of 1

BTXE

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil  
Batch#: 49442  
Units: ug/Kg  
Diln Fac: 1

Prep Date: 07/20/99  
Analysis Date: 07/20/99

LCS Lab ID: QC03155

Analyte	Result	Spike Added	%Rec #	Limits
MTBE	99.25	100	99	59-135
Benzene	103.3	100	103	67-116
Toluene	101.3	100	101	77-122
Ethylbenzene	106.2	100	106	70-124
m,p-Xylenes	218.9	200	109	75-125
o-Xylene	110.5	100	110	75-126

Surrogate	%Rec	Limits
Trifluorotoluene	95	59-134
Bromofluorobenzene	97	38-150

# Column to be used to flag recovery and RPD values with an asterisk  
\* Values outside of QC limits  
Spike Recovery: 0 out of 6 outside limits

Lab #: 140466

BATCH QC REPORT



Curtis & Tompkins, Ltd.  
Page 1 of 1

TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ  
Lab ID: 140457-006  
Matrix: Soil  
Batch#: 49395  
Units: mg/Kg  
Diln Fac: 1

Sample Date: 07/13/99  
Received Date: 07/15/99  
Prep Date: 07/18/99  
Analysis Date: 07/18/99

MS Lab ID: QC02981

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline C7-C12	10	<1	9.9	99	55-134
Surrogate	%Rec	Limits			
Trifluorotoluene	131	62-143			
Bromofluorobenzene	109	59-150			

MSD Lab ID: QC02982

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	10	9.83	98	55-134	1	30
Surrogate	%Rec	Limits				
Trifluorotoluene	130	62-143				
Bromofluorobenzene	107	59-150				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

Lab #: 140466

BATCH QC REPORT



TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ  
Lab ID: 140511-004  
Matrix: Soil  
Batch#: 49442  
Units: mg/Kg  
Diln Fac: 1

Sample Date: 07/15/99  
Received Date: 07/16/99  
Prep Date: 07/21/99  
Analysis Date: 07/21/99

MS Lab ID: QC03156

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline C7-C12	10	-1	7.19	72	55-134
Surrogate	%Rec	Limits			
Trifluorotoluene	128	62-143			
Bromofluorobenzene	114	59-150			

MSD Lab ID: QC03157

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	10	7.69	77	55-134	7	30
Surrogate	%Rec	Limits				
Trifluorotoluene	129	62-143				
Bromofluorobenzene	114	59-150				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: GW7-9  
Lab ID: 140466-001  
Matrix: Soil  
Batch#: 49417  
Units: ug/Kg  
Diln Fac: 1.02

Sampled: 07/15/99  
Received: 07/15/99  
Extracted: 07/19/99  
Analyzed: 07/19/99

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.1
Freon 113	ND	5.1
1,1-Dichloroethene	ND	5.1
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	5.1
1,1-Dichloroethane	ND	5.1
cis-1,2-Dichloroethene	ND	5.1
Chloroform	ND	5.1
1,1,1-Trichloroethane	ND	5.1
Carbon Tetrachloride	ND	5.1
1,2-Dichloroethane	ND	5.1
Trichloroethene	ND	5.1
1,2-Dichloropropane	ND	5.1
Bromodichloromethane	ND	5.1
cis-1,3-Dichloropropene	ND	5.1
trans-1,3-Dichloropropene	ND	5.1
1,1,2-Trichloroethane	ND	5.1
Tetrachloroethene	ND	5.1
Dibromochloromethane	ND	5.1
Chlorobenzene	ND	10
Bromoform	ND	5.1
1,1,2,2-Tetrachloroethane	ND	5.1
1,3-Dichlorobenzene	ND	5.1
1,4-Dichlorobenzene	ND	5.1
1,2-Dichlorobenzene	ND	5.1

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	111	80-129
Toluene-d8	94	88-111
Bromofluorobenzene	108	76-128

Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: GW7-11  
Lab ID: 140466-002  
Matrix: Soil  
Batch#: 49547  
Units: ug/Kg  
Diln Fac: 0.9804

Sampled: 07/15/99  
Received: 07/15/99  
Extracted: 07/26/99  
Analyzed: 07/26/99

Analyte	Result	Reporting Limit
Chloromethane	ND	9.8
Vinyl Chloride	ND	9.8
Bromomethane	ND	9.8
Chloroethane	ND	9.8
Trichlorofluoromethane	ND	4.9
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	4.9
1,1-Dichloroethane	ND	4.9
cis-1,2-Dichloroethene	ND	4.9
Chloroform	ND	4.9
1,1,1-Trichloroethane	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
cis-1,3-Dichloropropene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
Tetrachloroethene	ND	4.9
Dibromochloromethane	ND	4.9
Chlorobenzene	ND	4.9
Bromoform	ND	9.8
1,1,2,2-Tetrachloroethane	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	105	80-129
Toluene-d8	100	88-111
Bromofluorobenzene	103	76-128

Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke	Analysis Method: EPA 8260A
Project#: 6895.00.014	Prep Method: EPA 5030
Location: Former Glovatorium	

Field ID: GW7-14	Sampled: 07/15/99
Lab ID: 140466-003	Received: 07/15/99
Matrix: Soil	Extracted: 07/23/99
Batch#: 49498	Analyzed: 07/23/99
Units: ug/Kg	
Diln Fac: 0.9259	

Analyte	Result	Reporting Limit
Chloromethane	ND	9.3
Vinyl Chloride	ND	9.3
Bromomethane	ND	9.3
Chloroethane	ND	9.3
Trichlorofluoromethane	ND	4.6
Freon 113	ND	4.6
1,1-Dichloroethene	ND	4.6
Methylene Chloride	ND	19
trans-1,2-Dichloroethene	ND	4.6
1,1-Dichloroethane	ND	4.6
cis-1,2-Dichloroethene	ND	4.6
Chloroform	ND	4.6
1,1,1-Trichloroethane	ND	4.6
Carbon Tetrachloride	ND	4.6
1,2-Dichloroethane	ND	4.6
Trichloroethene	ND	4.6
1,2-Dichloropropane	ND	4.6
Bromodichloromethane	ND	4.6
cis-1,3-Dichloropropene	ND	4.6
trans-1,3-Dichloropropene	ND	4.6
1,1,2-Trichloroethane	ND	4.6
Tetrachloroethene	ND	4.6
Dibromochloromethane	ND	4.6
Chlorobenzene	ND	9.3
Bromoform	ND	4.6
1,1,2,2-Tetrachloroethane	ND	4.6
1,3-Dichlorobenzene	ND	4.6
1,4-Dichlorobenzene	ND	4.6
1,2-Dichlorobenzene	ND	4.6

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	102	80-129
Toluene-d8	91	88-111
Bromofluorobenzene	103	76-128



Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: GW7-16  
Lab ID: 140466-004  
Matrix: Soil  
Batch#: 49547  
Units: ug/Kg  
Diln Fac: 0.9804

Sampled: 07/15/99  
Received: 07/15/99  
Extracted: 07/26/99  
Analyzed: 07/26/99

Analyte	Result	Reporting Limit
Chloromethane	ND	9.8
Vinyl Chloride	ND	9.8
Bromomethane	ND	9.8
Chloroethane	ND	9.8
Trichlorofluoromethane	ND	4.9
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	4.9
1,1-Dichloroethane	ND	4.9
cis-1,2-Dichloroethene	ND	4.9
Chloroform	ND	4.9
1,1,1-Trichloroethane	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
cis-1,3-Dichloropropene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
Tetrachloroethene	ND	4.9
Dibromochloromethane	ND	4.9
Chlorobenzene	ND	4.9
Bromoform	ND	9.8
1,1,2,2-Tetrachloroethane	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	109	80-129
Toluene-d8	102	88-111
Bromofluorobenzene	102	76-128



Lab #: 140466

## BATCH QC REPORT

Page 1 of 1

Halogenated Volatile Organics  
EPA 8010 Analyte ListClient: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former GlovatoriumAnalysis Method: EPA 8260A  
Prep Method: EPA 5030

## METHOD BLANK

Matrix: Soil  
Batch#: 49417  
Units: ug/Kg  
Diln Fac: 1Prep Date: 07/19/99  
Analysis Date: 07/19/99

MB Lab ID: QC03063

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	10
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	108	80-129
Toluene-d8	89	88-111
Bromofluorobenzene	105	76-128



Halogenated Volatile Organics

Client: LFR-Levine-Fricke	Analysis Method: EPA 8260A
Project#: 6895.00.014	Prep Method: EPA 5030
Location: Former Glovatorium	

LABORATORY CONTROL SAMPLE

Matrix: Soil	Prep Date: 07/19/99
Batch#: 49417	Analysis Date: 07/19/99
Units: ug/Kg	
Diln Fac: 1	

LCS Lab ID: QC03062

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	46.68	50	93	63-144
Trichloroethene	45.61	50	91	70-131
Chlorobenzene	44.26	50	89	74-126
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	105	80-129		
Toluene-d8	94	88-111		
Bromofluorobenzene	91	76-128		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 3 outside limits



## Halogenated Volatile Organics

Client: LFR-Levine-Fricke  
 Project#: 6895.00.014  
 Location: Former Glovatorium

Analysis Method: EPA 8260A  
 Prep Method: EPA 5030

## LABORATORY CONTROL SAMPLE

Matrix: Soil  
 Batch#: 49498  
 Units: ug/Kg  
 Diln Fac: 1

Prep Date: 07/22/99  
 Analysis Date: 07/22/99

LCS Lab ID: QC03375

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	53.34	50	107	63-144
Trichloroethene	50.09	50	100	70-131
Chlorobenzene	49.42	50	99	74-126
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	96	80-129		
Toluene-d8	97	88-111		
Bromofluorobenzene	95	76-128		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 3 outside limits



## Halogenated Volatile Organics

Client: LFR-Levine-Fricke  
 Project#: 6895.00.014  
 Location: Former Glovatorium

Analysis Method: EPA 8260A  
 Prep Method: EPA 5030

## LABORATORY CONTROL SAMPLE

Matrix: Soil  
 Batch#: 49547  
 Units: ug/Kg  
 Diln Fac: 1

Prep Date: 07/26/99  
 Analysis Date: 07/26/99

LCS Lab ID: QC03558

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	49.81	50	100	63-144
Trichloroethene	47.39	50	95	70-131
Chlorobenzene	47.09	50	94	74-126
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	104	80-129		
Toluene-d8	101	88-111		
Bromofluorobenzene	99	76-128		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 3 outside limits



## Halogenated Volatile Organics

Client: LFR-Levine-Fricke  
 Project#: 6895.00.014  
 Location: Former Glovatorium

Analysis Method: EPA 8260A  
 Prep Method: EPA 5030

## MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ  
 Lab ID: 140483-001  
 Matrix: Soil  
 Batch#: 49417  
 Units: ug/Kg  
 Diln Fac: 1

Sample Date: 07/16/99  
 Received Date: 07/17/99  
 Prep Date: 07/19/99  
 Analysis Date: 07/19/99

MS Lab ID: QC03081

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	<5	49.92	100	51-137
Trichloroethene	50	<5	46.11	92	33-153
Chlorobenzene	50	<5	43.99	88	39-132
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	99	80-129			
Toluene-d8	93	88-111			
Bromofluorobenzene	92	76-128			

MSD Lab ID: QC03082

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	48.08	49.1	102	51-137	2	35
Trichloroethene	48.08	47.82	99	33-153	4	44
Chlorobenzene	48.08	43.84	91	39-132	0	47
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	100	80-129				
Toluene-d8	97	88-111				
Bromofluorobenzene	91	76-128				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits



Halogenated Volatile Organics

Client: LFR-Levine-Fricke  
 Project#: 6895.00.014  
 Location: Former Glovatorium

Analysis Method: EPA 8260A  
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: GW7-11  
 Lab ID: 140466-002  
 Matrix: Soil  
 Batch#: 49498  
 Units: ug/Kg  
 Diln Fac: 0.9804

Sample Date: 07/15/99  
 Received Date: 07/15/99  
 Prep Date: 07/23/99  
 Analysis Date: 07/23/99

MS Lab ID: QC03377

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	49.02	<4.902	53.07	108	51-137
Trichloroethene	49.02	<4.902	45.5	93	33-153
Chlorobenzene	49.02	<4.902	42.64	87	39-132
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	111	80-129			
Toluene-d8	103	88-111			
Bromofluorobenzene	95	76-128			

MSD Lab ID: QC03378

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	59.42	119	51-137	11	35
Trichloroethene	50	50.32	101	33-153	10	44
Chlorobenzene	50	43.86	88	39-132	3	47
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	101	80-129				
Toluene-d8	98	88-111				
Bromofluorobenzene	100	76-128				

# Column to be used to flag recovery and RPD values with an asterisk  
 \* Values outside of QC limits  
 RPD: 0 out of 3 outside limits  
 Spike Recovery: 0 out of 6 outside limits



## Halogenated Volatile Organics

Client: LFR-Levine-Fricke  
 Project#: 6895.00.014  
 Location: Former Glovatorium

Analysis Method: EPA 8260A  
 Prep Method: EPA 5030

## MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ  
 Lab ID: 140511-002  
 Matrix: Soil  
 Batch#: 49547  
 Units: ug/Kg  
 Diln Fac: 0.9615

Sample Date: 07/15/99  
 Received Date: 07/16/99  
 Prep Date: 07/26/99  
 Analysis Date: 07/26/99

MS Lab ID: QC03560

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	48.08	<4.808	47.46	99	51-137
Trichloroethene	48.08	<4.808	43.28	90	33-153
Chlorobenzene	48.08	<4.808	41.56	86	39-132
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	107	80-129			
Toluene-d8	100	88-111			
Bromofluorobenzene	100	76-128			

MSD Lab ID: QC03561

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	50.96	102	51-137	7	35
Trichloroethene	50	45.72	91	33-153	5	44
Chlorobenzene	50	44.24	88	39-132	6	47
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	108	80-129				
Toluene-d8	102	88-111				
Bromofluorobenzene	101	76-128				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits



140466

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: 6895.00.014		Project Location: Oakland, CA.			Date: 7/15/99		Serial No: 5669				
Project Name: Former Glovatorium		Field Logbook No.: _____		Sample Event Name: Soil + grab groundwater sample				Serial No: 5669			
Sampler (Signature): James R. Burke				ANALYSES				Samplers:			
SAMPLE INFORMATION (Print Clearly)											
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	VOCS 8010	TPHs 8015 *	BTEX 8020	HOLD	RUSH	REMARKS
1	7/15/99	15:00		1	Soil	X	X	X	X		* Please use
2	↓	15:10		1	↓	X	X	X	X		standard solvent
3	↓	15:20		1	↓	X	X	X	X		standard for TPH
4	↓	15:30		1	↓	X	X	X	X		fingerprinting
5	↓	15:40		1	↓	X	X	X	X		Normal turn around time
RELINQUISHED BY: (Signature) James R. Burke			DATE: 7/15/99	TIME: 1745	RECEIVED BY: (Signature) [Signature]			DATE: 7/15/99	TIME: 1745		
RELINQUISHED BY: (Signature)			DATE:	TIME:	RECEIVED BY: (Signature)			DATE:	TIME:		
RELINQUISHED BY: (Signature)			DATE:	TIME:	RECEIVED BY: (Signature)			DATE:	TIME:		
METHOD OF SHIPMENT:			DATE:	TIME:	LAB COMMENTS:						
Sample Collector: LEVINE•FRICKE•RECON 1900 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 652-4500					Analytical Laboratory: Curtis + Tompkin						



1900 Powell Street, 12th Floor  
Emeryville, California 94608-1827  
(510) 652-4500, FAX (510) 652-4906

FAX TRANSMISSION: This cover page plus 1 page.

Date	July 19, 1999
Time	5:47PM
From	Taylor Bennett

Deliver To	Tracy Babjar		
Name of Firm	Curtis & Tompkins		
FAX Number	486-0532	Project No.	6895.00-017

THE INFORMATION CONTAINED IN THIS FACSIMILE IS CONFIDENTIAL AND IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED. IF YOU ARE NOT THE INTENDED RECIPIENT, OR THE PERSON RESPONSIBLE FOR DELIVERING IT TO THE INTENDED RECIPIENT, DO NOT USE OR DISCLOSE THIS FACSIMILE. IF YOU HAVE RECEIVED THIS FACSIMILE IN ERROR, PLEASE NOTIFY US IMMEDIATELY BY TELEPHONE AND RETURN THE ORIGINAL TO LFR LEVINE-FRICKE VIA THE U.S. POSTAL SERVICE. THANK YOU.

Comments: Following is a revised C.O.C. #5669 for project 6895.00-017. Please analyze samples GW-7-11, ~~GW-7-14~~, and ~~GW-7-16~~.

TC

## CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: <b>CX75.00.011</b>		Project Location: <b>Central Ave.</b>			Date: <b>7/15/99</b>		Serial: <b>5669</b>				
Project Name: <b>Former Calvertone</b>		Field Logbook No.: _____			Sample Event Name: <b>Soil + groundwater sample</b>		<b>5669</b>				
Sampler (Signature): <b>James R. B. L.</b>				ANALYSES				Samplers:			
SAMPLE INFORMATION (Print Clearly)											
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	EPA 8010	EPA 8015	EPA 8020	HOLD	RUSH	REMARKS
GW-9	7/15/99	15:10		1	Soil	X	X	X	X		* Please use
GW-11	↓	↓		1	↓	X	X	X	X		standard submit
GW-14	↓	↓		1	↓	X	X	X	X		standard for TPH
GW-16	↓	↓		1	↓	X	X	X	X		finger printing
GW-17	↓	↓		1	↓	X	X	X	X		
											Decoml Time
											7/19/99 Please analyze
											GW-7-11, GW-7-14, and
											GW-7-16 for EPA 8010,
											EPA 8015, and EPA 8020
											with M+BE (IHB)
RELINQUISHED BY: (Signature) <b>James R. B. L.</b>			DATE: <b>7/15/99</b>	TIME: <b>15:10</b>	RECEIVED BY: (Signature) <b>[Signature]</b>			DATE: <b>7/17/99</b>	TIME:		
RELINQUISHED BY: (Signature) _____			DATE:	TIME:	RECEIVED BY: (Signature) _____			DATE:	TIME:		
RELINQUISHED BY: (Signature) _____			DATE:	TIME:	RECEIVED BY: (Signature) _____			DATE:	TIME:		
METHOD OF SHIPMENT:			DATE:	TIME:	LAB COMMENTS:						
Sample Collector: <b>LEVINE-FRICKE-RECON</b> 1900 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 852-4500					Analytical Laboratory: <b>Curtis + Suptis</b>						



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L   R E P O R T

Prepared for:

LFR-Levine-Fricke  
1900 Powell Street  
12th Floor  
Emeryville, CA 94608

Date: 30-JUL-99  
Lab Job Number: 140507  
Project ID: 6895.00.014  
Location: Former Glovatorium

Reviewed by: Trag Belsy

Reviewed by: [Signature]

This package may be reproduced only in its entirety.

Laboratory Numbers: **140507**  
Client: **LFR-Levine-Fricke**  
Project #: **6895.00.014**  
Location: **Former Glovatorium**  
COC#: **3500**

Sampled Date: **07/16/99**  
Received Date: **07/16/99**

### **CASE NARRATIVE**

This hardcopy data package contains sample and QC results for seven soil samples, which was received from the site referenced above on July 16, 1999. Fourteen soil samples were received cold and intact and placed on hold. On July 19, 1999 Taylor Bennett took seven soils off hold for analysis. All data were faxed to Taylor Bennett on July 27, 1999.

#### **TVH (EPA 8015M):**

Bromofluorobenzene failed high for sample GW-8-12 (CT# 140507-005) due to co-elution with hydrocarbons. No other analytical problems were encountered.

#### **VOCs (EPA 8260):**

No analytical problems were encountered.



TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
140507-001	GW-1-7	49442	07/16/99	07/21/99	07/21/99	
140507-002	GW-1-8	49442	07/16/99	07/21/99	07/21/99	
140507-003	GW-8-9	49442	07/16/99	07/21/99	07/21/99	
140507-005	GW-8-12	49442	07/16/99	07/21/99	07/21/99	

Matrix: Soil

Analyte	Units	140507-001	140507-002	140507-003	140507-005
Diln Fac:		1	1	1	1
Gasoline C7-C12	mg/Kg	<1	<1	<1	8.2YH
Stoddard Solvent	mg/Kg	<1	<1	<1	4.8
Surrogate					
Trifluorotoluene	%REC	107	106	106	106
Bromofluorobenzene	%REC	113	115	112	162 *

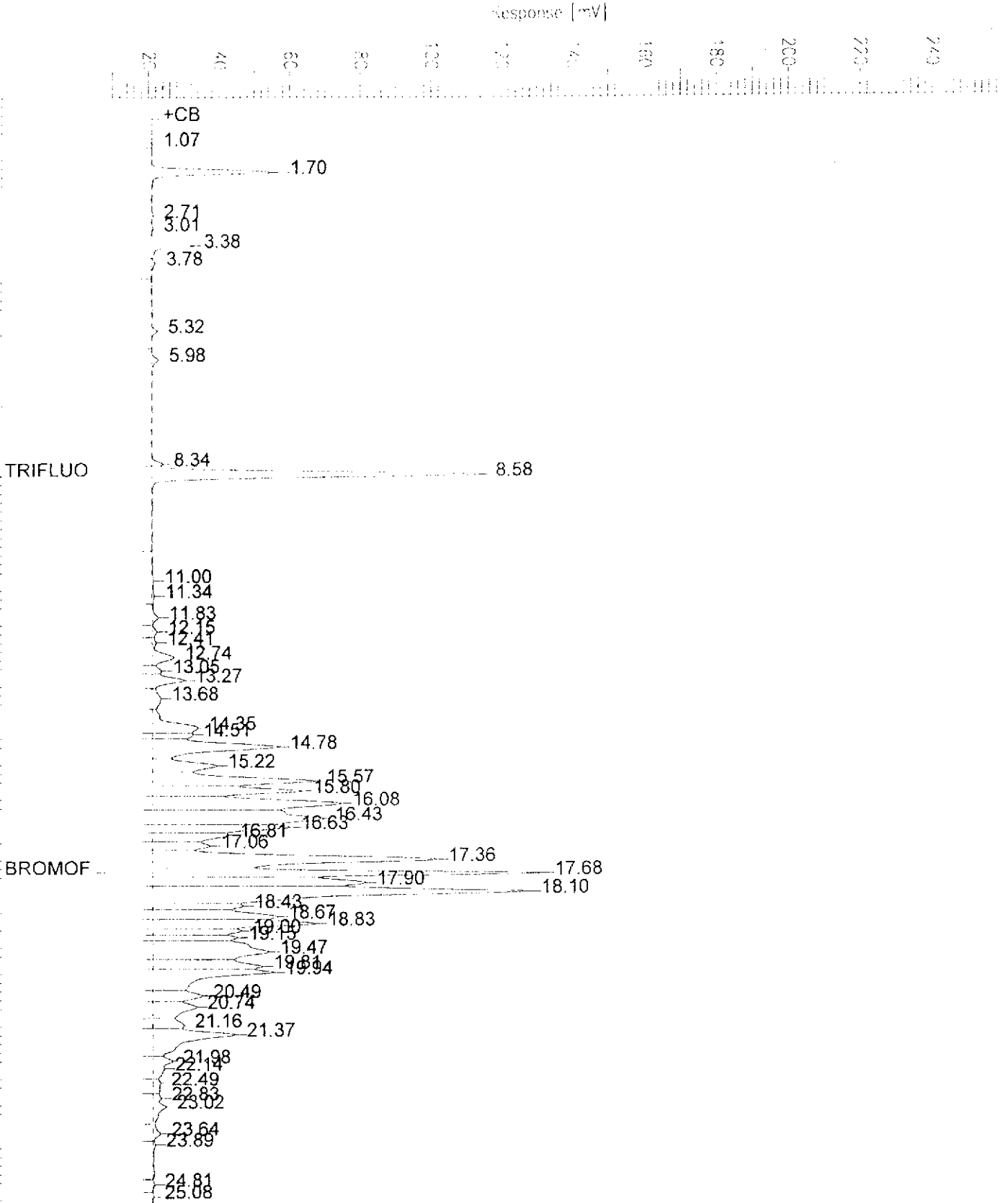
\* Values outside of QC limits

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

Sample Name : 140507-005,49442,+stod/mtbe  
fileName : G:\GC05\DATA\201G027.raw  
Method : TVHBTXE  
Start Time : 0.00 min  
End Time : 26.80 min  
Plot Offset : 8 mV

Sample # :  
Date : 7/21/99 10:14 AM  
Time of Injection: 7/21/99 09:46 AM  
Low Point : 8.47 mV  
High Point : 258.47 mV  
Plot Scale: 250.0 mV



Sample Name : ms,qc03156,99ws7780,49442

Sample #: gas

Page 1 of 1

FileName : G:\GC05\DATA\201G035.raw

Date : 7/21/99 03:36 PM

Method : TVHBTXE

Time of Injection: 7/21/99 03:08 PM

Start Time : 0.00 min

End Time : 26.80 min

Low Point : 6.12 mV

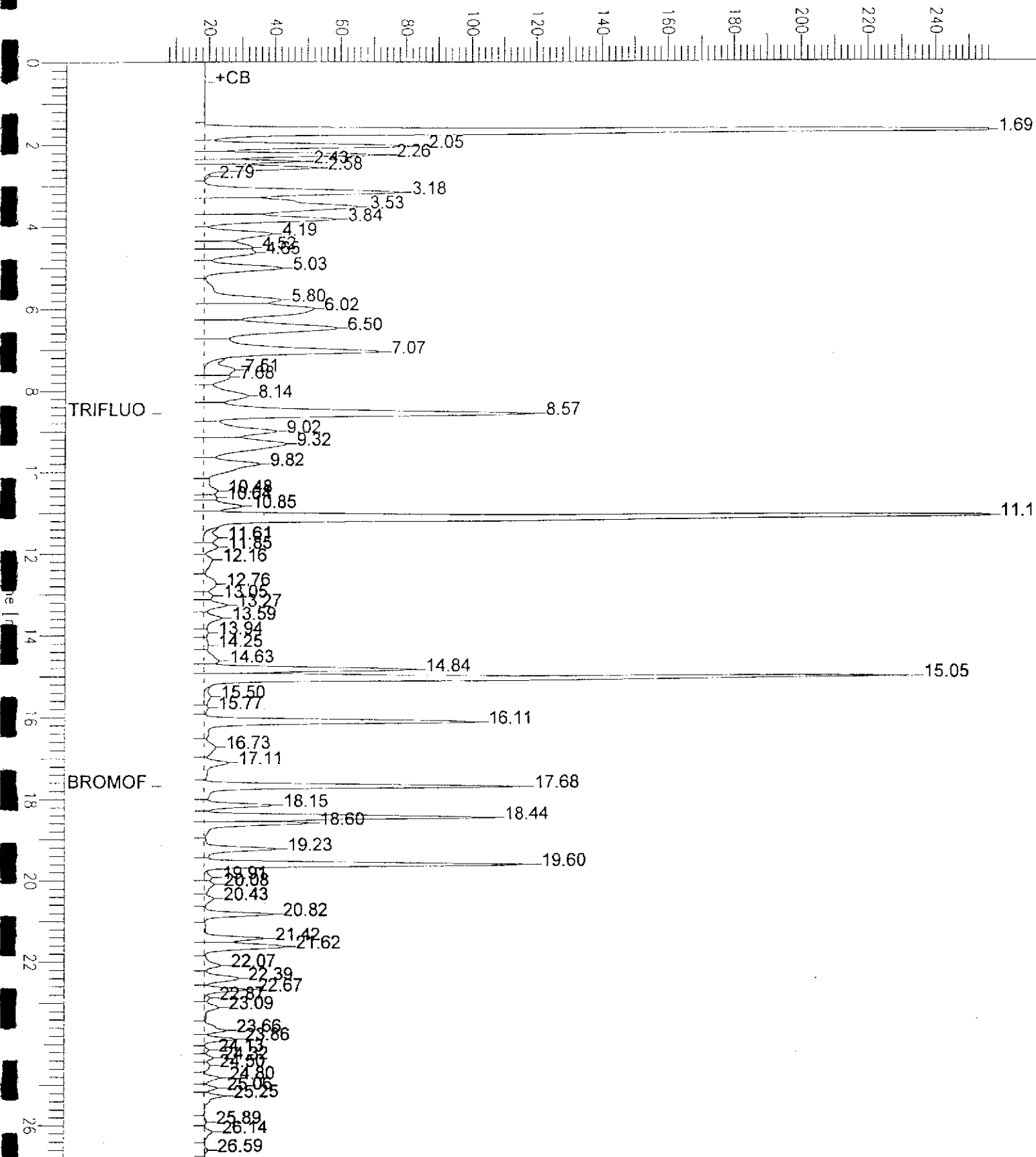
High Point : 256.12 mV

Gain Factor: -1.0

Plot Offset: 6 mV

Plot Scale: 250.0 mV

Response [mV]







TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
140507-008	GW-4-9	49442	07/16/99	07/21/99	07/21/99	
140507-010	GW-5A-9	49442	07/16/99	07/21/99	07/21/99	
140507-013	GW-6A-10.0	49442	07/16/99	07/21/99	07/21/99	

Matrix: Soil

Analyte	Units	140507-008	140507-010	140507-013
Diln Fac:		1	1	1
Gasoline C7-C12	mg/Kg	<1	<1	<1
Stoddard Solvent	mg/Kg	<1	<1	<1
Surrogates				
Trifluorotoluene	%REC	105	106	112
Bromofluorobenzene	%REC	109	118	118



BTXE

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
140507-001	GW-1-7	49442	07/16/99	07/21/99	07/21/99	
140507-002	GW-1-8	49442	07/16/99	07/21/99	07/21/99	
140507-003	GW-8-9	49442	07/16/99	07/21/99	07/21/99	
140507-005	GW-8-12	49442	07/16/99	07/21/99	07/21/99	

Matrix: Soil

Analyte	Units	140507-001	140507-002	140507-003	140507-005
Diln Fac:		1	1	1	1
MTBE	ug/Kg	<20	<20	<20	<20
Benzene	ug/Kg	<5	<5	<5	<5
Toluene	ug/Kg	<5	<5	<5	<5
Ethylbenzene	ug/Kg	<5	<5	<5	<5
m,p-Xylenes	ug/Kg	<5	<5	<5	<5
o-Xylene	ug/Kg	<5	<5	<5	140 C
Surrogate					
Trifluorotoluene	%REC	96	96	95	96
Bromofluorobenzene	%REC	101	98	99	119

C: Presence of this compound confirmed by second column,  
however, the confirmation concentration differed from the reported  
result by more than a factor of two



BTXE

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
140507-008	GW-4-9	49442	07/16/99	07/21/99	07/21/99	
140507-010	GW-5A-9	49442	07/16/99	07/21/99	07/21/99	
140507-013	GW-6A-10.0	49442	07/16/99	07/21/99	07/21/99	

Matrix: Soil

Analyte	Units	140507-008	140507-010	140507-013
Diln Fac:		1	1	1
MTBE	ug/Kg	<20	<20	<20
Benzene	ug/Kg	<5	<5	<5
Toluene	ug/Kg	<5	<5	<5
Ethylbenzene	ug/Kg	<5	<5	<5
m,p-Xylenes	ug/Kg	<5	<5	<5
o-Xylene	ug/Kg	<5	<5	<5
Surrogate				
Trifluorotoluene	%REC	94	95	98
Bromofluorobenzene	%REC	96	100	102

Lab #: 140507

BATCH QC REPORT



TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Soil  
Batch#: 49442  
Units: mg/Kg  
Diln Fac: 1

Prep Date: 07/20/99  
Analysis Date: 07/20/99

MB Lab ID: QC03153

Analyte	Result
Gasoline C7-C12	<1.0
Stoddard Solvent	<1.0

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	103	62-143
Bromofluorobenzene	114	59-150

Lab #: 140507

BATCH QC REPORT



BTXE

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Soil  
Batch#: 49442  
Units: ug/Kg  
Diln Fac: 1

Prep Date: 07/20/99  
Analysis Date: 07/20/99

MB Lab ID: QC03153

Analyte	Result	
MTBE	<20	
Benzene	<5.0	
Toluene	<5.0	
Ethylbenzene	<5.0	
m,p-Xylenes	<5.0	
o-Xylene	<5.0	

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	89	59-134
Bromofluorobenzene	93	38-150



## TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

## LABORATORY CONTROL SAMPLE

Matrix: Soil  
Batch#: 49442  
Units: mg/Kg  
Diln Fac: 1

Prep Date: 07/20/99  
Analysis Date: 07/20/99

LCS Lab ID: QC03154

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	10.38	10	104	77-122
Surrogate	%Rec	Limits		
Trifluorotoluene	130	62-143		
Bromofluorobenzene	108	59-150		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke	Analysis Method: EPA 8015M
Project#: 6895.00.014	Prep Method: EPA 5030
Location: Former Glovatorium	

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ	Sample Date: 07/15/99
Lab ID: 140511-004	Received Date: 07/16/99
Matrix: Soil	Prep Date: 07/21/99
Batch#: 49442	Analysis Date: 07/21/99
Units: mg/Kg	
Diln Fac: 1	

MS Lab ID: QC03156

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline C7-C12	10	<1	7.19	72	55-134
Surrogate	%Rec	Limits			
Trifluorotoluene	128	62-143			
Bromofluorobenzene	114	59-150			

MSD Lab ID: QC03157

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	10	7.69	77	55-134	7	30
Surrogate	%Rec	Limits				
Trifluorotoluene	129	62-143				
Bromofluorobenzene	114	59-150				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits

Lab #: 140507

BATCH QC REPORT



Curtis & Tompkins, Ltd.  
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BTXE

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil  
Batch#: 49442  
Units: ug/Kg  
Diln Fac: 1

Prep Date: 07/20/99  
Analysis Date: 07/20/99

LCS Lab ID: QC03155

Analyte	Result	Spike Added	%Rec #	Limits
MTBE	99.25	100	99	59-135
Benzene	103.3	100	103	67-116
Toluene	101.3	100	101	77-122
Ethylbenzene	106.2	100	106	70-124
m,p-Xylenes	218.9	200	109	75-125
o-Xylene	110.5	100	110	75-126
Surrogate	%Rec	Limits		
Trifluorotoluene	95	59-134		
Bromofluorobenzene	97	38-150		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 6 outside limits



Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: GW-1-7  
Lab ID: 140507-001  
Matrix: Soil  
Batch#: 49582  
Units: ug/Kg  
Diln Fac: 4.545

Sampled: 07/16/99  
Received: 07/16/99  
Extracted: 07/28/99  
Analyzed: 07/28/99

Analyte	Result	Reporting Limit
Chloromethane	ND	45
Vinyl Chloride	ND	45
Bromomethane	ND	45
Chloroethane	ND	45
Trichlorofluoromethane	ND	23
Freon 113	ND	23
1,1-Dichloroethene	ND	23
Methylene Chloride	ND	91
trans-1,2-Dichloroethene	ND	23
1,1-Dichloroethane	ND	23
cis-1,2-Dichloroethene	ND	23
Chloroform	ND	23
1,1,1-Trichloroethane	ND	23
Carbon Tetrachloride	ND	23
1,2-Dichloroethane	ND	23
Trichloroethene	ND	23
1,2-Dichloropropane	ND	23
Bromodichloromethane	ND	23
cis-1,3-Dichloropropene	ND	23
trans-1,3-Dichloropropene	ND	23
1,1,2-Trichloroethane	ND	23
Tetrachloroethene	710	23
Dibromochloromethane	ND	23
Chlorobenzene	ND	23
Bromoform	ND	45
1,1,2,2-Tetrachloroethane	ND	23
1,3-Dichlorobenzene	ND	23
1,4-Dichlorobenzene	ND	23
1,2-Dichlorobenzene	ND	23
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	116	80-129
Toluene-d8	102	88-111
Bromofluorobenzene	104	76-128

Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: GW-1-8  
Lab ID: 140507-002  
Matrix: Soil  
Batch#: 49582  
Units: ug/Kg  
Diln Fac: 0.9615

Sampled: 07/16/99  
Received: 07/16/99  
Extracted: 07/28/99  
Analyzed: 07/28/99

Analyte	Result	Reporting Limit
Chloromethane	ND	9.6
Vinyl Chloride	ND	9.6
Bromomethane	ND	9.6
Chloroethane	ND	9.6
Trichlorofluoromethane	ND	4.8
Freon 113	ND	4.8
1,1-Dichloroethene	ND	4.8
Methylene Chloride	ND	19
trans-1,2-Dichloroethene	ND	4.8
1,1-Dichloroethane	ND	4.8
cis-1,2-Dichloroethene	ND	4.8
Chloroform	ND	4.8
1,1,1-Trichloroethane	ND	4.8
Carbon Tetrachloride	ND	4.8
1,2-Dichloroethane	ND	4.8
Trichloroethene	ND	4.8
1,2-Dichloropropane	ND	4.8
Bromodichloromethane	ND	4.8
cis-1,3-Dichloropropene	ND	4.8
trans-1,3-Dichloropropene	ND	4.8
1,1,2-Trichloroethane	ND	4.8
Tetrachloroethene	140	4.8
Dibromochloromethane	ND	4.8
Chlorobenzene	ND	4.8
Bromoform	ND	9.6
1,1,2,2-Tetrachloroethane	ND	4.8
1,3-Dichlorobenzene	ND	4.8
1,4-Dichlorobenzene	ND	4.8
1,2-Dichlorobenzene	ND	4.8

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	117	80-129
Toluene-d8	102	88-111
Bromofluorobenzene	104	76-128

Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: GW-8-9  
Lab ID: 140507-003  
Matrix: Soil  
Batch#: 49557  
Units: ug/Kg  
Diln Fac: 0.9259

Sampled: 07/16/99  
Received: 07/16/99  
Extracted: 07/27/99  
Analyzed: 07/27/99

Analyte	Result	Reporting Limit
Chloromethane	ND	9.3
Vinyl Chloride	ND	9.3
Bromomethane	ND	9.3
Chloroethane	ND	9.3
Trichlorofluoromethane	ND	4.6
Freon 113	ND	4.6
1,1-Dichloroethene	ND	4.6
Methylene Chloride	ND	19
trans-1,2-Dichloroethene	ND	4.6
1,1-Dichloroethane	ND	4.6
cis-1,2-Dichloroethene	ND	4.6
Chloroform	ND	4.6
1,1,1-Trichloroethane	ND	4.6
Carbon Tetrachloride	ND	4.6
1,2-Dichloroethane	ND	4.6
Trichloroethene	6.1	4.6
1,2-Dichloropropane	ND	4.6
Bromodichloromethane	ND	4.6
cis-1,3-Dichloropropene	ND	4.6
trans-1,3-Dichloropropene	ND	4.6
1,1,2-Trichloroethane	ND	4.6
Tetrachloroethene	50	4.6
Dibromochloromethane	ND	4.6
Chlorobenzene	ND	4.6
Bromoform	ND	9.3
1,1,2,2-Tetrachloroethane	ND	4.6
1,3-Dichlorobenzene	ND	4.6
1,4-Dichlorobenzene	ND	4.6
1,2-Dichlorobenzene	ND	4.6

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	113	80-129
Toluene-d8	102	88-111
Bromofluorobenzene	101	76-128



Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: GW-8-12  
Lab ID: 140507-005  
Matrix: Soil  
Batch#: 49557  
Units: ug/Kg  
Diln Fac: 1

Sampled: 07/16/99  
Received: 07/16/99  
Extracted: 07/28/99  
Analyzed: 07/28/99

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Trichloroethene	13	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Bromoform	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	110	80-129
Toluene-d8	102	88-111
Bromofluorobenzene	108	76-128



Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: GW-4-9  
Lab ID: 140507-008  
Matrix: Soil  
Batch#: 49557  
Units: ug/Kg  
Diln Fac: 0.9259

Sampled: 07/16/99  
Received: 07/16/99  
Extracted: 07/28/99  
Analyzed: 07/28/99

Analyte	Result	Reporting Limit
Chloromethane	ND	9.3
Vinyl Chloride	ND	9.3
Bromomethane	ND	9.3
Chloroethane	ND	9.3
Trichlorofluoromethane	ND	4.6
Freon 113	ND	4.6
1,1-Dichloroethene	ND	4.6
Methylene Chloride	ND	19
trans-1,2-Dichloroethene	ND	4.6
1,1-Dichloroethane	ND	4.6
cis-1,2-Dichloroethene	ND	4.6
Chloroform	ND	4.6
1,1,1-Trichloroethane	ND	4.6
Carbon Tetrachloride	ND	4.6
1,2-Dichloroethane	ND	4.6
Trichloroethene	ND	4.6
1,2-Dichloropropane	ND	4.6
Bromodichloromethane	ND	4.6
cis-1,3-Dichloropropene	ND	4.6
trans-1,3-Dichloropropene	ND	4.6
1,1,2-Trichloroethane	ND	4.6
Tetrachloroethene	ND	4.6
Dibromochloromethane	ND	4.6
Chlorobenzene	ND	4.6
Bromoform	ND	9.3
1,1,2,2-Tetrachloroethane	ND	4.6
1,3-Dichlorobenzene	ND	4.6
1,4-Dichlorobenzene	ND	4.6
1,2-Dichlorobenzene	ND	4.6

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	114	80-129
Toluene-d8	102	88-111
Bromofluorobenzene	105	76-128



Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: GW-5A-9  
Lab ID: 140507-010  
Matrix: Soil  
Batch#: 49557  
Units: ug/Kg  
Diln Fac: 1

Sampled: 07/16/99  
Received: 07/16/99  
Extracted: 07/28/99  
Analyzed: 07/28/99

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Bromoform	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	114	80-129
Toluene-d8	101	88-111
Bromofluorobenzene	104	76-128



Halogenated Volatile Organics  
EPA 8010 Analyte List

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

Field ID: GW-6A-10.0  
Lab ID: 140507-013  
Matrix: Soil  
Batch#: 49557  
Units: ug/Kg  
Diln Fac: 1.02

Sampled: 07/16/99  
Received: 07/16/99  
Extracted: 07/28/99  
Analyzed: 07/28/99

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.1
Freon 113	ND	5.1
1,1-Dichloroethene	ND	5.1
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	5.1
1,1-Dichloroethane	ND	5.1
cis-1,2-Dichloroethene	ND	5.1
Chloroform	ND	5.1
1,1,1-Trichloroethane	ND	5.1
Carbon Tetrachloride	ND	5.1
1,2-Dichloroethane	ND	5.1
Trichloroethene	ND	5.1
1,2-Dichloropropane	ND	5.1
Bromodichloromethane	ND	5.1
cis-1,3-Dichloropropene	ND	5.1
trans-1,3-Dichloropropene	ND	5.1
1,1,2-Trichloroethane	ND	5.1
Tetrachloroethene	ND	5.1
Dibromochloromethane	ND	5.1
Chlorobenzene	ND	5.1
Bromoform	ND	10
1,1,2,2-Tetrachloroethane	ND	5.1
1,3-Dichlorobenzene	ND	5.1
1,4-Dichlorobenzene	ND	5.1
1,2-Dichlorobenzene	ND	5.1

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	114	80-129
Toluene-d8	100	88-111
Bromofluorobenzene	106	76-128

Lab #: 140507

## BATCH QC REPORT

Curtis & Tompkins, Ltd.  
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EPA 8010 Analyte ListClient: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former GlovatoriumAnalysis Method: EPA 8260A  
Prep Method: EPA 5030

## METHOD BLANK

Matrix: Soil  
Batch#: 49557  
Units: ug/Kg  
Diln Fac: 1Prep Date: 07/27/99  
Analysis Date: 07/27/99

MB Lab ID: QC03596

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Bromoform	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	114	80-129
Toluene-d8	101	88-111
Bromofluorobenzene	100	76-128



Lab #: 140507

## BATCH QC REPORT

Curtis & Tompkins, Ltd.  
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EPA 8010 Analyte ListClient: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former GlovatoriumAnalysis Method: EPA 8260A  
Prep Method: EPA 5030

## METHOD BLANK

Matrix: Soil  
Batch#: 49582  
Units: ug/Kg  
Diln Fac: 1Prep Date: 07/28/99  
Analysis Date: 07/28/99

MB Lab ID: QC03691

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Bromoform	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	119	80-129
Toluene-d8	99	88-111
Bromofluorobenzene	101	76-128

Lab #: 140507

BATCH QC REPORT



Curtis & Tompkins, Ltd.  
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Halogenated Volatile Organics

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil  
Batch#: 49557  
Units: ug/Kg  
Diln Fac: 1

Prep Date: 07/27/99  
Analysis Date: 07/27/99

LCS Lab ID: QC03594

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	53.1	50	106	63-144
Trichloroethene	47.75	50	96	70-131
Chlorobenzene	48.53	50	97	74-126
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	108	80-129		
Toluene-d8	99	88-111		
Bromofluorobenzene	101	76-128		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 3 outside limits

Lab #: 140507

BATCH QC REPORT



Halogenated Volatile Organics

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil  
Batch#: 49582  
Units: ug/Kg  
Diln Fac: 1

Prep Date: 07/28/99  
Analysis Date: 07/28/99

LCS Lab ID: QC03690

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	50.62	50	101	63-144
Trichloroethene	46.87	50	94	70-131
Chlorobenzene	47.37	50	95	74-126
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	117	80-129		
Toluene-d8	101	88-111		
Bromofluorobenzene	102	76-128		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 3 outside limits



Halogenated Volatile Organics

Client: LFR-Levine-Fricke  
Project#: 6895.00.014  
Location: Former Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: GW-8-9  
Lab ID: 140507-003  
Matrix: Soil  
Batch#: 49557  
Units: ug/Kg  
Diln Fac: 0.9615

Sample Date: 07/16/99  
Received Date: 07/16/99  
Prep Date: 07/27/99  
Analysis Date: 07/27/99

MS Lab ID: QC03619

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	48.08	<4.808	46.14	96	51-137
Trichloroethene	48.08	5.057	47.58	86	33-153
Chlorobenzene	48.08	<4.808	41.74	87	39-132
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	112	80-129			
Toluene-d8	102	88-111			
Bromofluorobenzene	104	76-128			

MSD Lab ID: QC03620

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	48.08	46.56	97	51-137	1	35
Trichloroethene	48.08	48	87	33-153	1	44
Chlorobenzene	48.08	41.21	86	39-132	1	47
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	115	80-129				
Toluene-d8	102	88-111				
Bromofluorobenzene	100	76-128				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits



Halogenated Volatile Organics

Client: LFR-Levine-Fricke	Analysis Method: EPA 8260A
Project#: 6895.00.014	Prep Method: EPA 5030
Location: Former Glovatorium	

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: GW-1-8	Sample Date: 07/16/99
Lab ID: 140507-002	Received Date: 07/16/99
Matrix: Soil	Prep Date: 07/28/99
Batch#: 49582	Analysis Date: 07/28/99
Units: ug/Kg	
Diln Fac: 0.9804	

MS Lab ID: QC03718

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	49.02	<4.902	58.5	119	51-137
Trichloroethene	49.02	0.9005	50.53	101	33-153
Chlorobenzene	49.02	<4.902	45.89	94	39-132
Surrogate	%Rec	Limits			
1,2-Dichloroethane-d4	119	80-129			
Toluene-d8	101	88-111			
Bromofluorobenzene	101	76-128			

MSD Lab ID: QC03719

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	49.02	48.54	99	51-137	19	35
Trichloroethene	49.02	38.84	77	33-153	26	44
Chlorobenzene	49.02	33.65	69	39-132	31	47
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	116	80-129				
Toluene-d8	101	88-111				
Bromofluorobenzene	103	76-128				

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 3 outside limits

Spike Recovery: 0 out of 6 outside limits

**CHAIN OF CUSTODY / ANALYSES REQUEST FORM**

Project No.: <b>6895.00.014</b>			Project Location: <b>OAKLAND, CA</b>			Date: <b>7/16/99</b>			Serial No.: <b>N<sup>o</sup> 35.0</b>					
Project Name: <b>GLOVATORIUM</b>			Field Logbook No.: <b>-</b>											
Sampler (Signature): <b>CRJ-V</b>						ANALYSES						Samplers: <b>CW</b>		
SAMPLES														
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CON-TAINERS	SAMPLE TYPE	VIC 2010	THH 8015	887XTHH 2020				HOLD	RUSH	REMARKS
GW-1-7	7/16/99	0900	X	1	Soil	X	X	X				X		* Standard solvent
GW-1-8	7/16/99	0910	X	1	Soil	X	X	X						Standard BCLTH
GW-8-9	7/16/99	0950	X	1	Soil	X	X	X						Fluoroplastic
GW-8-9.5	7/16/99	0955		1	Soil	X	X	X						
GW-8-12	7/16/99	1005	X	1	Soil	X	X	X						
GW-8-19	7/16/99	1025		1	Soil	X	X	X						
GW-4-8.5	7/16/99	1340		1	Soil	X	X	X						NORMAL TURKISH
GW-4-9	7/16/99	1345	X	1	Soil	X	X	X						7/19/99 (THB) Analyze GW-1-7,
GW-4-10	7/16/99	1350		1	Soil	X	X	X						GW-1-8, GW-8-9, GW-8-12,
GW-5A-9	7/16/99	1450	X	1	Soil	X	X	X						GW-4-9, GW-5A-9, GW-6A-10
GW-5A-7.5	7/16/99	1455		1	Soil	X	X	X						
GW-5A-10.0	7/16/99	1500		1	Soil	X	X	X						
GW-6A-10.0	7/16/99	1600	X	1	Soil	X	X	X						
GW-6A-12.5	7/16/99	1610		1	Soil	X	X	X						
RELINQUISHED BY: (Signature) <b>CRJ-V</b>			DATE: <b>7/16/99</b>	TIME: <b>15:15</b>	RECEIVED BY: (Signature) <b>Taylor Bennett</b>			DATE: <b>7/16/99</b>	TIME: <b>16:45</b>					
RELINQUISHED BY: (Signature) <b>Taylor Bennett</b>			DATE: <b>7/16/99</b>	TIME: <b>17:15</b>	RECEIVED BY: (Signature) <b>[Signature]</b>			DATE: <b>7/16/99</b>	TIME: <b>17:15</b>					
RELINQUISHED BY: (Signature)			DATE:	TIME:	RECEIVED BY: (Signature)			DATE:	TIME:					
METHOD OF SHIPMENT:			DATE:	TIME:	LAB COMMENTS:									
Sample Collector: <b>LEVINE•FRICKE•RECON</b> 1900 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 652-4500					Analytical Laboratory: <b>Curtis + Tomkins</b>									



1900 Powell Street, 12th Floor  
Emeryville, California 94608-1827  
(510) 652-4500, FAX (510) 652-4906

FAX TRANSMISSION: This cover page plus 1 page.

Date	July 19, 1999		
Time	6:37PM		
From	Taylor Bennett		

Deliver To	Tracy Babjar		
Name of Firm	Curtis & Tompkins		
FAX Number	486-0532	Project No.	6895.00-017

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**Comments:** Following is a revised C.O.C. #35X0 (X represents illegible digit printed on the C.O.C.) for project 6895.00-017. Please analyze samples GW-1-7, GW-1-8, GW-8-9, GW-8-12, GW-4-9, GW-5A-9, and GW-6A-10, as indicated on the C.O.C.

## CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: <b>6895.00.014</b>			Project Location: <b>OAKLAND, CA</b>			Date: <b>7/16/99</b>			Serial No.: <b>N<sup>o</sup> 350</b>					
Project Name: <b>GLOVATORUM</b>			Field Logbook No.: <b>-</b>											
Sampler (Signature): <b>CRH.V.</b>						ANALYSES						Samplers: <b>CW</b>		
SAMPLES														
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	VOC <sup>2</sup>	2010	TPH <sup>2</sup>	8015	SEPTIMIDE	2020	HOLD	RUSH	REMARKS
GW-1-7	7/16/99	0900	X	1	Soil	X	X	X				X		Include * Standard Solvent Standard for TPH Fluo-pyrid  Normal Turbidity 7/19/99 (THB) Analyze GW-1-7, GW-1-8, GW-8-9, GW-8-12, GW-4-9, GW-5A-9, GW-6A-10
GW-1-8	7/16/99	0910	X	1	Soil	X	X	X						
GW-8-9	7/16/99	0950	X	1	Soil	X	X	X						
GW-8-9.5	7/16/99	0955		1	Soil	X	X	X						
GW-8-12	7/16/99	1005	X	1	Soil	X	X	X						
GW-8-19	7/16/99	1025		1	Soil	X	X	X						
GW-4-8.5	7/16/99	1340		1	Soil	X	X	X						
GW-4-9	7/16/99	1345	X	1	Soil	X	X	X						
GW-4-10	7/16/99	1350		1	Soil	X	X	X						
GW-5A-9	7/16/99	1450	X	1	Soil	X	X	X						
GW-5A-7.5	7/16/99	1455		1	Soil	X	X	X						
GW-5A-10.0	7/16/99	1500		1	Soil	X	X	X						
GW-6A-10.0	7/16/99	1600	X	1	Soil	X	X	X						
GW-6A-17.5	7/16/99	1610		1	Soil	X	X	X						
RELINQUISHED BY: (Signature) <b>CRH.V.</b>			DATE: <b>7/16/99</b>	TIME: <b>15:45</b>	RECEIVED BY: (Signature) <b>Taylor Bennett</b>			DATE: <b>7/16/99</b>	TIME: <b>16:45</b>					
RELINQUISHED BY: (Signature) <b>Taylor Bennett</b>			DATE: <b>7/16/99</b>	TIME: <b>17:15</b>	RECEIVED BY: (Signature) <b>[Signature]</b>			DATE: <b>7/16/99</b>	TIME: <b>17:15</b>					
RELINQUISHED BY: (Signature)			DATE	TIME	RECEIVED BY: (Signature)			DATE	TIME					
METHOD OF SHIPMENT:			DATE	TIME	LAB COMMENTS:									
Sample Collector: <b>LEVINE•FRICKE•RECON</b> 1900 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 652-4500					Analytical Laboratory: <b>Curtis + Tomkins</b>									





Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L   R E P O R T

Prepared for:

LFR-Levine-Fricke  
1900 Powell Street  
12th Floor  
Emeryville, CA 94608

Date: 09-SEP-99      8/27/99  
Lab Job Number: 141186  
Project ID: 6895.00-018  
Location: Glovatorium

Reviewed by: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

This package may be reproduced only in its entirety.

Laboratory Number: 141186  
Client: Levine-Fricke-Recon  
Project#: 6895.00-018  
Location: Glovatorium  
COC#: 2281

Receipt Date: 08/27/99

### CASE NARRATIVE

This hardcopy data package contains sample and QC results for three water samples which were received from the site referenced above on August 27, 1999. All samples were received cold and intact. The trip blank was placed on hold per request on the chain of custody. All data were faxed to Taylor Bennett on September 09, 1999.

TVH/BTXE (EPA 8015M/8021B): No analytical problems were encountered.

VOC (EPA 8260): No analytical problems were encountered.



TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
Project#: 6895.00-018  
Location: Glovatorium

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
141186-003	GW-6A-B	50292	08/27/99	09/01/99	09/01/99	
141186-005	GW-106A-D	50292	08/27/99	09/01/99	09/01/99	
141186-007	GW-5-B	50292	08/27/99	09/01/99	09/01/99	

Matrix: Water

Analyte	Units	141186-003	141186-005	141186-007
Diln Fac:		1	1	1
Gasoline C7-C12	ug/L	54 Y	57 Y	<50
Stoddard Solvent	ug/L	<50	<50	<50
Surrogate				
Trifluorotoluene	%REC	90	88	91
Bromofluorobenzene	%REC	92	90	90

Y: Sample exhibits fuel pattern which does not resemble standard

# Chromatogram

Sample Name : 141186-003,50292

Sample #:

Page 1 of 1

File Name : G:\GC05\DATA\243G027.raw

Date : 9/1/99 06:30 AM

Method : TVHBTXE

Time of Injection: 9/1/99 06:03 AM

Run Time : 0.00 min

End Time : 26.80 min

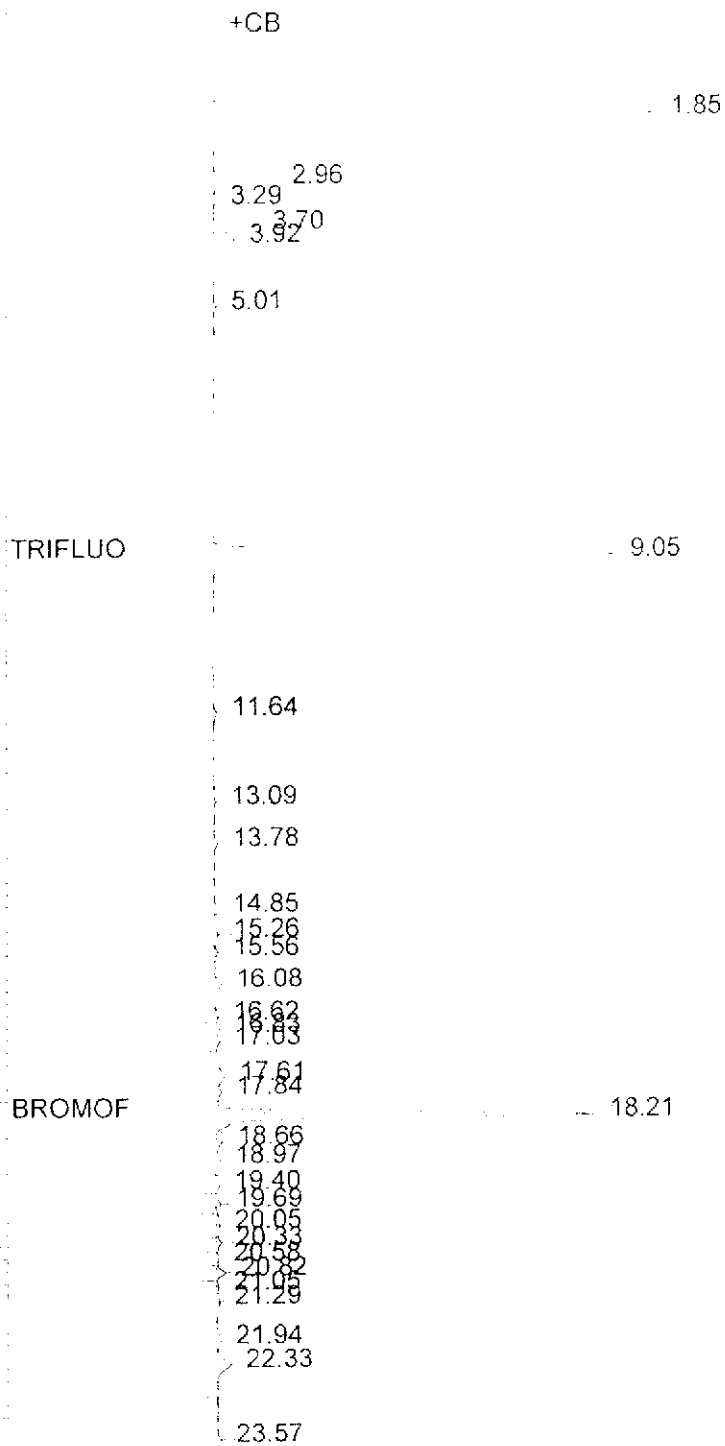
Low Point : 14.25 mV

High Point : 264.25 mV

Scale Factor: -1.0

Plot Offset: 14 mV

Plot Scale: 250.0 mV

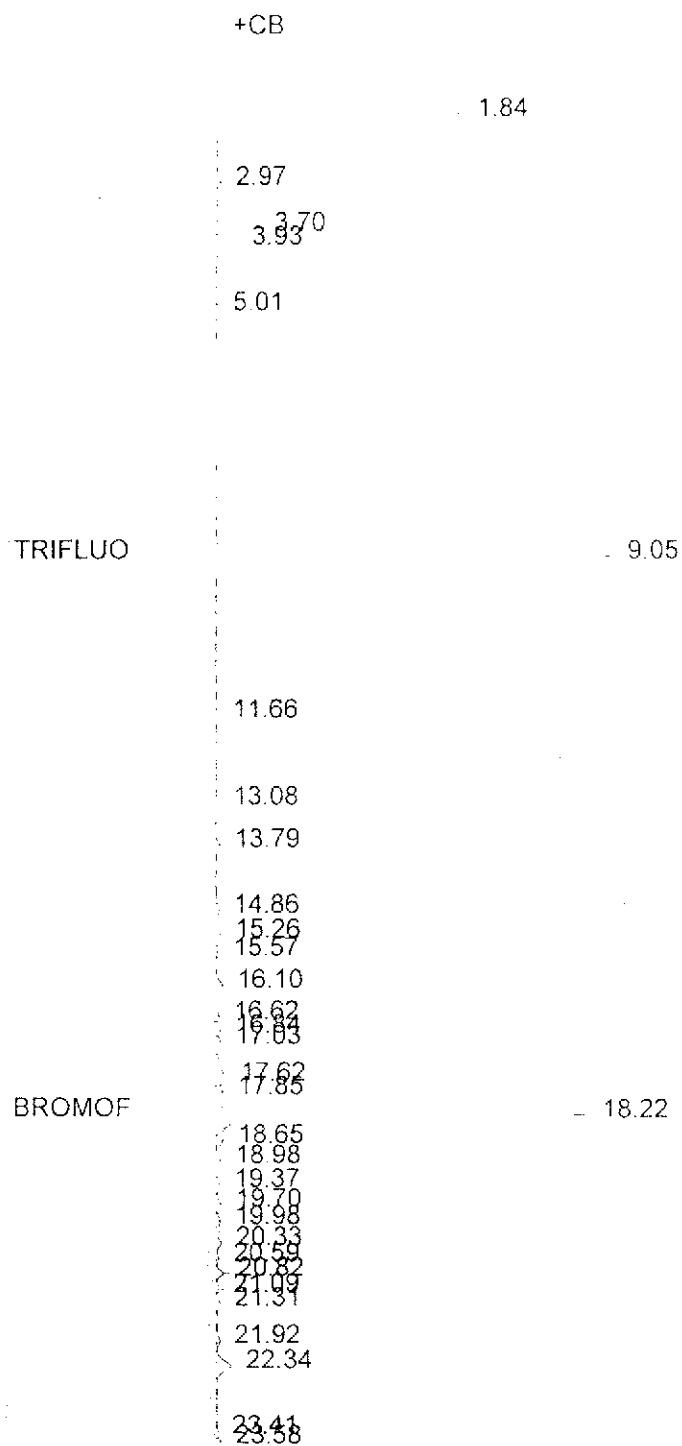


# Chromatogram

Sample Name : 141186-005.50292  
FileName : G:\GC05\DATA\243G028.raw  
Method : TVHBTXE  
Time : 0.00 min  
Scale Factor: -1.0

End Time : 26.80 min  
Plot Offset: 14 mV

Sample #:  
Date : 9/1/99 07:13 AM  
Time of Injection: 9/1/99 06:46 AM  
Low Point : 14.25 mV  
Plot Scale: 250.0 mV  
High Point : 264.25 mV



Sample Name : CCV/LCS, QC06427, 99WS7998, 50292

Sample #: GAS

Page 1 of 1

FileName : G:\GC05\DATA\243G011.raw

Date : 8/31/99 07:03 PM

Method : TVHBTXE

Time of Injection: 8/31/99 06:36 PM

Start Time : 0.00 min

End Time : 26.80 min

Low Point : 10.76 mV

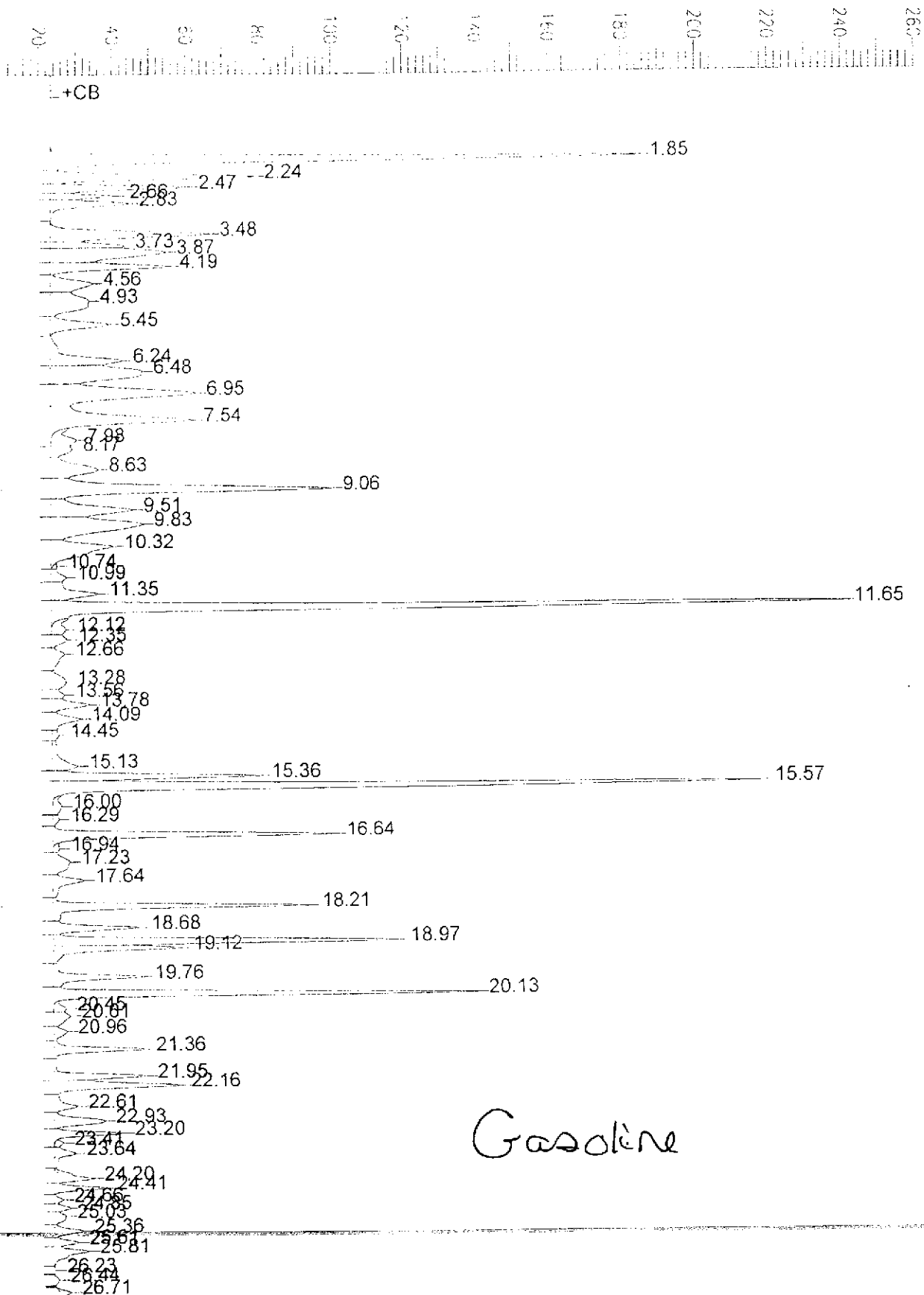
High Point : 260.76 mV

Gain Factor: -1.0

Plot Offset: 11 mV

Plot Scale: 250.0 mV

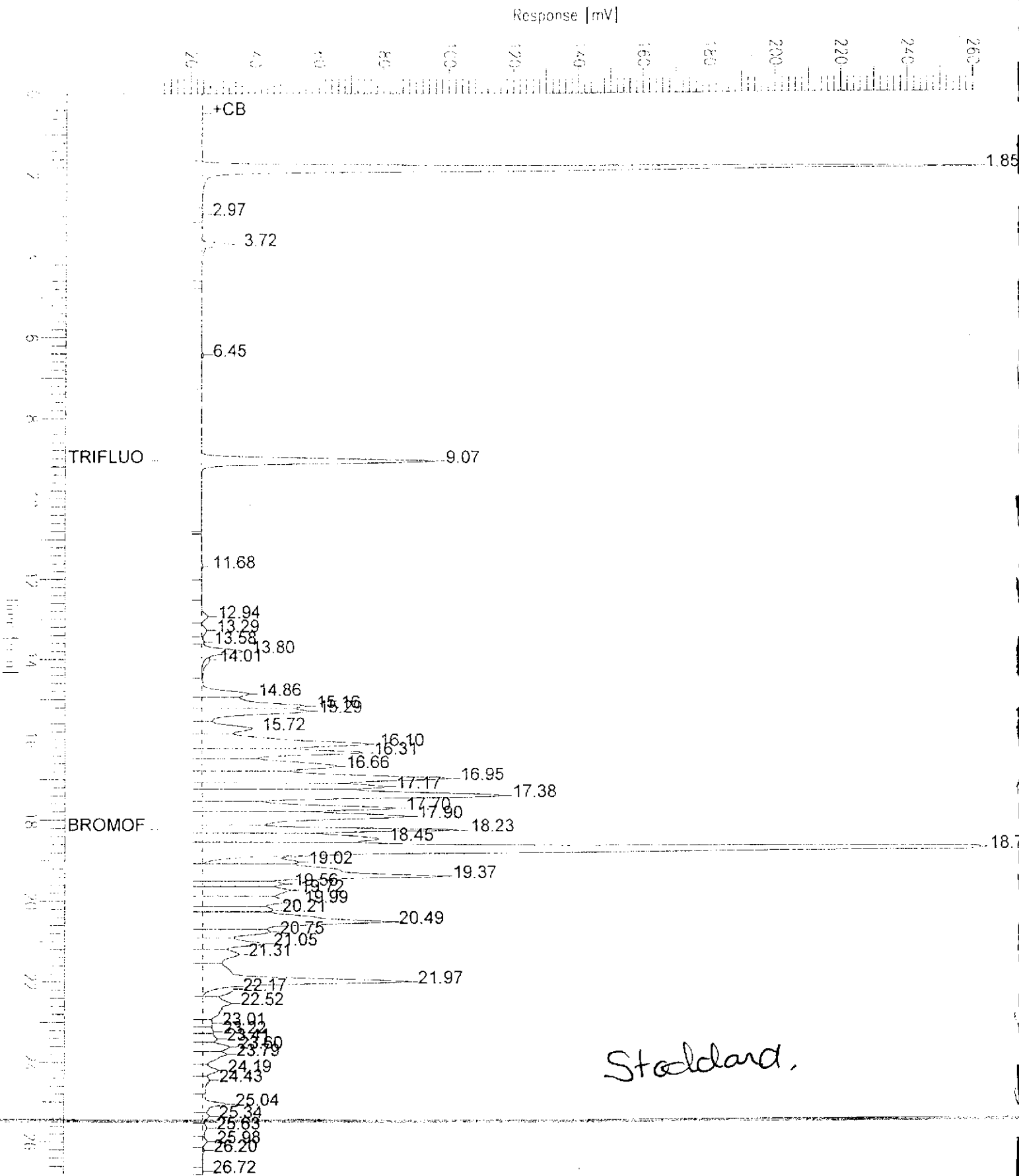
Response [mV]



Gasoline

Sample Name : CCV,99WS7997,50292  
FileName : G:\GC05\DATA\243G012.raw  
Method : TVHBTXE  
Start Time : 0.00 min  
Gain Factor : -1.0

Sample #: STODDARD  
Date : 8/31/99 09:50 PM  
Time of Injection: 8/31/99 07:18 PM  
Low Point : 10.98 mV  
Plot Scale: 250.0 mV  
End Time : 26.80 min  
Plot Offset: 11 mV  
High Point : 260.98 mV





BTXE

Client: LFR-Levine-Fricke  
Project#: 6895.00-018  
Location: Glovatorium

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
141186-003	GW-6A-B	50292	08/27/99	09/01/99	09/01/99	
141186-005	GW-106A-D	50292	08/27/99	09/01/99	09/01/99	
141186-007	GW-5-B	50292	08/27/99	09/01/99	09/01/99	

Matrix: Water

Analyte	Units	141186-003	141186-005	141186-007
Diln Fac:		1	1	1
MTBE	ug/L	8.9	8.7	<2
Benzene	ug/L	<0.5	<0.5	<0.5
Toluene	ug/L	<0.5	<0.5	<0.5
Ethylbenzene	ug/L	<0.5	<0.5	<0.5
m,p-Xylenes	ug/L	<0.5	<0.5	<0.5
o-Xylene	ug/L	<0.5	<0.5	<0.5
Surrogate				
Trifluorotoluene	%REC	92	90	91
Bromofluorobenzene	%REC	96	93	93



Lab #: 141186

BATCH QC REPORT



TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
Project#: 6895.00-018  
Location: Glovatorium

Analysis Method: EPA 8015M  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
Batch#: 50292  
Units: ug/L  
Diln Fac: 1

Prep Date: 08/31/99  
Analysis Date: 08/31/99

MB Lab ID: QC06430

Analyte	Result	
Gasoline C7-C12	<50	
Stoddard Solvent	<50	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	84	53-150
Bromofluorobenzene	91	53-149

Lab #: 141186

BATCH QC REPORT



BTXE

Client: LFR-Levine-Fricke  
Project#: 6895.00-018  
Location: Glovatorium

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
Batch#: 50292  
Units: ug/L  
Diln Fac: 1

Prep Date: 08/31/99  
Analysis Date: 08/31/99

MB Lab ID: QC06430

Analyte	Result		
MTBE	<2.0		
Benzene	<0.5		
Toluene	<0.5		
Ethylbenzene	<0.5		
m,p-Xylenes	<0.5		
o-Xylene	<0.5		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	87		51-143
Bromofluorobenzene	86		37-146



## TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke  
 Project#: 6895.00-018  
 Location: Glovatorium

Analysis Method: EPA 8015M  
 Prep Method: EPA 5030

## LABORATORY CONTROL SAMPLE

Matrix: Water  
 Batch#: 50292  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 08/31/99  
 Analysis Date: 08/31/99

LCS Lab ID: QC06427

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	1918	2000	96	77-117
Surrogate	%Rec	Limits		
Trifluorotoluene	95	53-150		
Bromofluorobenzene	84	53-149		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Spike Recovery: 0 out of 1 outside limits



Lab #: 141186

BATCH QC REPORT

BTXE

Client: LFR-Levine-Fricke  
Project#: 6895.00-018  
Location: Glovatorium

Analysis Method: EPA 8021B  
Prep Method: EPA 5030

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water  
Batch#: 50292  
Units: ug/L  
Diln Fac: 1

Prep Date: 08/31/99  
Analysis Date: 08/31/99

BS Lab ID: QC06428

Analyte	Spike Added	BS	%Rec	#	Limits
MTBE	20	16.92	85		66-126
Benzene	20	18.38	92		65-111
Toluene	20	18.38	92		76-117
Ethylbenzene	20	19.26	96		71-121
m,p-Xylenes	40	38.99	97		80-123
o-Xylene	20	19.94	100		75-127
Surrogate			%Rec		Limits
Trifluorotoluene			88		51-143
Bromofluorobenzene			88		37-146

BSD Lab ID: QC06429

Analyte	Spike Added	BSD	%Rec	#	Limits	RPD #	Limit
MTBE	20	17.72	89		66-126	5	12
Benzene	20	18.19	91		65-111	1	10
Toluene	20	18.24	91		76-117	1	10
Ethylbenzene	20	19.29	96		71-121	0	11
m,p-Xylenes	40	38.59	96		80-123	1	10
o-Xylene	20	20	100		75-127	0	11
Surrogate			%Rec		Limits		
Trifluorotoluene			90		51-143		
Bromofluorobenzene			91		37-146		

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits



TVH-Total Volatile Hydrocarbons

Client: LFR-Levine-Fricke	Analysis Method: EPA 8015M
Project#: 6895.00-018	Prep Method: EPA 5030
Location: Glovatorium	

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ	Sample Date: 08/26/99
Lab ID: 141160-007	Received Date: 08/26/99
Matrix: Water	Prep Date: 09/01/99
Batch#: 50292	Analysis Date: 09/01/99
Units: ug/L	
Diln Fac: 1	

MS Lab ID: QC06431

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline C7-C12	2000	<50	1710	85	69-131
Surrogate	%Rec	Limits			
Trifluorotoluene	103	53-150			
Bromofluorobenzene	96	53-149			

MSD Lab ID: QC06432

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	2000	1733	87	69-131	1	13
Surrogate	%Rec	Limits				
Trifluorotoluene	104	53-150				
Bromofluorobenzene	97	53-149				

# Column to be used to flag recovery and RPD values with an asterisk  
 \* Values outside of QC limits  
 RPD: 0 out of 1 outside limits  
 Spike Recovery: 0 out of 2 outside limits



Volatile Organics by GC/MS

Client: LFR-Levine-Fricke  
Project#: 6895.00-018  
Location: Glovatorium

Analysis Method: EPA 8260  
Prep Method: EPA 5030

Field ID: GW-6A-A  
Lab ID: 141186-002  
Matrix: Water  
Batch#: 50373  
Units: ug/L  
Diln Fac: 1

Sampled: 08/27/99  
Received: 08/27/99  
Extracted: 09/03/99  
Analyzed: 09/03/99

Analyte	Result	Reporting Limit
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	190	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
Carbon Disulfide	ND	0.5
MTBE	5.7	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
2-Chloroethylvinylether	ND	10
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrahydroethene	ND	0.5



## Volatile Organics by GC/MS

Field ID: GW-6A-A	Sampled: 08/27/99
Lab ID: 141186-002	Received: 08/27/99
Matrix: Water	Extracted: 09/03/99
Batch#: 50373	Analyzed: 09/03/99
Units: ug/L	
Diln Fac: 1	

Analyte	Result	Reporting Limit
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%Recovery	Recovery Limits
Dibromofluoromethane	98	81-121
1,2-Dichloroethane-d4	101	76-127
Toluene-d8	102	90-109
Bromofluorobenzene	96	82-118



Volatile Organics by GC/MS

Client: LFR-Levine-Fricke  
Project#: 6895.00-018  
Location: Glovatorium

Analysis Method: EPA 8260  
Prep Method: EPA 5030

Field ID: GW-106A-C  
Lab ID: 141186-004  
Matrix: Water  
Batch#: 50373  
Units: ug/L  
Diln Fac: 1

Sampled: 08/27/99  
Received: 08/27/99  
Extracted: 09/03/99  
Analyzed: 09/03/99

Analyte	Result	Reporting Limit
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	110	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
Carbon Disulfide	ND	0.5
MTBE	5.4	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2 Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
2-Chloroethylvinylether	ND	10
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5





## Volatile Organics by GC/MS

Field ID: GW-106A-C  
Lab ID: 141186-004  
Matrix: Water  
Batch#: 50373  
Units: ug/L  
Diln Fac: 1

Sampled: 08/27/99  
Received: 08/27/99  
Extracted: 09/03/99  
Analyzed: 09/03/99

Analyte	Result	Reporting Limit
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%Recovery	Recovery Limits
Dibromofluoromethane	94	81-121
1,2-Dichloroethane-d4	98	76-127
Toluene-d8	104	90-109
Bromofluorobenzene	96	82-118



## Volatile Organics by GC/MS

Client: LFR-Levine-Fricke  
Project#: 6895.00-018  
Location: GlovatoriumAnalysis Method: EPA 8260  
Prep Method: EPA 5030Field ID: GW-5-A  
Lab ID: 141186-006  
Matrix: Water  
Batch#: 50454  
Units: ug/L  
Diln Fac: 2Sampled: 08/27/99  
Received: 08/27/99  
Extracted: 09/08/99  
Analyzed: 09/08/99

Analyte	Result	Reporting Limit
Freon 12	ND	2.0
Chloromethane	ND	2.0
Vinyl Chloride	ND	1.0
Bromomethane	ND	2.0
Chloroethane	ND	2.0
Trichlorofluoromethane	ND	1.0
Acetone	240	20
Freon 113	ND	10
1,1-Dichloroethene	ND	1.0
Methylene Chloride	ND	10
Carbon Disulfide	ND	1.0
MTBE	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Vinyl Acetate	ND	20
1,1-Dichloroethane	ND	1.0
2-Butanone	ND	20
cis-1,2-Dichloroethene	ND	1.0
2,2-Dichloropropane	ND	1.0
Chloroform	ND	1.0
Bromochloromethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1-Dichloropropene	ND	1.0
Carbon Tetrachloride	ND	1.0
1,2-Dichloroethane	ND	1.0
Benzene	ND	1.0
Trichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
Bromodichloromethane	ND	1.0
Dibromomethane	ND	1.0
2-Chloroethylvinylether	ND	20
4-Methyl-2-Pentanone	ND	20
cis-1,3-Dichloropropene	ND	1.0
Toluene	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
2-Hexanone	ND	20
1,3-Dichloropropane	ND	1.0
Tetrachloroethene	ND	1.0



## Volatile Organics by GC/MS

Field ID: GW-5-A	Sampled: 08/27/99
Lab ID: 141186-006	Received: 08/27/99
Matrix: Water	Extracted: 09/08/99
Batch#: 50454	Analyzed: 09/08/99
Units: ug/L	
Diln Fac: 2	

Analyte	Result	Reporting Limit
Dibromochloromethane	ND	1.0
1,2-Dibromoethane	ND	1.0
Chlorobenzene	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
Ethylbenzene	ND	1.0
m,p-Xylenes	ND	1.0
o-Xylene	ND	1.0
Styrene	ND	1.0
Bromoform	ND	2.0
Isopropylbenzene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
1,2,3-Trichloropropane	ND	1.0
Propylbenzene	ND	1.0
Bromobenzene	ND	1.0
1,3,5-Trimethylbenzene	ND	1.0
2-Chlorotoluene	ND	1.0
4-Chlorotoluene	ND	1.0
tert-Butylbenzene	ND	1.0
1,2,4-Trimethylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
para-Isopropyl Toluene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
n-Butylbenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,2-Dibromo-3-Chloropropane	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
Hexachlorobutadiene	ND	1.0
Naphthalene	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0

Surrogate	%Recovery	Recovery Limits
Dibromofluoromethane	93	81-121
1,2-Dichloroethane-d4	101	76-127
Toluene-d8	106	90-109
Bromofluorobenzene	99	82-118



Lab #: 141186

BATCH QC REPORT

EPA 8260 Volatile Organics

Client: LFR-Levine-Fricke  
Project#: 6895.00-018  
Location: Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
Batch#: 50373  
Units: ug/L  
Diln Fac: 1

Prep Date: 09/03/99  
Analysis Date: 09/03/99

MB Lab ID: QC06791

Analyte	Result	Reporting Limit
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
2-Chloroethylvinylether	ND	10
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5



Lab #: 141186

BATCH QC REPORT

## EPA 8260 Volatile Organics

Client: LFR-Levine-Fricke  
 Project#: 6895.00-018  
 Location: Glovatorium

Analysis Method: EPA 8260A  
 Prep Method: EPA 5030

## METHOD BLANK

Matrix: Water  
 Batch#: 50373  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 09/03/99  
 Analysis Date: 09/03/99

MB Lab ID: QC06791

Analyte	Result	Reporting Limit
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5
Surrogate	%Rec	Recovery Limits
Dibromofluoromethane	104	81-121
1,2-Dichloroethane-d4	103	76-127
Toluene-d8	99	90-109
Bromofluorobenzene	97	82-118



Lab #: 141186

BATCH QC REPORT

EPA 8260 Volatile Organics

Client: LFR-Levine-Fricke  
Project#: 6895.00-018  
Location: Glovatorium

Analysis Method: EPA 8260A  
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water  
Batch#: 50454  
Units: ug/L  
Diln Fac: 1

Prep Date: 09/08/99  
Analysis Date: 09/08/99

MB Lab ID: QC07097

Analyte	Result	Reporting Limit
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
2-Chloroethylvinylether	ND	10
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5



Lab #: 141186

BATCH QC REPORT

## EPA 8260 Volatile Organics

Client: LFR-Levine-Fricke  
 Project#: 6895.00-018  
 Location: Glovatorium

Analysis Method: EPA 8260A  
 Prep Method: EPA 5030

## METHOD BLANK

Matrix: Water  
 Batch#: 50454  
 Units: ug/L  
 Diln Fac: 1

Prep Date: 09/08/99  
 Analysis Date: 09/08/99

MB Lab ID: QC07097

Analyte	Result	Reporting Limit
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	0.5
1,2,3-Trichlorobenzene	ND	0.5
Surrogate	%Rec	Recovery Limits
Dibromofluoromethane	96	81-121
1,2-Dichloroethane-d4	101	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	99	82-118



## EPA 8260 Volatile Organics

Client: LFR-Levine-Fricke  
Project#: 6895.00-018  
Location: Glovatorium

Analysis Method: EPA 8260  
Prep Method: EPA 5030

## BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water  
Batch#: 50373  
Units: ug/L  
Diln Fac: 1

Prep Date: 09/03/99  
Analysis Date: 09/03/99

BS Lab ID: QC06788

Analyte	Spike Added	BS	%Rec #	Limits
1,1-Dichloroethene	50	57.18	114	64-139
Benzene	50	48.78	98	71-127
Trichloroethene	50	47.4	95	72-129
Toluene	50	50.39	101	73-129
Chlorobenzene	50	48.92	98	77-126
Surrogate		%Rec		Limits
Dibromofluoromethane		100		81-121
1,2-Dichloroethane-d4		100		76-127
Toluene-d8		100		90-109
Bromofluorobenzene		97		82-118

BSD Lab ID: QC06789

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	57.38	115	64-139	0	13
Benzene	50	50.34	101	71-127	3	10
Trichloroethene	50	47.88	96	72-129	1	10
Toluene	50	51.75	103	73-129	3	10
Chlorobenzene	50	50.12	100	77-126	2	10
Surrogate		%Rec		Limits		
Dibromofluoromethane		98		81-121		
1,2-Dichloroethane-d4		99		76-127		
Toluene-d8		102		90-109		
Bromofluorobenzene		97		82-118		

\* Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits





EPA 8260 Volatile Organics

Client: LFR-Levine-Fricke	Analysis Method: EPA 8260
Project#: 6895.00-018	Prep Method: EPA 5030
Location: Glovatorium	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 09/08/99
Batch#: 50454	Analysis Date: 09/08/99
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC07094

Analyte	Spike Added	BS	%Rec #	Limits
1,1-Dichloroethene	50	53.4	107	64-139
Benzene	50	48.64	97	71-127
Trichloroethene	50	47.36	95	72-129
Toluene	50	50.48	101	73-129
Chlorobenzene	50	50.05	100	77-126

Surrogate	%Rec	Limits
Dibromofluoromethane	99	81-121
1,2-Dichloroethane-d4	98	76-127
Toluene-d8	99	90-109
Bromofluorobenzene	101	82-118

BSD Lab ID: QC07095

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	48.5	97	64-139	10	13
Benzene	50	45.37	91	71-127	7	10
Trichloroethene	50	44.12	88	72-129	7	10
Toluene	50	47.18	94	73-129	7	10
Chlorobenzene	50	46.89	94	77-126	7	10

Surrogate	%Rec	Limits
Dibromofluoromethane	97	81-121
1,2-Dichloroethane-d4	98	76-127
Toluene-d8	100	90-109
Bromofluorobenzene	102	82-118

\* Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



1900 Powell Street, 12th Floor  
Emeryville, California 94608-1827  
(510) 652-4500, FAX (510) 652-4906

FAX TRANSMISSION: This cover page plus 1 pages.

Date	September 2, 1999		
Time	5:08PM		
From	Taylor Bennett		

Deliver To	Tracy Babjar		
Name of Firm	Curtis & Tompkins		
FAX Number	486-0532	Project No.	6895.00-017

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**Comments:** Following is the revised C.O.C. #2281 to confirm our conversation today for project 6895.00-018. This is a confirmation, not a new request.

## CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: 6895.00 - <del>014</del> 018 THB		Project Location: 38th St. + Mission Oakland, CA		Date: 8/27/99		Serial No.: No 2231						
Project Name: Glovatorium				Field Logbook No.:								
Sampler (Signature): Taylor Bennett						Samplers: THB						
SAMPLES						ANALYSES						
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CON-TAINERS	SAMPLE TYPE	EPA 8015M Stoddard & Gasoline	EPA 8020 BTEX MTBE	EPA 8010	EPA 8260 Acetone, MEK, MIBK	HOLD	RUSH	REMARKS
Trip Blank	8/27/99	9:45		2	water					X		Normal turnaround results to Taylor Bennett 8/30/99 THB: Analyze GW-6A-A, GW-106A-C, and GW-5-A for EPA 8010. Analyze GW-6A-B, GW-106A-D, and GW-5-B for 8015 M (TPH as Stoddard and Gasoline) and for EPA 8020 (BTEX and MTBE)
GW-6A-A	8/27	12:00		1	water			X		X	THB	
GW-6A-B	8/27	12:00		1	water	X	X	X	THB			
GW-106A-C	8/27	13:00		1	water	X	X	X	THB			
GW-106A-D	8/27	13:00		1	water	X	X			X	THB	
GW-5-A	8/27	13:30		1	water	X	X	X	THB			9/2/99: Analyze GW-6A-A, GW-106A-C, and GW-5-A for EPA 8260, to include acetone, MEK, and MIBK.
GW-5-B	8/27	13:30		1	water	X	X			X	THB	
RELINQUISHED BY: (Signature) Taylor Bennett			DATE	TIME	RECEIVED BY: (Signature)			DATE	TIME			
RELINQUISHED BY: (Signature)			DATE	TIME	RECEIVED BY: (Signature)			DATE	TIME			
RELINQUISHED BY: (Signature)			DATE	TIME	RECEIVED BY: (Signature)			DATE	TIME			
METHOD OF SHIPMENT:			DATE	TIME	LAB COMMENTS:							
Sample Collector: LEVINE•FRICKE•RECON 1900 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 852-4500					Analytical Laboratory: Curtis & Tompkins							

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

11636

Project No.: 6895.00-014		Project Location: 38th St. + Manila Oakland, CA		Date: 8/27/99		Serial No.: No 2281				
Project Name: Glovatorium		Field Logbook No.:								
Sampler (Signature): Taylor Bennett				ANALYSES		Samplers: THB				
SAMPLES				REMARKS						
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CON-TAINERS	SAMPLE TYPE	EPA 8015M Stodard	EPA 8020 STEX MIBE	EPA 8017	HOLD	RUSH
Trip Blank	8/27/99	9:45		2	water				X	
GW-6A-A	8/27	12:00		1	water				X	Normal turnaround Results to Taylor Bennett
GW-6A-B	8/27	12:00		1	water	X	X	X		
GW-106A-C	8/27	13:00		1	water	X	X	X		
GW-106A-D	8/27	13:00		1	water				X	
GW-5-A	8/27	13:30		1	water	X	X	X		
GW-5-B	8/27	13:30		1	water				X	
RELINQUISHED BY: Taylor Bennett			DATE: 8/27/99	TIME: 2:40	RECEIVED BY: Troy D. Sica			DATE: 8/27/99	TIME: 2:40	
RELINQUISHED BY: (Signature)			DATE	TIME	RECEIVED BY: (Signature)			DATE	TIME	
RELINQUISHED BY: (Signature)			DATE	TIME	RECEIVED BY: (Signature)			DATE	TIME	
METHOD OF SHIPMENT:			DATE	TIME	LAB COMMENTS:					
Sample Collector: LEVINE•FRICKE•RECON 1900 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 652-4500					Analytical Laboratory: Curtis & Tompkins					



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L   R E P O R T

Prepared for:

LFR-Levine-Fricke  
1900 Powell Street  
12th Floor  
Emeryville, CA 94608

Date: 27-JAN-00  
Lab Job Number: 143527  
Project ID: 6895  
Location: Glovatorium

Reviewed by:

A handwritten signature in black ink, appearing to read 'Tracy Bha', written over a horizontal line.

Reviewed by:

A handwritten signature in black ink, consisting of several loops and strokes, written over a horizontal line.

This package may be reproduced only in its entirety.

Laboratory Numbers: **143527**  
Client: **LFR-Levine-Fricke**  
Project #: **6895**  
Location: **Glovatorium**  
COC#: **2771**

Sampled Date: **01/20/00**  
Received Date: **01/20/00**

### CASE NARRATIVE

This hardcopy data package contains sample and QC results for four water samples, which were received from the site referenced above on January 20, 2000. The samples were received intact. All data were faxed to Taylor Bennit on January 26, 2000.

**TVH/BTXE:**

No analytical problems were encountered.

**VOCs (EPA 8260):**

No analytical problems were encountered.

**Gasoline by GC/FID CA LUFT**

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8015M
Matrix:	Water	Sampled:	01/20/00
Units:	ug/L	Received:	01/20/00
Diln Fac:	1.000	Analyzed:	01/21/00
Batch#:	53282		

Field ID: GW-3                      Lab ID: 143527-001  
 Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	260 Y	50
Stoddard Solvent C7-C12	150	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	97	53-150
Bromofluorobenzene (FID)	113	53-149

Field ID: GW-8                      Lab ID: 143527-002  
 Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	330 Y	50
Stoddard Solvent C7-C12	190	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	98	53-150
Bromofluorobenzene (FID)	111	53-149

Field ID: GW-108                      Lab ID: 143527-003  
 Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	370 Y	50
Stoddard Solvent C7-C12	200	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	98	53-150
Bromofluorobenzene (FID)	113	53-149

Y = Sample exhibits fuel pattern which does not resemble standard

ND = Not Detected

RL = Reporting Limit



## Gasoline by GC/FID CA LUFT

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8015M
Matrix:	Water	Sampled:	01/20/00
Units:	ug/L	Received:	01/20/00
Diln Fac:	1.000	Analyzed:	01/21/00
Batch#:	53282		

Field ID: TRIP BLANK                      Lab ID: 143527-004  
Type: SAMPLE

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

Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	53-150
Bromofluorobenzene (FID)	100	53-149

Type: BLANK                                      Lab ID: QC106028

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

Surrogate	%REC	Limits
Trifluorotoluene (FID)	93	53-150
Bromofluorobenzene (FID)	91	53-149

Y = Sample exhibits fuel pattern which does not resemble standard

ND = Not Detected

RL = Reporting Limit

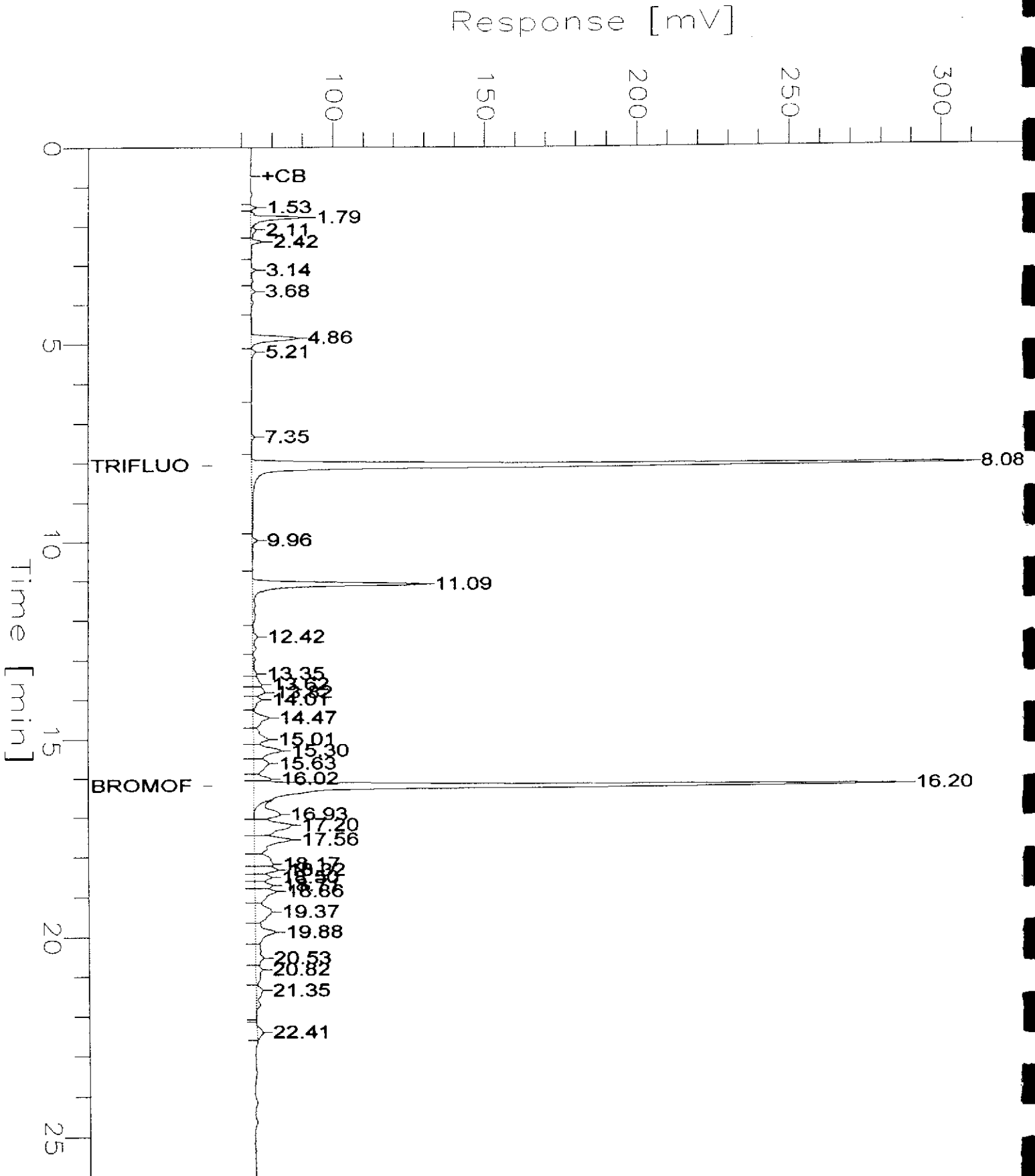


# GC04 TVH 'J' Data File Rtx1FID

Sample Name : mss,143527-001,53282,-mtbe&stoddard  
FileName : g:\gc04\data\021j005.raw  
Method : TVHBTXE  
Start Time : 0.00 min  
Scale Factor : -1.0

Sample #: a1  
Date : 1/21/00 09:07 PM  
Time of Injection: 1/21/00 08:01 PM  
Low Point : 60.47 mV  
Plot Scale: 250.0 mV

Page 1 of 1



# GC04 TVH 'J' Data File Rtx1FID

Sample Name : 143527-002,53282,+mtbexstoddard

Sample #: a1

Page 1 of 1

FileName : G:\GC04\DATA\021J008.raw

Date : 1/24/00 02:07 PM

Method : TVHBTXE

Time of Injection: 1/21/00 10:34 PM

Start Time : 0.00 min

End Time : 26.00 min

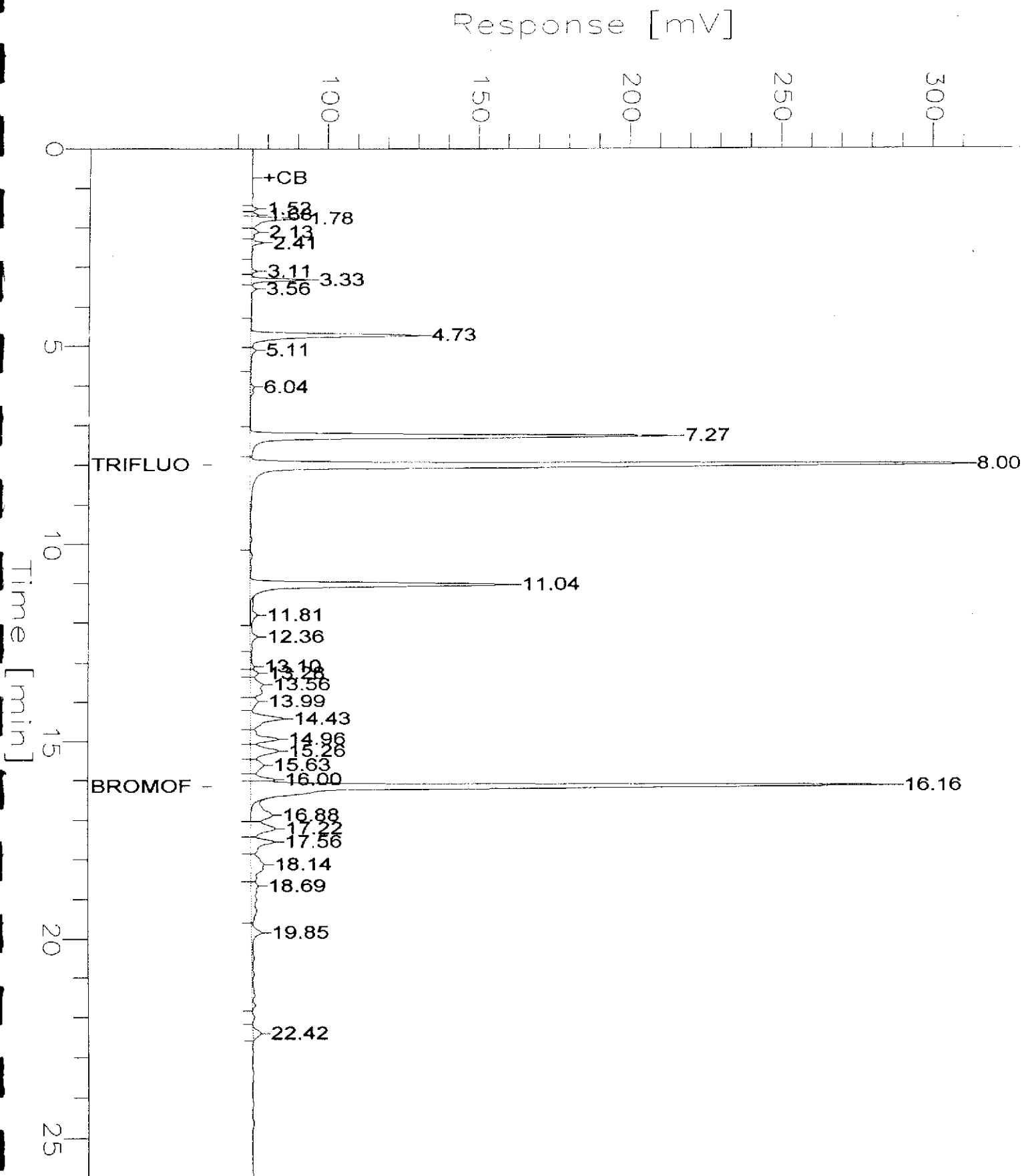
Low Point : 62.26 mV

High Point : 312.26 mV

Scale Factor: -1.0

Plot Offset: 62 mV

Plot Scale: 250.0 mV

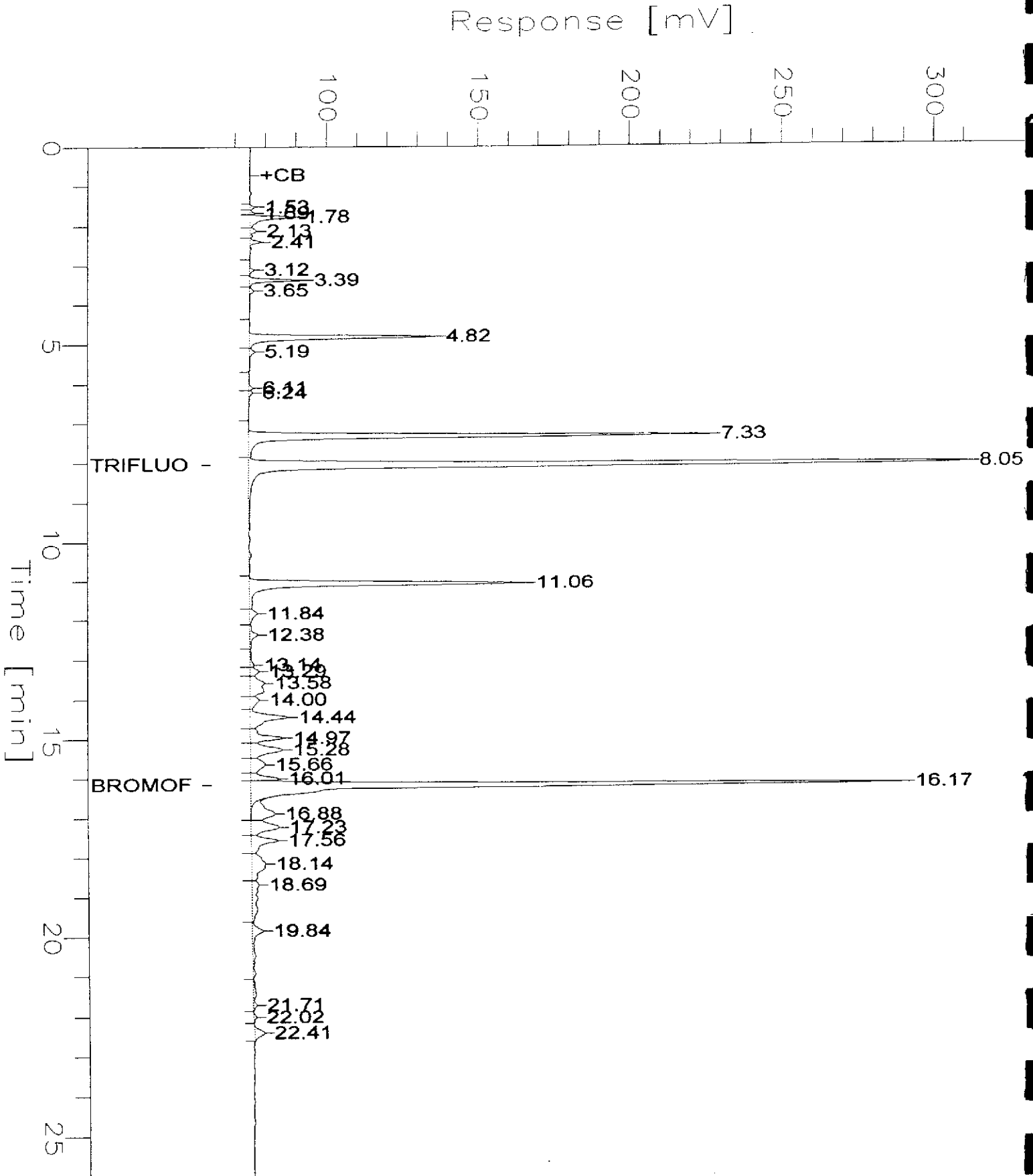


# GC04 TVH 'J' Data File Rtx1FID

Sample Name : 143527-003,53282,+mtbe&stoddard  
 FileName : G:\GC04\DATA\021J009.raw  
 Method : TVHBTXE  
 Start Time : 0.00 min  
 Scale Factor : -1.0

End Time : 26.00 min  
 Plot Offset: 62 mV

Sample #: a1  
 Date : 1/21/00 11:35 PM  
 Time of Injection: 1/21/00 11:09 PM  
 Low Point : 62.35 mV  
 High Point : 312.35 mV  
 Plot Scale: 250.0 mV

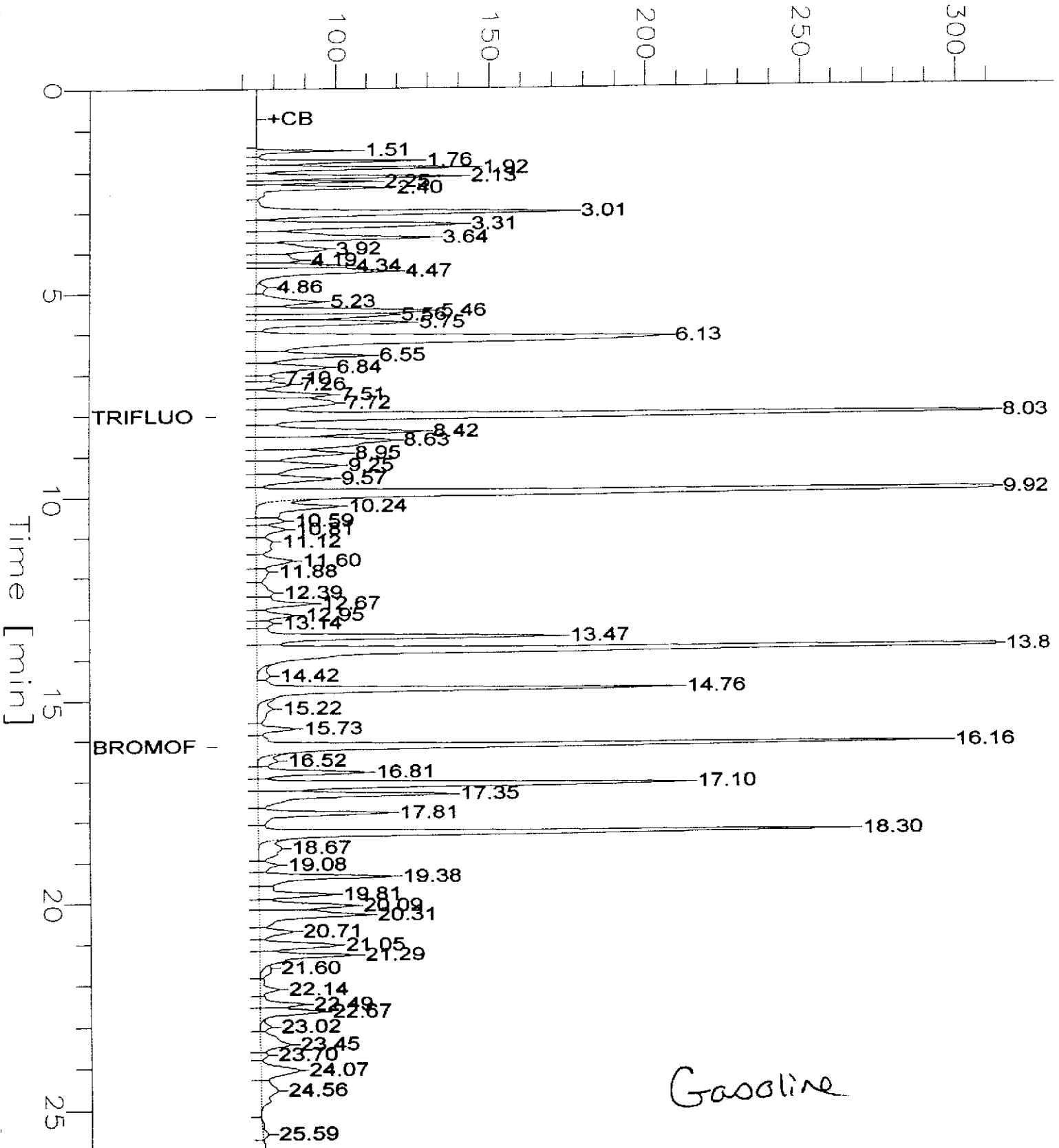


# GC04 TVH 'J' Data File Rtx1FID

Sample Name : bs,tvh,qc106030,53282,99ws8556,5/5000  
 FileName : G:\GC04\DATA\021J033.raw  
 Method : TVHBTXE  
 Start Time : 0.00 min  
 Scale Factor : -1.0

Sample #: gas  
 Date : 1/22/00 01:30 PM  
 Time of Injection: 1/22/00 01:04 PM  
 Low Point : 61.92 mV  
 High Point : 311.92 mV  
 End Time : 26.00 min  
 Plot Offset: 62 mV  
 Plot Scale: 250.0 mV

## Response [mV]

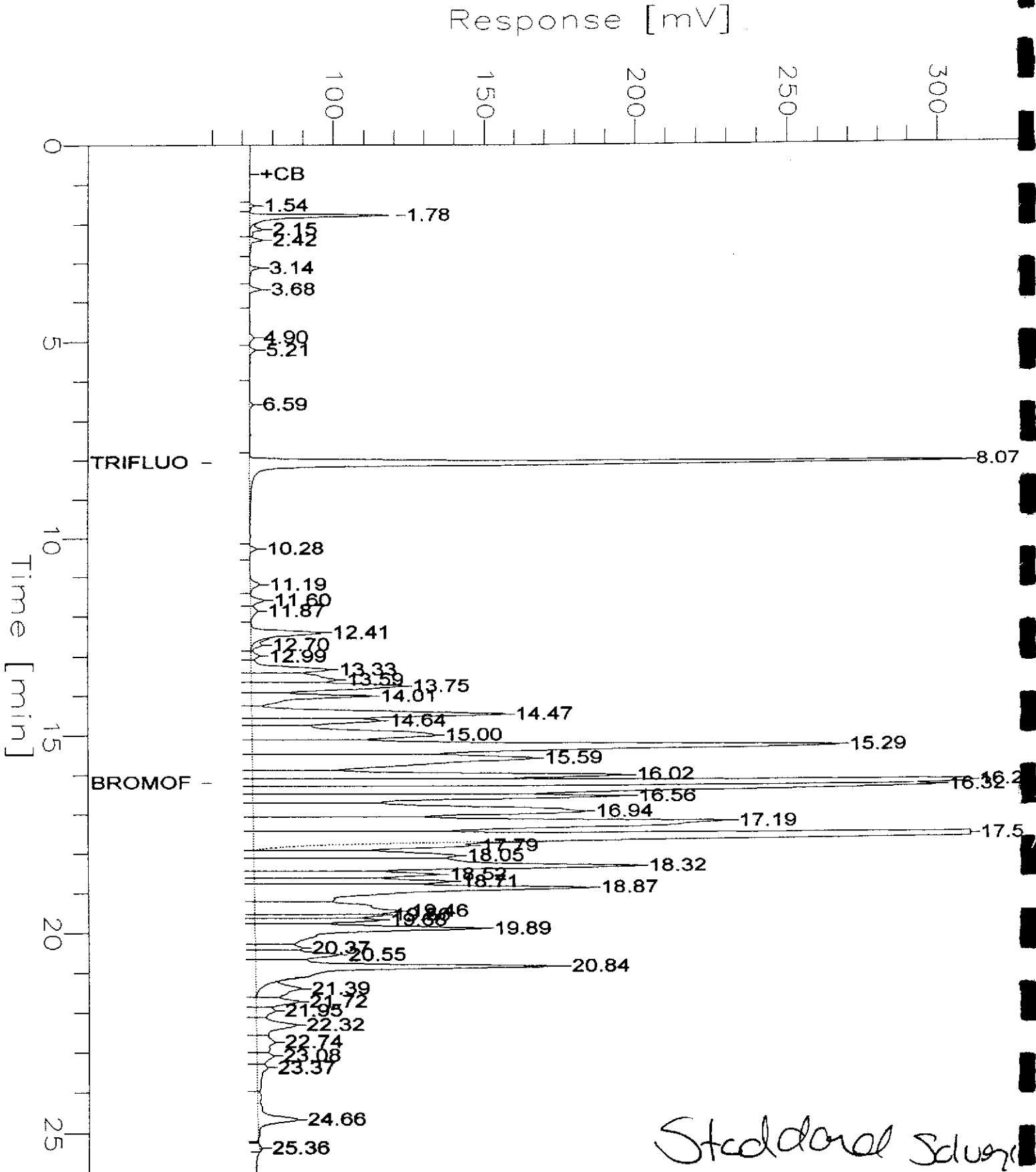


# GC04 TVH 'J' Data File Rtx1FID

Sample Name : ccv,stoddard,53282,99ws7997,5/5000  
FileName : g:\gc04\data\021j002.raw  
Method : TVHBTXE  
Start Time : 0.00 min  
Scale Factor: -1.0

End Time : 26.00 min  
Plot Offset: 60 mV

Sample #: stoddard  
Date : 1/21/00 09:06 PM  
Time of Injection: 1/21/00 06:17 PM  
Low Point : 59.88 mV  
Plot Scale: 250.0 mV  
Page 1 of 1  
High Point : 309.88 mV







## BTXE Compounds by GC/PID

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8021B
Matrix:	Water	Sampled:	01/20/00
Units:	ug/L	Received:	01/20/00
Diln Fac:	1.000	Analyzed:	01/21/00
Batch#:	53282		

Field ID: TRIP BLANK                      Lab ID: 143527-004  
 Type: SAMPLE

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)	101	51-143
Bromofluorobenzene (PID)	106	37-146

Type: BLANK                                      Lab ID: QC106028

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)	100	51-143
Bromofluorobenzene (PID)	99	37-146

## Gasoline by GC/FID CA LUFT

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8015M
Matrix:	Water	Batch#:	53282
Units:	ug/L	Prepared:	01/21/00
Diln Fac:	1.000	Analyzed:	01/22/00

Type: BS Lab ID: QC106030

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,037	102	77-117

Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	53-150
Bromofluorobenzene (FID)	109	53-149

Type: BSD Lab ID: QC106031

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,006	100	77-117	2	10

Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	53-150
Bromofluorobenzene (FID)	107	53-149



**BTXE Compounds by GC/PID**

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC106029	Batch#:	53282
Matrix:	Water	Prepared:	01/21/00
Units:	ug/L	Analyzed:	01/22/00

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	17.94	90	66-126
Benzene	20.00	16.35	82	65-111
Toluene	20.00	17.05	85	76-117
Ethylbenzene	20.00	18.03	90	71-121
m,p-Xylenes	40.00	36.44	91	80-123
o-Xylene	20.00	18.50	93	75-127

Surrogate	%REC	Limits
Trifluorotoluene (PID)	102	51-143
Bromofluorobenzene (PID)	106	37-146

**BTXE Compounds by GC/PID**

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8021B
Field ID:	GW-3	Batch#:	53282
MSS Lab ID:	143527-001	Sampled:	01/20/00
Matrix:	Water	Received:	01/20/00
Units:	ug/L	Analyzed:	01/21/00
Diln Fac:	1.000		

Type: MS Lab ID: QC106032

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<2.000	20.00	18.28	91	49-136
Benzene	<0.5000	20.00	16.25	81	55-122
Toluene	0.5100	20.00	18.08	88	63-139
Ethylbenzene	<0.5000	20.00	19.96	100	61-137
m,p-Xylenes	1.270	40.00	39.53	96	57-148
o-Xylene	<0.5000	20.00	20.57	103	70-141

Surrogate	%REC	Limits
Trifluorotoluene (PID)	103	51-143
Bromofluorobenzene (PID)	109	37-146

Type: MSD Lab ID: QC106033

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	19.36	97	49-136	6	11
Benzene	20.00	16.47	82	55-122	1	10
Toluene	20.00	18.07	88	63-139	0	10
Ethylbenzene	20.00	20.05	100	61-137	0	10
m,p-Xylenes	40.00	39.54	96	57-148	0	10
o-Xylene	20.00	20.73	104	70-141	1	10

Surrogate	%REC	Limits
Trifluorotoluene (PID)	102	51-143
Bromofluorobenzene (PID)	110	37-146

**Purgeable Halocarbons by GC/MS**

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	GW-3	Batch#:	53329
Lab ID:	143527-001	Sampled:	01/20/00
Matrix:	Water	Received:	01/20/00
Units:	ug/L	Analyzed:	01/25/00
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	20	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	1.0	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	55	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	94	76-127
Toluene-d8	101	90-109
Bromofluorobenzene	105	82-118

ND = Not Detected

RL = Reporting Limit



## Purgeable Halocarbons by GC/MS

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	GW-8	Batch#:	53353
Lab ID:	143527-002	Sampled:	01/20/00
Matrix:	Water	Received:	01/20/00
Units:	ug/L	Analyzed:	01/26/00
Diln Fac:	1.429		

Analyte	Result	RL
Freon 12	ND	2.9
Chloromethane	ND	1.4
Vinyl Chloride	4.5	0.7
Bromomethane	ND	1.4
Chloroethane	ND	1.4
Trichlorofluoromethane	ND	0.7
Freon 113	ND	7.1
1,1-Dichloroethene	ND	0.7
Methylene Chloride	ND	7.1
trans-1,2-Dichloroethene	12	0.7
1,1-Dichloroethane	ND	0.7
cis-1,2-Dichloroethene	53	0.7
Chloroform	ND	0.7
1,1,1-Trichloroethane	ND	0.7
Carbon Tetrachloride	ND	0.7
1,2-Dichloroethane	ND	0.7
Trichloroethene	190	0.7
1,2-Dichloropropane	ND	0.7
Bromodichloromethane	ND	0.7
cis-1,3-Dichloropropene	ND	0.7
trans-1,3-Dichloropropene	ND	0.7
1,1,2-Trichloroethane	ND	0.7
Tetrachloroethene	150	0.7
Dibromochloromethane	ND	0.7
Chlorobenzene	ND	0.7
Bromoform	ND	0.7
1,1,2,2-Tetrachloroethane	ND	0.7
1,3-Dichlorobenzene	ND	0.7
1,4-Dichlorobenzene	ND	0.7
1,2-Dichlorobenzene	ND	0.7

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	94	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	106	82-118

ND = Not Detected

RL = Reporting Limit

**Purgeable Halocarbons by GC/MS**

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	<b>GW-108</b>	Batch#:	53329
Lab ID:	143527-003	Sampled:	01/20/00
Matrix:	Water	Received:	01/20/00
Units:	ug/L	Analyzed:	01/25/00
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	4.6	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	11	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	52	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	7.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	180	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	150	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	94	76-127
Toluene-d8	102	90-109
Bromofluorobenzene	106	82-118

ND = Not Detected

RL = Reporting Limit



## Purgeable Halocarbons by GC/MS

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	TRIP BLANK	Batch#:	53329
Lab ID:	143527-004	Sampled:	01/20/00
Matrix:	Water	Received:	01/20/00
Units:	ug/L	Analyzed:	01/25/00
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	95	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	105	82-118

ND = Not Detected

RL = Reporting Limit

**Purgeable Halocarbons by GC/MS**

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC106200	Batch#:	53329
Matrix:	Water	Analyzed:	01/25/00
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	95	76-127
Toluene-d8	102	90-109
Bromofluorobenzene	105	82-118

### Purgeable Halocarbons by GC/MS

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC106201	Batch#:	53329
Matrix:	Water	Analyzed:	01/25/00
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	94	76-127
Toluene-d8	102	90-109
Bromofluorobenzene	106	82-118



**Purgeable Halocarbons by GC/MS**

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC106285	Batch#:	53353
Matrix:	Water	Analyzed:	01/26/00
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	94	76-127
Toluene-d8	101	90-109
Bromofluorobenzene	106	82-118

**Purgeable Halocarbons by GC/MS**

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC106286	Batch#:	53353
Matrix:	Water	Analyzed:	01/26/00
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	95	76-127
Toluene-d8	102	90-109
Bromofluorobenzene	107	82-118

**Purgeable Halocarbons by GC/MS**

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC106284	Batch#:	53353
Matrix:	Water	Analyzed:	01/26/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	43.26	87	64-139
Trichloroethene	50.00	47.64	95	72-129
Chlorobenzene	50.00	49.59	99	77-126

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	93	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	105	82-118



## Purgeable Halocarbons by GC/MS

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	53329
Units:	ug/L	Analyzed:	01/25/00
Diln Fac:	1.000		

Type: BS Lab ID: QC106198

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	46.04	92	64-139
Trichloroethene	50.00	49.05	98	72-129
Chlorobenzene	50.00	50.95	102	77-126

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	93	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	106	82-118

Type: BSD Lab ID: QC106199

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	44.67	89	64-139	3	13
Trichloroethene	50.00	46.77	94	72-129	5	10
Chlorobenzene	50.00	48.95	98	77-126	4	10

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	95	76-127
Toluene-d8	102	90-109
Bromofluorobenzene	106	82-118

### Purgeable Halocarbons by GC/MS

Lab #:	143527	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	143517-010	Batch#:	53353
Matrix:	Water	Sampled:	01/18/00
Units:	ug/L	Received:	01/19/00

Type: MS Analyzed: 01/26/00  
 Lab ID: QC106287

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	0.4300	50.00	45.88	91	59-144
Trichloroethene	0.2724	50.00	48.88	97	61-136
Chlorobenzene	<0.5000	50.00	50.46	101	78-122

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	93	76-127
Toluene-d8	102	90-109
Bromofluorobenzene	106	82-118

Type: MSD Analyzed: 01/27/00  
 Lab ID: QC106288

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	44.42	88	59-144	3	13
Trichloroethene	50.00	47.26	94	61-136	3	10
Chlorobenzene	50.00	49.25	98	78-122	2	10

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	92	76-127
Toluene-d8	102	90-109
Bromofluorobenzene	105	82-118

143527

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: 6895      Project Location: Oallamys Ca      Date: 1-20-97      Serial No.: N<sup>o</sup> 2771

Project Name: Glantonum      Field Logbook No.:

Sampler (Signature): *Kurtis Lee*      ANALYSES      Samplers: KAG

SAMPLES				ANALYSES										REMARKS			
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	IA (M.D. 10/1/85)	B (EPA 821)	EX (EPA 821)	PMTE (232)	EPA 8210						HOLD	RUSH
GW-3	1-20-00	1130		9	H2O	X	X	X							3 v. 1	X	1-week TAT
GW-8		1400		9	H2O	X	X	X							3 v. 1	X	
GW-10P		1405	KL	6	H2O	X	X	X								X	Results to TAP
Tap Blank	/			2		X	X	X									* including standard Subtract
																	- Had 3 v. A.S. for GW-3 & GW-8

RELINQUISHED BY: (Signature) <i>[Signature]</i>	DATE 1/20/00	TIME 1650	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE 01/20/00	TIME 1650
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME

METHOD OF SHIPMENT:      DATE      TIME      LAB COMMENTS:

Sample Collector: LEVINE•FRICKE•RECON  
1900 Powell Street, 12th Floor  
Emeryville, California 94608-1827  
(510) 652-4500

Analytical Laboratory: C ? T



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L   R E P O R T

Prepared for:

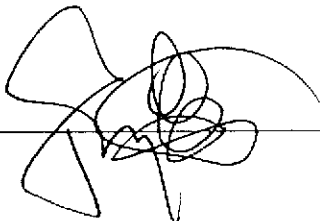
LFR-Levine-Fricke  
1900 Powell Street  
12th Floor  
Emeryville, CA 94608

Date: 31-JAN-00  
Lab Job Number: 143555  
Project ID: 6895  
Location: Glovatorium

Reviewed by:

  
\_\_\_\_\_

Reviewed by:

  
\_\_\_\_\_

This package may be reproduced only in its entirety.



Laboratory Numbers: **143555**  
Client: **LFR-Levine-Fricke**  
Project #: **6895**  
Location: **Glovatorium**  
COC#: **2769**

Sampled Date: **01/20,21/00**  
Received Date: **01/21/00**

### CASE NARRATIVE

This hardcopy data package contains sample and QC results for five water samples, which were received from the site referenced above on January 21, 2000. The samples were received intact. All data were faxed to Taylor Bennit on January 28, 2000.

#### TVH/BTXE:

High surrogate recoveries for bromofluorobenzene were observed in samples GW-4 (CT# 143555-002) and GW-104 (CT# 143555-003) due matrix interference. No other analytical problems were encountered.

#### VOCs (EPA 8260):

No analytical problems were encountered.







Gasoline by GC/FID CA LUFT

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8015M
Matrix:	Water	Sampled:	01/20/00
Units:	ug/L	Received:	01/21/00
Diln Fac:	1.000	Analyzed:	01/25/00
Batch#:	53330		

Field ID:	TRIP BLANK	Lab ID:	143555-005
Type:	SAMPLE		

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

Surrogate	%REC	Limits
Trifluorotoluene (FID)	106	53-150
Bromofluorobenzene (FID)	112	53-149

Type:	BLANK	Lab ID:	QC106204
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Analyte	Result	RL
Gasoline C7-C12	ND	50
Stoddard Solvent C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	53-150
Bromofluorobenzene (FID)	105	53-149

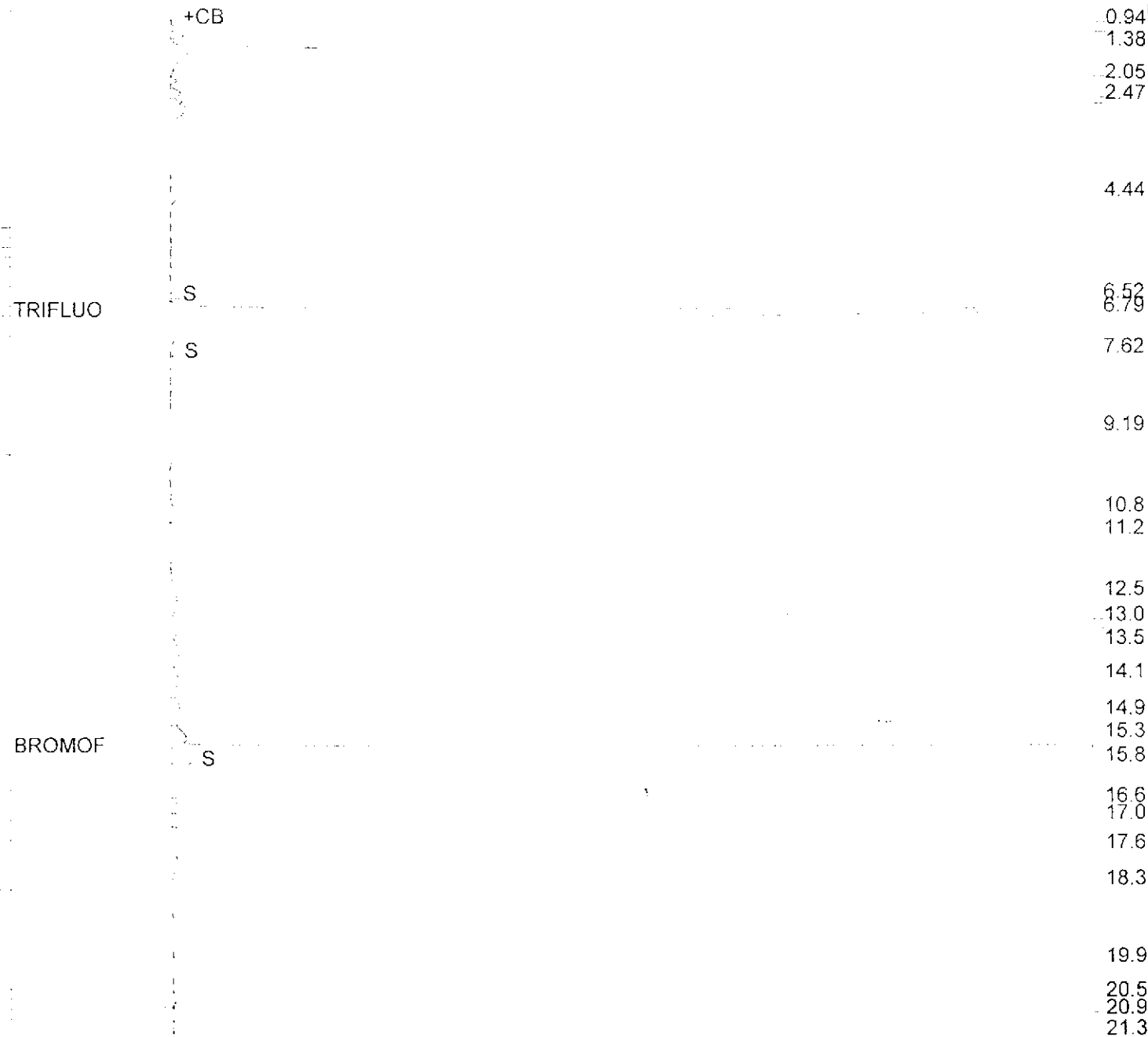
# GC07 TVH 'A' Data File RTX 502

Sample Name : MSS,143555-001,53330,/TVH ONLY  
FileName : G:\GC07\DATA\025A011.raw  
Method : TVHBTXE  
Start Time : 0.00 min  
Scale Factor : -1.0

End Time : 26.00 min  
Plot Offset : 6 mV

Sample # :  
Date : 1/26/00 09:21 AM  
Time of Injection: 1/25/00 05:39 PM  
Low Point : 5.67 mV  
Plot Scale: 250.0 mV  
High Point : 255.67 mV

Page 1 of 1



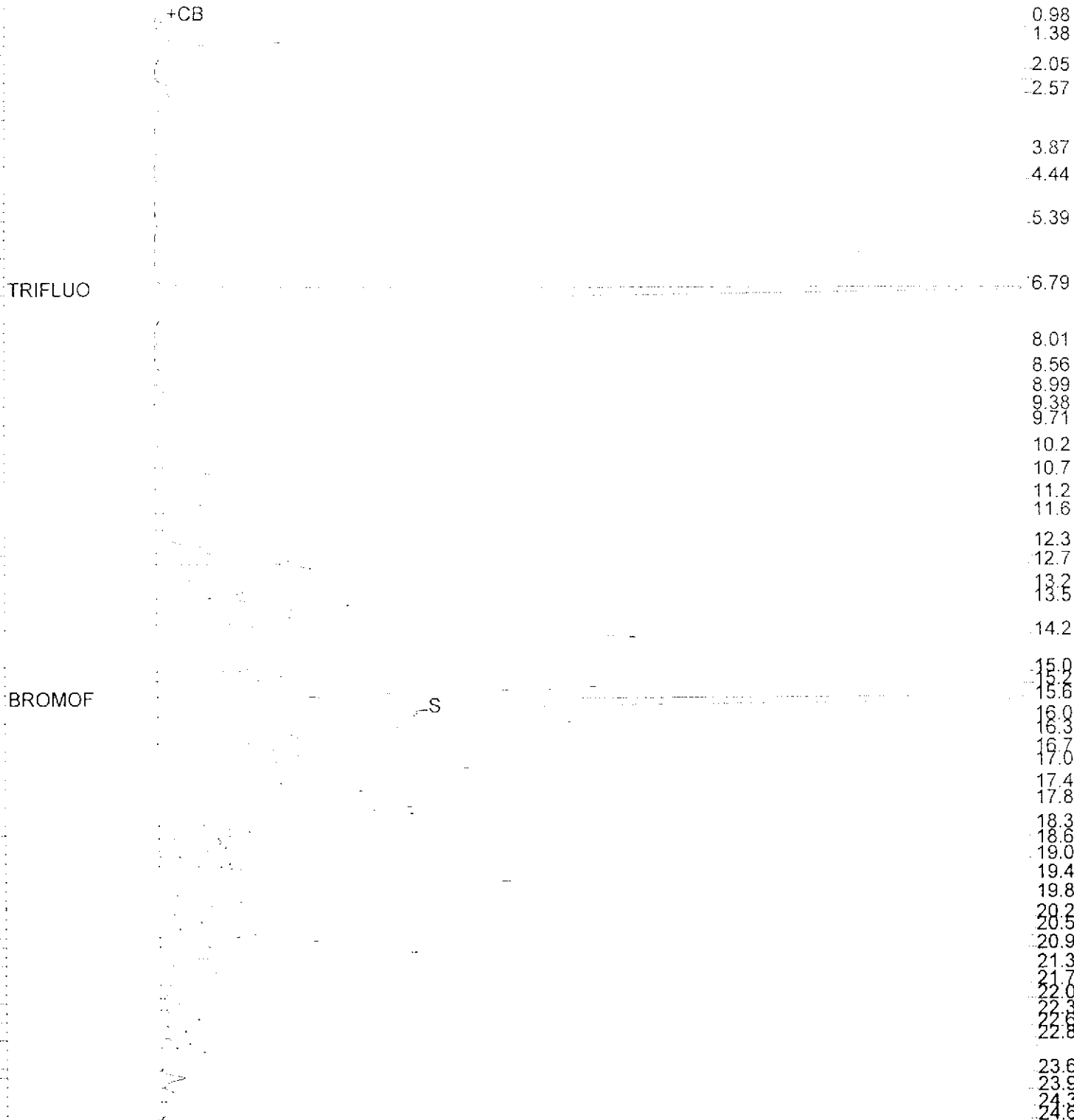
GC07 TVH 'A' Data File RTX 502

Sample Name : 143555-002,53330,/TVH ONLY  
 File Name : G:\GC07\DATA\025A010.raw  
 Method : TVHBTXE  
 Start Time : 0.00 min  
 Scale Factor: -1.0

End Time : 26.00 min  
 Plot Offset: 6 mV

Sample #:   
 Date : 1/26/00 09:21 AM  
 Time of Injection: 1/25/00 05:01 PM  
 Low Point : 5.58 mV  
 Plot Scale: 250.0 mV  
 High Point : 255.58 mV

Abundance [mV]

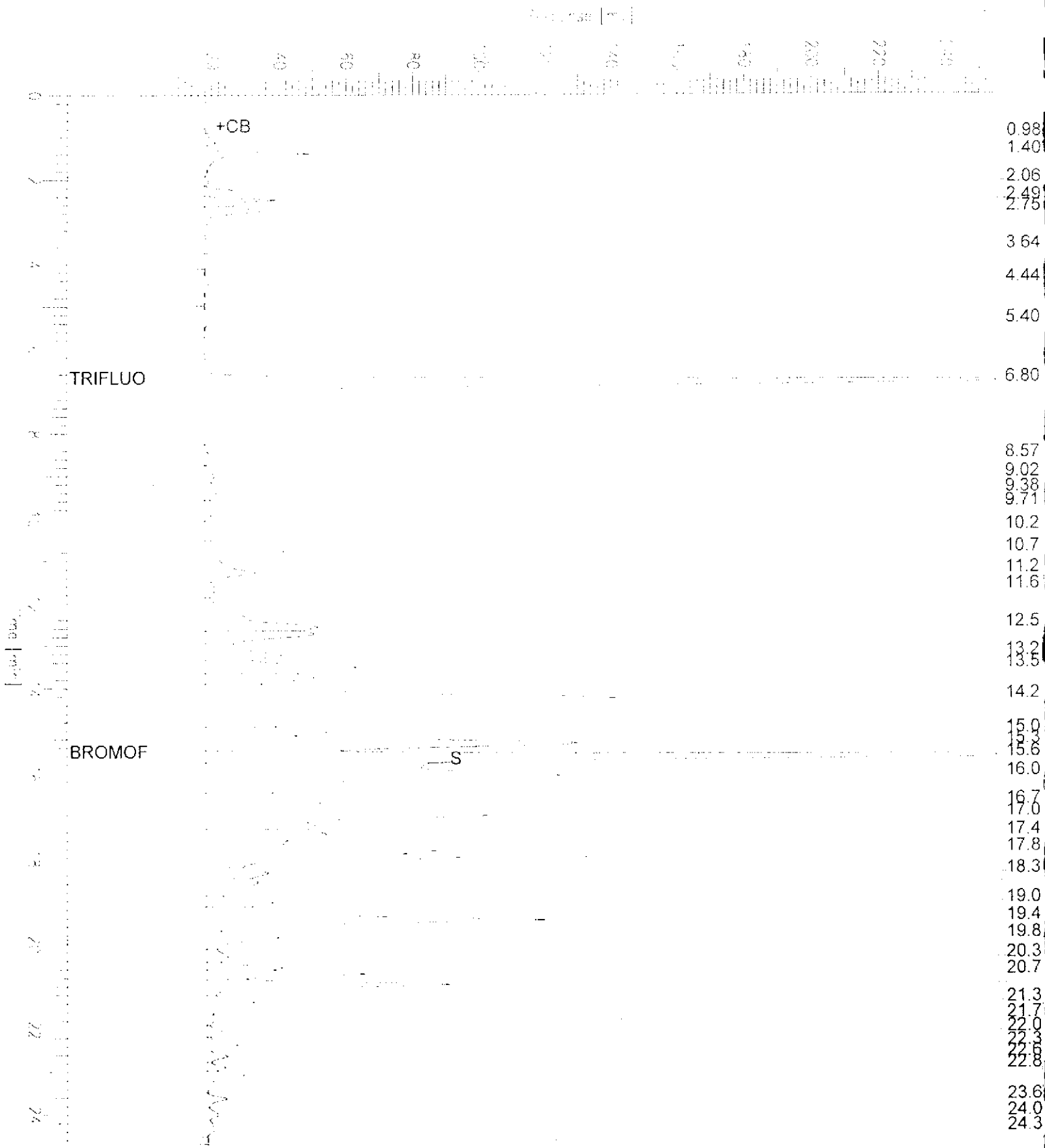


GC07 TVH 'A' Data File RTX 502

Sample Name : 143555-003.53330,TVH ONLY  
FileName : G:\GC07\DATA\025A009.raw  
Method : TVHBTXE  
Start Time : 0.00 min  
Scale Factor: -1.0

End Time : 26.00 min  
Plot Offset: 6 mV

Sample #:  
Date : 1/26/00 09:21 AM  
Time of Injection: 1/25/00 04:24 PM  
Low Point : 5.52 mV  
Plot Scale: 250.0 mV  
Page 1 of 1  
High Point : 255.52 mV

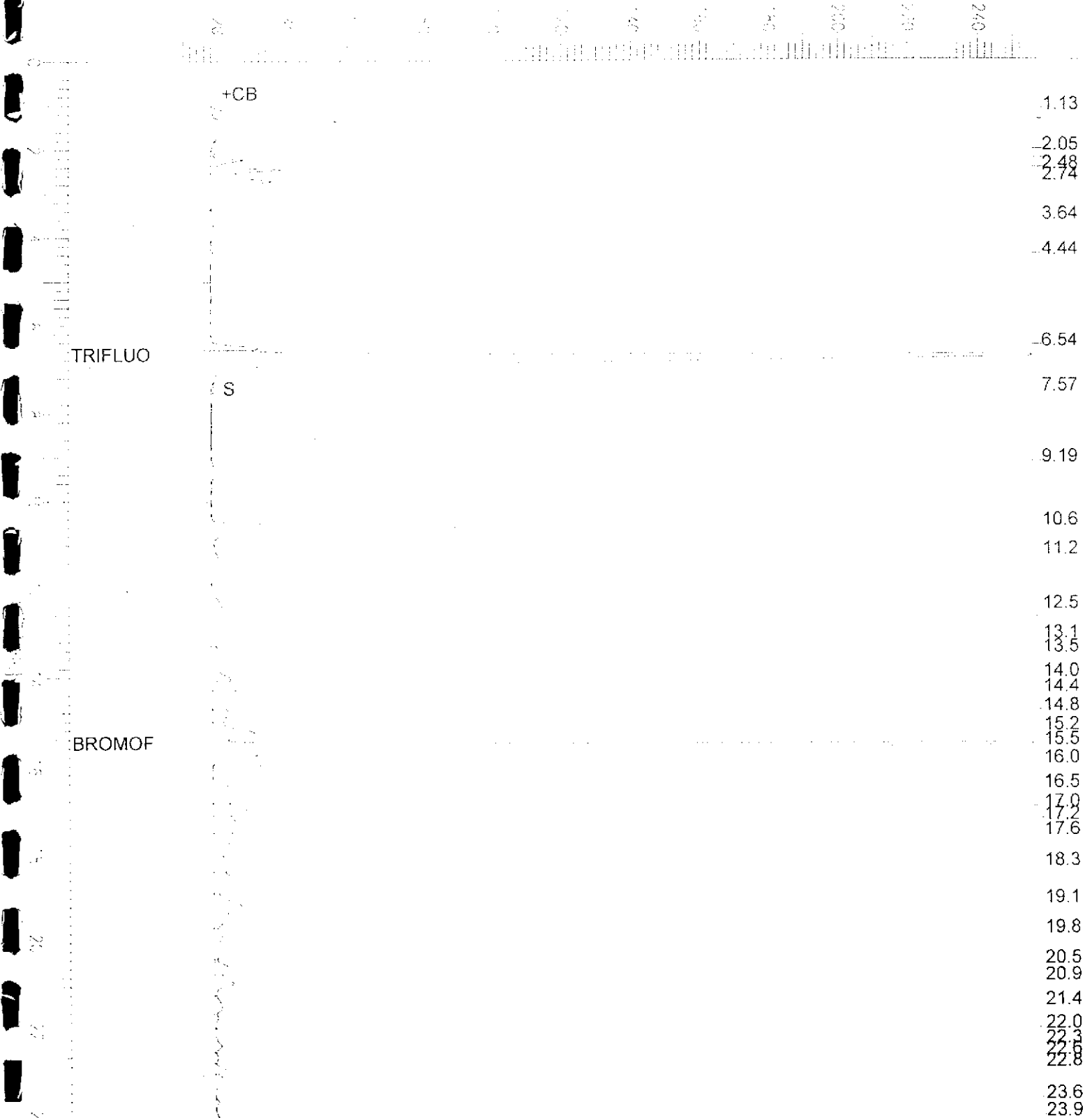


GC07 TVH 'A' Data File RTX 502

Sample Name : 143555-004,53330  
 File Name : G:\GC07\DATA\025A008.raw  
 Method : TVHBTXE  
 Start Time : 0.00 min End Time : 26.00 min  
 Scale Factor: -1.0 Plot Offset: 6 mV

Sample #: Page 1 of 1  
 Date : 1/26/00 09:21 AM  
 Time of Injection: 1/25/00 03:47 PM  
 Low Point : 5.61 mV High Point : 255.61 mV  
 Plot Scale: 250.0 mV

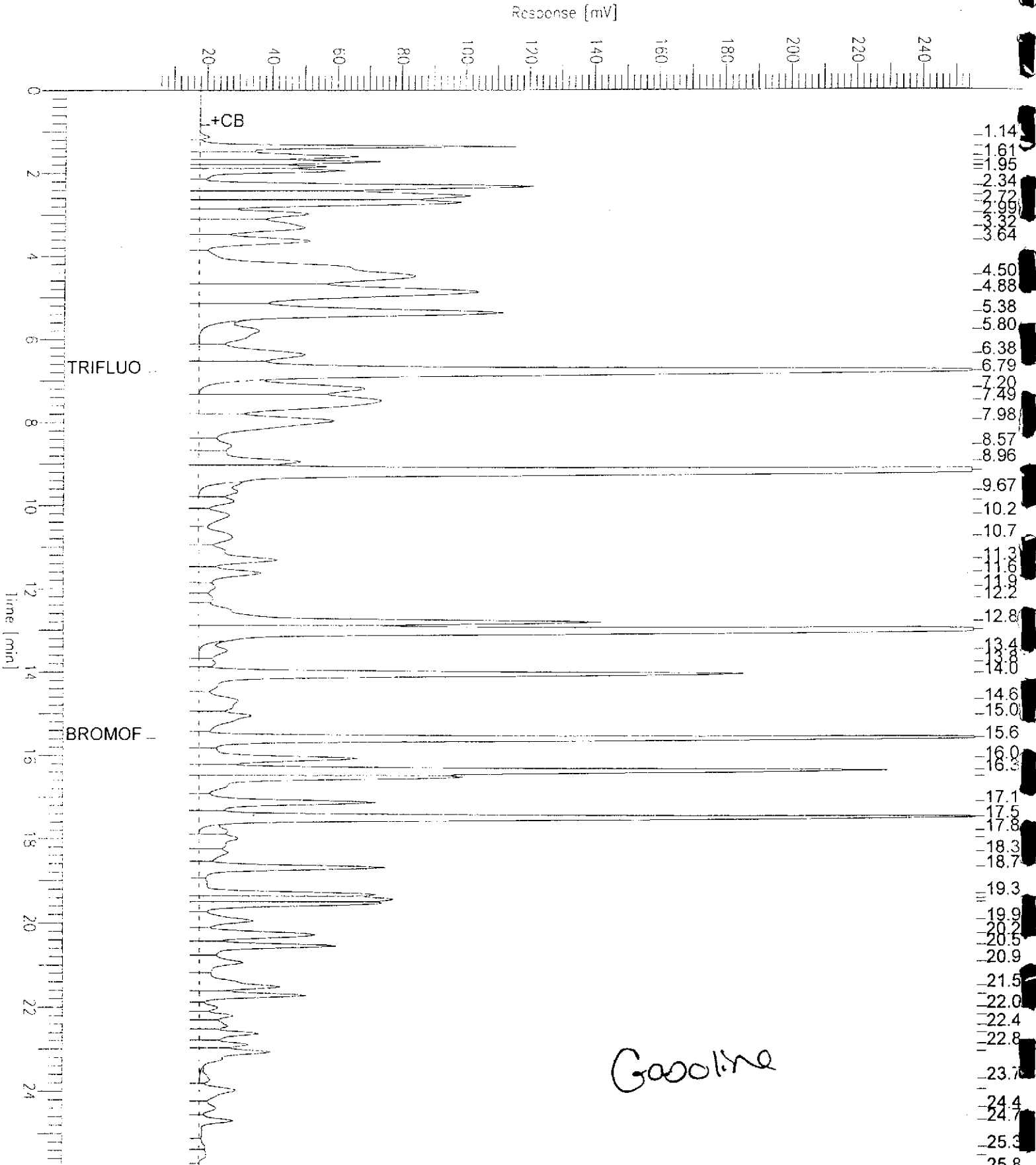
Time [min]



# GC07 TVH 'A' Data File RTX 502

Sample Name : CCV/LCS, QC106202, 53330, 99WS8556, 5/5000  
 FileName : G:\GC07\DATA\025A002.raw  
 Method : TVHBTXE  
 Start Time : 0.00 min  
 Scale Factor : -1.0

Sample #: GAS  
 Date : 1/25/00 11:33 AM  
 Time of Injection: 1/25/00 11:06 AM  
 Low Point : 5.23 mV  
 Plot Scale: 250.0 mV  
 Page 1 of 1  
 High Point : 255.23 mV  
 End Time : 26.00 min  
 Plot Offset: 5 mV

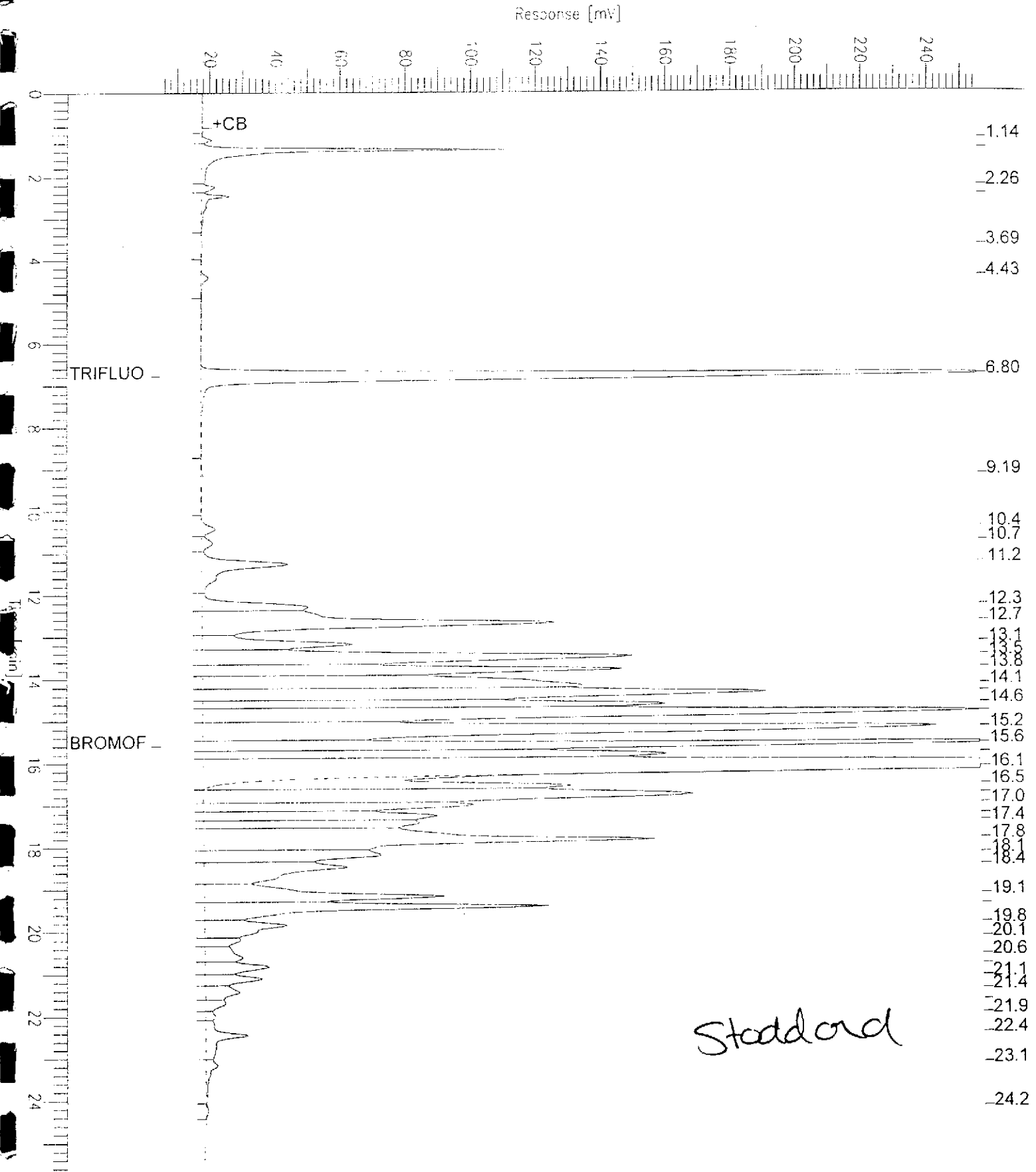


GC07 TVH 'A' Data File RTX 502

Sample Name : CCV,53330,99WS7997,5/5000  
 FileName : G:\GC07\DATA\025A003.raw  
 Method : TVHBTXE  
 Start Time : 0.00 min  
 Scale Factor : -1.0

End Time : 26.00 min  
 Plot Offset: 5 mV

Sample #: STODDARD  
 Date : 1/25/00 12:10 PM  
 Time of Injection: 1/25/00 11:43 AM  
 Low Point : 5.02 mV  
 Plot Scale: 250.0 mV  
 High Point : 255.02 mV





**BTXE Compounds by GC/PID**

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8021B
Field ID:	GW-2	Batch#:	53330
Matrix:	Water	Sampled:	01/20/00
Units:	ug/L	Received:	01/21/00
Diln Fac:	1.000	Analyzed:	01/25/00

Type: SAMPLE Lab ID: 143555-004

Analyte	Result	RL
MTBE	4.4	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	0.97 C	0.50
m,p-Xylenes	ND	0.50
o-Xylene	1.3	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	99	51-143
Bromofluorobenzene (PID)	104	37-146

Type: BLANK Lab ID: QC106204

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)	97	51-143
Bromofluorobenzene (PID)	99	37-146



Gasoline by GC/FID CA LUFT

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC106202	Batch#:	53330
Matrix:	Water	Analyzed:	01/25/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,143	107	77-117

Surrogate	%REC	Limits
Trifluorotoluene (FID)	122	53-150
Bromofluorobenzene (FID)	114	53-149



Gasoline by GC/FID CA LUFT

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8015M
Field ID:	GW-5	Batch#:	53330
MSS Lab ID:	143555-001	Sampled:	01/20/00
Matrix:	Water	Received:	01/21/00
Units:	ug/L	Analyzed:	01/25/00
Diln Fac:	1.000		

Type: MS Lab ID: QC106205

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	56.84	2,000	1,946	94	69-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	120	53-150
Bromofluorobenzene (FID)	119	53-149

Type: MSD Lab ID: QC106206

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,988	97	69-131	2	13

Surrogate	%REC	Limits
Trifluorotoluene (FID)	119	53-150
Bromofluorobenzene (FID)	119	53-149



## BTXE Compounds by GC/PID

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC106203	Batch#:	53330
Matrix:	Water	Analyzed:	01/25/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	16.53	83	66-126
Benzene	20.00	15.09	75	65-111
Toluene	20.00	16.97	85	76-117
Ethylbenzene	20.00	17.04	85	71-121
m,p-Xylenes	40.00	34.51	86	80-123
o-Xylene	20.00	16.99	85	75-127

Surrogate	%REC	Limits
Trifluorotoluene (PID)	97	51-143
Bromofluorobenzene (PID)	100	37-146

## Purgeable Organics by GC/MS

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	GW-5	Batch#:	53378
Lab ID:	143555-001	Sampled:	01/20/00
Matrix:	Water	Received:	01/21/00
Units:	ug/L	Analyzed:	01/27/00
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
Carbon Disulfide	ND	0.5
MTBE	0.7	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
2-Chloroethylvinylether	ND	10
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5

ND = Not Detected

RL = Reporting Limit

## Purgeable Organics by GC/MS

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	GW-5	Batch#:	53378
Lab ID:	143555-001	Sampled:	01/20/00
Matrix:	Water	Received:	01/21/00
Units:	ug/L	Analyzed:	01/27/00
Diln Fac:	1.000		

Analyte	Result	RL
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	1.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	107	81-121
1,2-Dichloroethane-d4	94	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	107	82-118



## Purgeable Organics by GC/MS

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	GW-4	Batch#:	53378
Lab ID:	143555-002	Sampled:	01/20/00
Matrix:	Water	Received:	01/21/00
Units:	ug/L	Analyzed:	01/27/00
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	3.6	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	1.5	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
2-Chloroethylvinylether	ND	10
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5

ND = Not Detected

RL = Reporting Limit

### Purgeable Organics by GC/MS

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	GW-4	Batch#:	53378
Lab ID:	143555-002	Sampled:	01/20/00
Matrix:	Water	Received:	01/21/00
Units:	ug/L	Analyzed:	01/27/00
Diln Fac:	1.000		

Analyte	Result	RL
Tetrachloroethene	0.8	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	5.5	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	9.4	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	0.9	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	2.7	0.5
1,2,4-Trimethylbenzene	3.4	0.5
sec-Butylbenzene	17	0.5
para-Isopropyl Toluene	0.9	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	4.1	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	1.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	108	81-121
1,2-Dichloroethane-d4	95	76-127
Toluene-d8	104	90-109
Bromofluorobenzene	108	82-118

ND = Not Detected

RL = Reporting Limit





## Purgeable Organics by GC/MS

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	GW-104	Batch#:	53378
Lab ID:	143555-003	Sampled:	01/20/00
Matrix:	Water	Received:	01/21/00
Units:	ug/L	Analyzed:	01/27/00
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	4.4	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	2.1	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
2-Chloroethylvinylether	ND	10
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5

ND = Not Detected

RL = Reporting Limit



## Purgeable Organics by GC/MS

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	GW-104	Batch#:	53378
Lab ID:	143555-003	Sampled:	01/20/00
Matrix:	Water	Received:	01/21/00
Units:	ug/L	Analyzed:	01/27/00
Diln Fac:	1.000		

Analyte	Result	RL
Tetrachloroethene	0.6	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	7.8	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	14	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	2.2	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	3.4	0.5
1,2,4-Trimethylbenzene	8.3	0.5
sec-Butylbenzene	24	0.5
para-Isopropyl Toluene	2.1	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	6.7	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	1.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	108	81-121
1,2-Dichloroethane-d4	95	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	106	82-118

ND = Not Detected

RL = Reporting Limit

**Purgeable Halocarbons by GC/MS**

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	GW-2	Batch#:	53378
Lab ID:	143555-004	Sampled:	01/20/00
Matrix:	Water	Received:	01/21/00
Units:	ug/L	Analyzed:	01/27/00
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	5.5	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	19	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	130	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	94	76-127
Toluene-d8	102	90-109
Bromofluorobenzene	107	82-118

ND = Not Detected  
RL = Reporting Limit

## Purgeable Organics by GC/MS

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	TRIP BLANK	Batch#:	53378
Lab ID:	143555-005	Sampled:	01/20/00
Matrix:	Water	Received:	01/21/00
Units:	ug/L	Analyzed:	01/27/00
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
2-Chloroethylvinylether	ND	10
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5

ND = Not Detected

RL = Reporting Limit

## Purgeable Organics by GC/MS

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	TRIP BLANK	Batch#:	53378
Lab ID:	143555-005	Sampled:	01/20/00
Matrix:	Water	Received:	01/21/00
Units:	ug/L	Analyzed:	01/27/00
Diln Fac:	1.000		

Analyte	Result	RL
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	1.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	106	81-121
1,2-Dichloroethane-d4	93	76-127
Toluene-d8	102	90-109
Bromofluorobenzene	106	82-118

ND = Not Detected

RL = Reporting Limit



## Purgeable Organics by GC/MS

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC106389	Batch#:	53378
Matrix:	Water	Analyzed:	01/27/00
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
2-Chloroethylvinylether	ND	10
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND = Not Detected

RL = Reporting Limit

**Purgeable Organics by GC/MS**

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC106389	Batch#:	53378
Matrix:	Water	Analyzed:	01/27/00
Units:	ug/L		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	1.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	109	81-121
1,2-Dichloroethane-d4	94	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	106	82-118

## Purgeable Halocarbons by GC/MS

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC106389	Batch#:	53378
Matrix:	Water	Analyzed:	01/27/00
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	94	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	106	82-118





## Purgeable Organics by GC/MS

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC106390	Batch#:	53378
Matrix:	Water	Analyzed:	01/27/00
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
2-Chloroethylvinylether	ND	10
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND = Not Detected

RL = Reporting Limit

## Purgeable Organics by GC/MS

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC106390	Batch#:	53378
Matrix:	Water	Analyzed:	01/27/00
Units:	ug/L		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	1.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	107	81-121
1,2-Dichloroethane-d4	93	76-127
Toluene-d8	102	90-109
Bromofluorobenzene	107	82-118

ND = Not Detected

RL = Reporting Limit

**Purgeable Halocarbons by GC/MS**

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC106390	Batch#:	53378
Matrix:	Water	Analyzed:	01/27/00
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	93	76-127
Toluene-d8	102	90-109
Bromofluorobenzene	107	82-118

ND = Not Detected

RL = Reporting Limit



## Purgeable Organics by GC/MS

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC106388	Batch#:	53378
Matrix:	Water	Analyzed:	01/27/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	43.90	88	64-139
Benzene	50.00	48.41	97	71-127
Trichloroethene	50.00	45.78	92	72-129
Toluene	50.00	49.32	99	73-129
Chlorobenzene	50.00	48.06	96	77-126

Surrogate	%REC	Limits
Dibromofluoromethane	107	81-121
1,2-Dichloroethane-d4	93	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	106	82-118

**Purgeable Halocarbons by GC/MS**

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC106388	Batch#:	53378
Matrix:	Water	Analyzed:	01/27/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	43.90	88	64-139
Trichloroethene	50.00	45.78	92	72-129
Chlorobenzene	50.00	48.06	96	77-126

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	93	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	106	82-118



## Purgeable Organics by GC/MS

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	143517-021	Batch#:	53378
Matrix:	Water	Sampled:	01/19/00
Units:	ug/L	Received:	01/19/00

Type: MS Analyzed: 01/27/00  
 Lab ID: QC106391

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	2.736	50.00	49.28	93	59-144
Benzene	<0.5000	50.00	50.88	102	67-128
Trichloroethene	18.37	50.00	63.38	90	61-136
Toluene	<0.5000	50.00	51.21	102	72-126
Chlorobenzene	<0.5000	50.00	49.61	99	78-122

Surrogate	%REC	Limits
Dibromofluoromethane	106	81-121
1,2-Dichloroethane-d4	94	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	105	82-118

Type: MSD Analyzed: 01/28/00  
 Lab ID: QC106392

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	47.77	90	59-144	3	13
Benzene	50.00	50.21	100	67-128	1	10
Trichloroethene	50.00	62.86	89	61-136	1	10
Toluene	50.00	51.03	102	72-126	0	10
Chlorobenzene	50.00	49.21	98	78-122	1	10

Surrogate	%REC	Limits
Dibromofluoromethane	106	81-121
1,2-Dichloroethane-d4	93	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	106	82-118



## Purgeable Halocarbons by GC/MS

Lab #:	143555	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	143517-021	Batch#:	53378
Matrix:	Water	Sampled:	01/19/00
Units:	ug/L	Received:	01/19/00

Type: MS Analyzed: 01/27/00  
 Lab ID: QC106391

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	2.736	50.00	49.28	93	59-144
Trichloroethene	18.37	50.00	63.38	90	61-136
Chlorobenzene	<0.5000	50.00	49.61	99	78-122

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	94	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	105	82-118

Type: MSD Analyzed: 01/28/00  
 Lab ID: QC106392

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	47.77	90	59-144	3	13
Trichloroethene	50.00	62.86	89	61-136	1	10
Chlorobenzene	50.00	49.21	98	78-122	1	10

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	93	76-127
Toluene-d8	103	90-109
Bromofluorobenzene	106	82-118

## CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: <i>1000</i>		Project Location: <i>San Francisco</i>		Date: <i>1-21-99</i>		Serial No.: No 2769						
Project Name: <i>Quantum</i>		Field Logbook No.:										
Sampler (Signature): <i>Victor Lee</i>						Analyses		Samplers: <i>K 10</i>				
SAMPLES						HOLD		RUSH				
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	TOXIC (MMS)	HEAVY METALS (MMS)	ANIONIC AMMONIUM (MMS)	AMMONIUM NITRATE (MMS)	LEAD (MMS)	OTHER	REMARKS
<i>1</i>	<i>1-21-99</i>	<i>10:00</i>		<i>2</i>	<i>SLURRY</i>	<i>X</i>	<i>X</i>					<i>1-week TAT</i>
<i>2</i>	<i>1-21-99</i>	<i>10:00</i>		<i>4</i>	<i>SLURRY</i>	<i>X</i>	<i>X</i>					<i>* Analytical Lab</i>
<i>3</i>	<i>1-21-99</i>	<i>10:00</i>		<i>2</i>	<i>SLURRY</i>	<i>X</i>	<i>X</i>					<i>2.1.99</i>
<i>4</i>	<i>1-21-99</i>	<i>10:00</i>		<i>2</i>	<i>SLURRY</i>	<i>X</i>	<i>X</i>					<i>route to TAT</i>
RELINQUISHED BY: (Signature) <i>Victor Lee</i>				DATE	TIME	RECEIVED BY: (Signature) _____				DATE	TIME	
RELINQUISHED BY: (Signature)				DATE	TIME	RECEIVED BY: (Signature)				DATE	TIME	
RELINQUISHED BY: (Signature)				DATE	TIME	RECEIVED BY: (Signature)				DATE	TIME	
METHOD OF SHIPMENT: <i>Box, etc.</i>				DATE	TIME	LAB COMMENTS:						
Sample Collector: LEVINE•FRICKE•RECON 1900 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 652-4500						Analytical Laboratory: <i>CAT</i>						





Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L   R E P O R T

Prepared for:

LFR-Levine-Fricke  
1900 Powell Street  
12th Floor  
Emeryville, CA 94608

Date: 07-FEB-00  
Lab Job Number: 143612  
Project ID: 6895  
Location: Glovatorium

Reviewed by:

Reviewed by:

This package may be reproduced only in its entirety.

Laboratory Numbers: 143612  
Client: LFR-Levine-Fricke  
Project #: 6895  
Location: Glovatorium  
COC#: 2770, 2775 & 4977

Sampled Date: 01/24,25/00  
Received Date: 01/25/00

### CASE NARRATIVE

This hardcopy data package contains sample and QC results for twelve water and two product samples, which were received from the site referenced above on January 25, 2000. The samples were received intact. The two product samples were sub contracted to Friedman & Bruya per Taylor Bennit's request. All data were faxed to Taylor Bennit on February 07,000.

#### TVH/BTXE:

High surrogate recoveries for bromofluorobenzene were observed in samples B-2 (CT# 143612-002), B-9 (CT# 143612-005), B-8 (CT# 143612-006), B-13 (CT# 143612-007) and B-3 (CT# 143612-008) due to matrix interference. High surrogate recoveries for bromofluorobenzene were also observe in the matrix spike and matrix spike duplicate of sample CT# 143643-002 due to matrix interference. No other analytical problems were encountered.

#### VOCs (EPA 8260):

No analytical problems were encountered.



## Gasoline by GC/FID CA LUFT

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8015M
Matrix:	Water	Received:	01/25/00
Units:	ug/L		

Field ID:	B-2	Batch#:	53382
Type:	SAMPLE	Sampled:	01/24/00
Lab ID:	143612-002	Analyzed:	01/28/00
Diln Fac:	25.00		

Analyte	Result	RL
Gasoline C7-C12	31,000 Y	1,300
Stoddard Solvent C7-C12	20,000	1,300

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	59-135
Bromofluorobenzene (FID)	142 *	60-140

Field ID:	B-10	Batch#:	53444
Type:	SAMPLE	Sampled:	01/24/00
Lab ID:	143612-003	Analyzed:	01/31/00
Diln Fac:	5.000		

Analyte	Result	RL
Gasoline C7-C12	4,200	250
Stoddard Solvent C7-C12	2,400 Y	250

Surrogate	%REC	Limits
Trifluorotoluene (FID)	107	59-135
Bromofluorobenzene (FID)	133	60-140

Field ID:	B-7	Batch#:	53382
Type:	SAMPLE	Sampled:	01/24/00
Lab ID:	143612-004	Analyzed:	01/28/00
Diln Fac:	25.00		

Analyte	Result	RL
Gasoline C7-C12	30,000 Y	1,300
Stoddard Solvent C7-C12	19,000	1,300

Surrogate	%REC	Limits
Trifluorotoluene (FID)	99	59-135
Bromofluorobenzene (FID)	127	60-140

\* = Value outside QC limits

H = Heavier hydrocarbons contributed to the quantitation

Y = Sample exhibits fuel pattern which does not resemble standard

ND = Not Detected

RL = Reporting Limit

Page 1 of 4



## Gasoline by GC/FID CA LUFT

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8015M
Matrix:	Water	Received:	01/25/00
Units:	ug/L		

Field ID:	B-9	Batch#:	53444
Type:	SAMPLE	Sampled:	01/24/00
Lab ID:	143612-005	Analyzed:	01/31/00
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	1,800 H Y	50
Stoddard Solvent C7-C12	1,000 Y	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	59-135
Bromofluorobenzene (FID)	141 *	60-140

Field ID:	B-8	Batch#:	53444
Type:	SAMPLE	Sampled:	01/24/00
Lab ID:	143612-006	Analyzed:	01/31/00
Diln Fac:	5.000		

Analyte	Result	RL
Gasoline C7-C12	19,000 Y	250
Stoddard Solvent C7-C12	11,000	250

Surrogate	%REC	Limits
Trifluorotoluene (FID)	105	59-135
Bromofluorobenzene (FID)	192 *	60-140

Field ID:	B-13	Batch#:	53444
Type:	SAMPLE	Sampled:	01/24/00
Lab ID:	143612-007	Analyzed:	01/31/00
Diln Fac:	5.000		

Analyte	Result	RL
Gasoline C7-C12	3,000 Y	250
Stoddard Solvent C7-C12	1,700	250

Surrogate	%REC	Limits
Trifluorotoluene (FID)	108	59-135
Bromofluorobenzene (FID)	163 *	60-140

H = Value outside QC limits

Y = Heavier hydrocarbons contributed to the quantitation

H Y = Sample exhibits fuel pattern which does not resemble standard

ND = Not Detected

RL = Reporting Limit



Gasoline by GC/FID CA LUFT

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8015M
Matrix:	Water	Received:	01/25/00
Units:	ug/L		

Field ID:	B-3	Batch#:	53444
Type:	SAMPLE	Sampled:	01/24/00
Lab ID:	143612-008	Analyzed:	01/31/00
Diln Fac:	5.000		

Analyte	Result	RL
Gasoline C7-C12	8,800 Y	250
Stoddard Solvent C7-C12	4,900	250

Surrogate	%REC	Limits
Trifluorotoluene (FID)	108	59-135
Bromofluorobenzene (FID)	155 *	60-140

Field ID:	GW-6A-1/25/00	Batch#:	53382
Type:	SAMPLE	Sampled:	01/25/00
Lab ID:	143612-013	Analyzed:	01/28/00
Diln Fac:	1.000		

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

Surrogate	%REC	Limits
Trifluorotoluene (FID)	95	59-135
Bromofluorobenzene (FID)	99	60-140

Field ID:	MW-11	Batch#:	53382
Type:	SAMPLE	Sampled:	01/25/00
Lab ID:	143612-014	Analyzed:	01/28/00
Diln Fac:	1.000		

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

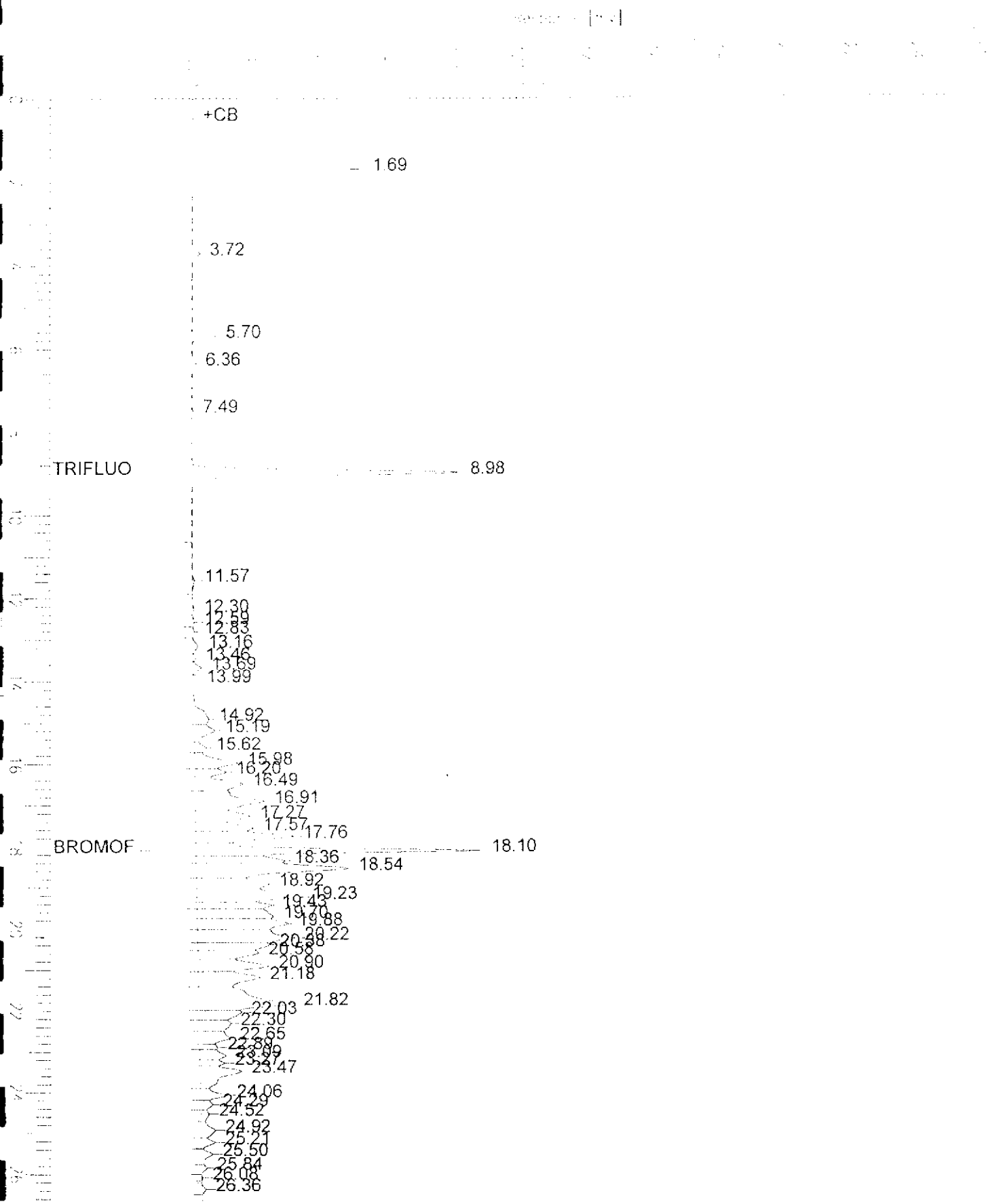
Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	59-135
Bromofluorobenzene (FID)	106	60-140

\* = Value outside QC limits  
H = Heavier hydrocarbons contributed to the quantitation  
Y = Sample exhibits fuel pattern which does not resemble standard  
ND = Not Detected  
RL = Reporting Limit  
Page 3 of 4

Chromatogram

Sample Name : 143612-002,53382  
FileName : G:\GC05\DATA\028G008.raw  
Method : TVHBTXE  
Start Time : 0.00 min End Time : 26.80 min  
Scale Factor: -1.0 Plot Offset: 10 mV

Sample #: . Page 1 of 1  
Date : 1/28/00 05:51 PM  
Time of Injection: 1/28/00 05:24 PM  
Low Point : 10.38 mV High Point : 260.38 mV  
Plot Scale: 250.0 mV

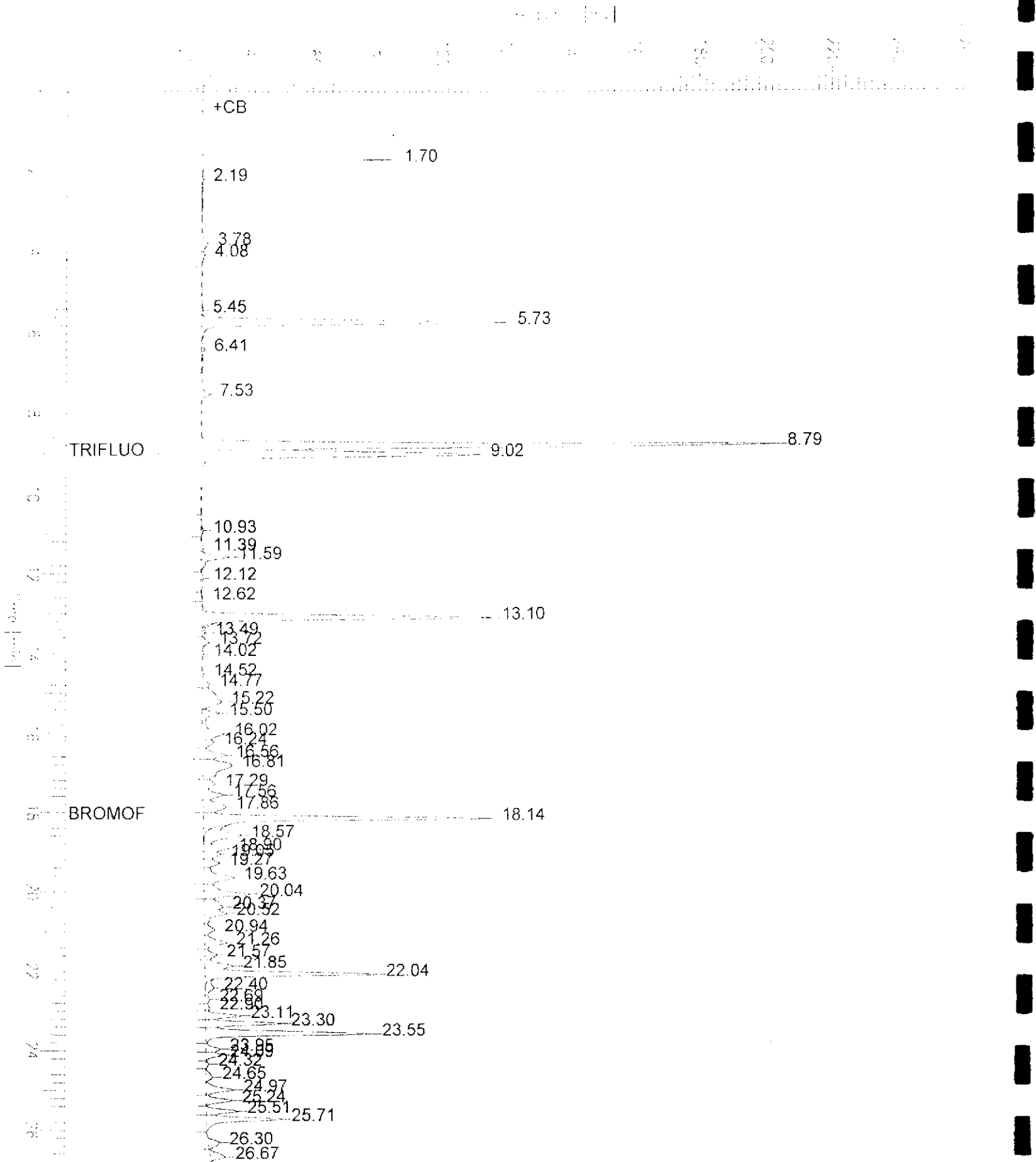


# Chromatogram

Sample Name : 143612-003,53444  
FileName : G:\GC05\DATA\031G008.raw  
Method : TVHBTXE  
Start Time : 0.00 min  
Scale Factor: -1.0

End Time : 26.80 min  
Plot Offset: 13 mV

Sample #:  
Date : 2/1/00 08:19 AM  
Time of Injection: 1/31/00 08:55 PM  
Low Point : 13.17 mV  
Plot Scale: 250.0 mV  
Page 1 of 1  
High Point : 263.17 mV



Chromatogram

Sample Name : 143612-004.53382

Sample #:

Page 1 of 1

File Name : G:\GC05\DATA\028G010.raw

Date : 1/28/00 07:17 PM

Method : TVHBTXE

Time of Injection: 1/28/00 06:50 PM

Start Time : 0.00 min

End Time : 26.80 min

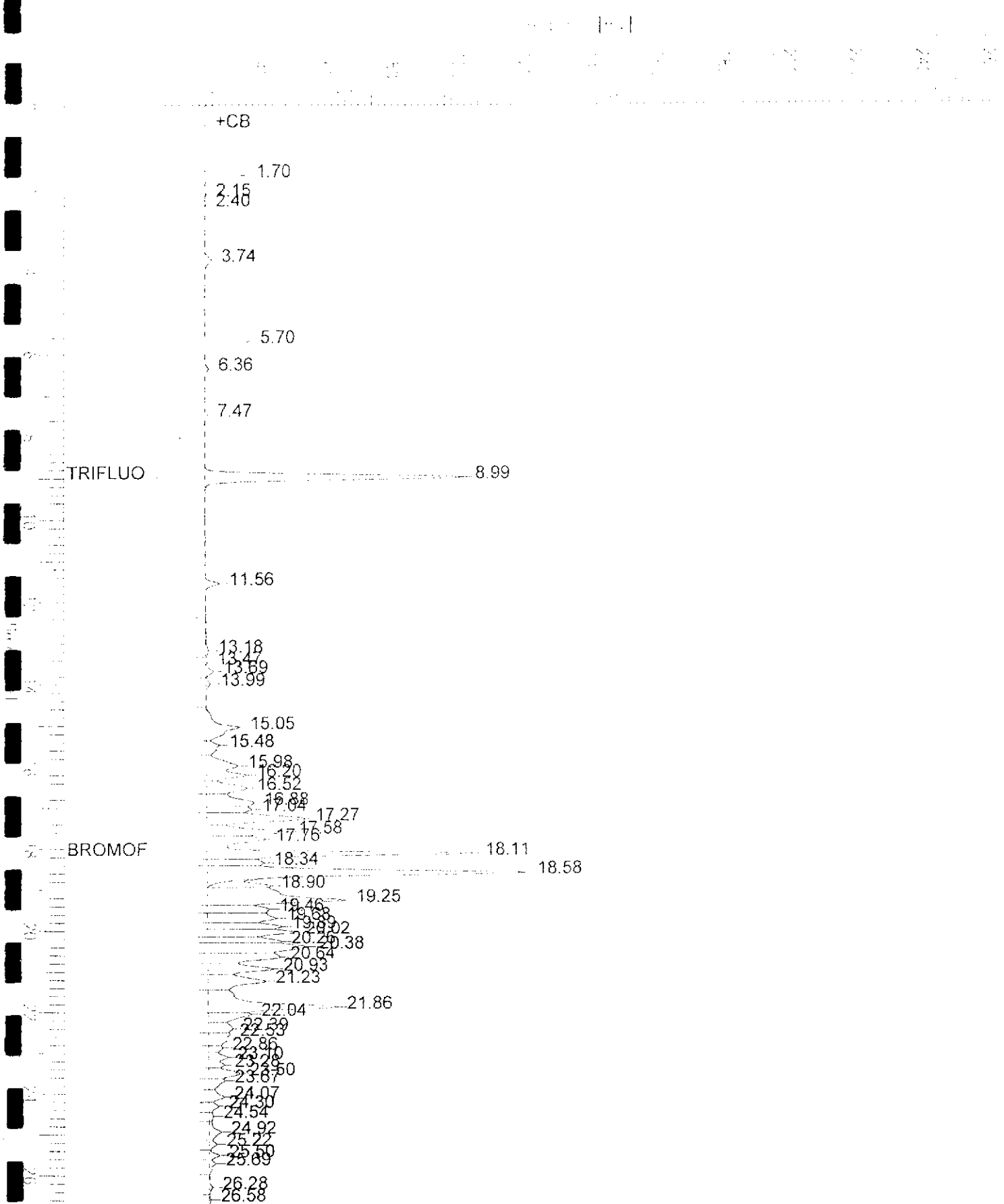
Low Point : 11.27 mV

High Point : 261.27 mV

Scale Factor: -1.0

Plot Offset: 11 mV

Plot Scale: 250.0 mV

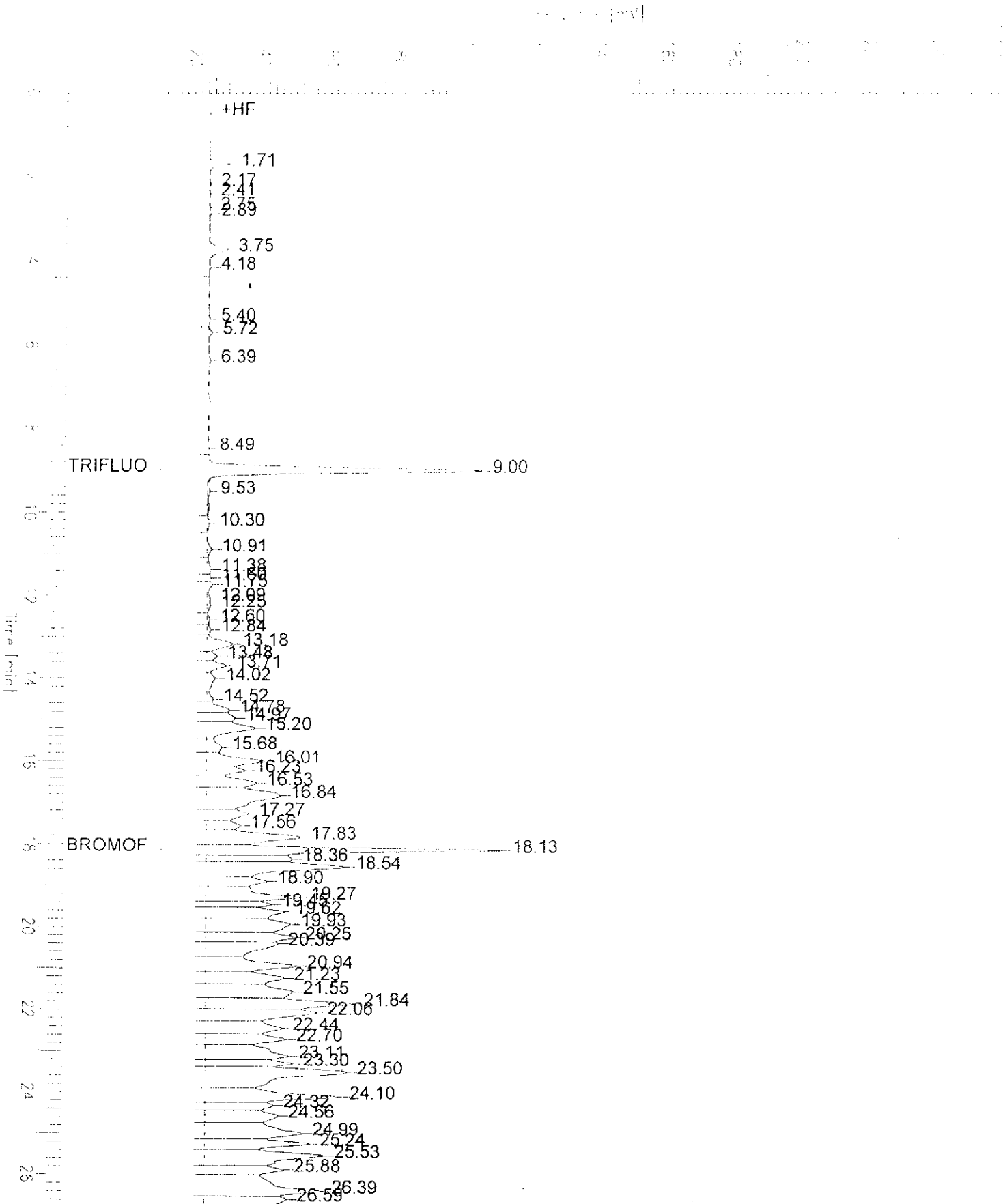




Chromatogram

Sample Name : 143612-005,53444  
FileName : G:\GC05\DATA\031G006.raw  
Method : TVHBTXE  
Start Time : 0.00 min End Time : 26.80 min  
Scale Factor: -1.0 Plot Offset: 12 mV

Sample #:   
Date : 2/2/00 10:18 AM Page 1 of 1  
Time of Injection: 1/31/00 07:35 PM  
Low Point : 11.83 mV High Point : 261.83 mV  
Plot Scale: 250.0 mV



Chromatogram

Sample Name : 143612-006,53444

Sample #:

Page 1 of 1

FileName : G:\GC05\DATA\031G010.raw

Date : 2/1/00 08:20 AM

Method : TVHBTXE

Time of Injection: 1/31/00 10:16 PM

Start Time : 0.00 min

End Time : 26.80 min

Low Point : 13.64 mV

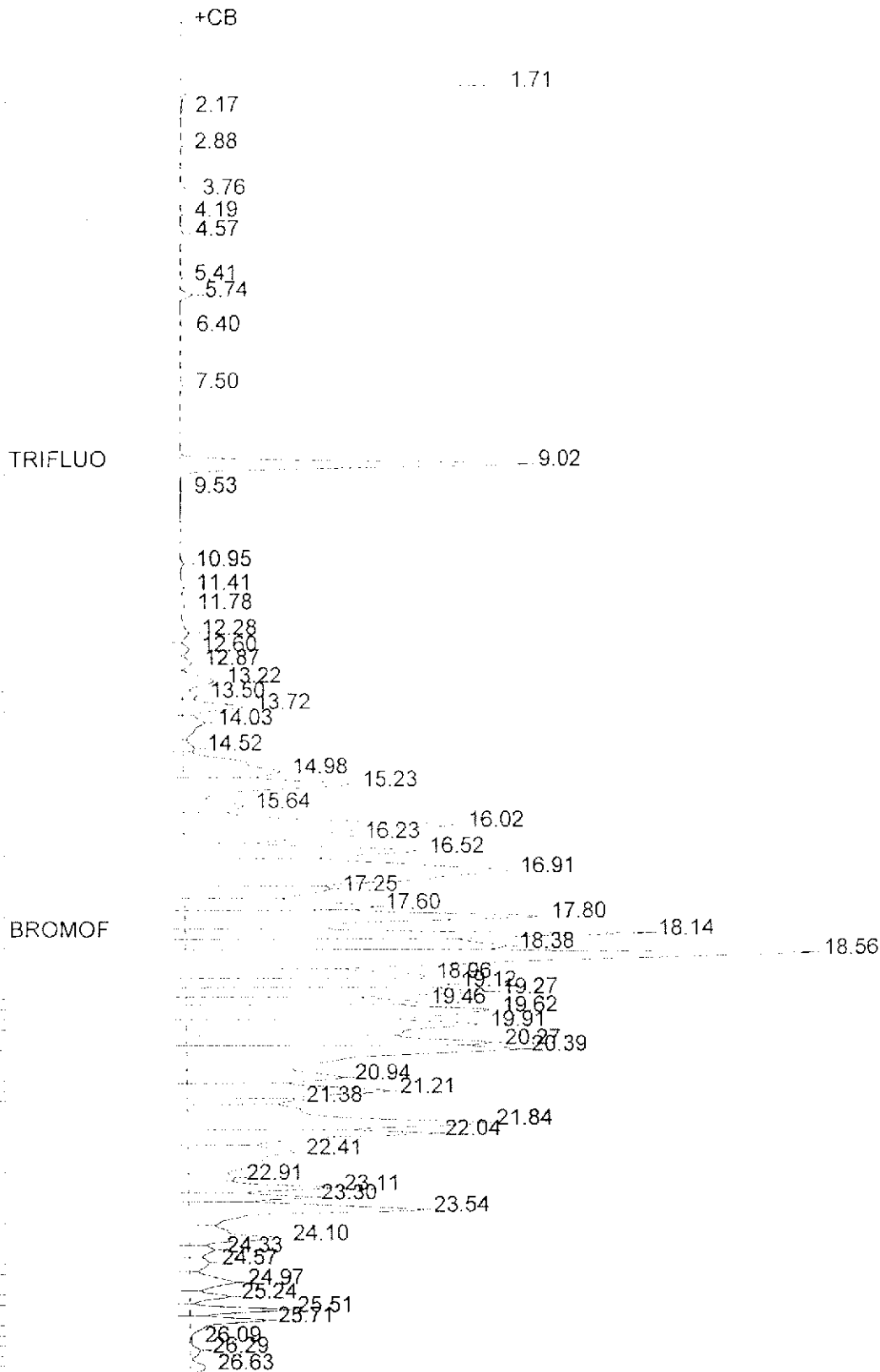
High Point : 263.64 mV

Scale Factor: -1.0

Plot Offset: 14 mV

Plot Scale: 250.0 mV

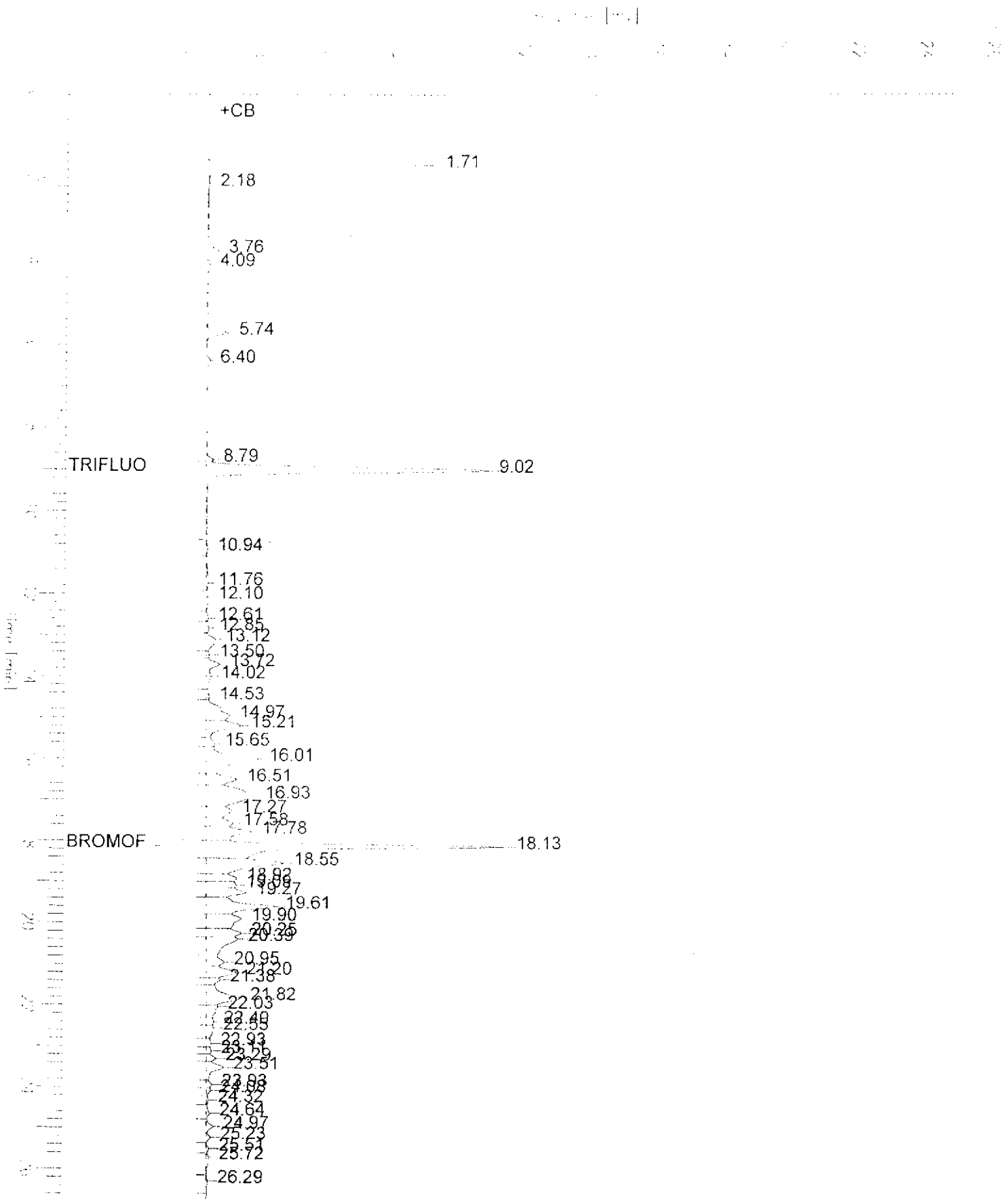
Response [mV]



Chromatogram

Sample Name : 143612-007,53444  
File Name : G:\GC05\DATA\031G009.raw  
Method : TVHBTXE  
Start Time : 0.00 min End Time : 26.80 min  
Scale Factor: -1.0 Plot Offset: 13 mV

Sample #:  
Date : 2/1/00 09:19 AM  
Time of Injection: 1/31/00 09:36 PM  
Low Point : 13.23 mV High Point : 263.23 mV  
Plot Scale: 250.0 mV



# Chromatogram

Sample Name : 143612-008,53444

Sample #:

Page 1 of 1

File Name : G:\GC05\DATA\031G011.raw

Date : 2/1/00 08:20 AM

Method : TVHBTXE

Time of Injection: 1/31/00 10:56 PM

Start Time : 0.00 min

End Time : 26.80 min

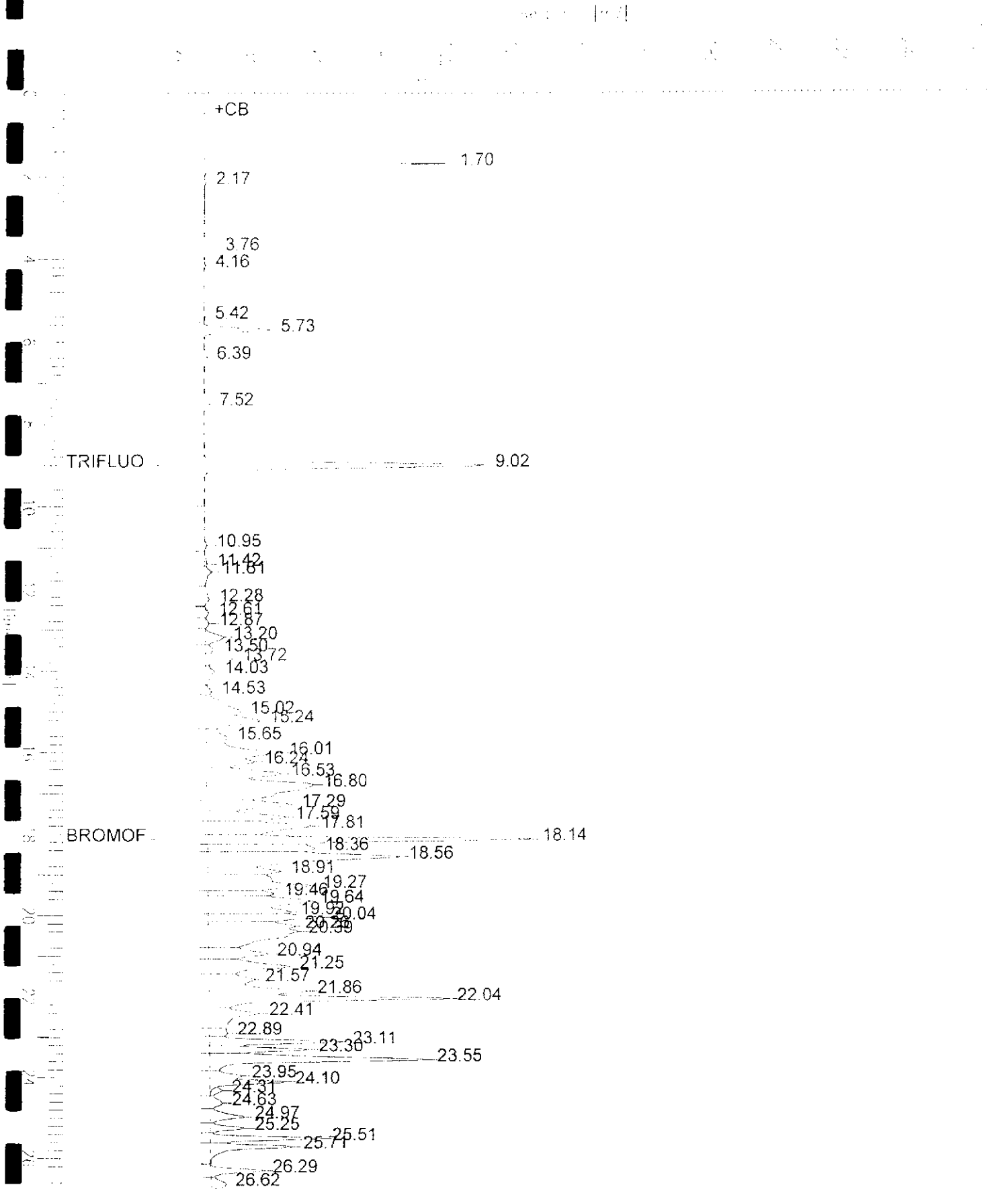
Low Point : 14.15 mV

High Point : 264.15 mV

Scale Factor: -1.0

Plot Offset: 14 mV

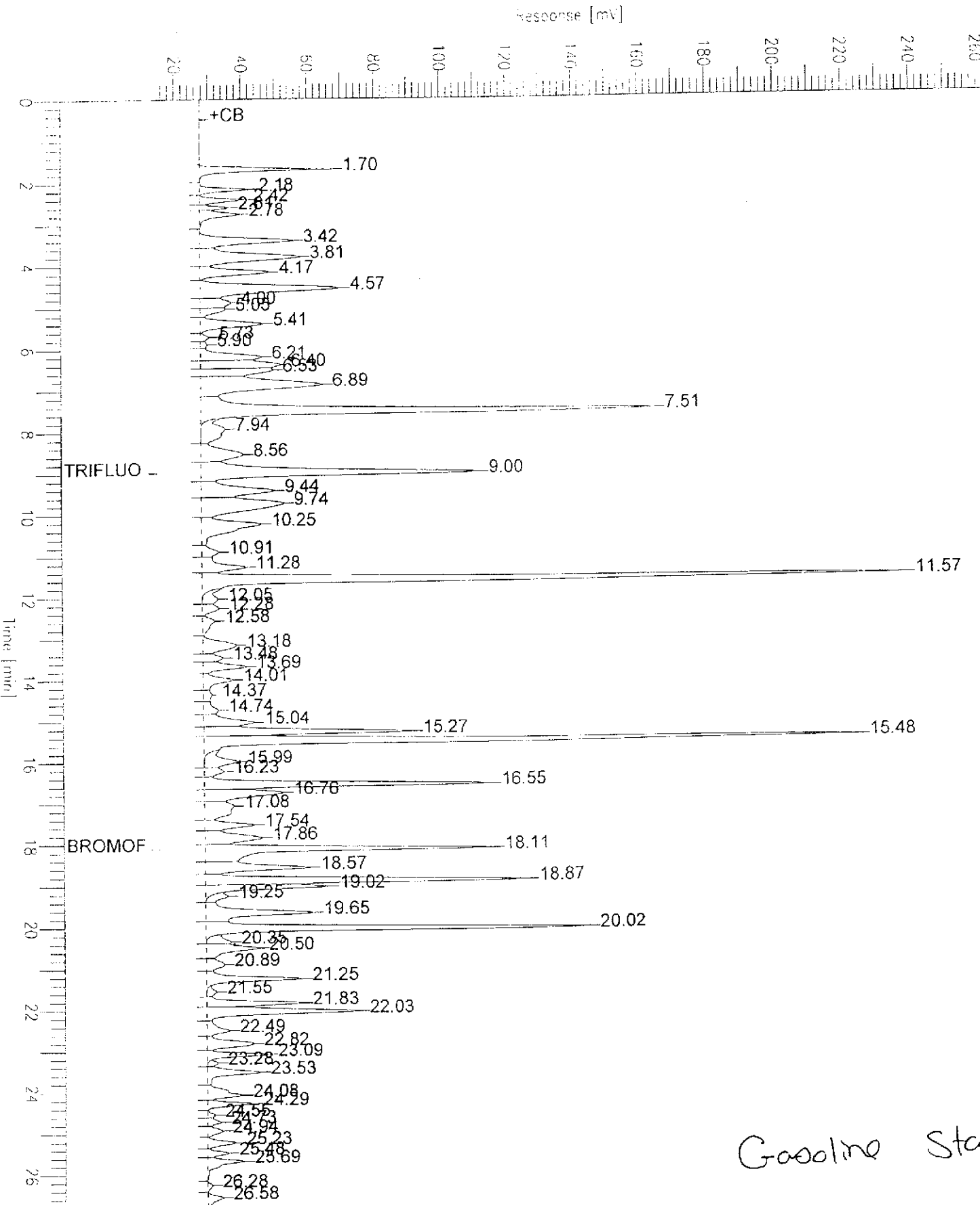
Plot Scale: 250.0 mV



# Chromatogram

Sample Name : MS, QC106411, 53382, 99WS8556, 5/5000  
File Name : G:\GC05\DATA\0286027.raw  
Method : TVHBTXE  
Start Time : 0.00 min  
Scale Factor : -1.0  
End Time : 26.80 min  
Plot Offset : 15 mV

Sample #: GAS  
Date : 1/29/00 06:40 AM  
Time of Injection: 1/29/00 06:12 AM  
Low Point : 15.08 mV  
Plot Scale: 250.0 mV  
High Point : 265.08 mV



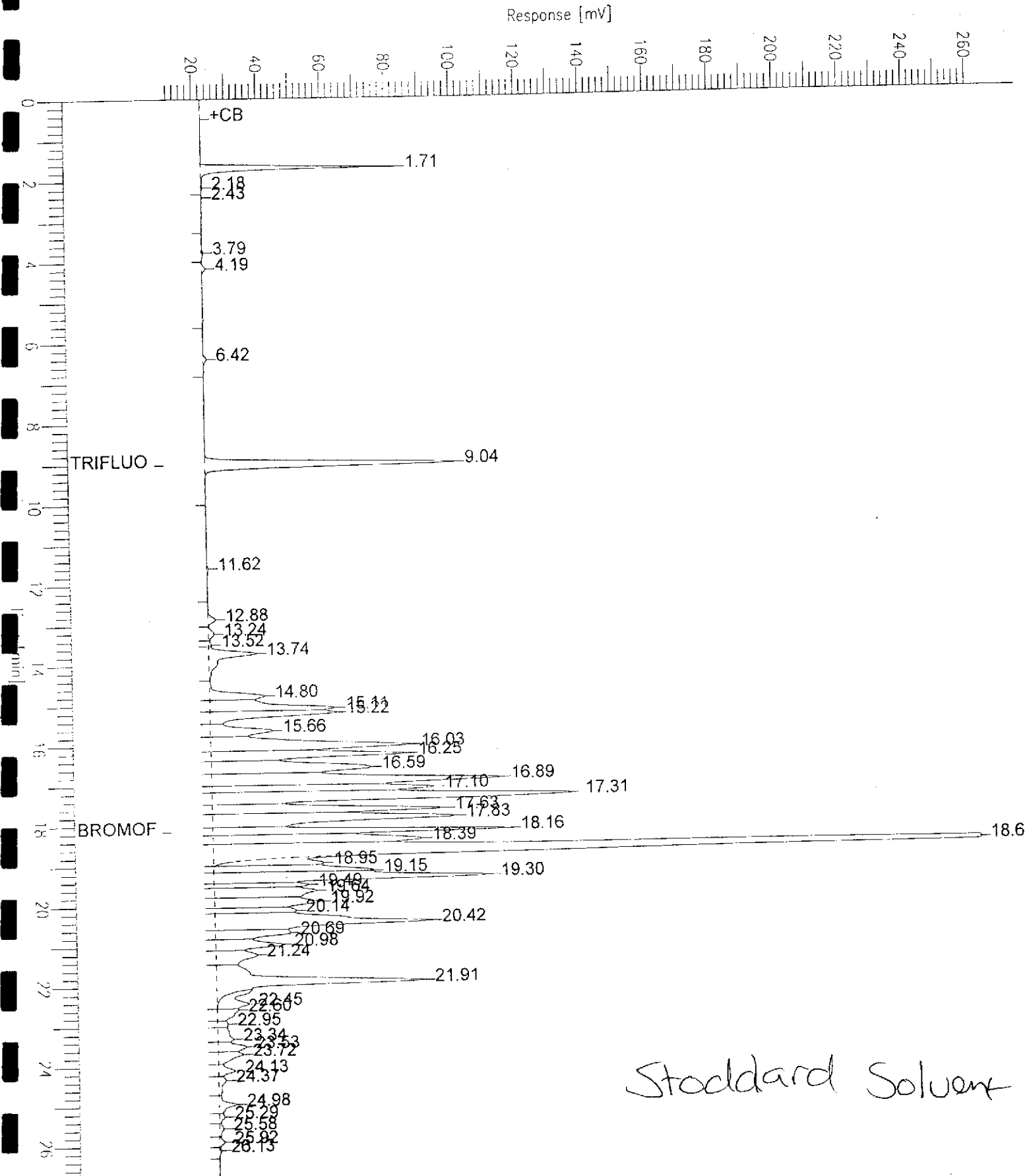
Gasoline Standards

# Chromatogram

Sample Name : CCV,STODDARD,53382,99WS7997,5/5000  
Sample Name : G:\GC05\DATA\028G002.raw  
Method : TVHBTXE  
Start Time : 0.00 min  
Scale Factor : -1.0

End Time : 26.80 min  
Plot Offset : 10 mV

Sample #: STODDARD  
Date : 1/28/00 01:14 PM  
Time of Injection: 1/28/00 12:46 PM  
Low Point : 10.16 mV  
High Point : 260.16 mV  
Plot Scale: 250.0 mV





Gasoline by GC/FID CA LUFT

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8015M
Matrix:	Water	Received:	01/25/00
Units:	ug/L		

Type:	BLANK	Batch#:	53382
Lab ID:	QC106410	Analyzed:	01/28/00
Oiln Fac:	1.000		

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

Surrogate	%REC	Limits
Trifluorotoluene (FID)	105	59-135
Bromofluorobenzene (FID)	110	60-140

Type:	BLANK	Batch#:	53444
Lab ID:	QC106656	Analyzed:	01/31/00
Oiln Fac:	1.000		

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

Surrogate	%REC	Limits
Trifluorotoluene (FID)	107	59-135
Bromofluorobenzene (FID)	106	60-140

**BTXE Compounds by GC/PID**

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8021B
Matrix:	Water	Sampled:	01/24/00
Units:	ug/L	Received:	01/25/00

Field ID:	B-2	Diln Fac:	25.00
Type:	SAMPLE	Batch#:	53382
Lab ID:	143612-002	Analyzed:	01/28/00

Analyte	Result	RL
TBE	ND	50
Benzene	ND	13
Toluene	ND	13
Ethylbenzene	110 C	13
m,p-Xylenes	ND	13
o-Xylene	220 C	13

Surrogate	%REC	Limits
Trifluorotoluene (PID)	104	56-142
Bromofluorobenzene (PID)	116	55-149

Field ID:	B-10	Diln Fac:	5.000
Type:	SAMPLE	Batch#:	53444
Lab ID:	143612-003	Analyzed:	01/31/00

Analyte	Result	RL
TBE	14 C	10
Benzene	7.2	2.5
Toluene	27	2.5
Ethylbenzene	25 C	2.5
m,p-Xylenes	15	2.5
o-Xylene	17	2.5

Surrogate	%REC	Limits
Trifluorotoluene (PID)	111	56-142
Bromofluorobenzene (PID)	123	55-149

Field ID:	B-7	Diln Fac:	25.00
Type:	SAMPLE	Batch#:	53382
Lab ID:	143612-004	Analyzed:	01/28/00

Analyte	Result	RL
TBE	ND	50
Benzene	ND	13
Toluene	62	13
Ethylbenzene	ND	13
m,p-Xylenes	47	13
o-Xylene	160 C	13

Surrogate	%REC	Limits
Trifluorotoluene (PID)	104	56-142
Bromofluorobenzene (PID)	121	55-149

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





## BTXE Compounds by GC/PID

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8021B
Matrix:	Water	Sampled:	01/24/00
Units:	ug/L	Received:	01/25/00

Field ID:	B-9	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	53444
Lab ID:	143612-005	Analyzed:	01/31/00

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	10 C	0.50
m,p-Xylenes	ND	0.50
o-Xylene	8.9 C	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	110	56-142
Bromofluorobenzene (PID)	131	55-149

Field ID:	B-8	Diln Fac:	5.000
Type:	SAMPLE	Batch#:	53444
Lab ID:	143612-006	Analyzed:	01/31/00

Analyte	Result	RL
MTBE	ND	10
Benzene	ND	2.5
Toluene	ND	2.5
Ethylbenzene	ND	2.5
m,p-Xylenes	ND	2.5
o-Xylene	170 C	2.5

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	56-142
Bromofluorobenzene (PID)	152 *	55-149

Field ID:	B-13	Diln Fac:	5.000
Type:	SAMPLE	Batch#:	53444
Lab ID:	143612-007	Analyzed:	01/31/00

Analyte	Result	RL
MTBE	ND	10
Benzene	ND	2.5
Toluene	ND	2.5
Ethylbenzene	ND	2.5
m,p-Xylenes	ND	2.5
o-Xylene	20	2.5

Surrogate	%REC	Limits
Trifluorotoluene (PID)	114	56-142
Bromofluorobenzene (PID)	128	55-149

\* = Value outside QC limits

! = Presence confirmed, but confirmation concentration differed by more than a factor of two

ND = Not Detected

RL = Reporting Limit

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**BTXE Compounds by GC/PID**

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8021B
Matrix:	Water	Sampled:	01/24/00
Units:	ug/L	Received:	01/25/00

Field ID:	B-3	Diln Fac:	5.000
Sample:	SAMPLE	Batch#:	53444
Lab ID:	143612-008	Analyzed:	01/31/00

Analyte	Result	RL
TBE	ND	10
Benzene	4.8	2.5
Toluene	ND	2.5
o-methylbenzene	ND	2.5
m,p-Xylenes	7.4	2.5
p-Xylene	64	2.5

Surrogate	%REC	Limits
trifluorotoluene (PID)	113	56-142
chromofluorobenzene (PID)	133	55-149

Sample:	BLANK	Batch#:	53382
Lab ID:	QC106410	Analyzed:	01/28/00
Diln Fac:	1.000		

Analyte	Result	RL
TBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
o-methylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
p-Xylene	ND	0.50

Surrogate	%REC	Limits
trifluorotoluene (PID)	108	56-142
chromofluorobenzene (PID)	111	55-149

Sample:	BLANK	Batch#:	53444
Lab ID:	QC106656	Analyzed:	01/31/00
Diln Fac:	1.000		

Analyte	Result	RL
TBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
o-methylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
p-Xylene	ND	0.50

Surrogate	%REC	Limits
trifluorotoluene (PID)	109	56-142
chromofluorobenzene (PID)	111	55-149

\* = Value outside QC limits  
 \* = Presence confirmed, but confirmation concentration differed by more than a factor of two  
 \* = Not Detected  
 \* = Reporting Limit

## Gasoline by GC/FID CA LUFT

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC106408	Batch#:	53382
Matrix:	Water	Analyzed:	01/28/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,942	97	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	130	59-135
Bromofluorobenzene (FID)	121	60-140

## Gasoline by GC/FID CA LUFT

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	Batch#:	53382
SS Lab ID:	143643-002	Sampled:	01/28/00
Matrix:	Water	Received:	01/28/00
Units:	ug/L	Prepared:	01/28/00
Diln Fac:	1.000	Analyzed:	01/29/00

Type: MS Lab ID: QC106411

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	611.1	2,000	2,252	82	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	125	59-135
Bromofluorobenzene (FID)	148 *	60-140

Type: MSD Lab ID: QC106412

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,335	86	65-131	4	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	125	59-135
Bromofluorobenzene (FID)	148 *	60-140

\* = Value outside QC limits

RPD= Relative Percent Difference

## Gasoline by GC/FID CA LUFT

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC106654	Batch#:	53444
Matrix:	Water	Analyzed:	01/31/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,975	99	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	120	59-135
Bromofluorobenzene (FID)	112	60-140



## Gasoline by GC/FID CA LUFT

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	Batch#:	53444
SS Lab ID:	143651-010	Sampled:	01/27/00
Matrix:	Water	Received:	01/27/00
Units:	ug/L	Prepared:	01/31/00
Diln Fac:	1.000	Analyzed:	02/01/00

Type: MS Lab ID: QC106657

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	316.1	2,000	2,274	98	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	132	59-135
Bromofluorobenzene (FID)	122	60-140

Type: MSD Lab ID: QC106658

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,325	100	65-131	2	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	132	59-135
Bromofluorobenzene (FID)	123	60-140



## BTXE Compounds by GC/PID

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC106409	Batch#:	53382
Matrix:	Water	Analyzed:	01/28/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	18.08	90	66-126
Benzene	20.00	18.26	91	67-117
Toluene	20.00	18.13	91	69-117
Ethylbenzene	20.00	18.16	91	68-124
m,p-Xylenes	40.00	37.86	95	70-125
o-Xylene	20.00	18.69	93	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	107	56-142
Bromofluorobenzene (PID)	111	55-149



## BTXE Compounds by GC/PID

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC106655	Batch#:	53444
Matrix:	Water	Analyzed:	01/31/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	18.58	93	66-126
Benzene	20.00	19.01	95	67-117
Toluene	20.00	18.75	94	69-117
Ethylbenzene	20.00	19.18	96	68-124
m,p-Xylenes	40.00	38.90	97	70-125
p-Xylene	20.00	19.44	97	65-129

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





## Purgeable Organics by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	GW-6A-1/25/00	Batch#:	53520
Lab ID:	143612-013	Sampled:	01/25/00
Matrix:	Water	Received:	01/25/00
Units:	ug/L	Analyzed:	02/03/00
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
Carbon Disulfide	ND	0.5
MTBE	2.2	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
2-Chloroethylvinylether	ND	10
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5

ND = Not Detected

RL = Reporting Limit

## Purgeable Organics by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	GW-6A-1/25/00	Batch#:	53520
Lab ID:	143612-013	Sampled:	01/25/00
Matrix:	Water	Received:	01/25/00
Units:	ug/L	Analyzed:	02/03/00
Diln Fac:	1.000		

Analyte	Result	RL
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	1.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	113	80-122
1,2-Dichloroethane-d4	106	78-123
Toluene-d8	99	80-110
Bromofluorobenzene	104	80-115

ND = Not Detected  
 RL = Reporting Limit



## Purgeable Organics by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	MW-11	Batch#:	53520
Lab ID:	143612-014	Sampled:	01/25/00
Matrix:	Water	Received:	01/25/00
Units:	ug/L	Analyzed:	02/03/00
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
Carbon Disulfide	ND	0.5
MTBE	9.0	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
2-Chloroethylvinylether	ND	10
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5

ND = Not Detected

RL = Reporting Limit

### Purgeable Organics by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	MW-11	Batch#:	53520
Lab ID:	143612-014	Sampled:	01/25/00
Matrix:	Water	Received:	01/25/00
Units:	ug/L	Analyzed:	02/03/00
Diln Fac:	1.000		

Analyte	Result	RL
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	1.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	113	80-122
1,2-Dichloroethane-d4	109	78-123
Toluene-d8	100	90-110
Bromofluorobenzene	103	80-115

## Purgeable Organics by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC106943	Batch#:	53520
Matrix:	Water	Analyzed:	02/03/00
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
2-Chloroethylvinylether	ND	10
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND = Not Detected

RL = Reporting Limit



## Purgeable Organics by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC106943	Batch#:	53520
Matrix:	Water	Analyzed:	02/03/00
Units:	ug/L		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	1.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	112	80-122
1,2-Dichloroethane-d4	108	78-123
Toluene-d8	100	80-110
Bromofluorobenzene	104	80-115



## Purgeable Organics by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	53520
Units:	ug/L	Analyzed:	02/03/00
Diln Fac:	1.000		

Type: BS Lab ID: QC106941

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	52.74	105	74-132
Benzene	50.00	48.69	97	80-116
Trichloroethene	50.00	52.13	104	80-119
Toluene	50.00	50.65	101	80-120
Chlorobenzene	50.00	48.85	98	80-117

Surrogate	%REC	Limits
Dibromofluoromethane	102	80-122
1,2-Dichloroethane-d4	101	78-123
Toluene-d8	102	80-110
Bromofluorobenzene	101	80-115

Type: BSD Lab ID: QC106942

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	53.34	107	74-132	1	20
Benzene	50.00	47.44	95	80-116	3	20
Trichloroethene	50.00	50.74	101	80-119	3	20
Toluene	50.00	48.25	96	80-120	5	20
Chlorobenzene	50.00	47.70	95	80-117	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	105	80-122
1,2-Dichloroethane-d4	102	78-123
Toluene-d8	100	80-110
Bromofluorobenzene	100	80-115

## Purgeable Halocarbons by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	B-2	Batch#:	53517
Lab ID:	143612-002	Sampled:	01/24/00
Matrix:	Water	Received:	01/25/00
Units:	ug/L	Analyzed:	02/03/00
Diln Fac:	2.500		

Analyte	Result	RL
Freon 12	ND	5.0
Chloromethane	ND	2.5
Vinyl Chloride	ND	1.3
Bromomethane	ND	2.5
Chloroethane	ND	2.5
Trichlorofluoromethane	ND	1.3
Freon 113	ND	13
1,1-Dichloroethene	ND	1.3
Methylene Chloride	ND	13
trans-1,2-Dichloroethene	1.4	1.3
1,1-Dichloroethane	ND	1.3
cis-1,2-Dichloroethene	270	1.3
Chloroform	ND	1.3
1,1,1-Trichloroethane	ND	1.3
Carbon Tetrachloride	ND	1.3
1,2-Dichloroethane	ND	1.3
Trichloroethene	ND	1.3
1,2-Dichloropropane	ND	1.3
Bromodichloromethane	ND	1.3
cis-1,3-Dichloropropene	ND	1.3
trans-1,3-Dichloropropene	ND	1.3
1,1,2-Trichloroethane	ND	1.3
Tetrachloroethene	ND	1.3
Dibromochloromethane	ND	1.3
Chlorobenzene	ND	1.3
Bromoform	ND	1.3
1,1,2,2-Tetrachloroethane	ND	1.3
1,3-Dichlorobenzene	ND	1.3
1,4-Dichlorobenzene	ND	1.3
1,2-Dichlorobenzene	ND	1.3

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	106	78-123
Toluene-d8	101	80-110
Bromofluorobenzene	102	80-115

D = Not Detected  
 L = Reporting Limit



**Purgeable Halocarbons by GC/MS**

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	B-10	Batch#:	53517
Lab ID:	143612-003	Sampled:	01/24/00
Matrix:	Water	Received:	01/25/00
Units:	ug/L	Analyzed:	02/03/00
Diln Fac:	125.0		

Analyte	Result	RL
Freon 12	ND	250
Chloromethane	ND	130
Vinyl Chloride	ND	63
Bromomethane	ND	130
Chloroethane	ND	130
Trichlorofluoromethane	ND	63
Freon 113	ND	630
1,1-Dichloroethene	ND	63
Methylene Chloride	ND	630
trans-1,2-Dichloroethene	90	63
1,1-Dichloroethane	ND	63
cis-1,2-Dichloroethene	14,000	63
Chloroform	ND	63
1,1,1-Trichloroethane	ND	63
Carbon Tetrachloride	ND	63
1,2-Dichloroethane	ND	63
Trichloroethene	2,400	63
1,2-Dichloropropane	ND	63
Bromodichloromethane	ND	63
cis-1,3-Dichloropropene	ND	63
trans-1,3-Dichloropropene	ND	63
1,1,2-Trichloroethane	ND	63
Tetrachloroethene	1,200	63
Dibromochloromethane	ND	63
Chlorobenzene	ND	63
Bromoform	ND	63
1,1,2,2-Tetrachloroethane	ND	63
1,3-Dichlorobenzene	ND	63
1,4-Dichlorobenzene	ND	63
1,2-Dichlorobenzene	ND	63

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	107	78-123
Toluene-d8	102	80-110
Bromofluorobenzene	105	80-115

## Purgeable Halocarbons by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	B-7	Batch#:	53517
Lab ID:	143612-004	Sampled:	01/24/00
Matrix:	Water	Received:	01/25/00
Units:	ug/L	Analyzed:	02/03/00
Diln Fac:	7.143		

Analyte	Result	RL
Freon 12	ND	14
Chloromethane	ND	7.1
Vinyl Chloride	ND	3.6
Bromomethane	ND	7.1
Chloroethane	ND	7.1
Trichlorofluoromethane	ND	3.6
Freon 113	ND	36
1,1-Dichloroethene	ND	3.6
Methylene Chloride	ND	36
trans-1,2-Dichloroethene	4.3	3.6
1,1-Dichloroethane	ND	3.6
cis-1,2-Dichloroethene	920	3.6
Chloroform	ND	3.6
1,1,1-Trichloroethane	ND	3.6
Carbon Tetrachloride	ND	3.6
1,2-Dichloroethane	ND	3.6
Trichloroethene	ND	3.6
1,2-Dichloropropane	ND	3.6
Bromodichloromethane	ND	3.6
cis-1,3-Dichloropropene	ND	3.6
trans-1,3-Dichloropropene	ND	3.6
1,1,2-Trichloroethane	ND	3.6
Tetrachloroethene	ND	3.6
Dibromochloromethane	ND	3.6
Chlorobenzene	ND	3.6
Bromoform	ND	3.6
1,1,2,2-Tetrachloroethane	ND	3.6
1,3-Dichlorobenzene	ND	3.6
1,4-Dichlorobenzene	ND	3.6
1,2-Dichlorobenzene	ND	3.6

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	106	78-123
Toluene-d8	101	80-110
Bromofluorobenzene	106	80-115



## Purgeable Halocarbons by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	B-9	Batch#:	53517
Lab ID:	143612-005	Sampled:	01/24/00
Matrix:	Water	Received:	01/25/00
Units:	ug/L	Analyzed:	02/03/00
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	3.2	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	0.6	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	109	78-123
Toluene-d8	100	80-110
Bromofluorobenzene	103	80-115

### Purgeable Halocarbons by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	B-8	Batch#:	53489
Lab ID:	143612-006	Sampled:	01/24/00
Matrix:	Water	Received:	01/25/00
Units:	ug/L	Analyzed:	02/03/00
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	35	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	0.7	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	106	78-123
Toluene-d8	101	80-110
Bromofluorobenzene	104	80-115



## Purgeable Halocarbons by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	B-13	Batch#:	53489
Lab ID:	143612-007	Sampled:	01/24/00
Matrix:	Water	Received:	01/25/00
Units:	ug/L	Analyzed:	02/03/00
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	4.9	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	130	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	29	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3 Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	20	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

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

ND = Not Detected

RL = Reporting Limit

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### Purgeable Halocarbons by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	B-3	Batch#:	53517
Lab ID:	143612-008	Sampled:	01/24/00
Matrix:	Water	Received:	01/25/00
Units:	ug/L	Analyzed:	02/03/00
Diln Fac:	4.000		

Analyte	Result	RL
Freon 12	ND	3.0
Chloromethane	ND	4.0
Vinyl Chloride	ND	2.0
Bromomethane	ND	4.0
Chloroethane	ND	4.0
Trichlorofluoromethane	ND	2.0
Freon 113	ND	20
1,1-Dichloroethene	ND	2.0
Methylene Chloride	ND	20
trans-1,2-Dichloroethene	ND	2.0
1,1-Dichloroethane	2.7	2.0
cis-1,2-Dichloroethene	610	2.0
Chloroform	ND	2.0
1,1,1-Trichloroethane	ND	2.0
Carbon Tetrachloride	ND	2.0
1,2-Dichloroethane	ND	2.0
Trichloroethene	ND	2.0
1,2-Dichloropropane	ND	2.0
Bromodichloromethane	ND	2.0
cis-1,3-Dichloropropene	ND	2.0
trans-1,3-Dichloropropene	ND	2.0
1,1,2-Trichloroethane	ND	2.0
Tetrachloroethene	ND	2.0
Dibromochloromethane	ND	2.0
Chlorobenzene	ND	2.0
Bromoform	ND	2.0
1,1,2,2-Tetrachloroethane	ND	2.0
1,3-Dichlorobenzene	ND	2.0
1,4-Dichlorobenzene	ND	2.0
1,2-Dichlorobenzene	ND	2.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	107	78-123
Toluene-d8	102	80-110
Bromofluorobenzene	105	80-115



## Purgeable Halocarbons by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC106834	Batch#:	53489
Matrix:	Water	Analyzed:	02/02/00
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	78-123
Toluene-d8	100	80-110
Bromofluorobenzene	106	80-115



## Purgeable Halocarbons by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC106931	Batch#:	53517
Matrix:	Water	Analyzed:	02/03/00
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethane	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	105	78-123
Toluene-d8	100	80-110
Bromofluorobenzene	108	80-115

D = Not Detected

L = Reporting Limit





## Purgeable Halocarbons by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC106932	Batch#:	53517
Matrix:	Water	Analyzed:	02/03/00
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	2.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	0.5
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	5.0
trans-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
cis-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
cis-1,3-Dichloropropene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	110	78-123
Toluene-d8	101	80-110
Bromofluorobenzene	107	80-115



### Purgeable Halocarbons by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC106930	Batch#:	53517
Matrix:	Water	Analyzed:	02/03/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	49.48	99	74-132
Trichloroethene	50.00	49.81	100	80-119
Chlorobenzene	50.00	50.00	100	80-117

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	101	78-123
Toluene-d8	99	80-110
Bromofluorobenzene	102	80-115

**Purgeable Halocarbons by GC/MS**

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	53489
Units:	ug/L	Analyzed:	02/02/00
Diln Fac:	1.000		

Type: BS Lab ID: QC106831

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	51.09	102	74-132
Trichloroethene	50.00	50.19	100	80-119
Chlorobenzene	50.00	49.71	99	80-117

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	78-123
Toluene-d8	99	80-110
Bromofluorobenzene	101	80-115

Type: BSD Lab ID: QC106832

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	51.72	103	74-132	1	20
Trichloroethene	50.00	49.16	98	80-119	2	20
Chlorobenzene	50.00	48.45	97	80-117	3	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	106	78-123
Toluene-d8	97	80-110
Bromofluorobenzene	102	80-115



## Purgeable Halocarbons by GC/MS

Lab #:	143612	Location:	Glovatorium
Client:	LFR-Levine-Fricke	Prep:	EPA 5030
Project#:	6895	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	53517
MSS Lab ID:	143561-004	Sampled:	01/24/00
Matrix:	Water	Received:	01/24/00
Units:	ug/L	Analyzed:	02/03/00
Diln Fac:	1.000		

Type: MS Lab ID: QC106953

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.5000	50.00	52.64	105	70-132
Trichloroethene	11.71	50.00	61.92	100	62-137
Chlorobenzene	<0.5000	50.00	50.22	100	80-117

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	104	78-123
Toluene-d8	100	80-110
Bromofluorobenzene	103	80-115

Type: MSD Lab ID: QC106954

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	54.28	109	70-132	3	20
Trichloroethene	50.00	62.20	101	62-137	0	20
Chlorobenzene	50.00	50.09	100	80-117	0	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	105	78-123
Toluene-d8	99	80-110
Bromofluorobenzene	104	80-115

RPD= Relative Percent Difference

143612

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: 6895.00		Project Location: Oakland, CA		Date: 1/24/00		Serial No.: No 2770		
Project Name: Gloveatorium		Field Logbook No.: MXD-3						
Sampler (Signature): <i>[Signature]</i>				ANALYSES		Samplers: MXD KAG		
SAMPLES								
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CON-TAINERS	SAMPLE TYPE	HOLD	RUSH	REMARKS
TB-12400	1/24/00	09:30		9	H <sub>2</sub> O	✓		1 week TAT
B-2		10:45						Results to Taylor Bennett. * = TPH Fingerprint + = VOAS w/ Acetone MEK, MTBE BI MIBC O = BTEX MTBE ~ = Additional VOAS were submitted on 1/21/00 ° = Hold for additional VOAS
B-10		11:30						
B-7		12:00						
B-9		12:20						
B-8		12:45						
B-13		13:15						
B-3		13:45						
GW-5		14:30						
GW-6A		15:00		* 5				
RELINQUISHED BY: <i>[Signature]</i>			DATE: 1/25/00	TIME: 17:00	RECEIVED BY: <i>[Signature]</i>		DATE: 01/25/00	TIME: 17:00
RELINQUISHED BY: (Signature)			DATE	TIME	RECEIVED BY: (Signature)		DATE	TIME
RELINQUISHED BY: (Signature)			DATE	TIME	RECEIVED BY: (Signature)		DATE	TIME
METHOD OF SHIPMENT: <i>Carrier</i>			DATE	TIME	LAB COMMENTS:			
Sample Collector: LEVINE•FRICKE•RECON 1900 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 652-4500					Analytical Laboratory:  <i>C+T</i>			

1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: <b>6895.00</b>			Project Location: <b>Oakland, CA</b>			Date: <b>1/24/00</b>		Serial No.: N <sup>o</sup> <b>2775</b>		
Project Name: <b>Globatorium</b>			Field Logbook No.: <b>MXD-3</b>							
Sampler (Signature): <i>[Signature]</i>						ANALYSES		Samplers: <b>MXD</b>		
SAMPLES										
	SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CON-TAINERS	SAMPLE TYPE	<i>Protected</i>	HOLD	RUSH	REMARKS
11	B-8	1/24/00	1245	1	1	H2O	X			Results to TALOR BENNET  STANDARD 1 WEEK TAT
12	B-3	1/24/00	1340	1	1	H2O	X			
RELINQUISHED BY: (Signature) <i>[Signature]</i>		DATE	TIME	RECEIVED BY: (Signature) <i>[Signature]</i>		DATE	TIME			
RELINQUISHED BY: (Signature)		DATE	TIME	RECEIVED BY: (Signature)		DATE	TIME			
RELINQUISHED BY: (Signature)		DATE	TIME	RECEIVED BY: (Signature)		DATE	TIME			
METHOD OF SHIPMENT:		DATE	TIME	LAB COMMENTS:						
Sample Collector: LEVINE•FRICKE•RECON 1900 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 652-4500				Analytical Laboratory:  <b>C+T</b>						

143612

### CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: 6895.00	Project Location: Oakland, CA	Date: 1/25/00	Serial No: 4977
Project Name: Glogatorium	Field Logbook No.: MXD-3	Sample Event Name: -	

Sampler (Signature): *[Signature]* ANALYSES: *[Blank]* Samplers: MXD

SAMPLE INFORMATION (Print Clearly)

13  
14

SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	ANALYSES	HOLD	RUSH	REMARKS
GW-6A MW-11	1/25/00 1/25/00	0810 0850		4 9	H <sub>2</sub> O H <sub>2</sub> O	* + OK Per for			* = TPH fingerprint + = VOCs w/ Acetone, MEK, MIBK o = BTEX; MTSE  o = 5 VOAs were submitted on 1/24/00 CAL. RUN SAMPLE 1 week TAT Results to Taylor Bennett

RELINQUISHED BY: <i>[Signature]</i>	DATE: 1/25/00	TIME: 17:00	RECEIVED BY: <i>[Signature]</i>	DATE: 01/25/00	TIME: 17:00
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME

METHOD OF SHIPMENT: *Carrier* DATE: DATE TIME: TIME LAB COMMENTS:

Sample Collector: LEVINE-FRICKE-RECON  
1900 Powell Street, 12th Floor  
Emeryville, California 94608-1827  
(510) 652-4500

Analytical Laboratory: C+T Berkeley

### CHAIN OF CUSTODY / ANALYSES REQUEST FORM

Project No.: **6895.00** Project Location: **Oakland, CA** Date: **1/24/00** Serial No.: **Nº 2770**  
 Project Name: **Gloveatorium** Field Logbook No.: **MND-3**

Sampler (Signature): *[Signature]* ANALYSES: **Forward 2000s to Friedwal & Bruya** Hold: **RUSH** Samplers: **MND KAG**

SAMPLES						ANALYSES				REMARKS		
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CON. TAINERS	SAMPLE TYPE	1015 MND	8000	8010	Forward 2000s to Friedwal & Bruya	HOLD	RUSH	REMARKS
IB-12400	1/24/00	09:30		9	H <sub>2</sub> O	X	X	X	X	X	X	Don't dispose of any samples PHB
B-2		10:45		9		X	X	X		X	X	1 week TAT
B-10		11:30		9		X	X	X		X	X	
B-7		12:00		9		X	X	X		X	X	* = TPH Fingerprint
B-9		12:20		9		X	X	X		X	X	
B-8		12:45		9		X	X	X		X	X	O = BTEX MIBK
B-13		13:15		9		X	X	X		X	X	
B-3		13:45		9		X	X	X		X	X	• = Hold for additional VOAs
GW-5		14:30		5		X	X	X	X	X	X	
GW-10A		15:00		5		X	X	X	X	X	X	

RELINQUISHED BY: (Signature) <i>[Signature]</i>	DATE: <b>1/25/00</b>	TIME: <b>17:00</b>	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE: <b>01/25/00</b>	TIME: <b>17:00</b>
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
METHOD OF SHIPMENT: <b>Carrier</b>	DATE	TIME	LAB COMMENTS:		
Sample Collector: <b>LEVINE-FRICKE-RECON</b> 1900 Powell Street, 12th Floor Emeryville, California 94608-1827 (510) 652-4500			Analytical Laboratory: <b>C+T</b>		







1900 Powell Street, 12th Floor  
Emeryville, California 94608-1827  
(510) 652-4500, FAX (510) 652-4906

FAX TRANSMISSION: This cover page plus 1 pages.

Date	January 26, 2000		
Time	12:36PM		
From	Taylor Bennett		

Deliver To	Tracy Babjar		
Name of Firm	Curtis & Tompkins		
FAX Number	486-0532	Project No.	6895.00

THE INFORMATION CONTAINED IN THIS FACSIMILE IS CONFIDENTIAL AND IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED. IF YOU ARE NOT THE INTENDED RECIPIENT, OR THE PERSON RESPONSIBLE FOR DELIVERING IT TO THE INTENDED RECIPIENT, DO NOT USE OR DISCLOSE THIS FACSIMILE. IF YOU HAVE RECEIVED THIS FACSIMILE IN ERROR, PLEASE NOTIFY US IMMEDIATELY BY TELEPHONE AND RETURN THE ORIGINAL TO LFR LEVINE-FRICKE VIA THE U.S. POSTAL SERVICE. THANK YOU.

**Comments:** Following are revisions to C.O.C. Nos. 2770, 2775, and 4997.

Please note the following:

- Please do not dispose of any samples for this project.
- C.O.C. No. 2770: Samples B-2, B-10, B-7, B-9, B-8, B-13, and B-3 had visible product sheen present. Please perform phase separation, if necessary, before analysis. We request that all samples be run undiluted, to achieve lowest possible detection limits for EPA method 8010 compounds. Hold sample nos. TB-12400, GW-5, and GW-6A. Do not analyze remaining samples for EPA method 8260A, only analyze them for modified EPA 8015 (including Stoddard solvent), EPA 8010 list, and EPA 8020, including MTBE.
- C.O.C. No. 2770: Forward 2 VOAs for each of the following samples, B-3 and B-8, to Friedman & Bruya, attention: Kurt Johnson. #6 → #2
- C.O.C. No. 2775: Forward product samples B-8 and B-3 to Friedman & Bruya, attention: Kurt Johnson, for product identification. #11 - 1  
→ #12 - 1
- C.O.C. No. 4977: Do not analyze samples GW-6A and MW-11 for EPA 8010 list and EPA 8020. Analyze these samples for modified EPA method 8015 (including Stoddard solvent), and EPA 8260A (including acetone, MEK, MIBK, and MTBE).

Please call me if you have any questions at 596-9628.

539-9706 Pagen

206-285-8282



1900 Powell Street, 12th Floor  
Emeryville, California 94608-1827  
(510) 652-4500, FAX (510) 652-4906

FAX TRANSMISSION: This cover page plus 1 pages.

Date	January 27, 2000		
Time	2:06PM		
From	Taylor Bennett		

Deliver To	Tracy Babjar		
Name of Firm	Curtis & Tompkins		
FAX Number	486-0532	Project No.	6895.00

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Comments: Here's the address for Friedman & Bruya:

3012 16<sup>th</sup> Ave. West  
Seattle, WA 98119-2029  
Attention: Kurt Johnson

Thanks.

→ Sent 4 samples total

- #1 - CT# 143612-006 B-8 - 2 vials
- #2 - CT# 143612-008 B-3 - 2 vials
- #3 - CT# 143612-011 B-E product - 1 vial
- #4 - CT# 143612-012 B-3 product - 1 vial