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**1999 SITE INVESTIGATION AND  
REMEDIATION ACTIVITIES**

**2855 Mandela Parkway Property  
Oakland, California**

**prepared for  
Page Street Properties  
Three Embarcadero Center  
San Francisco, California**

**January 2000  
Project 2543.01**

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# Treadwell & Rollo

21 January 2000

Mr. Larry Seto  
Hazardous Materials Specialist  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway, 2nd Floor  
Alameda, California 94507-6577

Subject: 1999 Site Investigation and Remediation Activities  
2855 Mandela Parkway  
Oakland, California

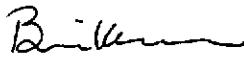
Dear Mr. Seto:

Please find enclosed the subject report prepared by Treadwell & Rollo, Inc. on behalf of 2855 Mandela Property, the current owner of the subject property. This report presents the results of activities undertaken in 1999 to investigate the presence of free-phase gasoline product, as well as to implement a trial extraction of product.

Based on the results of these and previous activities, we conclude that the lateral extent of free product has been defined, and that it consists of leaded gasoline without MTBE. The results also indicate that upward migration of volatiles may be severely limited by geologic factors, and that the indoor air transport pathway appears to be incomplete. Complete removal of free-product at the site would be very expensive and would likely not be technically feasible.

If you have any questions or comments, please call Michael McGuire at (925) 253-2683 or Faye Beverett of 2855 Mandela Parkway.

Sincerely,  
TREADWELL & ROLLO, INC.

  
Brian K. Moore for

Michael P. McGuire, P.E.  
Senior Engineer



Carrie M. Austin  
Environmental Engineer

Enclosure

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## 1.0 INTRODUCTION

This report presents the results of activities undertaken in 1999 to investigate the presence of free-phase gasoline product, as well as to implement a trial extraction of product, at the property located at 2855 Mandela Parkway ("the site") in Oakland, California (Figure 1). This report was prepared by Treadwell & Rollo, Inc. (T&R) on behalf of 2855 Mandela Property, the current property owner. These activities were conducted in phases in accordance with the following workplans prepared by T&R and subsequently approved by the Alameda County Department of Environmental Health (ACDEH):

- *Workplan for Source Investigation of Free Product*, dated 14 April 1999
- *Workplan for Phase I Remediation and Additional Subsurface Investigation*, dated 15 June 1999
- *Workplan for Floating Product Plume Delineation*, dated 10 November 1999

This report also includes the results of historical research of site operations and other additional information.

## 2.0 BACKGROUND

### 2.1 Property History

The property is an approximately 4-acre site on Mandela Parkway (formerly Cypress Street), between 32nd and 26th Avenues in west Oakland. The property is developed with a 143,000 square foot industrial building (Figure 2). According to records, the building was first constructed in 1941 by International Harvester Co. as the "Branch House and Service Station, Oakland, California." Records indicate that International Harvester Co. operated the property as a truck repair and sales facility until at least 1970 (the last date of Sanborn Map coverage for the property) and possibly as late as 1983. A 1941 construction drawing showed features normally associated with vehicle servicing, including what appears to be a fuel dispensing pump located in the "Inspection Room" inside the building near the intersection of Mandela Parkway and

Willow Street. These features are summarized on Figure 3. The area where the fuel dispensing pump was located on the drawing has since been remodeled into office spaces. No evidence of this pump is currently visible. No information regarding any tank associated with this pump has been located.

In 1982, the property was transferred from International Harvester Co. to Cypress General Partnership and then again in 1983 to Wareham Property Group (Wareham), which leased subdivided space at the property to various commercial tenants. Two underground storage tanks (USTs), a waste oil tank, and a 350-gallon gasoline tank, were removed by Wareham in 1991 from the southeast area of the property at the approximate locations indicated on Figure 2.

The gasoline tank was reportedly connected to a nearby fuel pump located immediately inside the building. This pump was not at the location shown on the 1941 design drawing and may have been added later. Upon removal, both tanks were noted to have been in deteriorated condition with numerous holes, and visibly stained soil was observed surrounding the tank. The tanks also still contained product at the time of removal. Apparently a closure letter for the tank removal was not issued.

In 1998, the property was bought by 2855 Mandela Property (including Page Street Properties LLC). A reconnaissance of the property and research of records by their environmental consultant at the time did not indicate the presence of any tenant business either currently or since 1983 (the date of purchase by Wareham) that would likely have operated underground fuel storage tanks.

Sanborn maps for the years 1912, 1951, 1952, 1954, 1959, 1962, 1967, and 1970 were reviewed by T&R for historic evidence of additional USTs at the site. The maps did not indicate any USTs or fuel dispensing pumps, including those that were later removed in 1991. City of Oakland building permit and UST permit records were also consulted by T&R for indications of historic fuel storage activities at the site. No relevant building records were found. City of Oakland UST permit records prior to December 1973 were not available. The only permit record for USTs was for the 1991 removal. No surface evidence of other potential USTs, e.g., vent pipes, in the vicinity of the former International-Harvester service areas was observed by T&R.

nor have been noted during previous investigations. The building has been extensively remodeled since its original construction.

## 2.2 Previous Environmental Investigations

There have been a number of previous environmental investigations at the property since 1990:

- *Phase I Preliminary Hazardous Materials Site Assessment*, dated 25 September 1990 by Harding Lawson Associates (HLA) for Wareham;
- *Underground Storage Tank Removal Report*, 13 August 1991 by HLA for Wareham;
- *Subsurface Soil Investigation*, dated 16 July 1992 by ATEC Environmental Consultants for Morgan Stanley and Company;
- *Environmental Site Assessment Transaction Screen*, dated 17 May 1998 by Ceres Associates (Ceres) for Page Street Properties LLC;
- *Phase II Subsurface Investigation Report*, dated 1 September 1998 by Ceres for Page Street Properties LLC;
- *Additional Subsurface Investigation Report*, dated 18 November 1998 by Ceres for Page Street Properties LLC; and
- *Soil and Groundwater Assessment Report*, dated 28 December 1998 by Ceres for Page Street Properties LLC.

The subsurface investigations have generally been focused in the southeast area of the property where the tanks were removed in 1991 and the adjacent portion of Willow Street (see Figure 4 for previous sampling locations). None of these investigations included installation and sampling of groundwater monitoring wells.

The 1998 Phase II Subsurface Investigation was the first to include groundwater grab sampling and the first to encounter free product. This investigation also included installation of three

shallow piezometers to calculate groundwater flow direction. That investigation concluded that groundwater flow was to the west-northwest at an approximate gradient of 0.021 ft/ft.

The 1992 Subsurface Soil Investigation and 1998 Phase II Subsurface Investigation both included active soil gas sampling surveys. The 1998 Additional Subsurface Investigation also included a geophysical survey in the southeast portion of the site and the adjacent part of Willow Street in an unsuccessful attempt to locate additional USTs. However, development of the site and geologic conditions hinder the effective use of geophysical techniques.

The 1998 Soil and Groundwater Assessment included additional soil borings and groundwater grab samples on the other side of Willow Street near an abandoned-in-place gasoline UST at 2607 Mandela Parkway to evaluate it as a potential source. The results were inconclusive.

### 3.0 OBJECTIVES AND CHRONOLOGY

The objectives of the 14 April 1999 *Workplan for Source Investigation of Free Product* were to:

- further evaluate the lateral extent of petroleum hydrocarbons in Willow Street between the site and the upgradient 2607 Mandela Parkway property with the known abandoned gasoline UST;
- investigate the potential presence of petroleum hydrocarbons in groundwater immediately upgradient of the 2607 Mandela Parkway property;
- calculate groundwater flow gradient and direction in the immediate plume area; and
- begin to chemically characterize ("fingerprint") the free product.

The workplan was subsequently implemented in May 1999.

A preliminary report of the results was submitted to ACDEH on 4 June 1999 in advance of a meeting with Larry Seto of ACDEH on 7 June 1999 to discuss the results and plan follow-up activities.

The decisions reached at the meeting lead to the submittal of the 15 June 1999 *Workplan for Phase I Remediation and Additional Subsurface Investigation*. The objectives of this workplan were to:

- more reliably detect and monitor free product beneath the site;
- further delineate free product extent under the site; and
- begin extraction of free product as a phased approach to site remediation.

The workplan was subsequently implemented in June and October 1999.

A summary report of previous soil gas survey results and their implications for a risk evaluation of the indoor air pathway was submitted on 6 July 1999 during a meeting with Larry Seto and Madhulla Logan of ACDEH (summary results of the previous soil vapor surveys are included in Appendix A). The report concluded that the soil gas results indicate an apparent lack of significant concentrations of benzene in shallow soil gas beneath the site building and an incomplete indoor air transport pathway. At the meeting it was speculated that geologic conditions may be acting to retard upward migration of volatiles from the free product toward the building floor slab.

The preliminary results of the Phase I Remediation and Additional Subsurface Investigation, as well as the results of additional historical research, were discussed with Larry Seto of ACDEH at a meeting on 4 November 1999. The decisions reached at the meeting lead to the submittal of the 10 November 1999 *Workplan for Floating Product Plume Delineation*. The objectives of this workplan were to:

- further delineate the extent of free product under the site building;
- investigate chemical concentrations in the shallow fill soil layer beneath the site building slab to support a possible later evaluation of the indoor air transport pathway; and

- investigate the presence and quality of perched water under the building at the shallow fill/Bay Mud interface which may be a factor in evaluating upward migration of volatiles from underlying free product or dissolved phase constituents.

The workplan was subsequently implemented in two phases in November and December 1999.

## 4.0 FIELD ACTIVITIES

### 4.1 Overview

Three field investigation efforts were conducted in 1999 corresponding to the workplans dated 14 April, 15 June; and 10 November 1999, and encompassed collecting soil, groundwater, and free product samples, and product extraction. Twenty direct-push borings, three temporary piezometers, and three 4-inch diameter monitoring wells were advanced in 1999 (see Figure 5 and borings logs in Appendix B). Soil samples for laboratory analysis were collected from eight locations (TR-4 through -6, and SB-25, -28 [two depths], -31, -33A and -34), groundwater samples from eighteen locations (TR-2 and -3, and SB-17, -19 through -24, -26 through -33, and -33A), and product samples from five locations (SB-18 and -34, and TR-4 through -6).

Field activities included the following common tasks.

- Contacting Underground Services Alert (USA) to help establish the approximate location of subsurface utilities within the investigation area.
- Performing an underground utility survey with California Utility Surveys to help locate subsurface obstructions in the investigation area.
- Obtaining drilling permits from Alameda County Public Works Agency.
- Performing work in accordance with a site-specific health and safety plan.
- Logging boreholes and classifying soils in general accordance with the ASTM test designation D 2488-90, Standard Practice for Description and Identification of Soils

(Visual – Manual Procedure) and the Unified Soil Classification System by a T&R geologist or engineer.

- Screening soil samples in the field for organic vapor emissions using a photo-ionization detector organic vapor meter (OVM), which was calibrated daily. Soil from the sampler bit was placed in a ziplock plastic bag and sealed. The soil was then broken up to volatilize compounds that may be present, and then the sampling port of the OVM was inserted into the bag to measure concentrations of organic vapors.
- Between each sampling event, the sampling equipment was steam-cleaned or manually washed and rinsed. Borings were backfilled and completed at the surface with concrete grout.

## 4.2 May 1999 Field Investigation

On 11 May 1999, T&R advanced 11 borings (SB-17 through -24 and TR-1 through -3). Continuous coring was performed with the Vironex, Inc. Macrocore equipment which had an inside diameter of 2 inches and a length of 4 feet. The Macrocore sampler was driven with a pneumatic-type hammer onto drilling rods extended above the ground surface. The borings were extended to approximately 12 feet below ground surface (bgs). No soil samples were collected for laboratory analysis.

SB-24 was located in an area where free product was expected. Therefore, it was left open overnight. Product was not encountered, and it was grouted on 12 May 1999.

Three of the soil borings (TR-1 through -3) were converted to temporary piezometers. Each piezometer was drilled to an approximate depth of 12 feet bgs and constructed with 5 feet of 3/4-inch diameter, Schedule 40, 0.01-inch slotted PVC screen at depth with sand pack, and up to 8 feet of casing to ground surface. The piezometer construction details are summarized on Table 1 and presented on the boring logs in Appendix B. The piezometers were left open overnight to allow groundwater to equilibrate, after which the depth to groundwater was



measured on 12 May 1999 with a Solinist electronic interface probe immediately prior to sampling.

Also on 12 May 1999, licensed surveyors from Moran Engineering of Oakland, California, surveyed the top of casing elevation (Mean Sea Level datum) and distance between each of the piezometers. Immediately after the casings were surveyed and groundwater depths were measured, the casing and screen of the temporary piezometers were removed, and the temporary piezometers were tremie-grouted with concrete grout.

In accordance with the workplan, product samples were collected from the borings where free product was encountered and groundwater grab samples were collected from the remaining borings. The single exception was TR-1, which was not scheduled for sampling (as it was located in an area where Total Petroleum Hydrocarbons quantified as gasoline (TPH-g) and benzene, toluene, ethylbenzene, and xylene (BTEX) constituents were not previously detected). Product was encountered and consequently sampled in only one boring (SB-18), and groundwater grab samples were collected from nine borings (SB-17, -19 through -24, and TR-2 and -3). A duplicate groundwater sample was also collected at SB-19. The free product and groundwater samples were collected with a peristaltic pump and Teflon™ tubing from open, uncased borings and temporary piezometer casings.

The samples were decanted into containers prepared and provided by Chromalab, Inc., a state-certified laboratory. The sample containers were immediately sealed, labeled, and placed in an ice-cooled chest for delivery to Chromalab in accordance with chain-of-custody protocol. A trip blank provided by Chromalab accompanied the groundwater sample shipment.

The groundwater samples were analyzed by EPA Method 8015M for TPH-g and EPA Method 8020 for BTEX and methyl tert butyl ether (MTBE). The product sample was analyzed by EPA Method 8015M for TPH-g, TPH quantified as diesel (TPH-d), and TPH quantified as motor oil (TPH-mo); EPA Method 8010 for BTEX and MTBE; and Leaking Underground Fuel Tank (LUFT) Method for tetraethyl/organic lead.

## 4.3 June 1999 Field Investigation

On 22 and 23 June 1999, Gregg Drilling and Testing of Martinez, California, installed monitoring wells TR-4 through TR-6, under the direction of a T&R geologist. The well boreholes were drilled with a 12-inch diameter hollow stem auger. Drive samples were collected at 5-foot intervals with a California modified split-barrel sampler.

The sampler was driven with a 140-pound hammer falling 30 inches onto drilling rods extended above the ground surface. The California modified split-barrel sampling equipment had an inside diameter of 2 inches and a length of 3 feet.

The borings were drilled to a depth of approximately 20 feet and converted into monitoring wells. The monitoring wells were constructed by installing 4-inch diameter, threaded schedule 40 PVC casing with 17 feet of 0.01-inch slotted well screen through the interior of the augers. The augers were intermittently raised to facilitate the placement of the sand pack between the well screen and the sidewall of the borehole. A No. 2/16 filter sand pack was then poured into the annular space from the bottom of the boring to approximately 1 foot above the well screen. A 2-foot thick hydrated bentonite pellet seal was placed above the sand pack. The remaining annular space was filled with a cement-bentonite grout. The wells were completed with traffic-rated vault boxes. The well construction details are summarized on Table 1 and presented on the boring logs in Appendix B.

In accordance with the workplan, one soil sample was collected from each of the three wells for laboratory analysis. Soil samples were collected from just above the estimated depth of the water table or from the soil with the highest OVM readings. Soil samples were collected in stainless steel tubes and covered with Teflon™, capped, labeled, placed in a chilled cooler and sent under chain-of-custody protocol to Chromalab. The soil samples were analyzed for TPH-g by EPA Method 8015M, and for BTEX and MTBE by EPA Method 8020.

On 28 June 1999, licensed surveyors from Moran Engineering of Oakland, California, surveyed the top of casing elevation (Mean Sea Level datum) and the distance between the wells.

Product samples from TR-6 and -5 were collected on 23 and 24 June 1999, respectively using a disposable bailer. Upon retrieval, the free product was decanted into 40-milliliter sample containers. Sample containers were immediately sealed, labeled, and placed with ice until delivery to Chromalab under chain-of-custody procedures. The samples were analyzed for TPH-g, TPH-d, TPH-mo, BTEX, and MTBE by EPA Method 8260, and tetraethyl lead, specific gravity, and dynamic viscosity. Sample TR-6 was also analyzed for flashpoint.

On 2 July 1999, a T&R field geologist developed well TR-4 using a 2-inch surge block attached to a 20-foot PVC extension. The surge block was submersed into the well and through the length of the water column and pulled up several times before, during, and after purging.

Approximately 10 casing volumes were removed with a submersible pump during well development. Temperature, conductivity, and pH were periodically measured during the purging. Observations of color, turbidity, and sediment content were also recorded. Purge water was placed in a labeled 55-gallon drum pending analytical results.

Free product was immediately apparent in TR-6 and the next day at -5, but was noted in TR-4 only later when next checked on 4 October 1999.

Product samples were collected from all three wells on 6 October 1999 and submitted to Friedman & Bruya, Inc's state-certified laboratory in Seattle, Washington under chain-of-custody control and in accordance with hazardous materials transport regulations. One sample, TR-6, was subsequently analyzed for organic lead and manganese by Gas Chromatograph/Electron Capture Detector (GC/ECD) and Paraffins, Isoparaffins, Aromatics, Naphthenes, and Olefins (PIANO).

#### **4.4 June and October 1999 Product Extraction**

Product extraction was conducted in accordance with the approved workplan dated 15 June 1999.

The workplan included initial remedial activities likely to consist of periodically hand-bailing the product from the wells, for up to 30 days. In June 1999, product was hand-bailed from TR-6 four times (24, 25, 28, and 29 June) and TR-5 twice (25 and 28 June).

Due to the nature and volume of free product that was observed, extraction was temporarily suspended while additional measures were taken to safely handle and store the product, as well as obtain necessary permits.

An intrinsically safe skimmer pump was utilized for resumption of product extraction activities in October. The equipment consisted of a density float, down-hole pump, and air supply controller. The density float has the same specific gravity as water, causing the pump intake to float just above the water level minimizing the amount of water that is extracted with the free product.

Product was first periodically extracted only from TR-6 between 4 and 13 October to evaluate its possible effect on product in the other wells, then periodically from all three wells for the remainder of the month.

#### **4.5 November and December 1999 Field Investigation**

For efficiency, the field work was conducted in two phases, with the scope of the second phase refined based on the results of the first

On 16 November 1999, T&R advanced 6 borings (SB-25 through -28, -31 and -33). Continuous coring was performed with the Vironex, Inc. Macrocore equipment (except SB-33) which had an inside diameter of 2 inches and a length of 4 feet. The Macrocore sampler was driven with a pneumatic-type hammer onto drilling rods extended above the ground surface. The borings were extended to approximately 16 feet bgs, except for select borings (SB-25, -28 and -31) which were extended to approximately 24 feet bgs. SB-33 was advanced using a solid probe pushed to approximately 16 feet bgs.

Soil samples were collected of the sandy fill near the underlying interface with the native soil at SB-25, -28 and -31, corresponding to the locations at which a perched water sample was also scheduled for collection. Because collecting an acceptably low-turbidity groundwater sample at SB-28 proved impossible, a soil sample was collected at 16 feet bgs instead. Soil samples were collected in plastic tubes, covered with Teflon™, capped, labeled, and placed in an ice-cooled

chest for delivery to Chromalab in accordance with chain-of-custody protocol. The soil samples were analyzed by EPA Method 8015M for TPH-g and EPA Method 8020 for BTEX.

Free product was not encountered in any of the borings advanced on 16 November. Grab samples of perched water were collected from two borings (SB-28 and -31) by coring to 8 feet bgs and setting a 3/4-inch diameter, 0.10-slot PVC screen. After allowing the perched water to enter the screen, a sample was collected with an approximately 5/8-inch diameter teflon bailer. The perched water sample from SB-25 had too many suspended solids for laboratory analysis. Attempts to measure the liquid level depth in the borings were blocked by bends in the small-diameter PVC casing and the massive influx of fines through the PVC screen.

Groundwater grab samples were collected from four borings (SB-26, -27, -31 and -33). A duplicate groundwater sample was collected at SB-26. The groundwater encountered at SB-28 had too high a proportion of suspended solids for laboratory analysis, therefore a soil sample was collected instead. In all but SB-33, the samples were collected by coring to 16 feet, setting a 0.75-inch diameter, 0.10-slot PVC screen, and retrieving a sample from water that entered the screen. Samples from SB-26 and -27 were collected by attaching a cleaned stainless-steel foot valve to 1/4-inch diameter tubing, dropping the tubing down the PVC casing repeatedly until the tubing filled with water sufficient to fill the sample containers. The sample from SB-31 was collected with a disposable bailer. The sample from SB-33 was collected with disposable tubing and a peristaltic pump.

On 2 December 1999, T&R advanced six borings (SB-29, -30, -32, -33A, -34, and TR-34A). Continuous coring was performed with the Vironex, Inc. Macrocore equipment at three locations. The continuously cored borings were extended to approximately 8 feet bgs (SB-33A and -34). When product was encountered at SB-34, an adjacent boring, SB-34A was continuously cored to 4 feet bgs, then direct pushed to 5.5 feet bgs where an attempt was made to collect perched water. Borings SB-29, -30, and -32, were pushed directly to approximately 24 feet bgs (SB-29 and -30) and 28 feet bgs (SB-32).

Soil samples were collected of the sandy fill at SB-33A and SB-34, corresponding to the locations at which a perched water sample was scheduled to be collected. Soil samples were

collected in plastic tubes, covered with Teflon™, capped, labeled, and placed in an ice-cooled chest for delivery in accordance with chain-of-custody protocol to Chromalab. The soil samples were subsequently analyzed by EPA Method 8015M for TPH-g and EPA Method 8020 for BTEX.

Free product was encountered and collected at SB-34. An adjacent boring, SB-34A, was then advanced for the purpose of collecting a perched water sample; however, no water entered the boring.

A perched water grab sample was collected at SB-33A (adjacent to SB-33) by coring to approximately 8 feet bgs and setting a 3/4-inch diameter, 0.10-slot PVC screen, allowing the water to enter the screen, then collecting a water sample with a disposable bailer.

Groundwater grab samples were collected from three borings (SB-29, -30 and -32). In these three borings the samples were collected by coring to 24 or 28 feet in depth, setting a 3/4-inch diameter, 0.10-slot PVC screen, allowing the water to enter the screen. The samples were collected with a disposable bailer.

The perched water and groundwater samples were decanted into containers prepared and provided by Chromalab. The sample containers were immediately sealed, labeled, and placed in an ice-cooled chest for delivery to Chromalab in accordance with chain-of-custody protocol. A trip blank provided by Chromalab accompanied the groundwater sample shipment. The groundwater and perched water samples were analyzed by EPA Method 8015M for TPH-g and EPA Method 8020 for BTEX.

## 5.0 RESULTS

### 5.1 Regional Sewers

According to City of Oakland records, there are numerous municipal sewers within one block of the site, as shown on Figure 6. These include deep, large-diameter sewer mains to the west, north, and east with invert elevations below Mean Sea Level.

## 5.2 Geologic Conditions

According to historical surveys, the site is located within the historic margins of San Francisco Bay, in an area formerly occupied by tidal flats and marshes. An historic creek and watershed map (Figure 7) indicates a slough that passed through or close to the site.

At the site, shallow geologic conditions consist of fill material over the native bay margin deposits. The fill material consists primarily of brown, poorly-graded fine-grained sand with relatively minor amounts of fines extending to depths ranging from 2 to 8 feet bgs.

The bay margin deposits consist generally of a soft, dark grey clay matrix known locally as Bay Mud, extending to a depth of at least 24 feet. Within the Bay Mud is a complex mixture of other alluvial clays (brown to olive in color), peats, and sand, present in relatively thin layers and zones.

Soil borings advanced in November 1999 using continuous coring techniques to between 16 and 24 feet bgs (Appendix B, SB-25 through -28, and -31) with generally good recovery illustrate the variability within the Bay Mud. The Bay Mud at the site has considerable variability itself, including varying water content from moist to saturated with a liquid consistency, thin sand layers, and variations in consistency from very soft to stiff.

Stabilized depth to groundwater has generally been at depths ranging from 8 to 10 feet bgs, but groundwater has been encountered at some borings at much shallower depths. Boring logs and water level measurements from borings and temporary piezometers indicate that this may be due to the presence of perched water near the fill/Bay Mud interface. The presence of perched water conditions at select locations under the site building was established during the November and December 1999 investigation. Stabilized depth to water measurements from the temporary piezometers TR-1, -2, and -3 and monitoring wells TR-4, -5, and -6 are presented on Table 2.

The results of the May 1999 temporary piezometers indicated that groundwater flow was to the west-southwest at a gradient of approximately 0.025 ft/ft (Figure 8). However, stabilized water level measurements (corrected for product) at monitoring wells TR-4, -5, and -6 yield a

remarkably different result. These results indicate flow to the northeast at a gradient of 0.01 ft/ft (Figure 9).

The groundwater elevations at the monitoring wells and at piezometer TR-1 were below Mean Sea Level. This indicates that groundwater may be artificially drained or is under a significant tidal influence. Given the proximity of several deep sewers, and that depth to water measurements have not detected obvious fluctuations, it is more likely that groundwater flow is being strongly influenced by the sewers. Groundwater flow characteristics may vary considerably on a local scale and seasonally due to the highly heterogeneous geology, the sewers, and the site's low elevation and proximity to the Bay.

### 5.3 Groundwater Sampling Results

Groundwater sample results are summarized on Table 3. Groundwater sample results for TPH-g and BTEX from the 1999 investigations are presented on Figure 8 and for TPH-g and benzene from the 1998 and 1999 investigations on Figure 9. Previous groundwater sampling results in tabular form from the 1998 investigations are enclosed in Appendix A. Complete laboratory analytical results and chain-of-custody forms for the 1999 investigation are provided in Appendix C.

Groundwater samples were collected from the water table at 16 locations (TR-2 and -3, and SB-17, -19 through -24, -26, -27, and -29 through -33). Results ranged from not detected to 360,000 micrograms per liter ( $\mu\text{g/L}$ ) for TPH-g, to 40,000  $\mu\text{g/L}$  for benzene, to 120,000  $\mu\text{g/L}$  for toluene, to 57,000  $\mu\text{g/L}$  for ethylbenzene, and to 240,000  $\mu\text{g/L}$  for total xylenes. MTBE was not detected in any of the groundwater samples, at varying detection limits.

In general, groundwater concentrations decrease very quickly with distance from the free product (see Figures 9 and 12, and Section 5.5). The groundwater flow direction from the October 1999 well soundings indicate that the groundwater concentrations detected at SB-20, -33, and TR-2 may be due to being located downgradient of the free product plume.



Perched water samples were collected at three locations (SB-28, -31, and -33A) from near the fill/Bay Mud interface. All results were below detection limits. Notably, the perched water sample from SB-33 was underlain by groundwater containing detectable concentrations of TPH-g and BTEX.

## 5.4 Quality Assurance/Quality Control for Groundwater Analyses

A comparison of the results for the primary sample collected in May (SB-19) to the duplicate sample (SB-19 [DUP]) indicate that the precision of the toluene data may have been affected. The precision of laboratory analyses is assessed by calculating the Relative Percent Differences (RPD) for each pair of duplicate analyses, as follows:

$$RPD = \frac{\text{primary results} - \text{duplicate results}}{(\text{primary results} + \text{duplicate results}) / 2} \times 100\%$$

The calculated RPD for SB-19 toluene analysis (with the non-detect result at 0.50 µg/L) is -50%. Therefore, the RPD for toluene is higher than desired (+/-25% is a typical RPD limit for quality assurance/quality control purposes). However, the five other compounds were non-detect in both samples, and so the toluene RPD does not indicate any significant problems with the reliability of the data.

No compounds were detected in the trip blank and equipment blank samples. The laboratory noted that, due to matrix interference in sample SB-23, the surrogate compound trifluorotoluene was recovered at 135.3% which exceeds the acceptable recovery range of 58-124%.

A comparison of the results for the primary sample collected in November (SB-26) to the duplicate sample (SB-26 [DUP]) indicate satisfactory quality as no compounds were detected in either sample. Similarly, no compounds were detected in the trip blank (TB) and equipment blank (EB) samples, which indicates satisfactory quality.

The laboratory noted that in product sample SB-18 the surrogate compounds for TPH-g, BTEX, TPH-d, and TPH-mo analyses were not detected due to high concentrations in the sample. The

laboratory also noted that the TPH-d results for SB-18, and TR-6 and -5 were in the early range and did not match the laboratory diesel chromatogram standard.

## 5.5 Free Product Sampling Results

Over the course of the 1999 investigations, free product was encountered at borings SB-18 and -34, and in monitoring wells TR-4, -5, and -6 (Figures 10 and 11). Free product was also observed in a number of borings during the 1998 investigations (Figure 11). The pre-extraction thickness of product in the wells was approximately 2.7 feet at TR-4, 7.5 feet at TR-5, and 10.6 feet at TR-6 on 4 October 1999 (see Table 4). The actual thickness of free product in the surrounding soil formation was approximately 1 foot at TR-4, 1.6 feet at TR-5, and 2 feet at TR-6 (calculations in Appendix D). The actual thickness in the formation is substantially less than the apparent thickness in the wells for the reasons described below. Because of capillary forces, the light non-aqueous phase liquid (LNAPL) thickness in a monitoring well is not the same as that within the surrounding soil (American Petroleum Institute [API], 1999, pg. 3.18). Under equilibrium conditions, free product preferentially accumulates within monitoring wells since the size of the "void space" is large and capillary pressures are negligible (API, 1999, pg. 3.26). In other words, the product thickness in a well is generally greater than the actual thickness of product saturation in the surrounding soil. Furthermore, the finer the soil grains, such as Bay Mud, the greater the difference (API, 1999, Figure 3.5.3).

At some locations free product was observed immediately. Product was not detected at TR-5 until the day after it was drilled, and had a darker amber color compared to the free product observed in TR-6 and -4. At well TR-4, product was first observed some time after the well was developed nearly 2 weeks after installation.

In a number of instances, borings where no product was observed were located very near previous borings where product was, but groundwater concentrations of benzene were appreciable. The lack of product in these borings may be due to geologic heterogeneities affecting product distribution, or because some of the different soil boring techniques used at the site may have allowed product from the Bay Mud matrix to inflow more readily than others.

Based on the overall pattern of results, benzene concentrations above approximately 2,000 µg/L appear to indicate that free product is present in the immediate vicinity. Based on that correlation, and the location of free product observed in the 1998 and 1999 investigations, the apparent extent of free product is indicated on Figure 12. The free-product plume extends from under the building out into Willow Street. The results indicate that the abandoned gasoline tank across Willow Street at 2607 Mandela Parkway is probably not the source of the on-site free product. The small-scale distribution of free product within this area is uncertain, but probably occupies at least a majority of the area.

Free product sample results are presented on Table 5, and complete laboratory analytical results and chain-of-custody forms are provided in Appendix C. The PIANO analysis reports the weight percent of petroleum hydrocarbon components. Sampling efforts previous to 1999 did not include laboratory analysis of product samples.

The results indicate that the product is gasoline. Chromatograms match the laboratory gasoline standard and are similar between sampling locations. MTBE was not detected. TPH-d was detected but the laboratory noted that these results do not match the diesel standard, and TPH-mo was not detected.

Product samples TR-5 and -6 were also analyzed for specific gravity (a unitless measure relative to the density of water), dynamic viscosity, and sample TR-6 was analyzed for flashpoint. The average specific gravity of the two samples (approximately 0.74) are virtually identical to the specific gravity of gasoline and the viscosity is similar to gasoline. Flashpoint analysis of TR-6 indicates that the product meets the definition of a flammable substance.

Product sample TR-4 contained 360 parts per million of organic lead (tetraethyl and methyltriethyl lead) and no detectable organic manganese. Tetraethyl lead was detected in the product sample from boring SB-18 at 260 milligrams per liter (mg/L) but was not detected in samples from TR-5 and -6. While the lack of detection was confirmed by the laboratory, the result is surprising given the close proximity of TR-5 with SB-18.

## 5.6 Free Product Extraction Program

Accumulated product thickness and product bailing and skimming activities are summarized on Table 4. Product was skimmed from TR-4 on four occasions between 20 October and 29 October producing a total of 7.3 gallons. Product was bailed from TR-5 twice in late June and skimmed on four occasions between 20 October and 29 October producing a total of 28.7 gallons. Product was bailed four times in late June and skimmed nine times in October, producing a total of 62.1 gallons. In all, a total of 98.2 gallons of product was produced during the trial extraction program.

The lateral extent and degree of product removal in the fine-grained soil was probably severely limited. Based on a typical decrease in product saturation of 5%, the radius of free product removal was calculated to range from approximately 8 feet at TR-4 to 17 feet at TR-6 (see Appendix D). Removal from one well had no discernable effect on product thickness in the other wells.

As illustrated on Figure 13, the product thickness in TR-6 dropped off sharply between the initial extraction events, and quickly reached a nearly asymptotic level. Therefore, extraction was conducted at all three wells, to evaluate whether all wells would reach a nearly asymptotic level. Product thickness in TR-5 did decrease with each product extraction event, but it did not reach the nearly asymptotic levels achieved in both TR-4 and -6 by the end of the trial extraction period. The product recovery rates decreased to 0.5 gallons per day in TR-4, 1.8 gallons per day in TR-5, and 0.1 gallons per day in TR-6 by the end of the trial period.

## 5.7 Soil Sampling Results

Soil sample analytical results are summarized on Table 6. Previous soil sampling analytical results are enclosed in Appendix A and complete laboratory analytical results and chain-of-custody forms are provided in Appendix C.

The soil samples from monitoring wells TR-4, -5, and -6 were obtained from a depth of approximately 6 feet in the native clay matrix near the expected water table depth. While product was encountered in all three wells, the depth to the water table (corrected for product)

proved to be approximately 8 to 10 feet, instead. No compounds were detected in the soil sample from TR-4. TPH-g was detected at 36 milligrams per kilogram (mg/kg) in soil from TR-6, BTEX compounds were detected 1.3 to 2.9 mg/kg, and MTBE was not detected. The soil sample from TR-5 had the highest concentrations. TPH-g was detected at 2,100 mg/kg, BTEX compounds were detected at 24 to 170 mg/kg, and MTBE was detected at 5.1 mg/kg. This is the only MTBE detected in any soil sample (1998-1999) and is likely a false positive result from the EPA 8010 analytical method that was used.

In November and December 1999, six soil samples were collected at SB-25, -28 (two depths), -31, -33A, and -34. Five of these samples were collected in shallow fill to correspond to planned perched water samples, and the 16-foot deep sample at SB-28 was collected because the planned groundwater sample was impossible to collect. While the results for all of these samples were below detection limits, it is noteworthy that the soil sample from SB-34 was obtained from a location where free product was encountered in the underlying native clay, and that SB-33 was obtained from a location where underlying groundwater contained detectable concentrations.

## 6.0 CONCLUSIONS

In conclusion:

- The lateral extent of free product has been defined. The free product occupies approximately 15,000 square feet extending under the building and adjacent outdoor areas as far as about the middle of Willow Street.
- The free product is gasoline containing organic lead and without MTBE.
- The free product is located within the highly variable Bay Mud matrix at the site. Its distribution within the matrix is likely complicated by numerous thin zones of more permeable sandy and peaty soil.
- The abandoned gasoline UST located across Willow Street does not appear to be the source of on-site free product.

- The only conclusively identified potential source within the source area is the 350-gallon gasoline UST removed from the site in 1991.
- The groundwater flow regime has not been completely defined, but is likely variable due to the site's geologic setting and the apparent influence of nearby sewers. The most reliable results so far indicate that direction of flow is to the northeast (away from the Bay).
- While the lateral extent of dissolved-phase groundwater concentrations has not been fully defined, it likely does not extend to the northeast much beyond the present investigation area.
- Soil sampling and perched water results, and previous soil gas surveys, suggest that upward migration of volatiles into the overlying shallow fill may be severely limited by geologic factors, and that the indoor air transport pathway appears to be incomplete.
- Trial product skimming activities indicate that the lateral influence of free product removal was limited and that product accumulation rates decreased to asymptotic or near-asymptotic levels relatively quickly. Complete removal of free product in the heterogeneous and fine-grained soil would be very expensive and would likely not be technically feasible.

## 7.0 REFERENCES

American Petroleum Institute (API), 1999. *Free-Product Recovery of Petroleum Hydrocarbon Liquids*, Health and Environmental Sciences Department, Publication Number 4682. June.

**TABLE 1**  
**WELL CONSTRUCTION DETAILS**  
**2855 Mandela Parkway**  
**Oakland, California**

Well or Piezometer	Date Installed	Casing Diameter (in)	Screen Interval (ft bgs)	Total Depth (ft)	Top of Casing Elevation (ft msl)
<b>Temporary Piezometers</b>					
TR-1	5/11/99	1	0 - 12	12.0	7.59
TR-2	5/11/99	1	0 - 12	12.0	9.06
TR-3	5/11/99	1	0 - 12	12.0	7.34
<b>Monitoring Wells</b>					
TR-4	6/22/99	4	2.5 - 20.5	20.5	7.20
TR-5	6/23/99	4	2.5 - 20.5	20.5	6.90
TR-6	6/22/99	4	2.5 - 20.5	20.5	7.30

**Notes**

- in = inches
- ft bgs = feet below ground surface
- ft msl = feet mean sea level

**TABLE 2**  
**WATER LEVEL MEASUREMENTS**  
**2855 Mandela Parkway**  
**Oakland, California**

Well or Piezometer	Date and Time	Top of Casing Elevation (ft msl)	Depth to Product (ft btoc)	Depth to Water (ft btoc)	Product Layer Thickness (ft)	Corrected Depth to Water (ft btoc)	Corrected Water Elevation (ft msl)
<b>Temporary Piezometers<sup>3</sup></b>							
TR-1	5/12/99 12:10	7.59	none	7.94	none	7.94	-0.35
TR-2	5/12/99 12:15	9.06	none	3.32	none	3.32	5.74
TR-3	5/12/99 12:20	7.34	none	2.17	none	2.17	5.17
<b>Monitoring Wells<sup>4,5</sup></b>							
TR-4 <sup>6</sup>	6/24/99 8:25	7.20	none	9.21	none	9.21	-2.01
	10/4/99 11:07		8.81	11.49	2.68	9.51	-2.31
	10/29/99 9:15		9.56	9.64	0.08	9.58	-2.38
TR-5 <sup>6</sup>	6/24/99 8:10	6.90	8.31	8.83	0.52	8.45	-1.55
	10/4/99 11:14		7.58	15.04	7.46	9.52	-2.62
	10/29/99 9:12		9.31	10.36	1.05	9.58	-2.68
TR-6 <sup>7</sup>	6/24/99 8:30	7.70	7.12	10.90	3.78	8.10	-0.40
	10/4/99 11:21		7.80	18.37	10.57	10.55	-2.85
	10/29/99 9:10		10.65	10.69	0.04	10.66	-2.96

**Notes**

ft msl = feet mean sea level

ft btoc = feet below top of casing

<sup>1</sup> Moran Engineering of Berkeley, California, conducted the surveys on 12 May 1999 and 28 June 1999.

<sup>2</sup> Correction based on specific gravity of product = 0.74 as follows:

Corrected depth to water = (depth to water) - (0.74 x [product layer thickness])

<sup>3</sup> TR-1, -2, and -3 installed 5/11/99; removed 5/12/99.

<sup>4</sup> Additional liquid level measurements are presented on Table 6.

<sup>5</sup> TR-4, -5, and -6 installed 6/22 through 6/23/99.

<sup>6</sup> Periodic product skimming from TR-4 and -5 conducted 10/20 through 10/29/99.

<sup>7</sup> Periodic product skimming from TR-6 conducted 6/24 through 6/29/99 and 10/4 through 10/29/99.



**TABLE 3**  
**GROUNDWATER SAMPLE RESULTS**  
**2855 Mandela Parkway**  
**Oakland, California**

Location	Date Sampled	Sample Depth Interval (ft bgs)	TPH-g 8015M (ug/L)	Benzene 8020 (ug/L)	Toluene 8020 (ug/L)	Ethylbenzene 8020 (ug/L)	Xylenes 8020 (ug/L)	MTBE 8020 (ug/L)
TR-2	5/11/99	0 - 12	2,600	340	630	< 10	270	< 100
TR-3	5/11/99	0 - 12	< 50	< 0.50	< 0.50	2.6	< 0.50	< 5.0
SB-17	5/11/99	0 - 12	< 50	< 0.50	0.93	< 0.50	2.7	< 5.0
SB-19	5/11/99	0 - 12	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
DUP (SB-19)	5/11/99	0 - 12	< 50	< 0.50	0.83	< 0.50	< 0.50	< 5.0
SB-20	5/11/99	0 - 12	160	12	38	< 0.50	30	< 5.0
SB-21	5/11/99	0 - 12	360,000	40,000	120,000	57,000	240,000	< 10,000
SB-22	5/11/99	0 - 12	< 50	< 0.50	2.2	< 0.50	< 0.50	< 5.0
SB-23 <sup>1</sup>	5/11/99	0 - 12	11,000	5,000	11,000	2,800	11,000	< 500
SB-24	5/11/99	0 - 12	71,000	6,400	9,200	2,700	9,400	< 1000
EB	5/11/99	NA	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
TB	5/11/99	NA	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
SB-26	11/16/99	0 - 16	< 50	< 0.50	< 0.50	< 0.50	< 0.50	NA
DUP (SB-26)	11/16/99	0 - 16	< 50	< 0.50	< 0.50	< 0.50	< 0.50	NA
SB-27 <sup>2</sup>	11/16/99	0 - 16	120	1.8	< 0.50	1.1	< 0.50	NA
SB-28 (F/BM) <sup>3</sup>	11/16/99	0 - 8	< 50	< 0.50	< 0.50	< 0.50	< 0.50	NA
SB-29	12/2/99	0 - 24	< 50	< 0.50	< 0.50	< 0.50	< 0.50	NA
SB-30	12/2/99	0 - 24	< 50	< 0.50	< 0.50	< 0.50	< 0.50	NA
SB-31 (F/BM) <sup>3</sup>	11/16/99	0 - 8	< 50	< 0.50	< 0.50	< 0.50	< 0.50	NA
SB-31	11/16/99	0 - 16	< 50	< 0.50	< 0.50	< 0.50	< 0.50	NA
SB-32	12/2/99	0 - 28	< 50	< 0.50	< 0.50	< 0.50	< 0.50	NA
SB-33	11/16/99	0 - 16	450	31	71	16	68	NA
SB-33A (F/BM) <sup>3</sup>	12/2/99	0 - 8	< 50	< 0.50	< 0.50	< 0.50	< 0.50	NA
TB	11/16/99	NA	< 50	< 0.50	< 0.50	< 0.50	< 0.50	NA
TB	12/2/99	NA						NA

**Notes**

TPH-g = Total Petroleum Hydrocarbons as Gasoline

MTBE = Methyl Tert Butyl Ether

ft bgs = feet below ground surface

ug/L = micrograms per liter

DUP = duplicate field sample

TB = trip blank

NA = not analyzed

< 50 indicates not detected at that reporting limit

<sup>1</sup> Laboratory noted surrogate recoveries higher than QC limits due to matrix interference.

<sup>2</sup> Laboratory noted TPH-G result for SB-27 did not match the standard for gasoline.

<sup>3</sup> F/BM indicates perched water sample collected from fill/Bay Mud interface.

**TABLE 4**  
**LIQUID LEVELS AND VOLUME OF PRODUCT EXTRACTED**  
**2855 Mandela Parkway**  
**Oakland, California**

Well	Date	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Observations	Volume of Product in Casing (gal)	Product Extracted (gal)	Water Bailed (gal)	
TR-4	<b>June Extraction Data</b>								
	6/22/1999 17:10:00 AM	---	10.71						
	6/23/99 11:24 AM	---	9.71						
	6/23/1999 17:00:00 AM	---	9.78						
	6/24/99 8:25 AM	---	9.21						
	6/24/99 10:23 AM	---	9.45		after bailing TR-6				
	6/25/1999 13:15:00 AM	---	9.26						
	6/25/1999 14:12:00 AM	---	9.36		after bailing TR-5 & -6				
	6/28/99 12:32 PM	---	9.27						
	6/28/99 2:20 PM	---	9.48		after bailing TR-5 & -6				
	6/29/99 1:00 PM	---	9.32						
	6/29/99 3:20 PM	---	9.41		after bailing TR-6				
	<b>Well Development</b>								
	7/2/99 11:30 AM	---	9.21			pre-TR-4 development well is dry			30
	7/2/99 1:00 PM	---	20.12						
	7/2/99 1:30 PM	---	16.21						
	7/2/99 2:00 PM	---	14.61						
7/2/99 2:30 PM	---	13.56							
7/2/99 3:00 PM	---	12.88							
7/2/99 3:30 PM	---	12.22							
7/2/99 4:00 PM	---	11.69							
7/2/99 4:15 PM	---	11.01							
7/2/99 4:40 PM	---	20.12			well is dry			18	

**TABLE 4**  
**LIQUID LEVELS AND VOLUME OF PRODUCT EXTRACTED**  
 2855 Mandela Parkway  
 Oakland, California

Well	Date	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Observations	Volume of Product in Casing (gal)	Product Extracted (gal)	Water Bailed (gal)
TR-4 (cont'd)	<b>October Extraction Data</b>							
	10/4/99 11:07 AM	8.81	11.49	2.68		1.7688		
	10/4/99 6:20 PM	8.94	11.67	2.73	after pumping TR-6	1.8		
	10/6/99 9:30 AM	7.85	11.54	3.69		2.4		
	10/6/99 11:10 AM	7.87	11.54	3.67	after pumping TR-6	2.4		
	10/8/99 10:35 AM	8.84	11.56	2.72		1.8		
	10/8/99 12:35 PM	8.88	11.60	2.72	after pumping TR-6	1.8		
	10/11/99 9:50 AM	8.79	11.56	2.77		1.8		
	10/11/99 11:54 AM	8.79	11.57	2.78	after pumping TR-6	1.8		
	10/13/99 9:50 AM	8.77	11.60	2.83		1.9		
	10/13/99 11:54 AM	8.77	11.60	2.83	after pumping TR-6	1.9		
	10/20/99 12:00 AM	8.83	11.76	2.93		1.9		
	10/20/99 12:00 AM	10.02	10.38	0.36	after pumping TR-4, -5, -6	0.2	5.5	
	10/25/99 10:19 AM	9.49	10.06	0.57		0.4		
	10/25/99 12:58 PM	9.72	9.79	0.07	after pumping TR-4, -5, -6	0.05	1.1	
	10/27/99 8:35 AM	9.61	9.74	0.13		0.1		
	10/27/99 11:57 AM	none	9.69	0	after pumping TR-4, -5, -6	0	0.3	
	10/29/99 9:15 AM	9.56	9.64	0.08		0.03		
10/29/99 12:30 PM	none	9.62	0	after pumping TR-4, -5, -6	0	0.5		
Product extracted from 20-Oct-99 to 29-Oct-99 Cumulative volume of product extracted (gal):							7.3	

**TABLE 4**  
**LIQUID LEVELS AND VOLUME OF PRODUCT EXTRACTED**  
**2855 Mandela Parkway**  
**Oakland, California**

Well	Date	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Observations	Volume of Product in Casing (gal)	Product Extracted (gal)	Water Bailed (gal)
TR-5	<b>June Extraction Data</b>							
	6/23/99 3:15 PM	---	11.61					
	6/23/99 3:30 PM	---	10.37					
	6/23/99 4:00 PM	---	9.92					
	6/23/99 5:05 PM	---	9.71					
	6/24/99 8:10 AM	8.31	8.83	0.52		0.3		
	6/24/99 10:30 AM	8.26	8.81	0.55	after bailing TR-6	0.4		
	6/25/99 1:17 PM	8.29	9.28	0.99		0.7		
	6/25/99 2:10 PM	11.01	11.12	0.11	after bailing TR-5 & -6	0.1	0.8	0.5
	6/28/99 12:34 PM	8.15	9.81	1.66		1.1		
	6/28/99 2:22 PM	8.89	9.12	0.23	after bailing TR-5 & -6	0.2	1.8	0.6
	6/29/99 1:05 PM	8.27	9.56	1.29		0.9		
	6/29/99 3:24 PM	8.34	9.63	1.29	after bailing TR-6	0.9		
	7/2/99 11:40 AM	---	7.92	0.00	pre-TR-4 development	0.0		
	7/2/99 4:45 PM	8.00	10.42	2.42	post-TR-4 development	1.6		
Volume of product extracted 25-Jun-99 and 28-Jun-99:							2.6	

**TABLE 4**  
**LIQUID LEVELS AND VOLUME OF PRODUCT EXTRACTED**  
**2855 Mandela Parkway**  
**Oakland, California**

Well	Date	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Observations	Volume of Product in Casing (gal)	Product Extracted (gal)	Water Bailed (gal)
TR-5 (cont'd)	<b>October Extraction Data</b>							
	10/4/99 11:14 AM	7.58	15.04	7.46		4.9236		
	10/4/99 6:25 PM	7.69	15.05	7.36	after pumping TR-6	4.9		
	10/6/99 9:25 AM	7.54	15.02	7.48		4.9		
	10/6/99 11:12 AM	7.52	15.01	7.49	after pumping TR-6	4.9		
	10/8/99 10:45 AM	7.53	15.04	7.51		5.0		
	10/8/99 12:45 PM	7.52	15.06	7.54	after pumping TR-6	5.0		
	10/11/99 10:00 AM	7.45	15.03	7.58		5.0		
	10/11/99 12:01 PM	7.40	14.99	7.59	after pumping TR-6	5.0		
	10/13/99 10:00 AM	7.42	15.04	7.62		5.0		
	10/13/99 12:01 PM	7.42	15.04	7.62	after pumping TR-6	5.0		
	10/20/99 12:00 AM	7.52	15.09	7.57		5.0		
	10/20/99 12:00 AM	10.62	10.90	0.28	after pumping TR-4, -5, -6	0.2	13	
	10/25/99 10:21 AM	8.31	12.87	4.56		3.0		
	10/25/99 1:05 PM	10.40	10.56	0.16	after pumping TR-4, -5, -6	0.1	8.6	
	10/27/99 8:40 AM	9.16	10.49	1.33		0.9		
	10/27/99 11:45 AM	10.03	10.07	0.04	after pumping TR-4, -5, -6	0	2.8	
	10/29/99 9:12 AM	9.31	10.36	1.05		0.7		
	10/29/99 12:25 PM	10.01	10.05	0.04	after pumping TR-4, -5, -6	0.03	1.8	
	Product extracted 25-Jun-99 to 28-Jun-99, and 20-Oct-99 to 29-Oct-99. Cumulative volume of product extracted (gal):							28.7

**TABLE 4**  
**LIQUID LEVELS AND VOLUME OF PRODUCT EXTRACTED**  
**2855 Mandela Parkway**  
**Oakland, California**

Well	Date	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Observations	Volume of Product in Casing (gal)	Product Extracted (gal)	Water Bailed (gal)
TR-6	<b>June Extraction Data</b>							
	6/22/99 1:45 PM	9.96	11.35	1.39		0.9		
	6/22/99 2:23 PM	9.71	11.75	2.04		1.3		
	6/23/99 11:28 AM	7.54	17.38	9.84		6.5		
	6/23/99 2:26 PM	7.50	17.81	10.31		6.8		
	6/24/99 8:30 AM	7.12	18.52	11.40		7.5		
	6/24/99 10:10 AM	10.90	11.12	0.22	after bailing TR-6	0.1	22	3
	6/25/99 1:20 PM	8.59	14.51	5.92		3.9		
	6/25/99 2:12 PM	10.79	11.13	0.34	after bailing TR-5&-6	0.2	7.5	3.5
	6/28/99 12:40 PM	7.54	17.55	10.01		6.6		
	6/28/99 2:30 PM	10.96	11.18	0.22	after bailing TR-5 & -6	0.1	13.5	1.5
	6/29/99 1:10 PM	8.77	14.17	5.40		3.6		
	6/29/99 3:16 PM	10.16	11.03	0.87	after bailing TR-6	0.6	6	
	7/2/99 11:35 AM	4.61	17.09	12.48	pre-TR-4 development	8.2		
	7/2/99 4:40 PM	7.81	17.87	10.06	post-TR-4 development	6.6		
	Volume of product extracted 24-Jun-99 and 29-Jun-99:							49.0

**TABLE 4**  
**LIQUID LEVELS AND VOLUME OF PRODUCT EXTRACTED**  
**2855 Mandela Parkway**  
**Oakland, California**

Well	Date	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Observations	Volume of Product in Casing (gal)	Product Extracted (gal)	Water Bailed (gal)
TR-6 (cont'd)	<b>October Extraction Data</b>							
	10/4/99 11:21 AM	7.80	18.37	10.57	after pumping TR-6 & removing pump from it	7.0	10	
	10/4/99 6:35 PM	10.35	12.66	2.31		1.5		
	10/6/99 9:35 AM	9.91	12.47	2.56	after pumping TR-6	1.7	4.9	
	10/6/99 11:27 AM	10.84	NM					
	10/8/99 10:55 AM	10.44	NM	0	after pumping TR-6	0	1.8	
	10/8/99 12:10 PM	none	10.95					
	10/11/99 10:10 AM	10.54	NM	0	after pumping TR-6	0	0.2	
	10/11/99 11:15 AM	none	none					
	10/13/99 10:00 AM	10.53	10.74	0.21	after pumping TR-6	0.1	0.1	
	10/13/99 11:00 AM	none	10.62			0		
	10/20/99 12:00 AM	10.49	11.08	0.59	after pumping TR-4, -5, -6	0.4	1.5	
	10/20/99 12:00 AM	10.74	10.76	0		0.0132		
	10/25/99 10:15 AM	10.61	10.81	0.20	after pumping TR-4, -5, -6	0.1	0.4	
	10/25/99 12:55 PM	none	10.71	0		0		
	10/27/99 8:30 AM	10.73	10.79	0.06	after pumping TR-4, -5, -6	0.04	0.1	
	10/27/99 11:55 AM	none	10.70	0		0		
	10/29/99 9:10 AM	10.65	10.69	0.04	after pumping TR-4, -5, -6	0.03	0.1	
10/29/99 12:27 PM	none	10.68	0	0				
Product extracted 24-Jun-99 to 28-Jun-99, and 4-Oct-99 to 29-Oct-99.								
Cumulative volume of product extracted (gal):								62.1
Total volume extracted from all 3 wells June - October:								98.2

**TABLE 5A**  
**FREE PRODUCT CHEMICAL RESULTS**  
**2855 Mandela Parkway**  
**Oakland, California**

Location	Date Sampled	TPH-g 8015M (%)	Benzene 8020 (%)	Toluene 8030 (%)	Ethylbenzene 8040 (%)	Xylene 8050 (%)	MTBE 8060 (%)	Tetraethyl Lead 8070 (mg/L)	TPH-d 8015M (%)	TPH-m 8015M (%)	Organic Lead 6010 (ug/g)	Organic Manganese 6010 (ug/g)
SB-18	5/11/99	73	0.97	3.6	1.0	5.3	0.56 <sup>1</sup>	260 <sup>2</sup>	38 <sup>3</sup>	< 3.4		
TR-4 <sup>4</sup>	10/6/99										360	< 1
TR-5 <sup>5</sup>	6/24/99	83	0.68	1.1	3.4	5.1	< 5.0	< 0.1	23 <sup>3</sup>	< 2.5		
TR-6	6/24/99	100	0.75	4	1.5	5.6	< 5.0	< 0.1	17 <sup>3</sup>	< 2.5		

**Notes**

- TPH-g = Total Petroleum Hydrocarbons as Gasoline
- MTBE = Methyl Tert Butyl Ether
- TPH-d = Total Petroleum Hydrocarbons as Diesel
- TPH-m = Total Petroleum Hydrocarbons as Motor Oil
- mg/L = milligrams per liter
- ug/g = micrograms per gram (parts per million [ppm])
- C = degrees Celsius
- F = degrees Fahrenheit

<sup>1</sup> MTBE not confirmed; suspected false positive.

<sup>2</sup> Laboratory noted sample was leaded gasoline.

<sup>3</sup> Laboratory noted diesel results in early range and did not match diesel standard.

<sup>4</sup> Complete analytical results presented in Appendix C.

<sup>5</sup> Laboratory noted surrogates were diluted out due to presence of non-target materials.



**TABLE 5B**  
**FREE PRODUCT PHYSICAL CHARACTERISTICS**  
**2855 Mandela Parkway**  
**Oakland, California**

Location	Date Sampled	Specific Gravity	Dynamic Viscosity <sup>2</sup> (cP at 20C)	Flashpoint (F)
TR-5	6/24/99	0.7456	0.487	
TR-6	6/24/99	0.7313	0.478	60

Notes

C = degrees Celsius

F = degrees Fahrenheit

<sup>1</sup> Analytical method ASTM D1298-85(90).

<sup>2</sup> Laboratory report did not reference method for dynamic viscosity or flashpoint.

**TABLE 6**  
**SOIL SAMPLE RESULTS**  
**2855 Mandela Parkway**  
**Oakland, California**

Location	Depth (ft)	Date Sampled	TPH-g 8015M (mg/kg)	Benzene 8020 (mg/kg)	Toluene 8020 (mg/kg)	Ethylbenzene 8020 (mg/kg)	Xylenes 8020 (mg/kg)	MTBE 8020 (mg/kg)
TR-4	5.5	6/22/99	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
TR-5	5.5	6/22/99	2,100	24	92	40	170	5.1 <sup>1</sup>
TR-6	6.0	6/22/99	36	2.2	2.9	1.3	2.6	< 0.62
SB-25	3.5	11/16/99	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	NA
SB-28	6.0	11/16/99	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	NA
SB-28	16	11/16/99	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	NA
SB-31	5.0	11/16/99	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	NA
SB-33A	5.5	12/2/99	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	NA
SB-34	3.0	12/2/99	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	NA

**Notes**

TPH-g = Total Petroleum Hydrocarbons as Gasoline

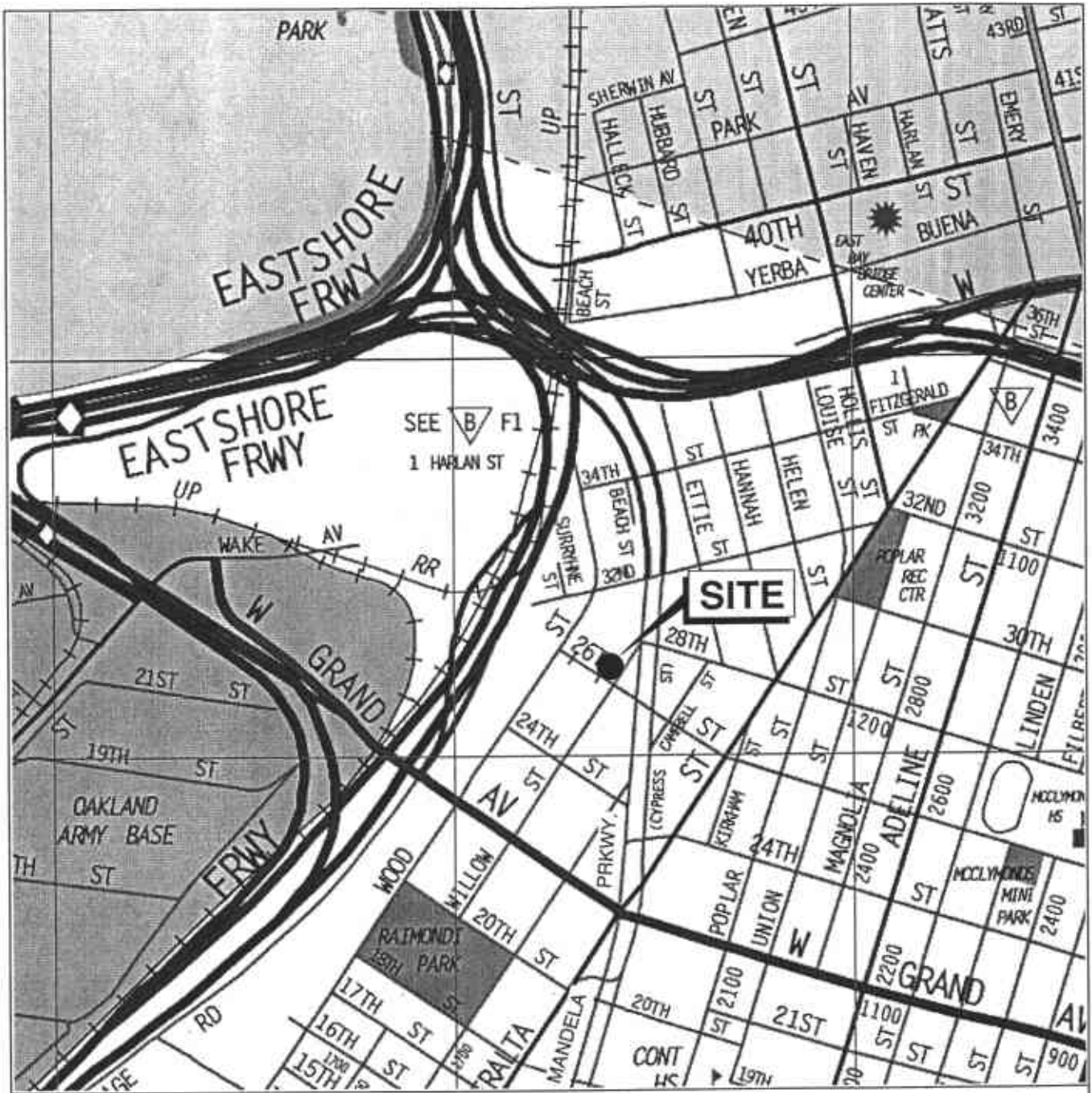
MTBE = Methyl Tert Butyl Ether

mg/kg = milligrams per kilogram

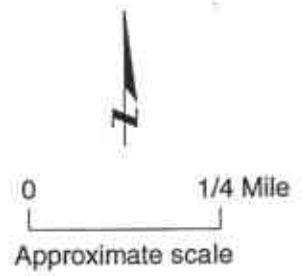
NA = not analyzed

< 1.0 indicates not detected at that reporting limit

<sup>1</sup> MTBE detection not confirmed; suspected false positive.



Reference: The Thomas Brothers Maps  
Alameda County  
1999

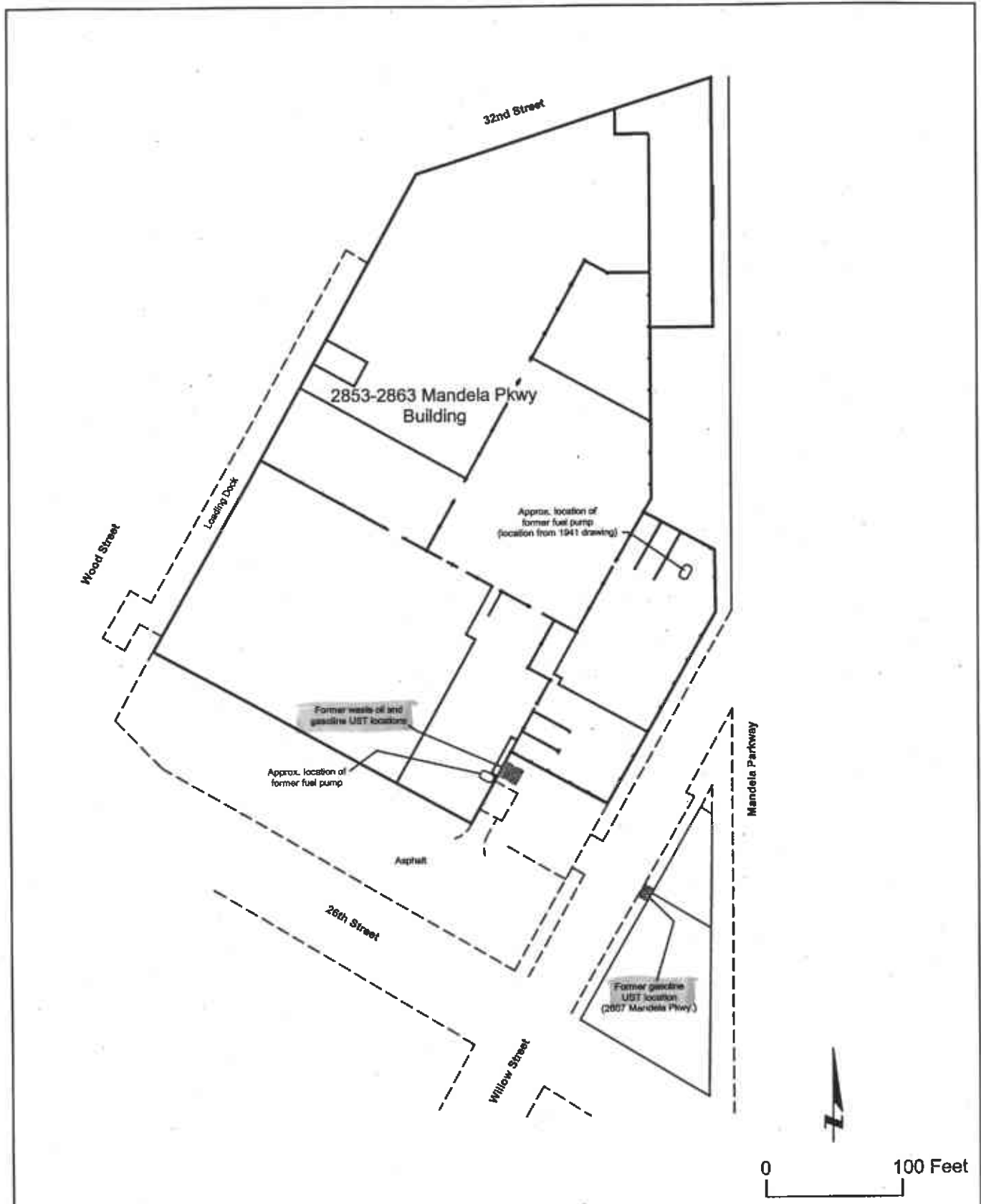


2855 MANDELA PARKWAY  
Oakland, California

**SITE LOCATION MAP**

**Treadwell&Rollo**

Date 5/19/99    Project No. 2543.01    Figure 1



References: Interactive Resources, 1999.

0 100 Feet  
Approximate scale

BORINGS1299.DWG





**2855 MANDELA PARKWAY PROPERTY**  
Oakland, California

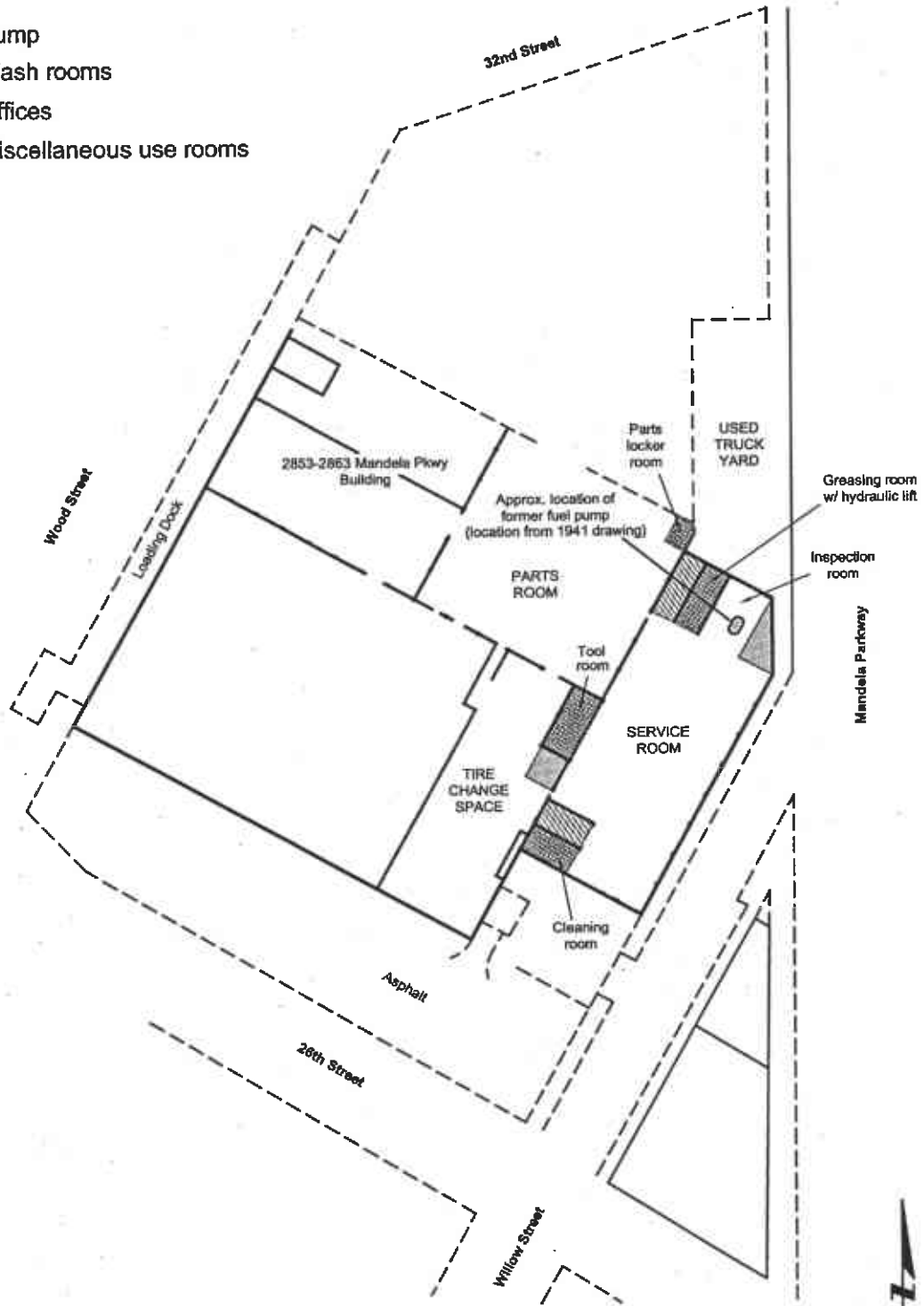
**SITE PLAN**

**Treadwell & Rollo**

Date 01/20/00	Project No. 2543.01	Figure 2
---------------	---------------------	----------

**EXPLANATION**

-  Pump
-  Wash rooms
-  Offices
-  Miscellaneous use rooms



References: Ceres Associates, 1998.  
 Interactive Resources, 1999.  
 International Harvester, Drawing No. 5370, 1941.

0 100 Feet  
 Approximate scale

1941 BASE.DWG

**2855 MANDELA PARKWAY PROPERTY**  
 Oakland, California

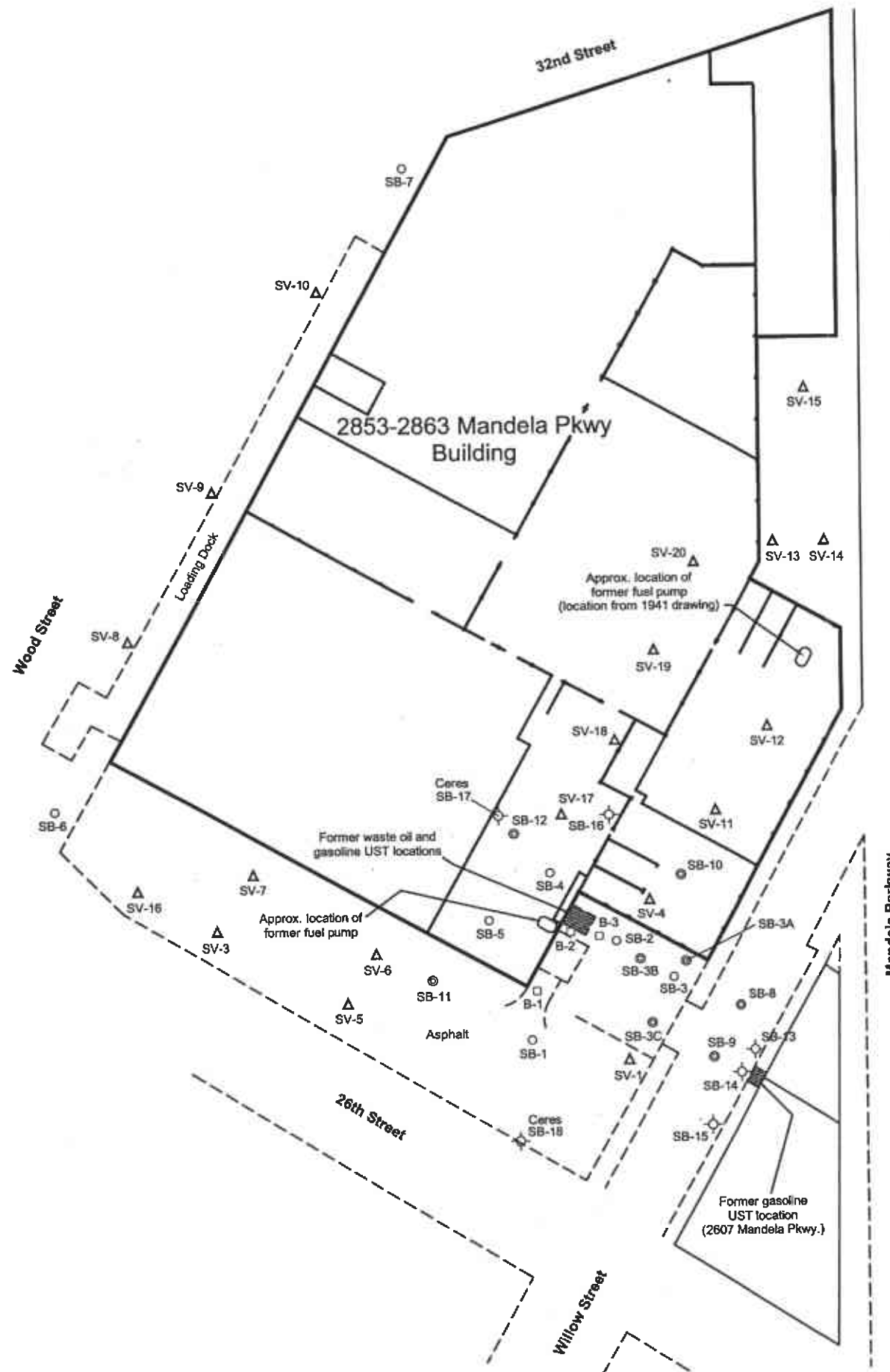
**FORMER INTERNATIONAL HARVESTER  
 ACTIVITY AREAS (circa 1941)**

**Treadwell&Rollo**

Date 01/20/00	Project No. 2543.01	Figure 3
---------------	---------------------	----------

FILE: BORINGS1299.DWG

References: Ceres Associates, 1998.  
Interactive Resources, 1999.



EXPLANATION

- Soil boring (06/92)
- △ Soil vapor sampling (08/98)
- Soil boring (08/98)
- ⊙ Soil boring (10/98)
- ⊗ Soil boring (11/98)

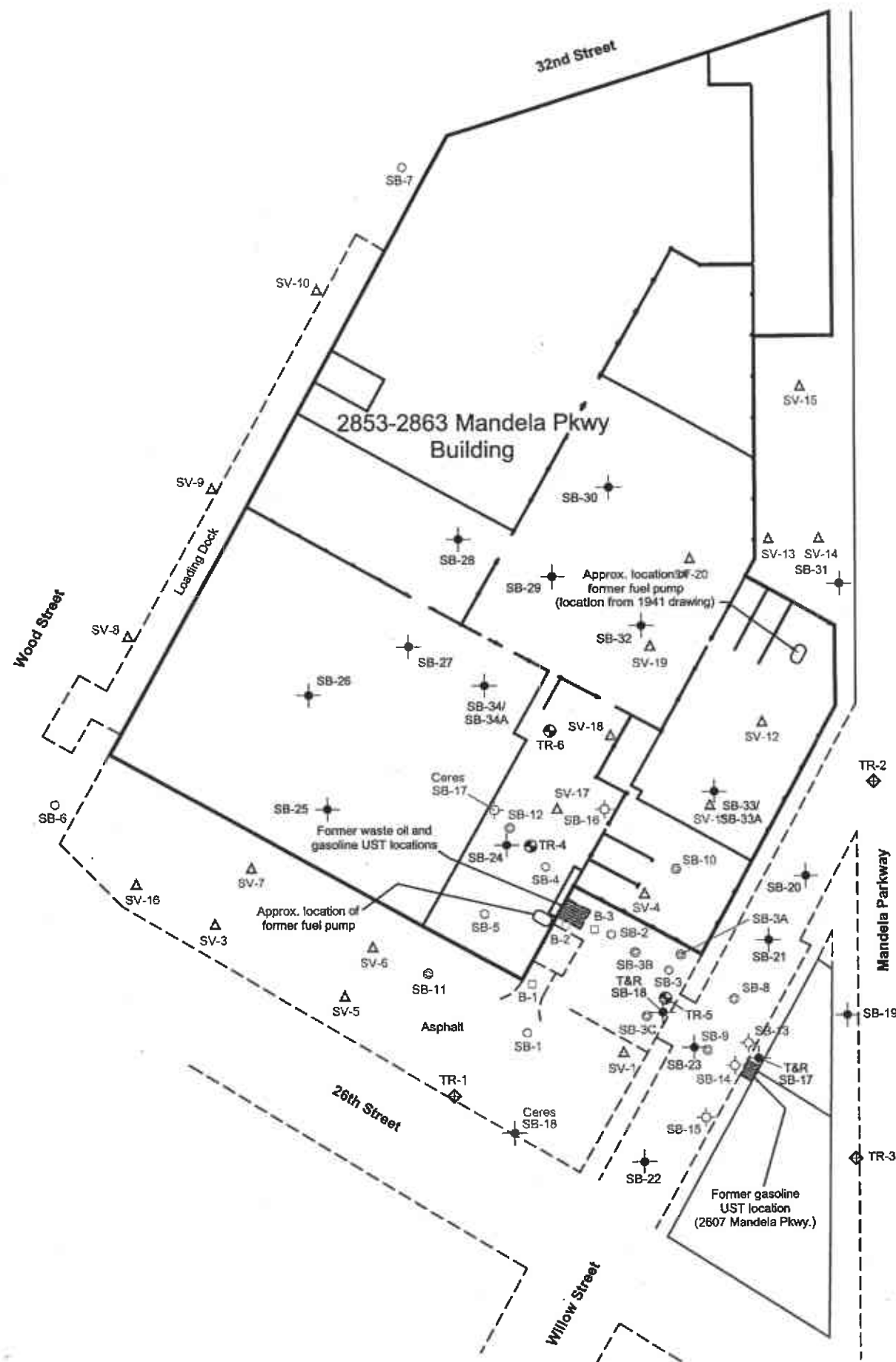
NOTES

1. 1992 soil vapor sample locations are not shown.
2. UST removal sample locations are not shown.

<b>2855 MANDELA PARKWAY PROPERTY</b> Oakland, California		
<b>PREVIOUS SAMPLING LOCATIONS</b>		
Date 12/15/99	Project No. 2543.01	Figure 4
<b>Treadwell&amp;Rollo</b>		

FILE: BORINGS1299.DWG

References: Ceres Associates, 1998.  
Interactive Resources, 1999.

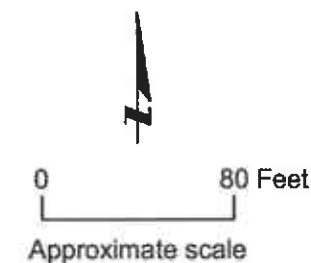


EXPLANATION

- Soil boring (06/92)
- △ Soil vapor sampling (08/98)
- Soil boring (08/98)
- ⊙ Soil boring (10/98)
- ⊕ Soil boring (11/98)
- Soil boring (1999)
- ◆ Temporary piezometer (1999)
- ⊗ Monitoring well (1999)

NOTES

1. 1992 soil vapor sample locations are not shown.
2. UST removal sample locations are not shown.



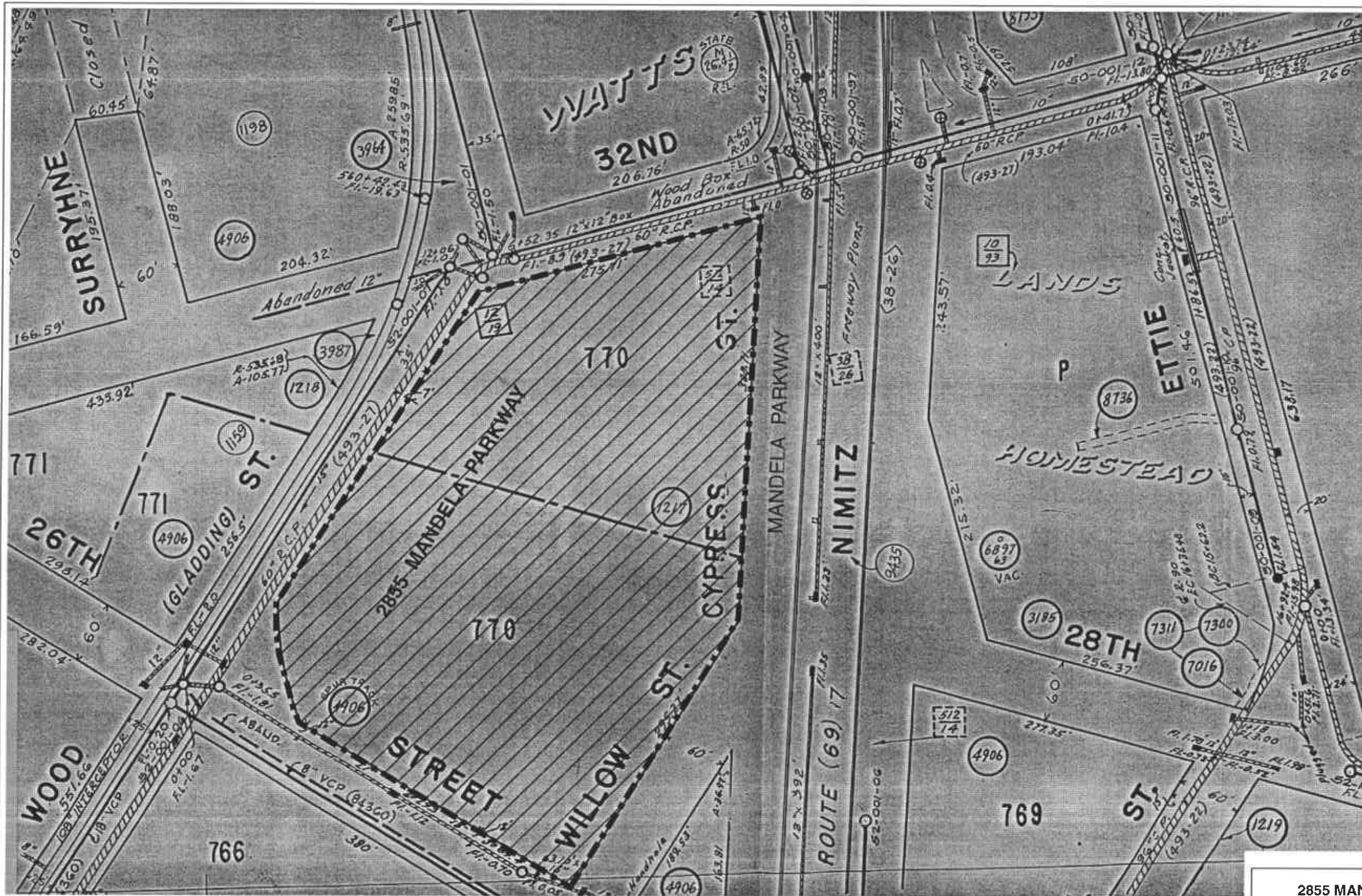
2855 MANDELA PARKWAY PROPERTY  
Oakland, California

SAMPLING LOCATIONS

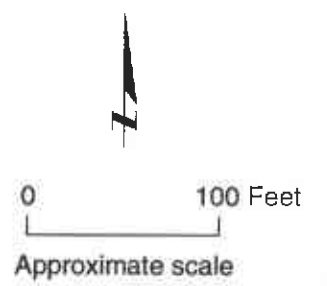
Date 12/15/99 | Project No. 2543.01 | Figure 5

**Treadwell & Rollo**





- EXPLANATION**
- Interceptor sewer
  - Storm drain
  - Sanitary sewer
  - Manhole
  - FL Flow line elevation in feet, City of Oakland Datum (COOD)
- 0 ft. COOD = 3 ft. MSL  
MSL Mean Sea Level (feet)



2855 MANDELA PARKWAY PROPERTY  
Oakland, California

**SEWER MAP**

Date 01/11/00 Project No. 2543.01 Figure 6

**Treadwell&Rollo**

Reference:  
City of Oakland Sewer Map, Public Works Agency



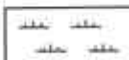


Reference: Creek & Watershed Map of Oakland & Berkeley by Janet M. Sowers, William Lettis & Associates, Inc. Published by Oakland Museum of California, 1993; revised 1995

**EXPLANATION:**



Former creeks, buried or drained, and bay shoreline, circa 1850



Tidal marsh, circa 1850



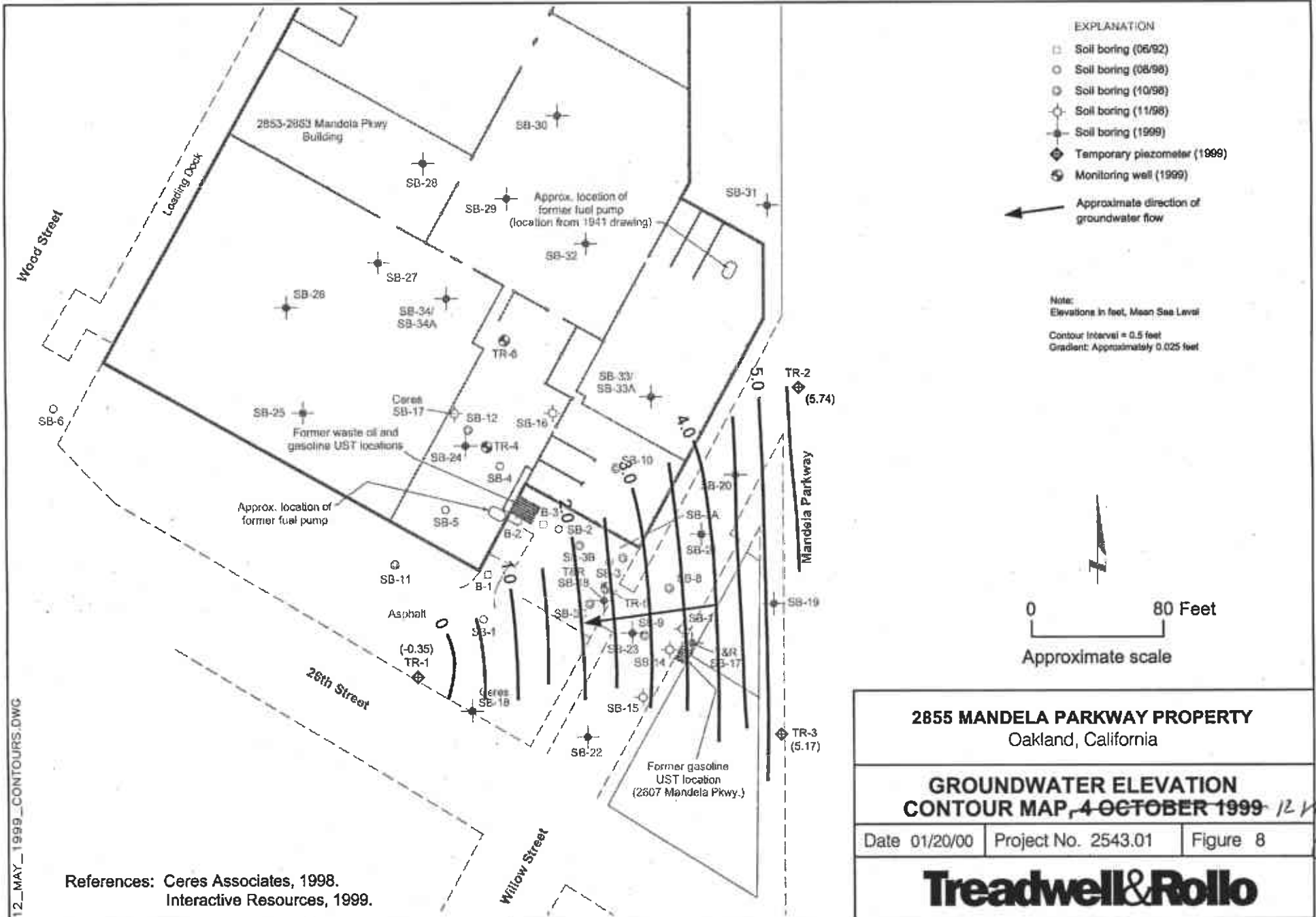
0 2000 Feet  
Approximate scale

2855 MANDELA PARKWAY PROPERTY  
Oakland, California

**HISTORIC MARSH MAP**

**Treadwell & Rollo**

Date 01/14/00 Project No. 2543.01 Figure 7

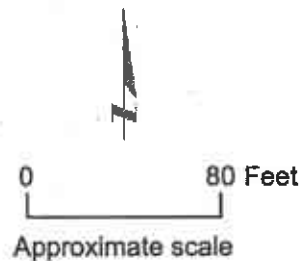


**EXPLANATION**

- Soil boring (06/92)
- Soil boring (08/98)
- Soil boring (10/98)
- Soil boring (11/98)
- ⊕ Soil boring (1999)
- ◇ Temporary piezometer (1999)
- ⊗ Monitoring well (1999)

← Approximate direction of groundwater flow

Note:  
Elevations in feet, Mean Sea Level  
Contour Interval = 0.5 feet  
Gradient: Approximately 0.025 feet

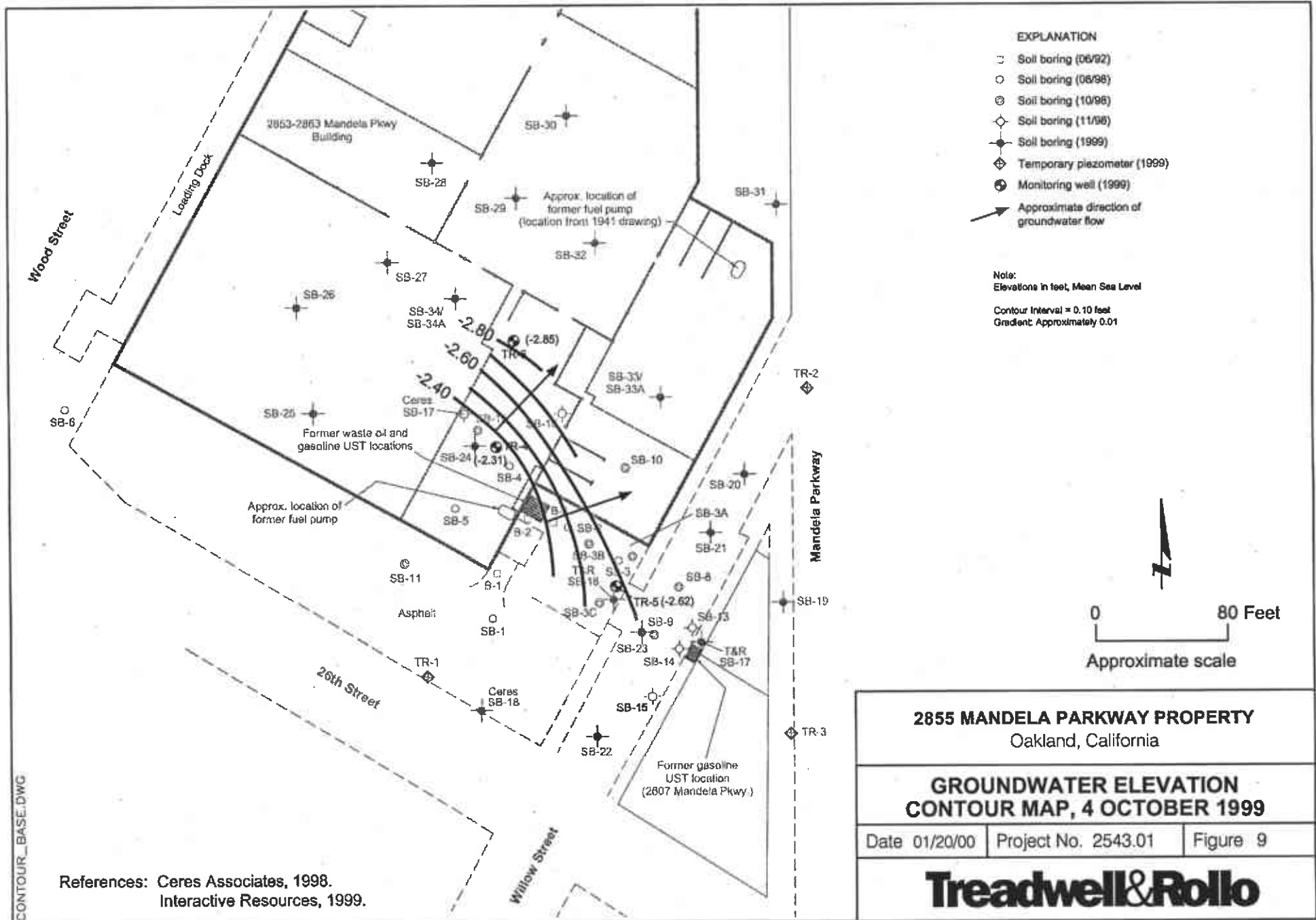


<b>2855 MANDELA PARKWAY PROPERTY</b> Oakland, California		
<b>GROUNDWATER ELEVATION CONTOUR MAP, 4 OCTOBER 1999</b>		
Date 01/20/00	Project No. 2543.01	Figure 8
<b>Treadwell &amp; Rollo</b>		

*12 May 1999*  
*John Carnie*  
*Assistant*  
*Traslad & Rollo*

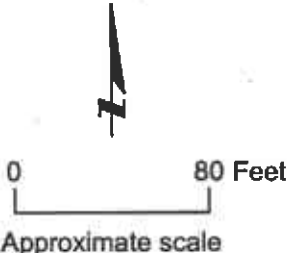
12\_MAY\_1999\_CONTOURS.DWG

References: Ceres Associates, 1998.  
Interactive Resources, 1999.



- EXPLANATION**
- Soil boring (06/92)
  - Soil boring (06/98)
  - ⊙ Soil boring (10/98)
  - ◇ Soil boring (11/98)
  - ⊕ Soil boring (1999)
  - ⊕ Temporary piezometer (1999)
  - ⊕ Monitoring well (1999)
  - ➔ Approximate direction of groundwater flow

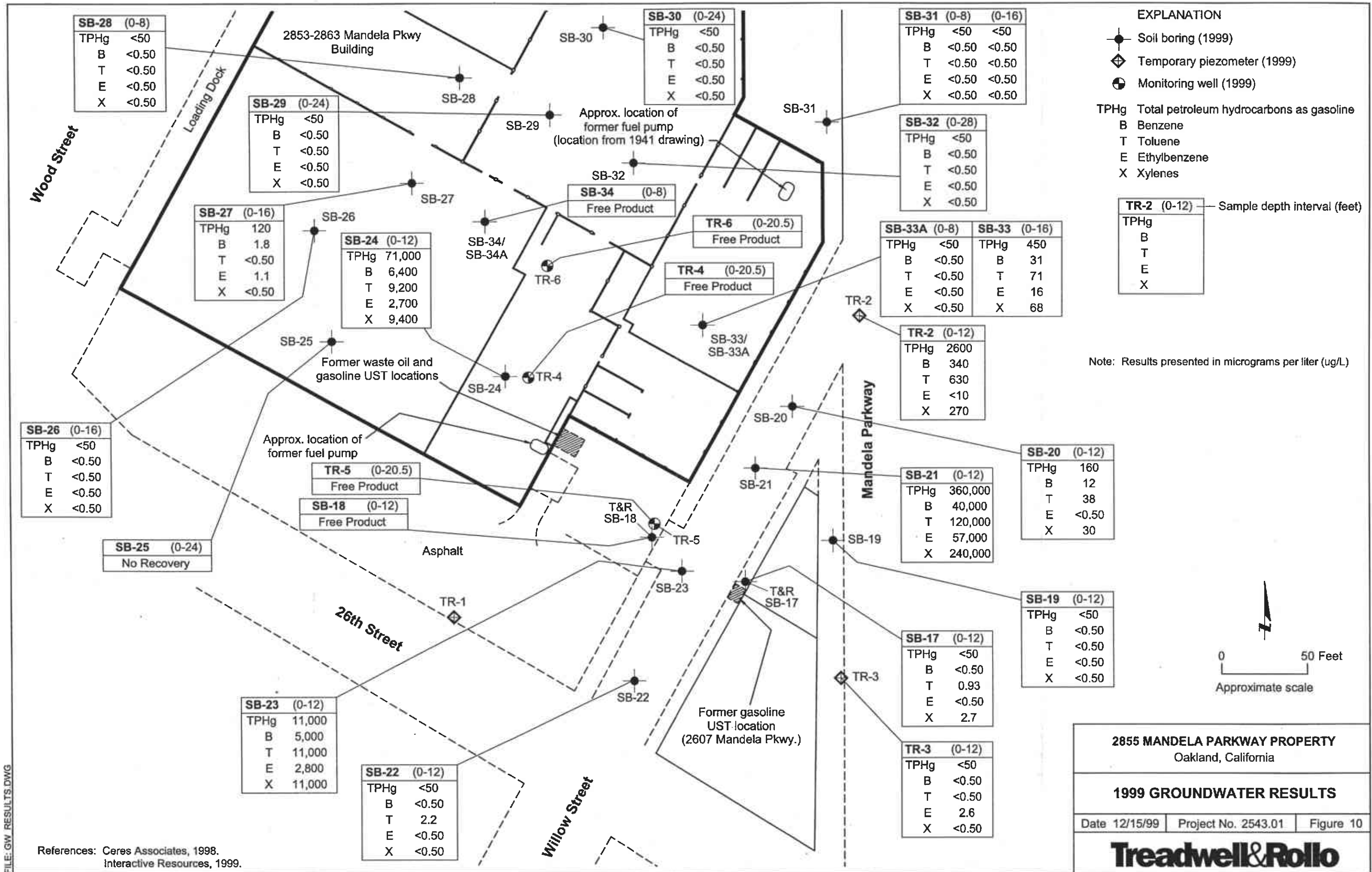
Note:  
Elevations in feet, Mean Sea Level  
Contour Interval = 0.10 feet  
Gradient: Approximately 0.01



<b>2855 MANDELA PARKWAY PROPERTY</b> Oakland, California		
<b>GROUNDWATER ELEVATION CONTOUR MAP, 4 OCTOBER 1999</b>		
Date 01/20/00	Project No. 2543.01	Figure 9
<b>Treadwell&amp;Rollo</b>		

CONTOUR\_BASE.DWG

References: Ceres Associates, 1998.  
Interactive Resources, 1999.



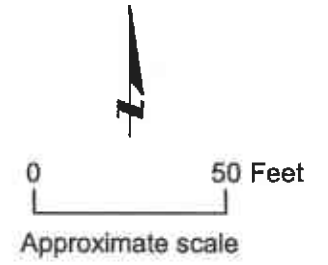
**EXPLANATION**

- Soil boring (1999)
- ◊ Temporary piezometer (1999)
- ⊕ Monitoring well (1999)

TPHg Total petroleum hydrocarbons as gasoline  
 B Benzene  
 T Toluene  
 E Ethylbenzene  
 X Xylenes

<b>TR-2 (0-12)</b> — Sample depth interval (feet)	
TPHg	
B	
T	
E	
X	

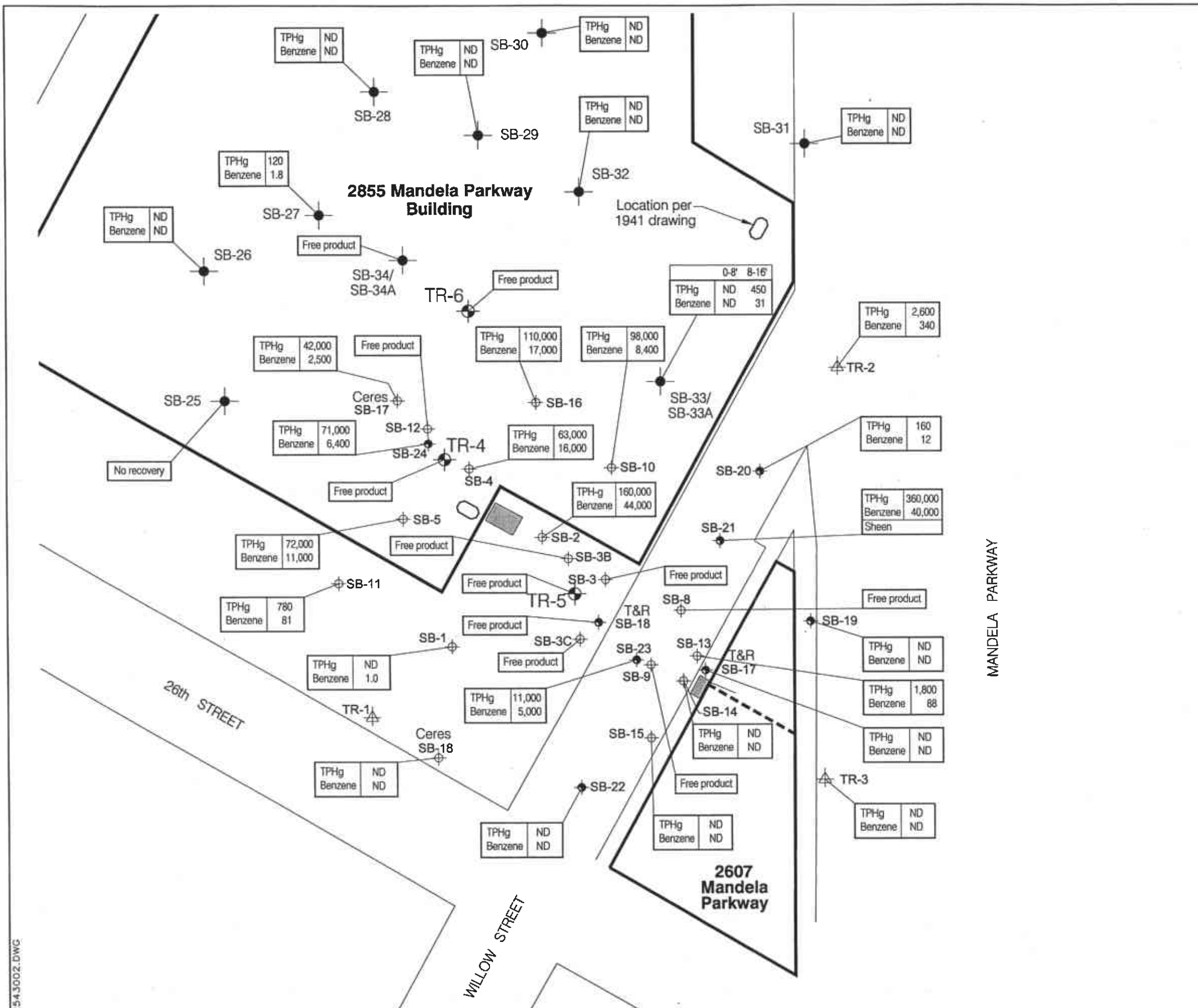
Note: Results presented in micrograms per liter (ug/L)



<b>2855 MANDELA PARKWAY PROPERTY</b> Oakland, California		
<b>1999 GROUNDWATER RESULTS</b>		
Date 12/15/99	Project No. 2543.01	Figure 10
<b>Treadwell&amp;Rollo</b>		

FILE: GW RESULTS.DWG

References: Ceres Associates, 1998.  
 Interactive Resources, 1999.



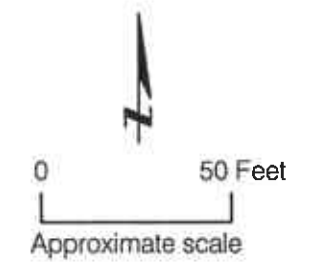
**EXPLANATION**

- SB-12 ⊕ Approximate boring location by Ceres Associates, August and November 1998
- SB-20 ⊕ Approximate boring location by Treadwell & Rollo, Inc., April 1999
- TR-1 ⊕ Approximate piezometer location Treadwell & Rollo, Inc., April 1999
- TR-4 ⊕ Approximate monitoring well location by Treadwell & Rollo, Inc., installed June 1999

TPHg	360,000	Groundwater sample chemical analysis results in parts per billion (ppb)
Benzene	40,000	
Sheen		

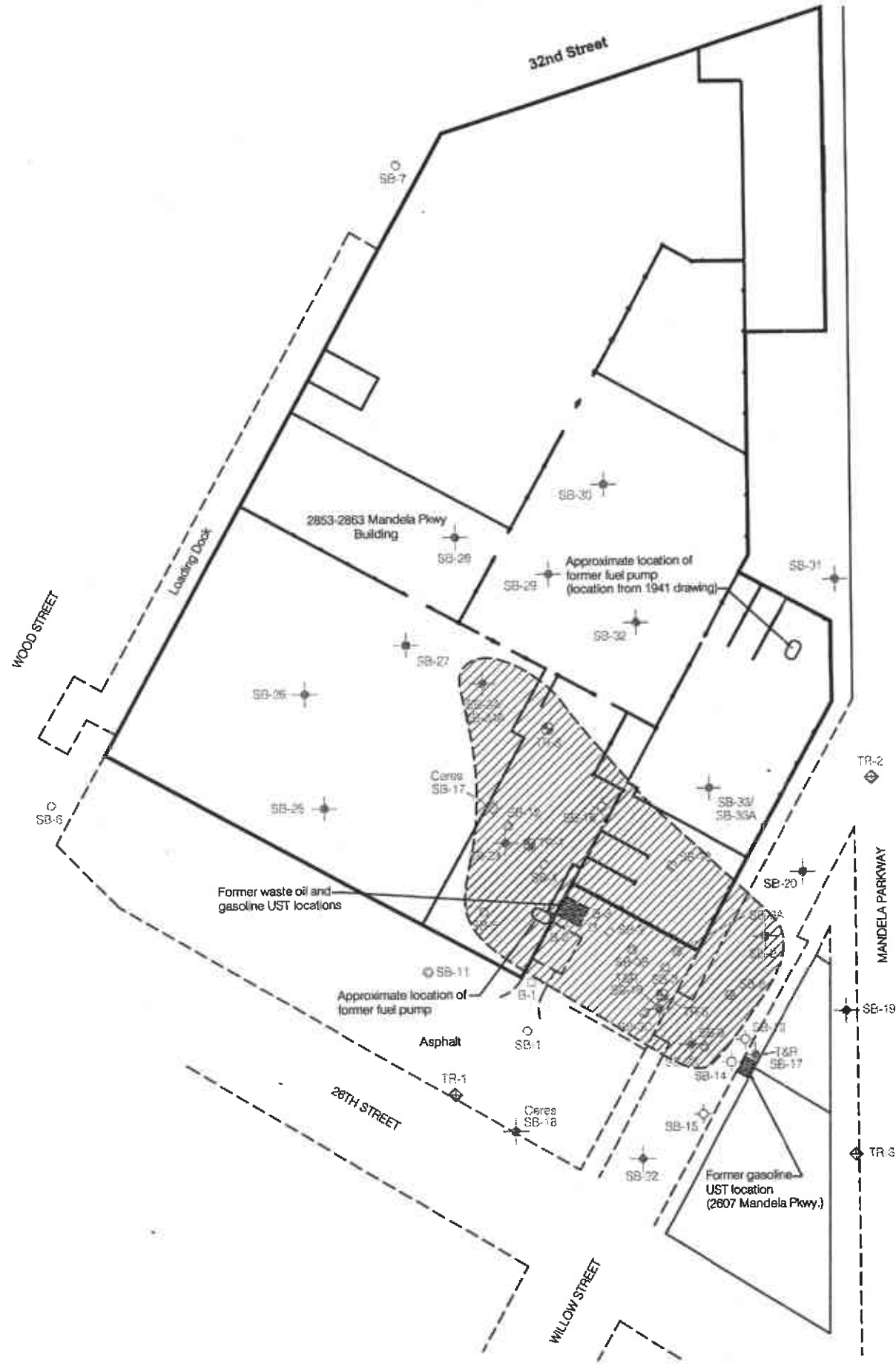
- TPHg Total petroleum hydrocarbons as gasoline
- ND Not detected at or above laboratory detection limits
- Approximate location of former fuel pump
- Approximate location of former UST



<b>2855 MANDELA PARKWAY PROPERTY</b> Oakland, California		
<b>GROUNDWATER SAMPLING RESULTS</b> <b>TPHg AND BENZENE</b>		
Date 10/8/99	Project No. 2543.01	Figure 11
<b>Treadwell &amp; Rollo</b>		

254.3002.DWG

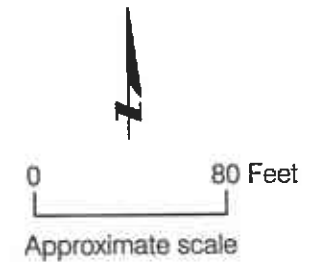




EXPLANATION

- Soil boring (06/92)
  - Soil boring (08/98)
  - ⊙ Soil boring (10/98)
  - ⊕ Soil boring (11/98)
  - Soil boring (1999)
  - ◆ Piezometer (1999)
  - ⊗ Monitoring well (1999)
- Free product extent based on:  
 1 - direct observation of product  
 2 - benzene > 2000 µg/L

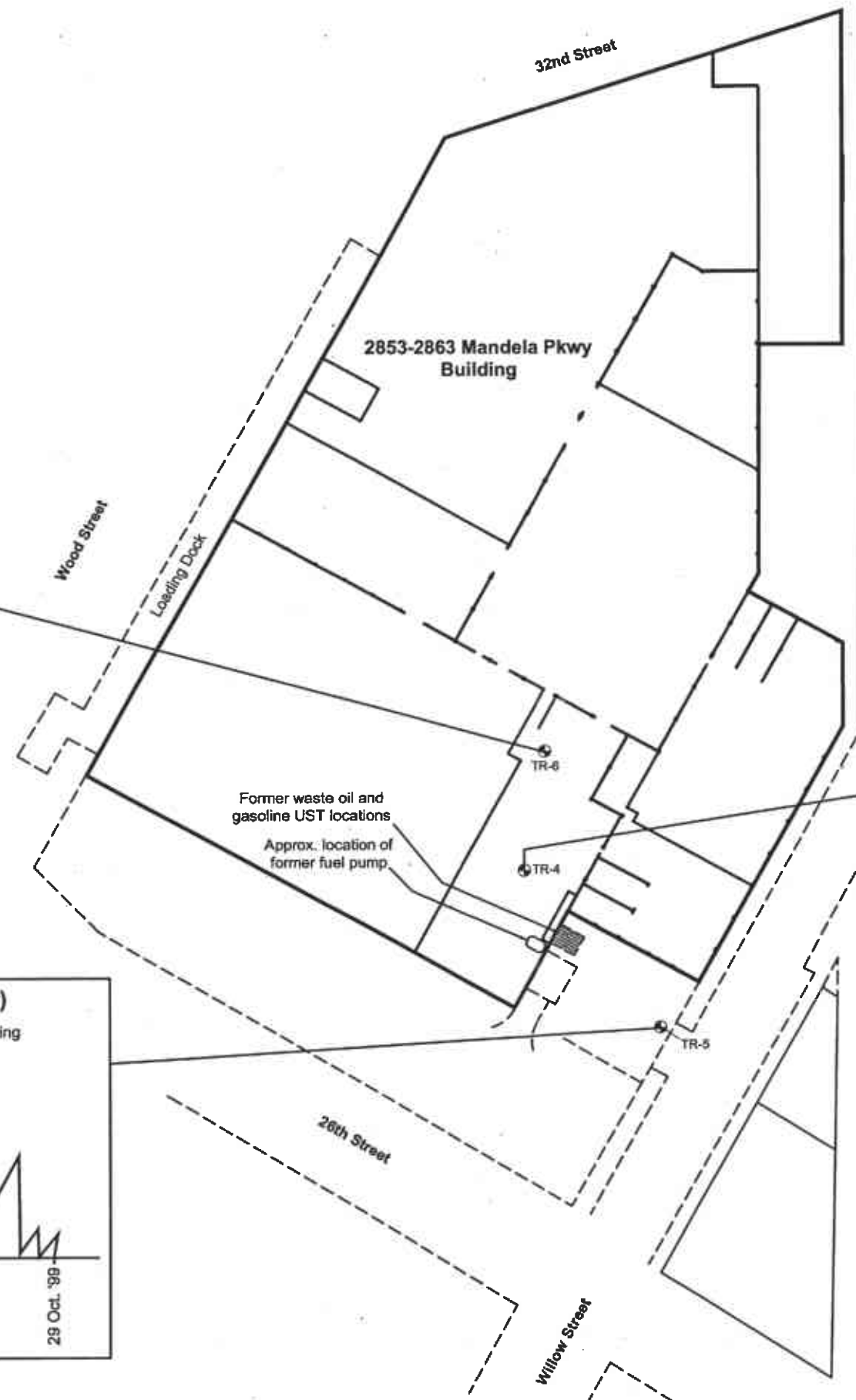
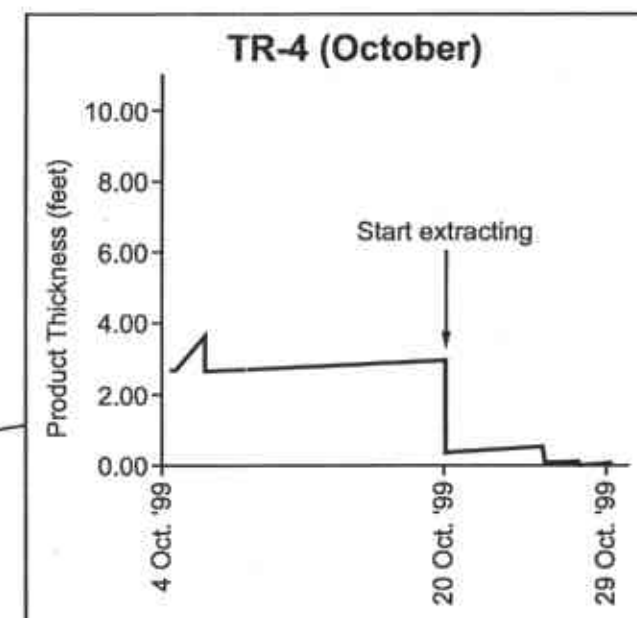
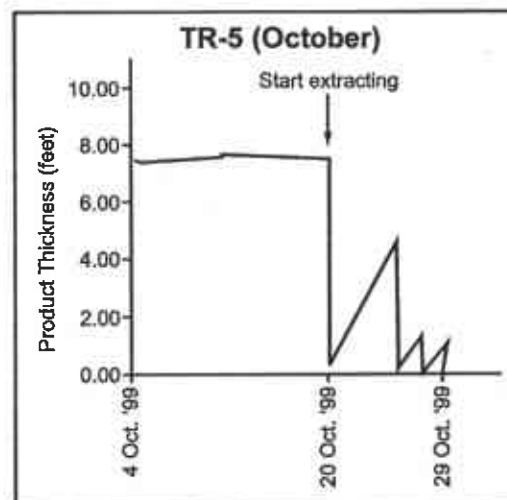
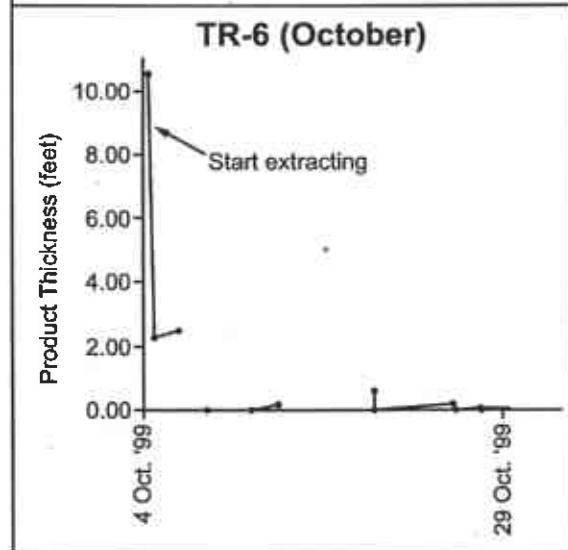
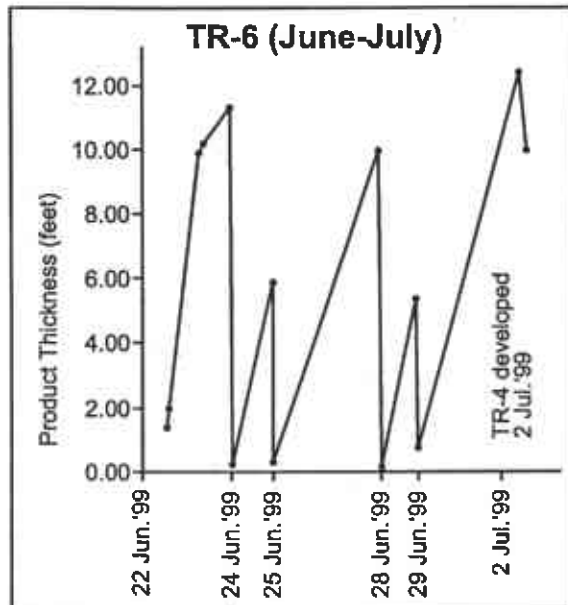
Note:  
Free product may not necessarily be present at all locations within the extent envelope indicated.



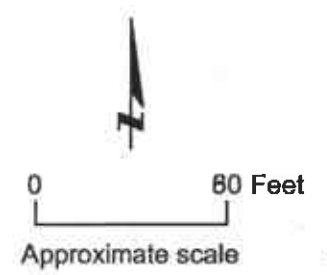
<b>2855 MANDELA PARKWAY PROPERTY</b> Oakland, California		
<b>APPARENT EXTENT OF FREE PRODUCT</b>		
Date 12/21/99	Project No. 2543.01	Figure 12
<b>Treadwell &amp; Rollo</b>		

References: Ceres Associates, 1998.  
Interactive Resources, 1999.

FILE: APPARENT-EXT-42.DWG



EXPLANATION  
 ● Monitoring well (1999)

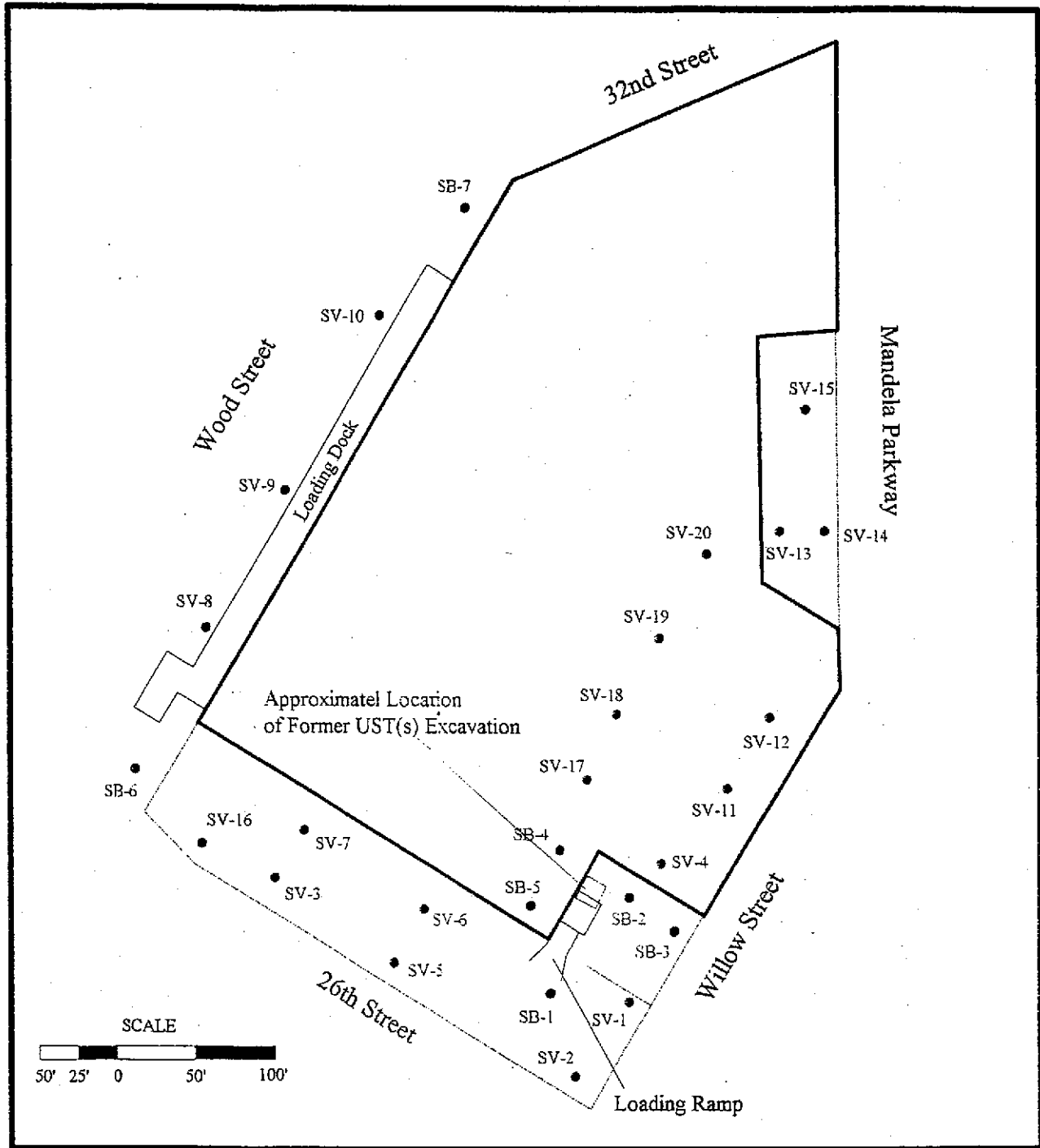


2855 MANDELA PARKWAY PROPERTY Oakland, California		
<b>PRODUCT THICKNESS</b>		
Date 11/02/99	Project No. 2543.01	Figure 13
<b>Treadwell&amp;Rollo</b>		

**APPENDIX A**

**PREVIOUS SAMPLING  
ANALYTICAL RESULTS**







Commercial Property  
 2855 Mandela Parkway  
 Oakland, California

Project CA268-1



- Soil vapor sample location
- Soil boring sample location
-  Property building outline
-  Fence



**FIGURE 2 - SAMPLE LOCATION  
 MAP**

**TABLE 1**  
**SOIL SAMPLE RESULTS**  
 (TPH-g, BTEX COMPOUNDS AND MTBE)  
 Page 1 of 2

Sample Location	Sample Depth (feet bgs)	Analytical Laboratory Results (mg/kg or ppm)					
		TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
SB-1	5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
SB-1	10	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
SB-2	5	<b>130</b>	<b>1.2</b>	<b>2.0</b>	<b>6.3</b>	<b>13</b>	<0.005
SB-2	11	<b>52</b>	<b>13</b>	<b>17</b>	<b>2.1</b>	<b>8.6</b>	<0.005
SB-3	5	<b>68</b>	<b>7.2</b>	<b>15</b>	<b>3.0</b>	<b>11</b>	<0.005
SB-3	10	<b>99</b>	<b>9.1</b>	<b>14</b>	<b>5.0</b>	<b>17</b>	<0.005
SB-4	5	<b>21</b>	<b>3.1</b>	<b>0.49</b>	<b>2.9</b>	<b>2.9</b>	<0.005
SB-4	11	<b>42</b>	<b>1.6</b>	<b>0.12</b>	<b>1.1</b>	<b>4.3</b>	<0.005
SB-4	15	<1.0	<b>0.019</b>	<0.005	<0.005	<0.005	<0.005
SB-5	5	<b>2.7</b>	<b>0.56</b>	<b>0.011</b>	<b>0.46</b>	<b>0.041</b>	<0.005
SB-5	10	<b>3.4</b>	<b>0.040</b>	<b>0.76</b>	<b>0.13</b>	<b>0.59</b>	<0.005
SB-6	5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.0005
SB-7	5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
SB-8	5	<b>2.6</b>	<b>0.92</b>	<b>0.010</b>	<b>0.026</b>	<b>0.063</b>	<0.05
SB-8	10	<b>7,400</b>	<b>83</b>	<b>270</b>	<b>110</b>	<b>470</b>	<100
SB-9	5	<b>1.1</b>	<b>0.006</b>	<b>0.034</b>	<b>0.017</b>	<b>0.082</b>	<0.05
SB-9	10	<b>49</b>	<b>0.31</b>	<b>1.7</b>	<b>0.84</b>	<b>3.5</b>	<0.30
SB-9	15	<b>4,700</b>	<b>32</b>	<b>180</b>	<b>80</b>	<b>320</b>	<70
SB-10	5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-10	10	<1.0	<b>0.005</b>	<b>0.006</b>	<0.005	<b>0.017</b>	<0.05
SB-10	15	<b>580</b>	<b>12</b>	<b>29</b>	<b>12</b>	<b>52</b>	<10

Bold type indicates compound reported above laboratory detection limit concentration. HVOCs were not reported above their respective detection limit concentrations. Detection limit concentrations are presented on the analytical laboratory data sheets provided in Appendix C.

**TABLE 1**  
**SOIL SAMPLE RESULTS**  
 (TPH-g, BTEX COMPOUNDS AND MTBE)  
 Page 2 of 2

Sample Location	Sample Depth (feet bgs)	Analytical Laboratory Results (mg/kg or ppm)					
		TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
SB-11	5	11	0.34	0.016	0.35	0.29	<0.05
SB-11	10	8.0	0.39	0.026	0.057	0.12	<0.05
SB-11	15	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-12	17	26	0.33	1.5	0.52	2.1	<0.50
SB-13	10	94	3.2	6.1	2.6	10	<2.0
SB-13	15	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-14	5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-14	10	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-15	5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-15	10	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-15	15	1,600	22	67	26	93	<30
SB-16	12	670	12	34	9.2	40	<5
SB-16	16	5.6	0.60	0.62	0.14	0.57	<0.05
SB-17	9	5.9	0.017	0.12	0.074	0.33	<0.05
SB-17	16	2.9	0.33	0.36	0.064	0.25	<0.05
SB-18	8	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
SB-18	16	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05

Bold type indicates compound reported above laboratory detection limit concentration. HVOCs were not reported above their respective detection limit concentrations. Detection limit concentrations are presented on the analytical laboratory data sheets provided in Appendix C.

**TABLE 2**  
**GRAB GROUNDWATER SAMPLE RESULTS**  
**(TPH-g, BTEX COMPOUNDS AND MTBE)**

Sample Location	Sample Depth (feet bgs)	Analytical Laboratory Results ( $\mu\text{g/l}$ or ppb)					
		TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
SB-1	4	<50	1.0	1.0	<0.5	1.2	<0.5
SB-2	4	160,000	44,000	38,000	5,900	24,000	<50
SB-3	4	No sample. Free product.					
SB-4	7.5	63,000	16,000	12,000	3,200	11,000	<50
SB-5	7.5	72,000	11,000	17,000	3,600	20,000	<250
SB-6	8	63	3.1	9.0	3.3	16	<0.5
SB-7	6.5	<50	1.1	2.1	1.9	6.4	<0.5
SB-8	6	No sample. Free product.					
SB-9	6	No sample. Free product.					
SB-10	11	98,000	8,400	10,000	2,800	13,000	<200
SB-11	7	780	81	1.3	4.9	18	<1
SB-12	8	No sample. Free product.					
SB-13	7.5	1,800	88	100	85	160	<80
SB-14	7.5	<50	<0.5	<0.5	<0.5	<0.5	14
SB-15	7	<50	<0.5	<0.5	<0.5	<0.5	<5.0
SB-16	8	110,000	17,000	24,000	2,700	11,000	<1,300
SB-17	7.5	43,000	2,500	6,700	1,600	6,200	<690
SB-18	7	<50	<0.5	<0.5	0.67	<0.5	<5.0

Bold type indicates compound reported above laboratory detection limit concentration. HVOCs were not reported above their respective detection limit concentrations. Detection limit concentrations are presented on the analytical laboratory data sheets provided in Appendix C.

SUBSURFACE SOIL INVESTIGATION  
2855 Cypress Street  
Oakland, California

A Report Prepared for  
Morgan Stanley and Company, Inc.  
24222 Avenida de la Carlota, Suite 275  
Laguna Hills, California 92653

July 16, 1992

Report Prepared by  
ATEC Environmental consultants  
8 Pasteur, Suite 150  
Irvine, CA 92718

**SOIL VAPOR STUDY RESULTS**

Chromalloy Facility  
Oakland, California

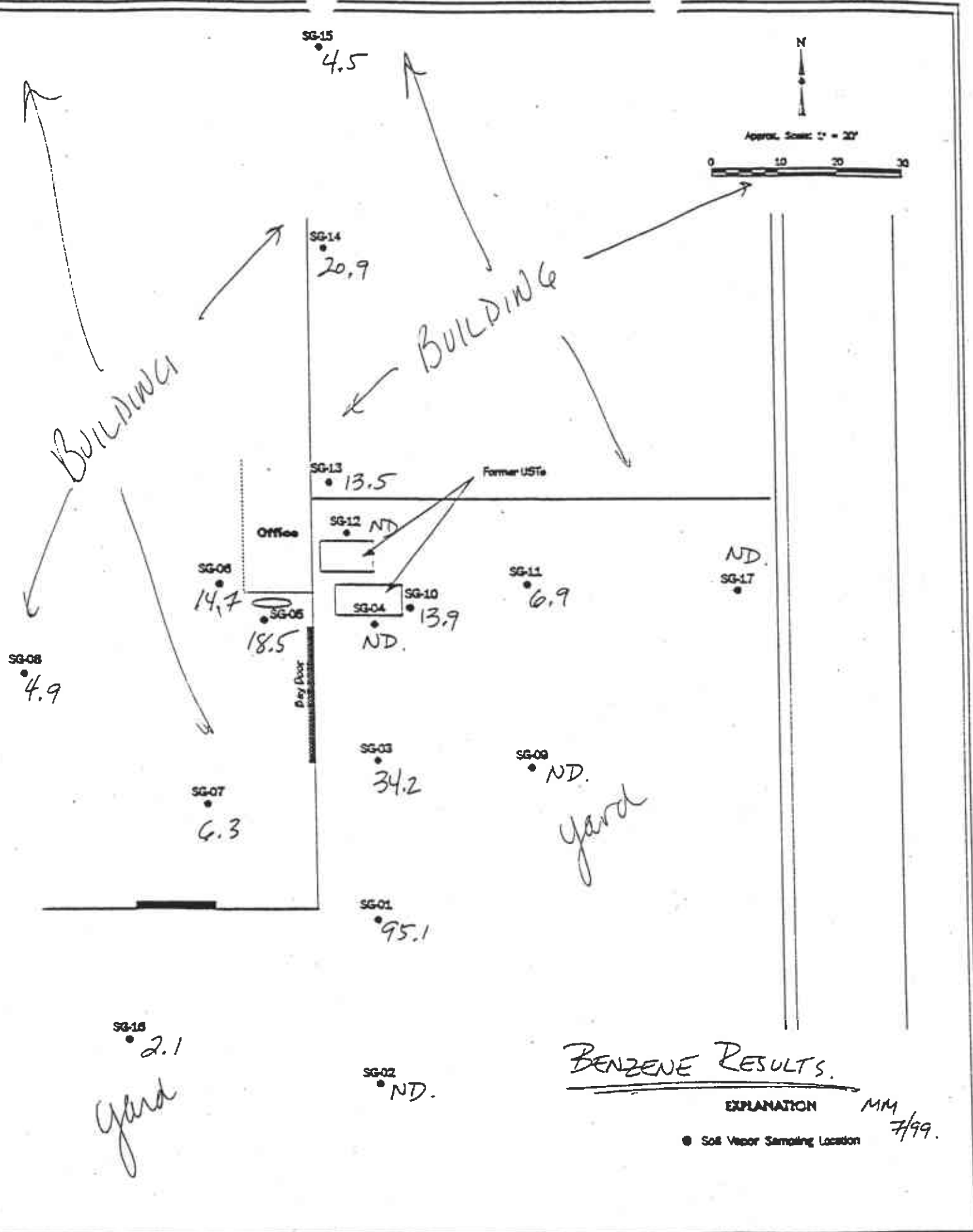
Project #: OTI-060692

*Submitted By:*

**Optimal Technology Inc.**

June 21, 1992





BENZENE RESULTS.

EXPLANATION MM 7/99.  
 ● Soil Vapor Sampling Location



**PHASE II SUBSURFACE INVESTIGATION  
REPORT**

**Commercial Property  
2853-2863 Mandela Parkway  
Oakland, California**



5040 Commercial Circle, Suite F  
Concord, California 94520  
(925) 825-4466 / Fax (925) 825-4441

CERES Project CA268-2  
September 1, 1998

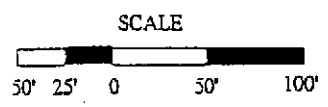
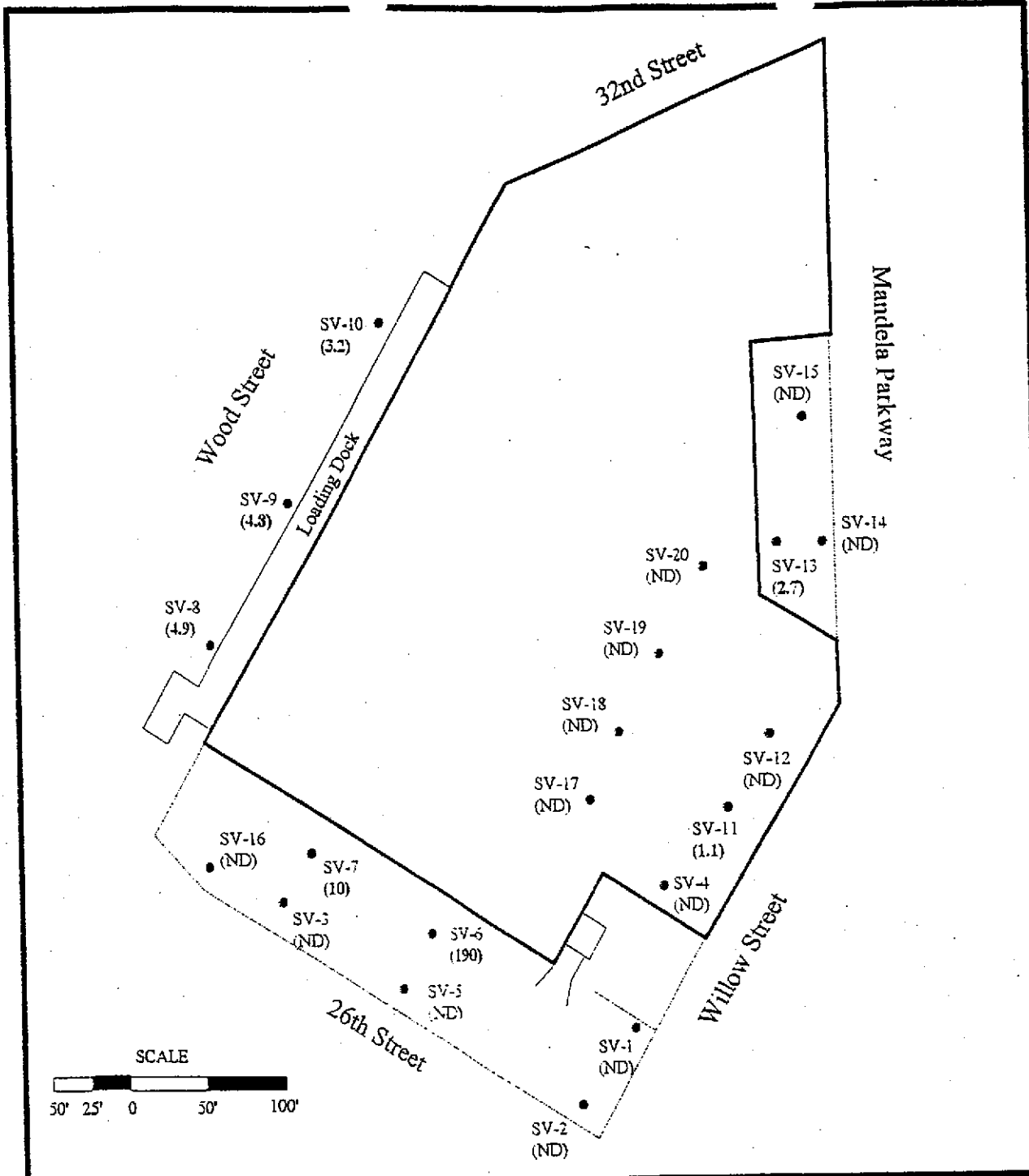
TABLE 3

**SOIL VAPOR SAMPLE RESULTS**  
(BTEX COMPOUNDS AND MTBE)

Sample Location	Sample Depth (feet bgs)	Analytical Laboratory Results ( $\mu\text{g/l}$ )				
		Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
SV-1	3	<1.0	<1.0	<1.0	<1.0	<1.0
SV-2	1	<1.0	<1.0	<1.0	<1.0	<1.0
SV-3	1.5	<1.0	<1.0	<1.0	<1.0	<1.0
SV-4	1.5	<1.0	<1.0	<1.0	<1.0	<1.0
SV-5	1.5	<1.0	<1.0	<1.0	<1.0	<1.0
SV-6	1.5	<b>190</b>	<b>110</b>	<b>190</b>	<b>75</b>	<1.0
SV-7	1.5	<b>10</b>	<b>65</b>	<b>20</b>	<b>15</b>	<1.0
SV-8	1.5	<b>4.9</b>	<1.0	<b>9.2</b>	<b>8.6</b>	<1.0
SV-9	1.5	<b>4.8</b>	<1.0	<b>7.3</b>	<b>5.9</b>	<1.0
SV-10	1.5	<b>3.2</b>	<1.0	<b>5.4</b>	<b>4.5</b>	<1.0
SV-11	1.5	<b>1.1</b>	<1.0	<b>1.6</b>	<b>3.7</b>	<1.0
SV-12	1.5	<1.0	<1.0	<b>1.9</b>	<b>15</b>	<1.0
SV-13	1.5	<b>2.7</b>	<b>18</b>	<b>6.8</b>	<b>6.9</b>	<1.0
SV-14	1.5	<1.0	<1.0	<1.0	<1.0	<1.0
SV-15	1.5	<1.0	<1.0	<1.0	<1.0	<1.0
SV-16	1.5	<1.0	<1.0	<1.0	<1.0	<1.0
SV-17	1.5	<1.0	<1.0	<1.0	<1.0	<1.0
SV-18	1.5	<1.0	<1.0	<1.0	<1.0	<1.0
SV-19	3	<1.0	<1.0	<1.0	<1.0	<1.0
SV-20	3	<1.0	<1.0	<1.0	<1.0	<1.0

Bold type indicates compound reported above laboratory detection limit concentration.

HVOCs were not reported above their respective detection limit concentrations. Detection limit concentrations are presented on the analytical laboratory data sheets provided in Appendix C.



Commercial Property  
 2855 Mandela Parkway  
 Oakland, California

Project CA268-1



• SV-11 Soil vapor sample location. Benzene concentration (1.1) in parts per billion (ppb).  
 (ND) Not detected above 1.0 ppb.



**FIGURE 5 - SOIL VAPOR SAMPLE RESULTS (Benzene)**

**APPENDIX B**  
**BORING LOGS**

PROJECT: **2855 MANDELA PARKWAY**  
Oakland, California

# Log of Boring SB-17

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 5/11/99 (08:40)

Date finished: 5/11/99 (08:55)

Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches

Hammer type: Pneumatic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/foot			
1						Asphalt and baserock
2					SP	SAND (SP) brown, moist, fine-grained, poorly graded, no odor
3						▼ 5/11/99 (16:05)
4	MC	X		0		SB-17-4
5						▽ wet
6						
7						
8						
9						
10						
11						
12						
13						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 5 feet.
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

NO RECOVERY

PROJECT: 2855 MANDELA PARKWAY  
Oakland, California

# Log of Boring SB-18

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 5/11/99 (09:20)

Date finished: 5/11/99 (09:40)

Drilling method: Direct push (DP), Veronex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches

Hammer type: Pneumatic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/foot			
1						Concrete and baserock
2				0		SAND (SP) brown, moist, poorly graded, slight petroleum odor
3					SP	5/11/99 depth to product = 2.75 depth to water = 5.45 (13:55)
4						
5	MC	⊗				SB-18-5
6				243		CLAY (CL) dark gray, moist, wet, slight petroleum odor
7						wet
8					CL	
9						
10	MC	⊗				SB-18-10
11				243		
12						
13						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 7.5 feet.
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

BAY MUD

PROJECT: 2855 MANDELA PARKWAY  
Oakland, California

# Log of Boring SB-19

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 5/11/99 (11:00)

Date finished: 5/11/99 (11:15)

Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches

Hammer type: Pneumatic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/ Foot			
1						Concrete and baserock
2						Crushed rock with sand, trace gravel, concrete 5/11/99 (14:49)
3					SP	SAND (SP) brown, moist, poorly graded, no odor
4				0		CLAY (CL) dark gray, moist to wet, no odor [BAY MUD]
5	MC	X				SB-19-5
6						
7					CL	wet
8				0		
9						
10						
11						
12				0		
13						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 7.5 feet.
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

BAY MUD

PROJECT: **2855 MANDELA PARKWAY**  
Oakland, California

# Log of Boring SB-20

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 5/11/99 (11:25)

Date finished: 5/11/99 (11:45)

Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches

Hammer type: Pneumatic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/ foot			
1						Concrete and baserock
2					SP	SAND (SP) brown, moist, poorly graded, no odor
3						CLAY (CL) dark gray, moist to wet, strong petroleum odor
4				0		[BAY MUD] 5/11/99(15:19)
5	MC	X				SB-20-5
6					CL	
7						wet
8				0		
9						
10						
11						
12				0		
13						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 7.5 feet.
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

BAY MUD



PROJECT: 2855 MANDELA PARKWAY  
Oakland, California

# Log of Boring SB-21

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 5/11/99 (11:50)

Date finished: 5/11/99 (12:05)

Drilling method: Direct push (Dp), Vironex Macrocore, truck mounted

Hammer weight/drop: --- lbs./--- inches

Hammer type: Pneumatic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/foot			
1						Concrete and baserock
2					SP	SAND (SP) brown, moist, poorly graded, no odor
3						▼ 5/11/99 (15:44)
4				0		CLAY (CL) dark gray, moist to wet, strong petroleum odor [BAY MUD]
5	MC	⊗				SB-21-5
6						
7						
8				237	CL	▼ wet
9						
10						
11						
12						
13						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 7.5 feet.
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

↑  
BAY  
MUD  
↓

PROJECT: 2855 MANDELA PARKWAY  
Oakland, California

# Log of Boring SB-22

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 5/11/99 (12:12)

Date finished: 5/11/99 (12:30)

Drilling method: Direct push (DP), Vironex Microcore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches

Hammer type: Pneumatic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/ foot			
1						Concrete and baserock
2					SP	SAND (SP) brown, moist, poorly graded, fine-grained, no odor
3						
4				0		SB-22-4
5						
6						
7						5/11/99 (16:20)
8						wet
9						CLAY (CL) dark gray, moist to wet, strong petroleum odor [BAY MUD]
10	MC				CL	SB-22-10
11						
12				0		
13						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 8 feet.
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

NO RECOVERY  
BAY MUD

PROJECT: **2855 MANDELA PARKWAY**  
Oakland, California

# Log of Boring SB-23

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 5/11/99 (12:40)

Date finished: 5/11/99 (12:55)

Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches

Hammer type: Pneumatic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/ foot			
1						Concrete and baserock
2						SAND (SP) gray-brown, moist, poorly graded, fine-grained, no odor
3					SP	5/11/99 (14:12)
4				0		
5						
6				239		strong petroleum odor
7						
8						wet
9	MC	SB-23-8.5				CLAY (CL) dark gray, wet, strong petroleum odor [BAY MUD]
10						
11						
12				164		
13						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 8 feet.
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

NO RECOVERY

BAY MUD

PROJECT: 2855 MANDELA PARKWAY  
Oakland, California

# Log of Boring SB-24

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 5/11/99 (13:10)

Date finished: 5/11/99 (13:23)

Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches

Hammer type: Pneumatic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/ foot			
1						Concrete and baserock
2						SAND (SP)
3						brown, moist, fine-grained, poorly graded, no odor
4				0	SP	
5						
6						
7						5/11/99 (16:40)
8				238		wet
9						CLAY (CL)
10	MC				CL	dark gray, wet, strong petroleum odor
11						5/12/99 (09:45)
12				436		SB-24-10
13						5/11/99 (13:45)
14						Boring terminated at a depth of 12 feet.
15						Boring backfilled with cement/bentonite grout.
16						Groundwater first encountered at a depth of 8 feet.
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

PROJECT: 2855 MANDELA PARKWAY  
Oakland, California

# Log of Boring SB-25

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: C. Austin

Date started: 11/16/99

Date finished: 11/16/99

Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted

Hammer weight/drop: --- lbs./ --- inches

Hammer type: Hydraulic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/foot			
1						Concrete no recovery
2					CL	CLAY (CL) brown, yellow, and black, stiff, moist
3						SAND (SP) brown, moist, fine-grained, with shell fragments
4	MC	X			SP	no recovery
5						
6						CLAY (CL) gray, very soft, moist saturated sand layer at 7 feet
7						
8						
9						
10						
11					CL	
12						
13						
14						occasional shell fragments stiff
15						
16					CL	CLAY (CL) olive and yellow-brown, with gravel to 1/4-inch
17						
18						CLAY (CL) gray, saturated, very soft
19						drier and sandier
20					CL	
21						
22						sandy, yellow-brown and gray, fine sand and clay, very wet, liquid consistency
23						SANDY GRAVELLY CLAY (CL) yellow, red-yellow, and brown gravelly sand, gravel to 1/2-inch some layers with plasticity
24					CL	
25						Boring terminated at a depth of 24 feet. Boring tremie-grouted with a Portland cement mixture.
26						
27						
28						
29						
30						

FILL

BAY MUD

BAY MUD

PROJECT: 2855 MANDELA PARKWAY  
Oakland, California

# Log of Boring SB-26

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: C. Austin

Date started: 11/16/99

Date finished: 11/16/99

Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted

Hammer weight/drop: --- lbs./ --- inches

Hammer type: Hydraulic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/foot			
1						Concrete no recovery
2					CL SP	CLAY (CL) dark gray, very soft, moist
3						SAND (SP) gray, moist, fine-grained [FILL]
4						
5					CL	CLAY (CL) gray, very soft, moist, sand lenses [BAY MUD]
6						no recovery, saturated
7						sand lens
8						
9					GC	SAND and GRAVEL (GC) yellow-brown and olive, saturated, gravel to 1/2-inch
10						
11						CLAY (CL) gray, very soft, moist
12					CL	
13						
14						
15					GC	SAND and GRAVEL (GC) gray and yellow-brown, moist, gravels to 1/2-inch
16						
17						Boring terminated at a depth of 16 feet. Boring tremie-grouted with a Portland cement mixture.
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

BAY MUD

PROJECT: **2855 MANDELA PARKWAY**  
Oakland, California

# Log of Boring SB-27

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: C. Austin

Date started: 11/16/99

Date finished: 11/16/99

Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted

Hammer weight/drop: --- lbs./ --- inches

Hammer type: Hydraulic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/foot			
1						Concrete, no recovery
2						SAND (SP) brown, gray, moist, fine-grained
3						
4					SP	no recovery
5						
6						
7						CLAY (CL) gray, very soft, moist
8						
9					CL	
10						
11						
12					CL	
13					SP	CLAY (CL) olive-brown, moist, with coarse sand to small gravel-sized rock fragments
14					CL	SAND (SP) gray, moist, with gravels to 1/4-inch
15						
16					CL	CLAY (CL) gray, soft, moist, layers of brown, gray sand with gravels to 1/2-inch
17						Boring terminated at a depth of 16 feet. Boring tremie-grouted with a Portland cement mixture.
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

FILL

BAY MUD

BAY MUD

PROJECT: 2855 MANDELA PARKWAY  
Oakland, California

# Log of Boring SB-28

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: C. Austin

Date started: 11/16/99

Date finished: 11/16/99

Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted

Hammer weight/drop: --- lbs./ --- inches

Hammer type: Hydraulic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/foot			
1						Concrete, concrete rubble to 1-inch no recovery
2						SAND (SP) gray-brown, moist, fine-grained, poorly graded
3						
4					SP	no recovery
5						
6	MC	X				SB-28-6
7						CLAY (CL) gray, medium stiff, wet
8						sandy, liquid consistency from 8.5 to 11 feet
9						
10					CL	
11						
12						
13						less sand less gravel
14						
15					CL	CLAY (CL) yellow and gray, some mottling, stiff, drier
16	MC	X				
17					CL	CLAY (CL) gray, very soft, wet, lenses of sand and gravel to 1/2-inch
18						SB-28-16
19						CLAYEY SAND (SC) mottled olive and yellow-brown, moist, fine-grained sands with gravels to 1/4-inch
20					SC	
21						
22						
23					CL	CLAY (CL) gray, very soft to liquid, wet, with gravels to 1/4-inch
24						
25						Boring terminated at a depth of 24 feet. Boring tremie-grouted with a Portland cement mixture.
26						
27						
28						
29						
30						

FILL

BAY MUD

BAY MUD

BAY MUD



PROJECT: 2855 MANDELA PARKWAY  
Oakland, California

# Log of Boring SB-31

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: C. Austin

Date started: 11/16/99

Date finished: 11/16/99

Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted

Hammer weight/drop: --- lbs./ --- inches

Hammer type: Hydraulic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/ feet			
1						Concrete no recovery
2						
3						SAND (SP) gray-brown, moist, fine-grained, poorly graded
4						
5	MC	X			SP	SB-31-5 no recovery
6						
7						CLAY (CL) gray, very soft, moist
8						fine-grained sand lens from 8 to 9 feet
9					CL	
10						
11						
12						
13					CL	CLAY (CL) olive and yellow-brown, soft, moist
14						
15					CL	CLAY (CL) yellow-brown, stiff, moist
16						
17						no recovery
18					SP	SAND (SP) yellow-brown and gray, moist
19					CL	CLAY (CL) yellow-brown, stiff, moist
20						
21					SC	CLAYEY SAND (SC) yellow-brown and gray, saturated, fine-grained sand and clay
22						
23					CL	CLAY (CL) yellow-brown, stiff, moist gray and yellow brown at 21.5 feet increasing stiffness, trace gravels to 1/8-inch, at 23.5 feet
24						
25						Boring terminated at a depth of 24 feet. Boring tremie-grouted with a Portland cement mixture.
26						
27						
28						
29						
30						

FILL

BAY MUD

PROJECT: 2855 MANDELA PARKWAY  
Oakland, California

# Log of Boring SB-33A

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 12/2/99

Date finished: 12/2/99

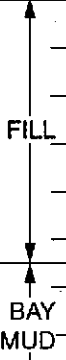
Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted

Hammer weight/drop: --- lbs./ --- inches

Hammer type: Hydraulic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/foot			
1	DP	[Patterned]	[Patterned]	0	SP	SAND (SP) gray, moist to wet, fine-grained, with shell fragments
2						Concrete, no recovery
3						
4						
5	DP	[Patterned]	[Patterned]	0	CL	SB-33A-5.5
6						CLAY (CL) gray, very soft, wet, high plasticity
7						
8						
9						Boring terminated at 7.96 feet. Boring tremie-grouted with a Portland cement mixture.
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						



PROJECT: **2855 MANDELA PARKWAY**  
Oakland, California

# Log of Boring SB-34

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 12/2/99

Date finished: 12/2/99

Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted

Hammer weight/drop: --- lbs./ --- inches

Hammer type: Hydraulic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/foot			
1	DP			0	SP	SAND (SP) gray-brown, moist, fine-grained
2						Concrete, no recovery
3						SB-34-4.5
4	DP			0	CL	CLAY (CL) gray very soft, moist
5						
6						
7						strong hydrocarbon odor at 7.0 feet
8				143		
9						Boring terminated at 7.5 feet. Boring tremie-grouted with a Portland cement mixture.
10						
11						Note: soil sample SB-34-4.5 collected at depth interval of 3 to 3.5 feet.
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

FILL  
BAY MUD

PROJECT: 2855 MANDELA PARKWAY  
Oakland, California

# Log of Boring SB-34A

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 12/2/99

Date finished: 12/2/99

Drilling method: Direct push (DP), Vironex Macrocore (MC), Truck Mounted

Hammer weight/drop: --- lbs./ --- inches

Hammer type: Hydraulic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION
	Sampler Type	Sample	Blows/ Foot			
1	DP	[Shaded Box]		0	SP	SAND (SP) gray-brown, moist, fine-grained Concrete, no recovery
2						
3						
4						
5				0		Piston tip pushed to 5.5 feet.
6						Boring terminated at 5.5 feet. Boring tremie-grouted with a Portland cement mixture. No groundwater encountered.
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

FILL

PROJECT: **2855 MANDELA PARKWAY**  
Oakland, California

# Log of Boring TR-1

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 5/11/99 (07:40)

Date finished: 5/11/99 (07:52)

Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches

Hammer type: Pneumatic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION	WELL CONSTRUCTION DETAILS
	Sampler Type	Sample	Blows/ foot				
						Ground Surface Elevation: 7.59 feet <sup>1</sup>	
1						Concrete and baserock	
2						SAND (SP) brown, moist, poorly graded, no odor	1-inch PVC casing, perforated with 0.01- inch slots
3				0	SP		
4							
5	MC	X				TR-1-5	Monterey No. 2 sand
6						CLAY (CL) dark gray, moist, wet, slight petroleum odor	
7				48			
8						5/11/99 (12:10) wet	
9					CL		
10	MC						NO RECOVERY
11				173			
12						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 8.5 feet	
13							
14							
15						<sup>1</sup> Elevation referenced to Mean Sea Level.	
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

PROJECT: **2855 MANDELA PARKWAY**  
Oakland, California

# Log of Boring TR-2

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 5/11/99 (09:55)

Date finished: 5/11/99 (10:12)

Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches

Hammer type: Pneumatic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION	WELL CONSTRUCTION DETAILS
	Sampler Type	Sample	Blows/foot				
						Ground Surface Elevation: 9.06 feet <sup>1</sup>	
						Concrete and baserock	
1					SP	SAND (SP) brown, moist, fine-grained, poorly graded	<p>1-inch PVC casing, perforated with 0.01-inch slots</p> <p>Monterey No. 2 sand</p>
2							
3					CL	CLAY (CL) dark gray, moist to wet, slight petroleum odor 5/11/99 (14:29)	
4				0			
5	MC	X				TR-2-5	
6							
7					CL		
8				0		wet	
9							
10	MC	X				TR-2-10	
11							
12				0			
13						Boring terminated at a depth of 12 feet. Boring backfilled with cement/bentonite grout. Groundwater first encountered at a depth of 8 feet.	
14							
15						<sup>1</sup> Elevation referenced to Mean Sea Level.	
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

PROJECT: **2855 MANDELA PARKWAY**  
Oakland, California

# Log of Boring TR-3

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 5/11/99 (10:25)

Date finished: 5/11/99 (10:40)

Drilling method: Direct push (DP), Vironex Macrocore, Truck Mounted

Hammer weight/drop: --- lbs./--- inches

Hammer type: Pneumatic

Sampler: Continuous Core

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION	WELL CONSTRUCTION DETAILS
	Sampler Type	Sample	Blows/foot				
						Ground Surface Elevation: 7.34 feet <sup>1</sup>	
1					SP	Concrete and baserock	<p>1-inch PVC casing, perforated with 0.01-inch slots</p> <p>Monterey No. 2 sand</p>
2						Crushed rock with sand, trace gravel, trace concrete	
3						CLAY (CL) dark gray, moist to wet, slight petroleum odor	
4				0		5/11/99 (14:05)	
5	MC	✕			TR-3-5		
6							
7					CL	wet	
8				0			
9							
10							
11							
12				0			
						NO RECOVERY	
13						Boring terminated at a depth of 12 feet.	
14						Boring backfilled with cement/bentonite grout.	
15						Groundwater first encountered at a depth of 7 feet.	
16						<sup>1</sup> Elevation referenced to Mean Sea Level.	
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

PROJECT: 2855 MANDELA PARKWAY  
Oakland, California

# Log of Boring TR-4

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 6/22/99 (13:40)

Date finished: 6/22/99 (14:55)

Drilling method: Hollow-stem auger

Hammer weight/drop: --- lbs./--- inches

Hammer type: Pneumatic

Sampler: California split-barrel

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION	WELL CONSTRUCTION DETAILS
	Sampler Type	Sample	Blows/foot				
Ground Surface Elevation: 7.20 feet <sup>1</sup>							
1						6 inches concrete	<p>Grout Bentonite 4-inch PVC casing Monterey No. 2 sand Perforated interval 0.01-inch slots</p>
2					SP	SAND (SP) tan-brown, moist, medium-grained, slight petroleum odor	
3							
4						CLAY (CL) dark gray, wet, strong petroleum odor	
5				126		wet from hand auger TR-4-5.5	
6							
7							
8							
9							
10					CL		
11				390		sheen 6/22/99 (17:10)	
12							
13							
14							
15							
16				242		saturated	
17							
18					CL	CLAY (CL) light gray, stiff, wet to moist, trace medium-grained sand, strong petroleum odor	
19							
20				182	SP	SAND (SP) brown, moist, medium- to coarse-grained, strong petroleum odor	
21							
22						Boring terminated at a depth of 20.5 feet. Groundwater first encountered at depth of 4.5 feet.	
23						<sup>1</sup> Elevation referenced to Mean Sea Level.	
24							
25							
26							
27							
28							
29							
30							



PROJECT: 2855 MANDELA PARKWAY  
Oakland, California

# Log of Boring TR-5

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 6/23/99 (12:54)

Date finished: 6/23/99 (16:00)

Drilling method: Hollow-stem auger

Hammer weight/drop: --- lbs./--- inches

Hammer type: Pneumatic

Sampler: California split-barrel

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION	WELL CONSTRUCTION DETAILS
	Sampler Type	Sample	Blows/foot				
Top of Casing Elevation: 6.90 feet <sup>1</sup>							
1						6 inches concrete	<p>Grout Bentonite 4-inch PVC casing Monterey No. 2 sand Perforated interval 0.01-inch slots</p>
2					SP	SAND (SP) tan-brown, moist, medium- to fine-grained, slight petroleum odor	
3						CLAY (CL) dark gray, wet, strong petroleum odor	
4						wet from hand auger	
5	CA			164		sheen TR-5-5.5	
6							
7							
8							
9							
10					CL		
11	CA			238			
12						6/23/99 (15:15)	
13							
14							
15	CA					saturated TR-5-15.5 (submitted to lab, not analyzed)	
16							
17						CLAY (CL) light gray, stiff, wet to moist, strong petroleum odor	
18					CL		
19						SAND with GRAVEL (SP) brown, moist, medium- to coarse-grained, strong petroleum odor	
20	CA			189	SP		
21						Boring terminated at a depth of 20.5 feet. Groundwater first encountered at depth of 4.5 feet.	
22						<sup>1</sup> Elevation referenced to Mean Sea Level.	
23							
24							
25							
26							
27							
28							
29							
30							

PROJECT: **2855 MANDELA PARKWY**  
Oakland, California

# Log of Boring TR-6

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: M. Rapoport

Date started: 6/22/99 (08:30)

Date finished: 6/22/99 (12:30)

Drilling method: Hollow-stem auger

Hammer weight/drop: --- lbs./--- inches

Hammer type: Pneumatic

Sampler: California split-barrel

DEPTH (feet)	SAMPLES			OVM	LITHOLOGY	MATERIAL DESCRIPTION	WELL CONSTRUCTION DETAILS
	Sampler Type	Sample	Blows/foot				
Top of Casing Elevation: 7.30 feet <sup>1</sup>							
1						6 inches concrete	<p>Grout Bentonite 4-inch PVC casing Monterey No. 2 sand Perforated interval 0.01-inch slots</p>
2					SP	SAND (SP) tan-brown, moist, medium-grained, slight petroleum odor	
3							
4						CLAY (CL) dark gray, wet, strong petroleum odor	
5						wet from hand auger	
6	CA			118		sheen TR-6-6.0	
7							
8							
9							
10						6/22/99 (13:45) depth to product = 9.96, depth to water = 11:35	
11	CA			226	CL	saturated	
12							
13							
14							
15							
16	CA			238			
17					CL	CLAY (CL) light gray, stiff, wet to moist, strong petroleum odor	
18							
19							
20	CA			417	SP	SAND (SP) brown, moist, medium- to coarse-grained, with gravel, strong petroleum odor	
21						Boring terminated at a depth of 20.5 feet. Groundwater first encountered at depth of 5.0 feet.	
22						<sup>1</sup> Elevation referenced to Mean Sea Level.	
23							
24							
25							
26							
27							
28							
29							
30							

**APPENDIX C**

**LABORATORY ANALYTICAL REPORTS  
AND CHAIN-OF-CUSTODY FORMS**

**Treadwell & Rollo-Orinda**  
2 Theater Square, Suite 216  
Orinda, CA 94563

Attn.: Mr. Michael McGuire

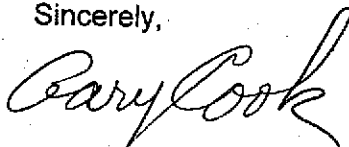
Project: 2855 Mandela Parkway

Dear Michael,

Attached is our report for your samples received on Wednesday May 12, 1999. This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after June 11, 1999 unless you have requested otherwise. We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

Sincerely,



Gary Cook

Environmental Services (SDB)

To: **Treadwell & Rollo-Orinda**

Test Method: 8020  
8015M

Attn.: Michael McGuire

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: <b>TR-2</b>	Lab Sample ID: <b>1999-05-1080-010</b>
Project: <b>2855 Mandela Parkway</b>	Received: <b>05/12/1999 12:00</b>
Sampled: <b>05/11/1999</b>	Extracted: <b>05/18/1999 18:02</b>
Matrix: <b>Water</b>	QC-Batch: <b>1999/05/18-01.02</b>

Compound	Result	Rep. Limit	Units	Dilution	Analyzed	Flag
Gasoline	2600	1000	ug/L	20.00	05/18/1999 18:02	
Benzene	340	10	ug/L	20.00	05/18/1999 18:02	
Toluene	630	10	ug/L	20.00	05/18/1999 18:02	
Ethyl benzene	ND	10	ug/L	20.00	05/18/1999 18:02	
Xylene(s)	240	10	ug/L	20.00	05/18/1999 18:02	
MTBE	ND	100	ug/L	20.00	05/18/1999 18:02	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	97.2	50-150	%	1.00	05/18/1999 18:02	
Trifluorotoluene	97.8	58-124	%	1.00	05/18/1999 18:02	

Environmental Services (SDB)

To: **Treadwell & Rollo-Orinda**

Test Method: 8020  
8015M

Attn.: Michael McGuire

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: <b>TR-3</b>	Lab Sample ID: <b>1999-05-1080-011</b>
Project: 2855 Mandela Parkway	Received: 05/12/1999 12:00
Sampled: 05/11/1999	Extracted: 05/18/1999 16:15
Matrix: Water	QC-Batch: 1999/05/18-01.02

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	05/18/1999 16:15	
Benzene	ND	0.50	ug/L	1.00	05/18/1999 16:15	
Toluene	ND	0.50	ug/L	1.00	05/18/1999 16:15	
Ethyl benzene	ND	0.50	ug/L	1.00	05/18/1999 16:15	
Xylene(s)	2.6	0.50	ug/L	1.00	05/18/1999 16:15	
MTBE	ND	5.0	ug/L	1.00	05/18/1999 16:15	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	107.9	50-150	%	1.00	05/18/1999 16:15	
Trifluorotoluene	112.5	58-124	%	1.00	05/18/1999 16:15	

Environmental Services (SDB)

To: **Treadwell & Rollo-Orinda**

Test Method: 8020  
8015M

Attn.: Michael McGuire

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: <b>SB-17</b>	Lab Sample ID: <b>1999-05-1080-012</b>
Project: 2855 Mandela Parkway	Received: 05/12/1999 12:00
Sampled: 05/11/1999	Extracted: 05/18/1999 17:08
Matrix: Water	QC-Batch: 1999/05/18-01.02

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	05/18/1999 17:08	
Benzene	ND	0.50	ug/L	1.00	05/18/1999 17:08	
Toluene	0.93	0.50	ug/L	1.00	05/18/1999 17:08	
Ethyl benzene	ND	0.50	ug/L	1.00	05/18/1999 17:08	
Xylene(s)	2.7	0.50	ug/L	1.00	05/18/1999 17:08	
MTBE	ND	5.0	ug/L	1.00	05/18/1999 17:08	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	107.6	50-150	%	1.00	05/18/1999 17:08	
Trifluorotoluene	116.4	58-124	%	1.00	05/18/1999 17:08	

To: Treadwell &amp; Rollo-Orinda

Test Method: 8020  
8015M

Attn.: Michael McGuire

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: <b>SB-19</b>	Lab Sample ID: <b>1999-05-1080-013</b>
Project: 2855 Mandela Parkway	Received: 05/12/1999 12:00
Sampled: 05/11/1999	Extracted: 05/18/1999 16:40
Matrix: Water	QC-Batch: 1999/05/18-01.02

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	05/18/1999 16:40	
Benzene	ND	0.5	ug/L	1.00	05/18/1999 16:40	
Toluene	ND	0.50	ug/L	1.00	05/18/1999 16:40	
Ethyl benzene	ND	0.50	ug/L	1.00	05/18/1999 16:40	
Xylene(s)	ND	0.50	ug/L	1.00	05/18/1999 16:40	
MTBE	ND	5.0	ug/L	1.00	05/18/1999 16:40	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	106.3	50-150	%	1.00	05/18/1999 16:40	
Trifluorotoluene	108.9	58-124	%	1.00	05/18/1999 16:40	



Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8020  
8015M

Attn.: Michael McGuire

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: <b>SB-20</b>	Lab Sample ID: <b>1999-05-1080-014</b>
Project: 2855 Mandela Parkway	Received: 05/12/1999 12:00
Sampled: 05/11/1999	Extracted: 05/18/1999 17:35
Matrix: Water	QC-Batch: 1999/05/18-01.02

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	160	50	ug/L	1.00	05/18/1999 17:35	
Benzene	12	0.50	ug/L	1.00	05/18/1999 17:35	
Toluene	38	0.50	ug/L	1.00	05/18/1999 17:35	
Ethyl benzene	ND	0.50	ug/L	1.00	05/18/1999 17:35	
Xylene(s)	30	0.50	ug/L	1.00	05/18/1999 17:35	
MTBE	ND	5.0	ug/L	1.00	05/18/1999 17:35	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	109.8	50-150	%	1.00	05/18/1999 17:35	
Trifluorotoluene	114.4	58-124	%	1.00	05/18/1999 17:35	

Environmental Services (SDB)

To: **Treadwell & Rollo-Orinda**

Test Method: 8020  
8015M

Attn.: Michael McGuire

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: <b>SB-21</b>	Lab Sample ID: <b>1999-05-1080-015</b>
Project: <b>2855 Mandela Parkway</b>	Received: <b>05/12/1999 12:00</b>
Sampled: <b>05/11/1999</b>	Extracted: <b>05/19/1999 16:40</b>
Matrix: <b>Water</b>	QC-Batch: <b>1999/05/19-01.03</b>

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	360000	100000	ug/L	2000.00	05/19/1999 17:35	
Benzene	40000	1000	ug/L	2000.00	05/19/1999 17:35	
Toluene	120000	1000	ug/L	2000.00	05/19/1999 17:35	
Ethyl benzene	57000	1000	ug/L	2000.00	05/19/1999 17:35	
Xylene(s)	240000	1000	ug/L	2000.00	05/19/1999 17:35	
MTBE	ND	10000	ug/L	2000.00	05/19/1999 17:35	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	173.5	50-150	%	1.00	05/19/1999 17:35	
Trifluorotoluene	112.6	58-124	%	1.00	05/19/1999 17:35	

Environmental Services (SDB)

To: **Treadwell & Rollo-Orinda**

Test Method: 8020  
8015M

Attn.: Michael McGuire

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: <b>SB-22</b>	Lab Sample ID: <b>1999-05-1080-016</b>
Project: 2855 Mandela Parkway	Received: 05/12/1999 12:00
Sampled: 05/11/1999	Extracted: 05/18/1999 19:33
Matrix: Water	QC-Batch: 1999/05/18-01.03

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	05/18/1999 19:33	
Benzene	ND	0.50	ug/L	1.00	05/18/1999 19:33	
Toluene	2.2	0.50	ug/L	1.00	05/18/1999 19:33	
Ethyl benzene	ND	0.50	ug/L	1.00	05/18/1999 19:33	
Xylene(s)	ND	0.50	ug/L	1.00	05/18/1999 19:33	
MTBE	ND	5.0	ug/L	1.00	05/18/1999 19:33	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	91.3	50-150	%	1.00	05/18/1999 19:33	
Trifluorotoluene	97.5	58-124	%	1.00	05/18/1999 19:33	

Environmental Services (SDB)

To: **Treadwell & Rollo-Orinda**

Test Method: 8020  
8015M

Attn.: Michael McGuire

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: <b>SB-23</b>	Lab Sample ID: <b>1999-05-1080-017</b>
Project: 2855 Mandela Parkway	Received: 05/12/1999 12:00
Sampled: 05/11/1999	Extracted: 05/19/1999 19:33
Matrix: Water	QC-Batch: 1999/05/19-01.03

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	11000	5000	ug/L	100.00	05/19/1999 19:33	
Benzene	5000	50	ug/L	100.00	05/19/1999 19:33	
Toluene	11000	50	ug/L	100.00	05/19/1999 19:33	
Ethyl benzene	2800	50	ug/L	100.00	05/19/1999 19:33	
Xylene(s)	11000	50	ug/L	100.00	05/19/1999 19:33	
MTBE	ND	500	ug/L	100.00	05/19/1999 19:33	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	136.6	50-150	%	1.00	05/19/1999 19:33	
Trifluorotoluene	135.3	58-124	%	1.00	05/19/1999 19:33	sh

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8020  
8015M

Attn.: Michael McGuire

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: <b>SB-24</b>	Lab Sample ID: <b>1999-05-1080-018</b>
Project: 2855 Mandela Parkway	Received: 05/12/1999 12:00
Sampled: 05/11/1999	Extracted: 05/19/1999 15:45
Matrix: Water	QC-Batch: 1999/05/19-01.03

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	71000	10000	ug/L	200.00	05/19/1999 15:45	
Benzene	6400	100	ug/L	200.00	05/19/1999 15:45	
Toluene	9200	100	ug/L	200.00	05/19/1999 15:45	
Ethyl benzene	2700	100	ug/L	200.00	05/19/1999 15:45	
Xylene(s)	9400	100	ug/L	200.00	05/19/1999 15:45	
MTBE	ND	1000	ug/L	200.00	05/19/1999 15:45	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	111.0	50-150	%	1.00	05/19/1999 15:45	
Trifluorotoluene	110.3	58-124	%	1.00	05/19/1999 15:45	

Environmental Services (SDB)

To: **Treadwell & Rollo-Orinda**

Test Method: 8020  
8015M

Attn.: Michael McGuire

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: <b>DUP</b>	Lab Sample ID: <b>1999-05-1080-019</b>
Project: 2855 Mandela Parkway	Received: 05/12/1999 12:00
Sampled: 05/11/1999	Extracted: 05/19/1999 13:56
Matrix: Water	QC-Batch: 1999/05/19-01.03

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	05/19/1999 13:56	
Benzene	ND	0.50	ug/L	1.00	05/19/1999 13:56	
Toluene	0.83	0.50	ug/L	1.00	05/19/1999 13:56	
Ethyl benzene	ND	0.50	ug/L	1.00	05/19/1999 13:56	
Xylene(s)	ND	0.50	ug/L	1.00	05/19/1999 13:56	
MTBE	ND	5.0	ug/L	1.00	05/19/1999 13:56	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	101.2	50-150	%	1.00	05/19/1999 13:56	
Trifluorotoluene	107.0	58-124	%	1.00	05/19/1999 13:56	

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Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8020  
8015M

Attn: Michael McGuire

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: <b>EB</b>	Lab Sample ID: <b>1999-05-1080-020</b>
Project: 2855 Mandela Parkway	Received: 05/12/1999 12:00
Sampled: 05/11/1999	Extracted: 05/19/1999 14:23
Matrix: Water	QC-Batch: 1999/05/19-01.03

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	05/19/1999 14:23	
Benzene	ND	0.50	ug/L	1.00	05/19/1999 14:23	
Toluene	ND	0.50	ug/L	1.00	05/19/1999 14:23	
Ethyl benzene	ND	0.50	ug/L	1.00	05/19/1999 14:23	
Xylene(s)	ND	0.50	ug/L	1.00	05/19/1999 14:23	
MTBE	ND	5.0	ug/L	1.00	05/19/1999 14:23	
<i>Surrogate(s)</i>						
4-Bromofluorobenzene	105.6	50-150	%	1.00	05/19/1999 14:23	
Trifluorotoluene	111.7	58-124	%	1.00	05/19/1999 14:23	

Environmental Services (SDB)

To: **Treadwell & Rollo-Orinda**

Test Method: 8020  
8015M

Attn.: Michael McGuire

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: <b>TB</b>	Lab Sample ID: <b>1999-05-1080-021</b>
Project: <b>2855 Mandela Parkway</b>	Received: <b>05/12/1999 12:00</b>
Sampled: <b>05/11/1999</b>	Extracted: <b>05/19/1999 15:18</b>
Matrix: <b>Water</b>	QC-Batch: <b>1999/05/19-01.03</b>

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	05/19/1999 15:18	
Benzene	ND	0.50	ug/L	1.00	05/19/1999 15:18	
Toluene	ND	0.50	ug/L	1.00	05/19/1999 15:18	
Ethyl benzene	ND	0.50	ug/L	1.00	05/19/1999 15:18	
Xylene(s)	ND	0.50	ug/L	1.00	05/19/1999 15:18	
MTBE	ND	5.0	ug/L	1.00	05/19/1999 15:18	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	115.5	50-150	%	1.00	05/19/1999 15:18	
Trifluorotoluene	112.2	58-124	%	1.00	05/19/1999 15:18	



Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8015M

8020

Attn.: Michael McGuire

Prep Method: 5030

**Batch QC Report**  
Gas/BTEX and MTBE

<b>Method Blank</b>	<b>Water</b>	<b>QC Batch # 1999/05/18-01.03</b>
MB: 1999/05/18-01.03-001		Date Extracted: 05/18/1999 07:18

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	05/18/1999 07:18	
Benzene	ND	0.5	ug/L	05/18/1999 07:18	
Toluene	ND	0.5	ug/L	05/18/1999 07:18	
Ethyl benzene	ND	0.5	ug/L	05/18/1999 07:18	
Xylene(s)	ND	0.5	ug/L	05/18/1999 07:18	
MTBE	ND	5.0	ug/L	05/18/1999 07:18	
<b>Surrogate(s)</b>					
4-Bromofluorobenzene	99.3	50-150	%	05/18/1999 07:18	
Trifluorotoluene	97.2	58-124	%	05/18/1999 07:18	
4-Bromofluorobenzene-FID	109.6	50-150	%	05/18/1999 07:18	
Trifluorotoluene-FID	108.1	58-124	%	05/18/1999 07:18	

Environmental Services (SDB)

To: **Treadwell & Rollo-Orinda**

Test Method: 8015M

8020

Attn.: Michael McGuire

Prep Method: 5030

**Batch QC Report**  
Gas/BTEX and MTBE

<b>Method Blank</b>	<b>Water</b>	<b>QC Batch # 1999/05/18-01.02</b>
MB: 1999/05/18-01.02-001		Date Extracted: 05/18/1999 07:20

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	05/18/1999 07:20	
Benzene	ND	0.5	ug/L	05/18/1999 07:20	
Toluene	ND	0.5	ug/L	05/18/1999 07:20	
Ethyl benzene	ND	0.5	ug/L	05/18/1999 07:20	
Xylene(s)	ND	0.5	ug/L	05/18/1999 07:20	
MTBE	ND	5.0	ug/L	05/18/1999 07:20	
<b>Surrogate(s)</b>					
Trifluorotoluene	112.6	58-124	%	05/18/1999 07:20	
4-Bromofluorobenzene-FID	111.0	50-150	%	05/18/1999 07:20	

Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M

8020

Attn: Michael McGuire

Prep Method: 5030

**Batch QC Report**  
Gas/BTEX and MTBE

Method Blank

Water

QC Batch # 1999/05/19-01.03

MB: 1999/05/19-01.03-001

Date Extracted: 05/19/1999 13:29

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	05/19/1999 13:29	
Benzene	ND	0.5	ug/L	05/19/1999 13:29	
Toluene	ND	0.5	ug/L	05/19/1999 13:29	
Ethyl benzene	ND	0.5	ug/L	05/19/1999 13:29	
Xylene(s)	ND	0.5	ug/L	05/19/1999 13:29	
MTBE	ND	5.0	ug/L	05/19/1999 13:29	
<b>Surrogate(s)</b>					
Trifluorotoluene	60.2	58-124	%	05/19/1999 13:29	
4-Bromofluorobenzene-FID	106.9	50-150	%	05/19/1999 13:29	

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To: Treadwell & Rollo-Orinda

Test Method: 8020  
8015M

Attn: Michael McGuire

Prep Method: 5030

### Batch QC Report

Gas/BTEX and MTBE

<b>Laboratory Control Spike (LCS/LCSD)</b>	<b>Water</b>	<b>QC Batch # 1999/05/18-01.03</b>
LCS: 1999/05/18-01.03-002	Extracted: 05/18/1999 07:44	Analyzed: 05/18/1999 07:44
LCSD: 1999/05/18-01.03-003	Extracted: 05/18/1999 08:38	Analyzed: 05/18/1999 08:38

Compound	Conc. [ ug/L ]		Exp. Conc. [ ug/L ]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	2330	2270	2500	2500	93.2	90.8	2.6	75-125	20		
Benzene	413.0934	403.9542	500	500	82.6	80.8	2.2	77-123	20		
Toluene	446.882	435.7016	500	500	89.4	87.1	2.6	78-122	20		
Ethyl benzene	449.0382	453.7077	500	500	89.8	90.7	1.0	70-130	20		
Xylene(s)	1289.2971	1277.6469	1500	1500	86.0	85.2	0.9	75-125	20		
<b>Surrogate(s)</b>											
Trifluorotoluene	457	448	500	500	91.4	89.6		58-124			
4-Bromofluorobenzene-FI	554.7823	470.2268	500	500	111.0	94.0		50-150			

Environmental Services (SDB)

To: **Treadwell & Rollo-Orinda**

Test Method: 8020  
8015M

Attn: Michael McGuire

Prep Method: 5030

**Batch QC Report**

Gas/BTEX and MTBE

<b>Laboratory Control Spike (LCS/LCSD)</b>	<b>Water</b>	<b>QC Batch # 1999/05/18-01.02</b>
LCS: 1999/05/18-01.02-002	Extracted: 05/18/1999 07:47	Analyzed: 05/18/1999 07:47
LCSD: 1999/05/18-01.02-003	Extracted: 05/18/1999 09:58	Analyzed: 05/18/1999 09:58

Compound	Conc. [ug/L]		Exp. Conc. [ug/L]		Recovery [%]			RPD		Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	RPD	Recovery	RPD	LCS	LCSD		
Gasoline	2828.3	2646.2	2500	2500	113.1	105.8	6.7	75-125	20				
Benzene	400.0974	506.8181	500	500	80.0	101.4	23.6	77-123	20				
Toluene	444.2792	527.3472	500	500	88.9	105.5	17.1	78-122	20				
Ethyl benzene	478.3075	507.3797	500	500	95.7	101.5	6.4	70-130	20				
Xylene(s)	1367.5943	1512.6407	1500	1500	91.2	100.8	13.9	75-125	20				
<b>Surrogate(s)</b>													
Trifluorotoluene	462.1922	487.1516	500	500	92.4	97.4		58-124					
4-Bromofluorobenzene-FI	573.8345	559.3588	500	500	114.8	111.9		50-150					

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Environmental Services (SDB)

To: **Treadwell & Rollo-Orinda**

Test Method: 8020  
8015M

Attn: Michael McGuire

Prep Method: 5030

**Batch QC Report**

Gas/BTEX and MTBE

<b>Laboratory Control Spike (LCS/LCSD)</b>	<b>Water</b>	<b>QC Batch # 1999/05/19-01.03</b>
LCS: 1999/05/19-01.03-002	Extracted: 05/19/1999 07:12	Analyzed: 05/19/1999 07:12
LCSD: 1999/05/19-01.03-003	Extracted: 05/19/1999 08:06	Analyzed: 05/19/1999 08:06

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]			RPD		Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	RPD [%]	Recovery	RPD	LCS	LCSD		
Gasoline	2213.6	2284.9	2500	2500	88.5	91.4	3.2	75-125	20				
Benzene	500.1150	495.3710	500	500	100.0	99.1	0.9	77-123	20				
Toluene	489.3364	489.6998	500	500	97.9	97.9	0.0	78-122	20				
Ethyl benzene	482.7095	487.4307	500	500	96.5	97.5	1.0	70-130	20				
Xylene(s)	1369.6585	1392.0152	1500	1500	91.3	92.8	1.6	75-125	20				
<b>Surrogate(s)</b>													
Trifluorotoluene	470.8088	442.7961	500	500	94.2	88.6		58-124					
4-Bromofluorobenzene-FI	518.3972	542.4222	500	500	103.7	108.5		50-150					

Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

 Test Method: 8020  
8015M

Attn.: Michael McGuire

Prep Method: 5030

**Batch QC Report**  
Gas/BTEX and MTBE

<b>Matrix Spike ( MS / MSD )</b>	<b>Water</b>	<b>QC Batch # 1999/05/19-01.03</b>
Sample ID: <b>MW2</b>		Lab Sample ID: 1999-05-1102-002
MS: 1999/05/19-01.03-004	Extracted: 05/19/1999 10:40	Analyzed: 05/19/1999 10:40 Dilution: 1.0
MSD: 1999/05/19-01.03-005	Extracted: 05/19/1999 11:34	Analyzed: 05/19/1999 11:34 Dilution: 1.0

Compound	Conc. [ ug/L ]			Exp. Conc. [ ug/L ]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD		Recovery	RPD	MS	MSD
Gasoline	3927.1	3577.2	190	2500	2500	149.5	135.5	2.5	65-135	20		
Benzene	530.9132	568.2891	6.8	500	500	104.8	112.3	1.7	65-135	20		
Toluene	486.7830	529.7951	1.2	500	500	97.1	105.7	2.1	65-135	20		
Ethyl benzene	487.6003	516.0588	1.2	500	500	97.3	103.0	1.4	65-135	20		
Xylene(s)	1379.28	1461.2497	4.5	1500	1500	91.7	97.1	1.4	65-135	20		
<b>Surrogate(s)</b>												
Trifluorotoluene	524.0384	558.0184		500	500	104.8	111.6		58-124			
4-Bromofluorobenzene-F	527.9779	627.3794		500	500	105.6	125.5		50-150			

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Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8020  
8015M

Attn: Michael McGuire

Prep Method: 5030

### Legend & Notes

Gas/BTEX and MTBE

### Analyte Flags

sh

Surrogate recoveries were higher than QC limits due to matrix interference.



Gas/BTEX (Methanol Extraction)

<b>Treadwell &amp; Rollo-Orinda</b>	<input checked="" type="checkbox"/> 2 Theater Square, Suite 216 Orinda, CA 94563
Attn: Michael McGuire	Phone: (925) 253-2683 Fax: (925) 253-2680
Project #:	Project: 2855 Mandela Parkway

**Samples Reported**

Sample ID	Matrix	Date Sampled	Lab #
SB-18	Product	05/11/1999	22

Environmental Services (SDB)

To: **Treadwell & Rollo-Orinda**

Test Method: 8020  
8015M

Attn.: Michael McGuire

Prep Method: 5030

Gas/BTEX (Methanol Extraction)

Sample ID: <b>SB-18</b>	Lab Sample ID: <b>1999-05-1080-022</b>
Project: 2855 Mandela Parkway	Received: 05/12/1999 12:00
Sampled: 05/11/1999	Extracted: 05/20/1999 21:55
Matrix: Product	QC-Batch: 1999/05/18-05.03

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	730000	1000	mg/Kg	100.00	05/02/1999 21:55	
Benzene	9700	62	mg/Kg	100.00	05/02/1999 21:55	
Toluene	36000	62	mg/Kg	100.00	05/02/1999 21:55	
Ethyl benzene	10000	62	mg/Kg	100.00	05/02/1999 21:55	
Xylene(s)	53000	62	mg/Kg	100.00	05/02/1999 21:55	
MTBE	5600	62	mg/Kg	100.00	05/02/1999 21:55	
<i>Surrogate(s)</i>						
Trifluorotoluene	ND	53-125	mg/Kg	1.00	05/02/1999 21:55	do
4-Bromofluorobenzene-FID	ND	58-124	%	1.00	05/02/1999 21:55	do

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8020  
8015M

Attn.: Michael McGuire

Prep Method: 5030

**Batch QC Report**  
Gas/BTEX (Methanol Extraction)

<b>Method Blank</b>	<b>Soil</b>	<b>QC Batch # 1999/05/18-05.03</b>
MB: 1999/05/18-05.03-001		Date Extracted: 05/18/1999 10:21

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	10	mg/Kg	05/18/1999 10:21	
Benzene	ND	0.62	mg/Kg	05/18/1999 10:21	
Toluene	ND	0.62	mg/Kg	05/18/1999 10:21	
Ethyl benzene	ND	0.62	mg/Kg	05/18/1999 10:21	
Xylene(s)	ND	0.62	mg/Kg	05/18/1999 10:21	
MTBE	ND	0.62	mg/Kg	05/18/1999 10:21	
<b>Surrogate(s)</b>					
4-Bromofluorobenzene	120.0	58-124	mg/Kg	05/18/1999 10:21	
Trifluorotoluene	110.0	53-125	mg/Kg	05/18/1999 10:21	
4-Bromofluorobenzene-FID	93.0	58-124	mg/Kg	05/18/1999 10:21	
Trifluorotoluene-FID	98.0	53-125	mg/Kg	05/18/1999 10:21	

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8020  
8015M

Attn: Michael McGuire

Prep Method: 5030

**Batch QC Report**

Gas/BTEX (Methanol Extraction)

<b>Laboratory Control Spike (LCS/LCSD)</b>	<b>Soil</b>	<b>QC Batch # 1999/05/18-05.03</b>
LCS: 1999/05/18-05.03-002	Extracted: 05/18/1999 10:49	Analyzed: 05/18/1999 10:49
LCSD: 1999/05/18-05.03-003	Extracted: 05/18/1999 11:43	Analyzed: 05/18/1999 11:43

Compound	Conc. [ mg/Kg ]		Exp. Conc. [ mg/Kg ]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	2.5745	2.6348	2.5	2.5	103.0	105.4	2.3	75-125	35		
Benzene	.540	.565	0.50	0.50	108.0	113.0	4.5	77-123	35		
Toluene	.540	.570	0.50	0.50	108.0	114.0	5.4	78-122	35		
Ethyl benzene	0.535	.550	0.50	0.50	107.0	110.0	2.8	70-130	35		
Xylene(s)	1.541	1.631	1.5	1.5	102.7	108.7	5.7	75-125	35		
<b>Surrogate(s)</b>											
4-Bromofluorobenzene	535	560	500	500	107.0	112.0		58-124			
Trifluorotoluene	530	545	500	500	106.0	109.0		53-125			
4-Bromofluorobenzene-FI	530	560	500	500	106.0	112.0		58-124			
Trifluorotoluene-FID	625	545	500	500	125.0	109.0		53-125			

Total Extractable Petroleum Hydrocarbons (TEPH)

**Treadwell & Rollo-Orinda**

☒ 2 Theater Square, Suite 216  
Orinda, CA 94563

Attn: Michael McGuire

Phone: (925) 253-2683 Fax: (925) 253-2680

Project #:

Project: 2855 Mandela Parkway

**Samples Reported**

Sample ID	Matrix	Date Sampled	Lab #
SB-18	Product	05/11/1999	22

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8015M

Attn.: Michael McGuire

Prep Method: 3550/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID: <b>SB-18</b>	Lab Sample ID: <b>1999-05-1080-022</b>
Project: 2855 Mandela Parkway	Received: 05/12/1999 12:00
Sampled: 05/11/1999	Extracted: 05/19/1999 13:38
Matrix: Product	QC-Batch: 1999/05/19-05.10
Sample/Analysis Flag: o ( See Legend & Note section )	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	380000	69000	mg/Kg	6880.73	05/19/1999 16:31	ed
Motor Oil	ND	3400000	mg/Kg	6880.73	05/19/1999 16:31	
<i>Surrogate(s)</i> o-Terphenyl	ND	60-130	%	1.00	05/19/1999 16:31	do

Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M

Attn: Michael McGuire

Prep Method: 3550/8015M

**Batch QC Report**

Total Extractable Petroleum Hydrocarbons (TEPH)

<b>Method Blank</b>	<b>Oil</b>	<b>QC Batch # 1999/05/19-05.10</b>
MB: 1999/05/19-05.10-001		Date Extracted: 05/19/1999 13:38

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Diesel	ND	10	mg/Kg	05/20/1999 09:50	
Motor Oil	ND	500	mg/Kg	05/20/1999 09:50	
<b>Surrogate(s)</b>					
o-Terphenyl	103.0	60-130	%	05/20/1999 09:50	

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8015M

Attn: Michael McGuire

Prep Method: 3550/8015M

## Batch QC Report

### Total Extractable Petroleum Hydrocarbons (TEPH)

Laboratory Control Spike (LCS/LCSD)		Oil	QC Batch # 1999/05/19-05.10		
LCS:	1999/05/19-05.10-002	Extracted:	05/19/1999 13:38	Analyzed:	05/19/1999 18:04
LCSD:	1999/05/19-05.10-003	Extracted:	05/19/1999 13:38	Analyzed:	05/20/1999 12:12

Compound	Conc. [mg/Kg]		Exp. Conc. [mg/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Diesel	873.4602	834.3764	1000	1000	87.3	83.4	4.6	60-130	25		
<i>Surrogate(s)</i>											
o-Terphenyl	20.6472	19.7126	20	20	103.2	98.6		60-130			

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096



Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M

Attn: Michael McGuire

Prep Method: 3550/8015M

**Legend & Notes**

## Total Extractable Petroleum Hydrocarbons (TEPH)

**Analysis Flags**

o

Reporting limits were raised due to high level of analyte present in the sample.

**Analyte Flags**

ed

Hydrocarbon reported is in the early Diesel range, and does not match our Diesel standard

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096



# Sequoia Analytical

Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite 8  
1455 McDowell Blvd. North, Ste. D  
1551 Industrial Road

Redwood City, CA 94063  
Walnut Creek, CA 94598  
Sacramento, CA 95834  
Petaluma, CA 94954  
San Carlos, CA 94070-4111

(650) 364-9600  
(925) 988-9600  
(916) 921-9600  
(707) 792-1865  
(650) 232-9600

FAX (650) 364-9233  
FAX (925) 988-9673  
FAX (916) 921-0100  
FAX (707) 792-0342  
FAX (650) 232-9612

Sequoia Analytical  
1551 Industrial Blvd.  
San Carlos, CA 94070  
Attention: Tim Costello

Client Project ID: L905390 / Chromalab, Inc.  
Sample Descript: Liquid  
Analysis for: Organic Lead  
First Sample #: 905-2361

Sampled: May 11, 1999  
Received: May 20, 1999  
Extracted: Jun 8, 1999  
Analyzed: Jun 8, 1999  
Reported: Jun 17, 1999

## LABORATORY ANALYSIS FOR: Organic Lead

Sample Number	Sample Description	Detection Limit mg/L	Sample Results mg/L	QC Batch Number	Instrument ID
905-2361	SB-18	0.50	260	ME060899LUFTMDA	MV-1

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, #1271

Charlie Westwater  
Project Manager





# Sequoia Analytical

J Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite 8  
1455 McDowell Blvd. North, Ste. D  
1551 Industrial Road

Redwood City, CA 94063  
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FAX (650) 364-9233  
FAX (925) 988-9673  
FAX (916) 921-0100  
FAX (707) 792-0342  
FAX (650) 232-9612

Sequoia Analytical  
1551 Industrial Blvd.  
San Carlos, CA 94070  
Attention: Tim Costello

Client Project ID: L905390 / Chromalab, Inc.  
Matrix: Liquid

QC Sample Group: 905-2361

Reported: Jun 17, 1999

## QUALITY CONTROL DATA REPORT

<b>Analyte:</b>	Organic Lead
<b>QC Batch#:</b>	ME060899 LUFTMDA
<b>Analy. Method:</b>	LUFT
<b>Prep. Method:</b>	LUFT
<b>Analyst:</b>	T. Le
<b>MS/MSD #:</b>	9060594
<b>Sample Conc.:</b>	N.D.
<b>Prepared Date:</b>	06/08/99
<b>Analyzed Date:</b>	06/08/99
<b>Instrument I.D.#:</b>	MV-1
<b>Conc. Spiked:</b>	20 mg/L
<b>Result:</b>	0.0
<b>MS % Recovery:</b>	0.0
<b>Dup. Result:</b>	0.0
<b>MSD % Recov.:</b>	0.0
<b>RPD:</b>	0.0
<b>RPD Limit:</b>	0-20

<b>LCS #:</b>	LCS060899
<b>Prepared Date:</b>	06/08/99
<b>Analyzed Date:</b>	06/08/99
<b>Instrument I.D.#:</b>	MV-1
<b>Conc. Spiked:</b>	20 mg/L
<b>LCS Result:</b>	0.77
<b>LCS % Recov.:</b>	3.9

<b>MS/MSD</b>	
<b>LCS</b>	2.7-42
<b>Control Limits</b>	

SEQUOIA ANALYTICAL, #1271

Charlie Westwater  
Project Manager

Please Note:  
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference





HERE ARE THE CHROMATOGRAMS YOU  
REQUESTED

ATTENTION: Michael McGuire

AT: Treadwell & Rollo Orando

SUBMISSION#: 1999-05-1080

# of chromatograms: 14

*Gary Cook*



# Gasoline Chromatogram

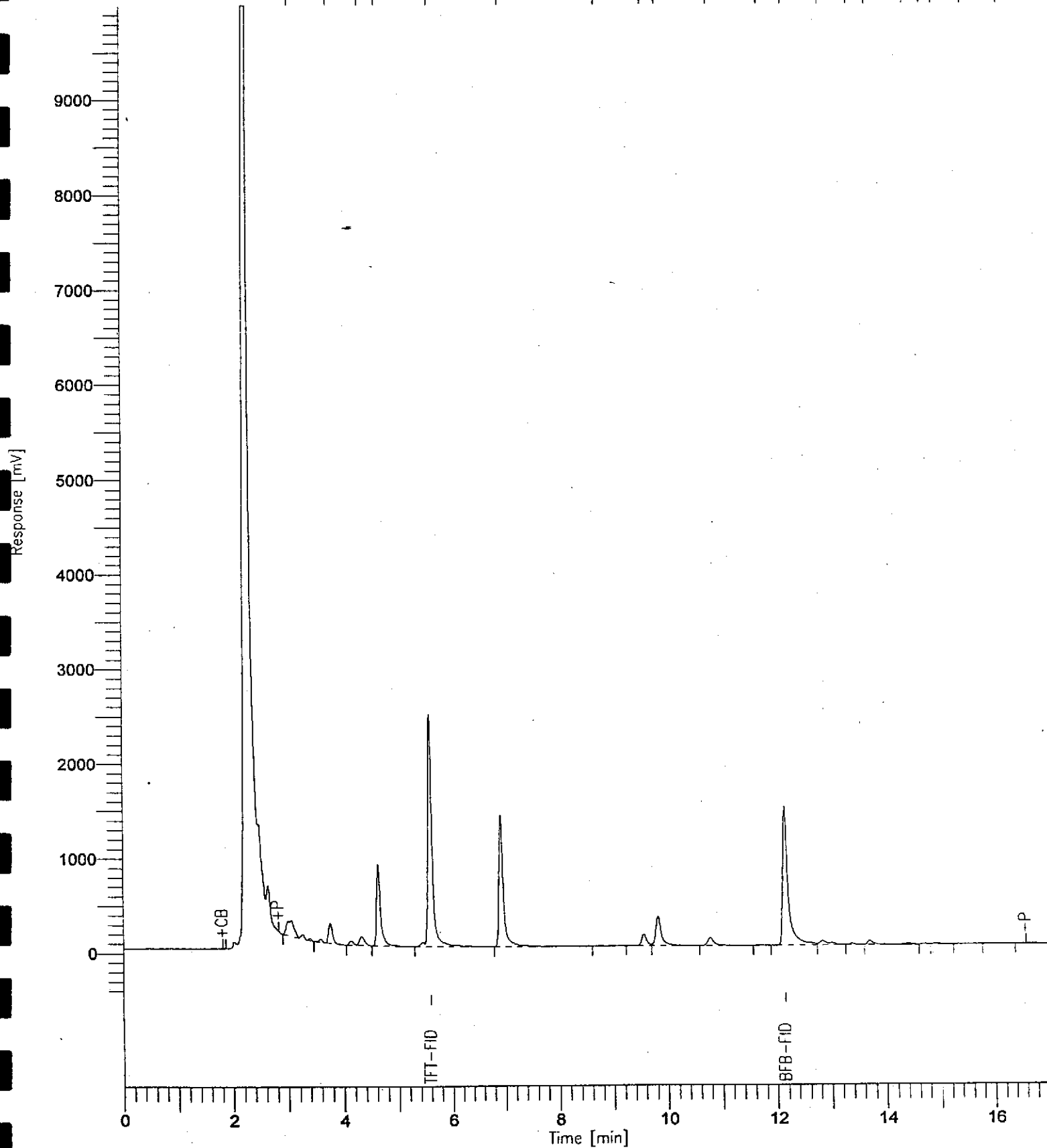
Sample Name : 1999-05-1080/TR2  
FileName : N:\9905\2G51821.raw  
Method : 2B042899  
Start Time : 0.00 min  
Scale Factor : 1.0

End Time : 17.00 min  
Plot Offset : -444 mV

Sample #: 010  
Date : 5/18/99 18:19  
Time of Injection: 5/18/99 18:02  
Low Point : -444.28 mV  
Plot Scale: 10444.3 mV  
High Point : 9999.99 mV

Page 1 of 1

-3.06 -3.77 -4.34 -4.64 -5.60 -6.93 -8.71 -9.57 -9.83 -10.78 -11.71 -12.15 -12.83 -13.37 -13.69 -14.39 -14.70 -14.92 -15.46 -16.12



# asoline Chromatogr.

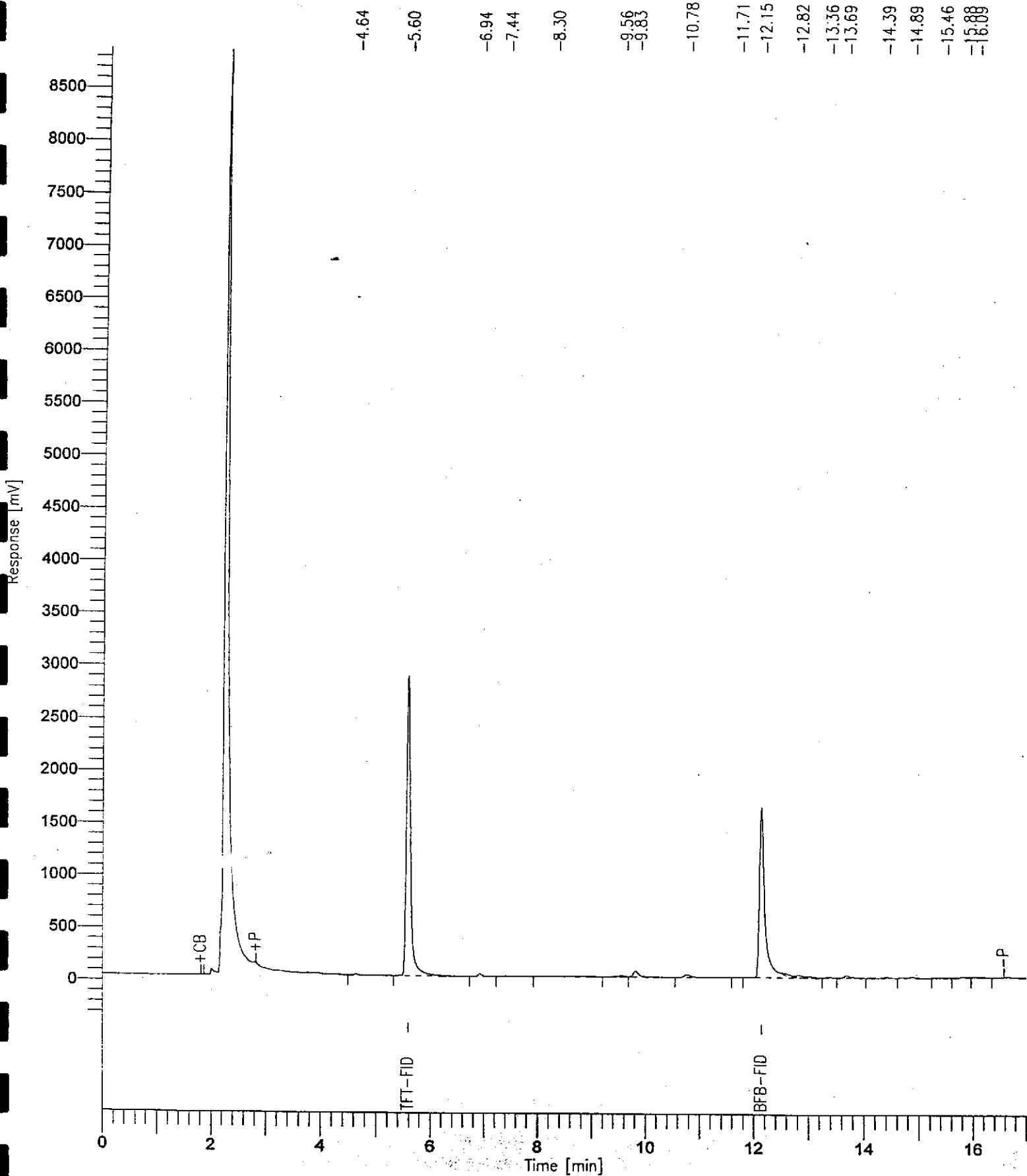
Name : 1999-05-1080/TR3  
eName : N:\9905\2G51817.raw  
Method : 2B042899  
Start Time : 0.00 min  
Scale Factor: 1.0

End Time : 17.00 min  
Plot Offset: -390 mV

Sample #: 011  
Date : 5/18/99 16:32  
Time of Injection: 5/18/99 16:15  
Low Point : -389.53 mV  
Plot Scale: 9272.3 mV

Page 1 of 1

High Point : 8882.75 mV





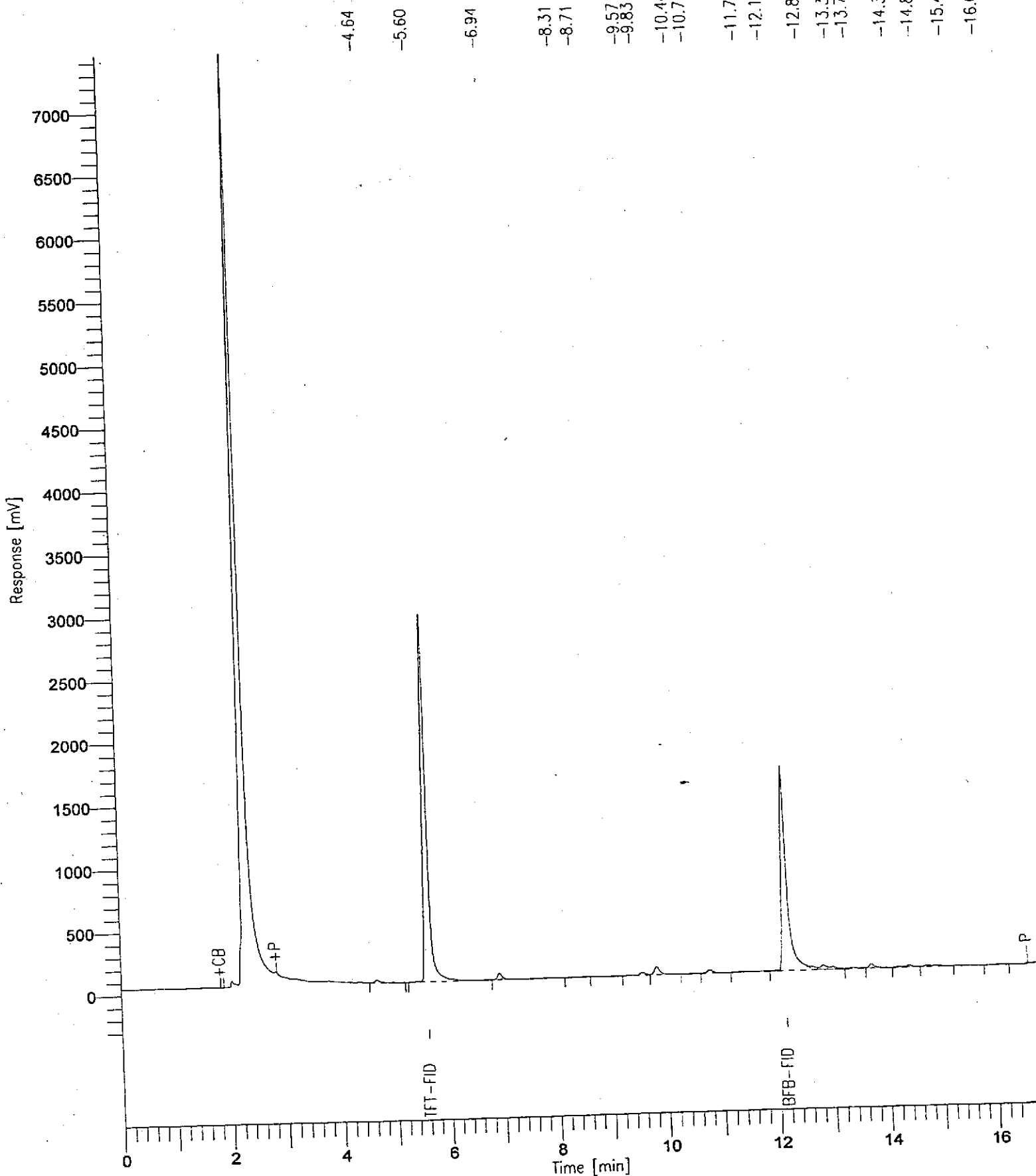
# Gasoline Chromatogram

Sample Name : 1999-05-1080/SB17  
FileName : N:\9905\2G51819.raw  
Method : 2B042899  
Start Time : 0.00 min  
Scale Factor: 1.0

End Time : 17.00 min  
Plot Offset: -317 mV

Sample #: 012  
Date : 5/18/99 17:25  
Time of Injection: 5/18/99 17:08  
Low Point : -317.20 mV  
Plot Scale: 7777.3 mV  
High Point : 7460.08 mV

Page 1 of 1



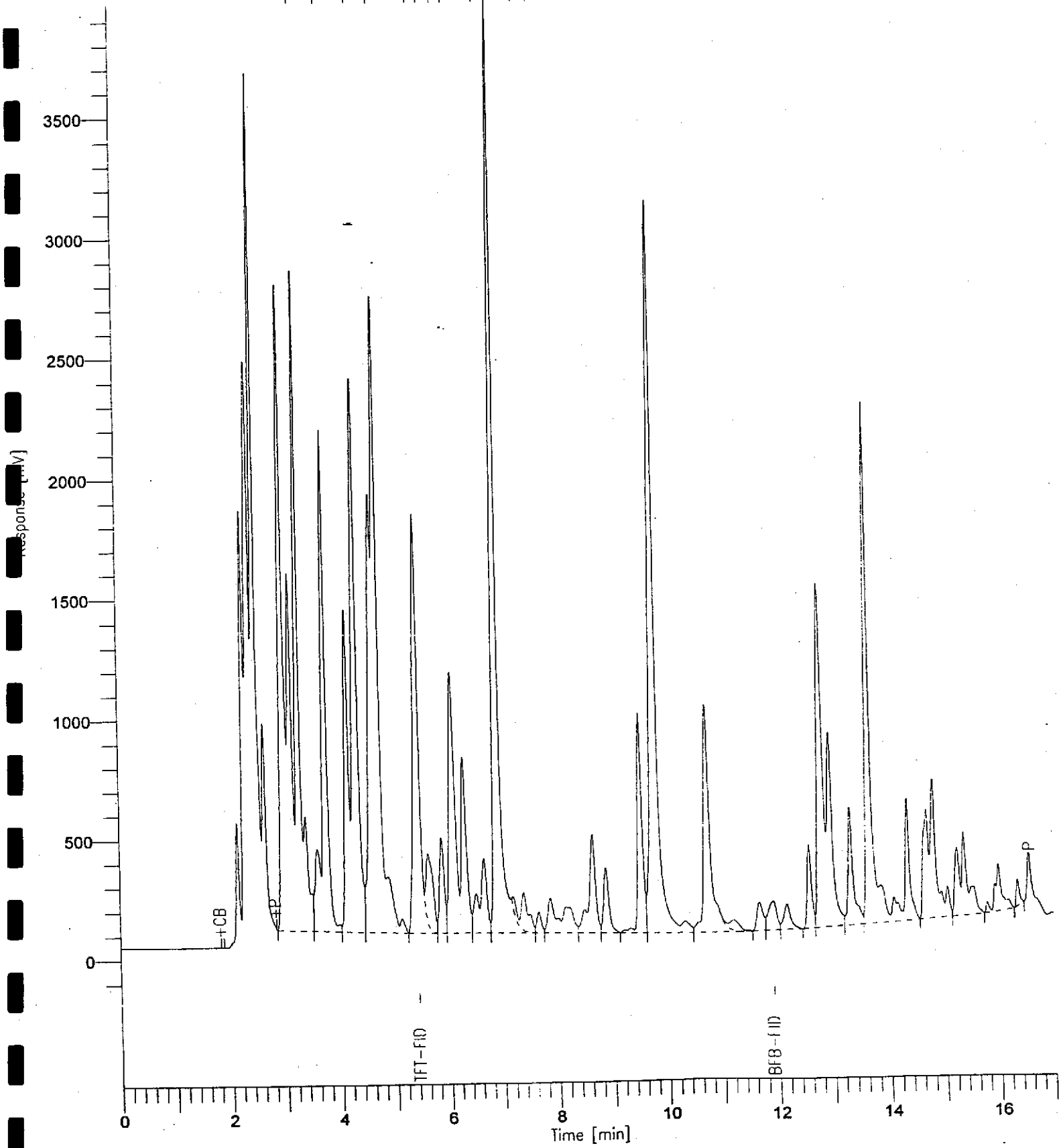
( soline Chromatogra

Sample Name : 1999-05-1080/SB-18  
LeName : N:\9905\2GS2029.raw  
Method : 2B042899  
Start Time : 0.00 min  
Scale Factor : 1.0

End Time : 17.00 min  
Plot Offset: -144 mV

Sample #: 022  
Date : 5/20/99 22:12  
Time of Injection: 5/20/99 21:55  
Low Point : -144.05 mV High Point : 3973.18 mV  
Plot Scale: 4117.2 mV

- 3.27
- 3.75
- 4.32
- 4.71
- 5.42
- 5.62
- 5.87
- 6.07
- 6.66
- 6.90
- 7.38
- 7.66
- 7.89
- 8.65
- 8.88
- 9.51
- 9.77
- 10.72
- 11.18
- 11.67
- 11.91
- 12.16
- 12.57
- 13.31
- 13.63
- 14.81
- 15.36
- 16.00
- 16.34



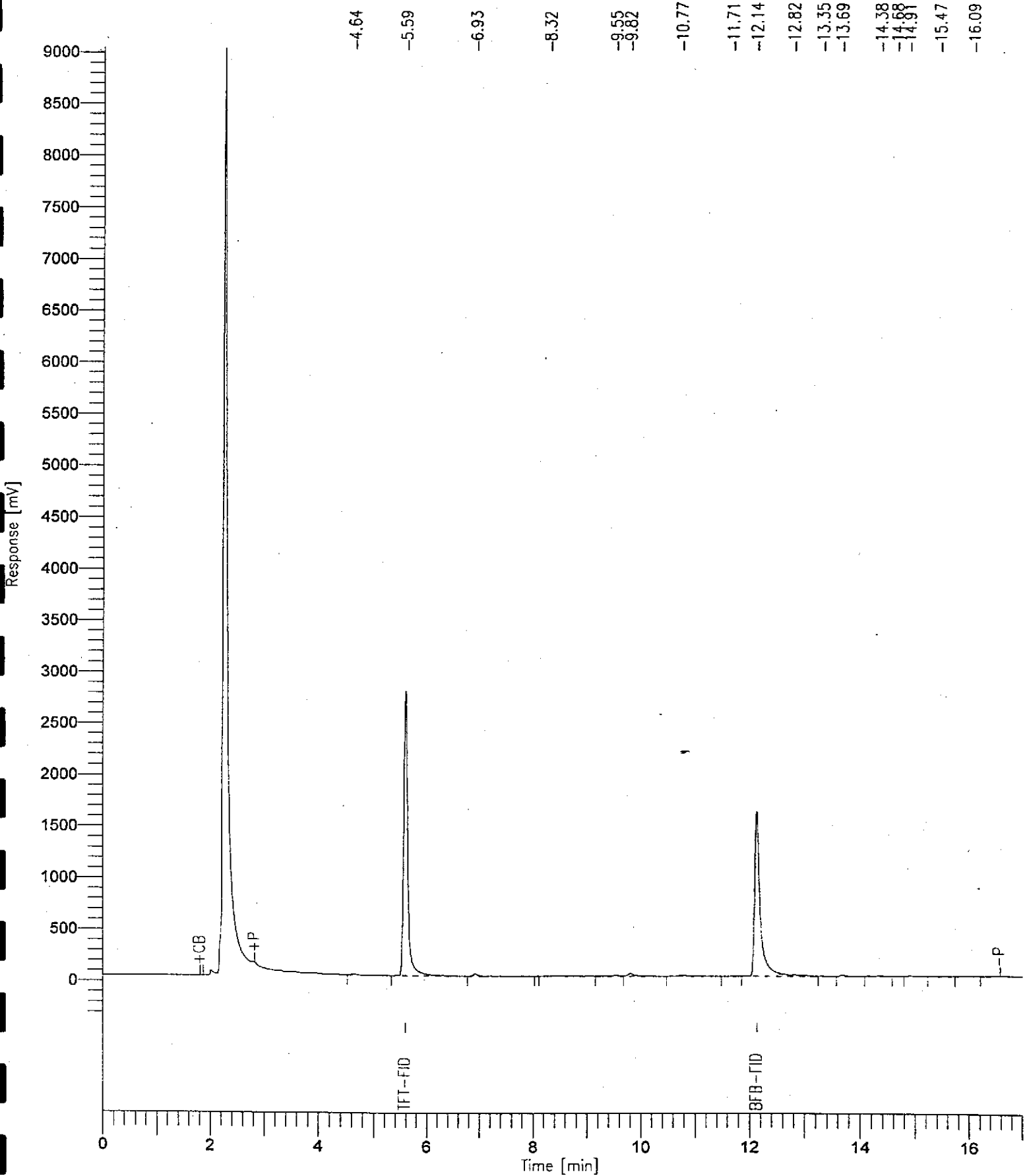
# Gasoline Chromatogram

Sample Name : 1999-05-1080/SB19  
FileName : N:\9905\2G51818.raw  
Method : 2B042899  
Start Time : 0.00 min  
Scale Factor: 1.0

End Time : 17.00 min  
Plot Offset: -397 mV

Sample #: 013  
Date : 5/18/99 16:57  
Time of Injection: 5/18/99 16:40  
Low Point : -397.12 mV  
Plot Scale: 9446.4 mV  
High Point : 9049.31 mV

Page 1 of 1

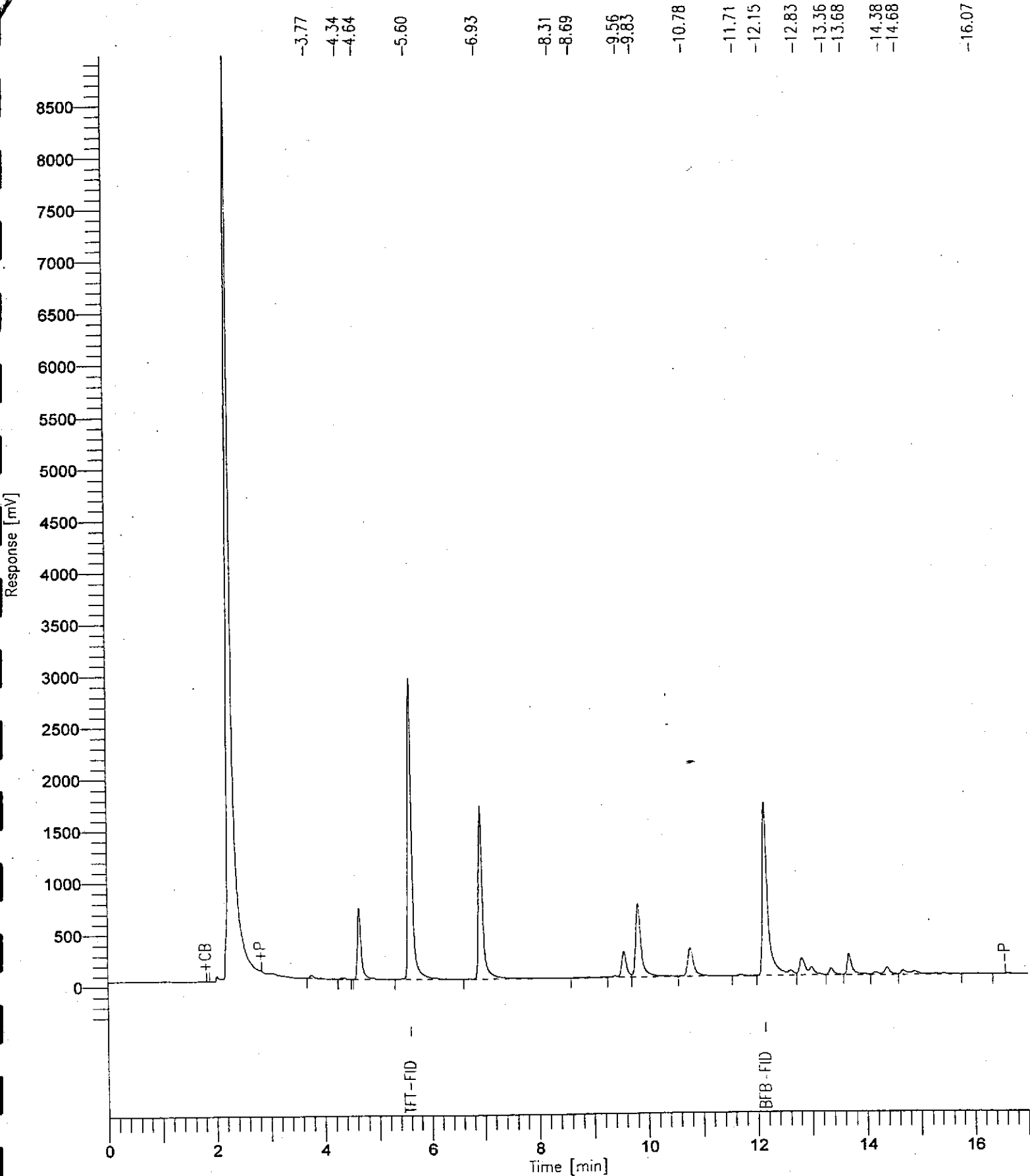


# Gasoline Chromatogram

Sample Name : 1999-05-1080/SB20  
File Name : N:\9905\2651820.raw  
Sample ID : 2B042899  
Injection Time : 0.00 min  
Gain Factor : 1.0

End Time : 17.00 min  
Plot Offset : -395 mV

Sample #: 014  
Date : 5/18/99 17:52  
Time of Injection: 5/18/99 17:35  
Low Point : -395.19 mV  
Plot Scale: 9381.5 mV  
High Point : 8986.30 mV



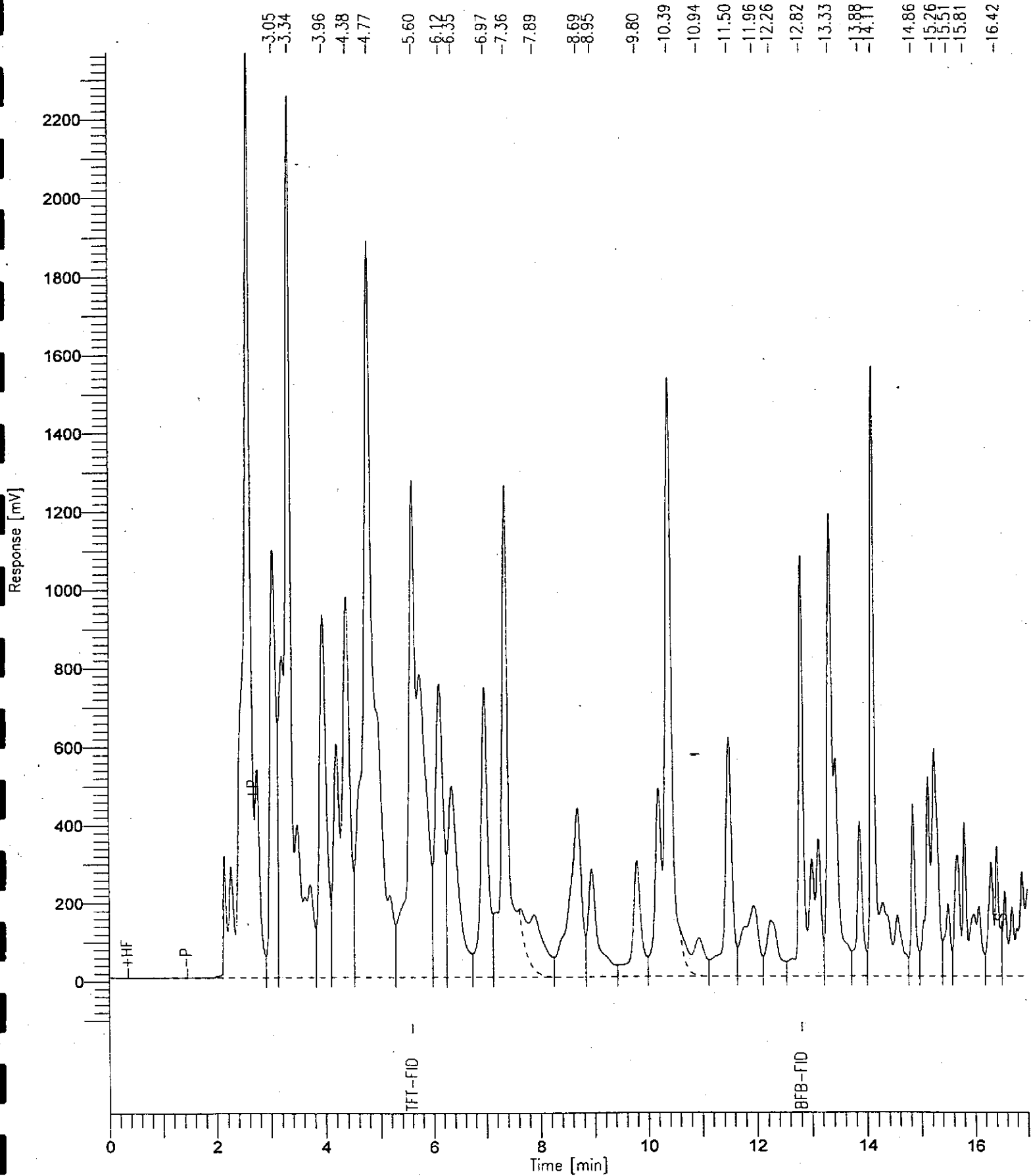
# Gasoline Chromatogram

Sample Name : 1999-05-1080/SB21  
FileName : O:\9905\3G51922.raw  
Method : 3B043099  
Start Time : 0.00 min  
Scale Factor: 1.0

End Time : 17.00 min  
Plot Offset: -109 mV

Sample #: 015  
Date : 5/19/99 16:57  
Time of Injection: 5/19/99 16:40  
Low Point : -108.53 mV  
High Point : 2370.30 mV  
Plot Scale: 2478.8 mV

Page 1 of 1

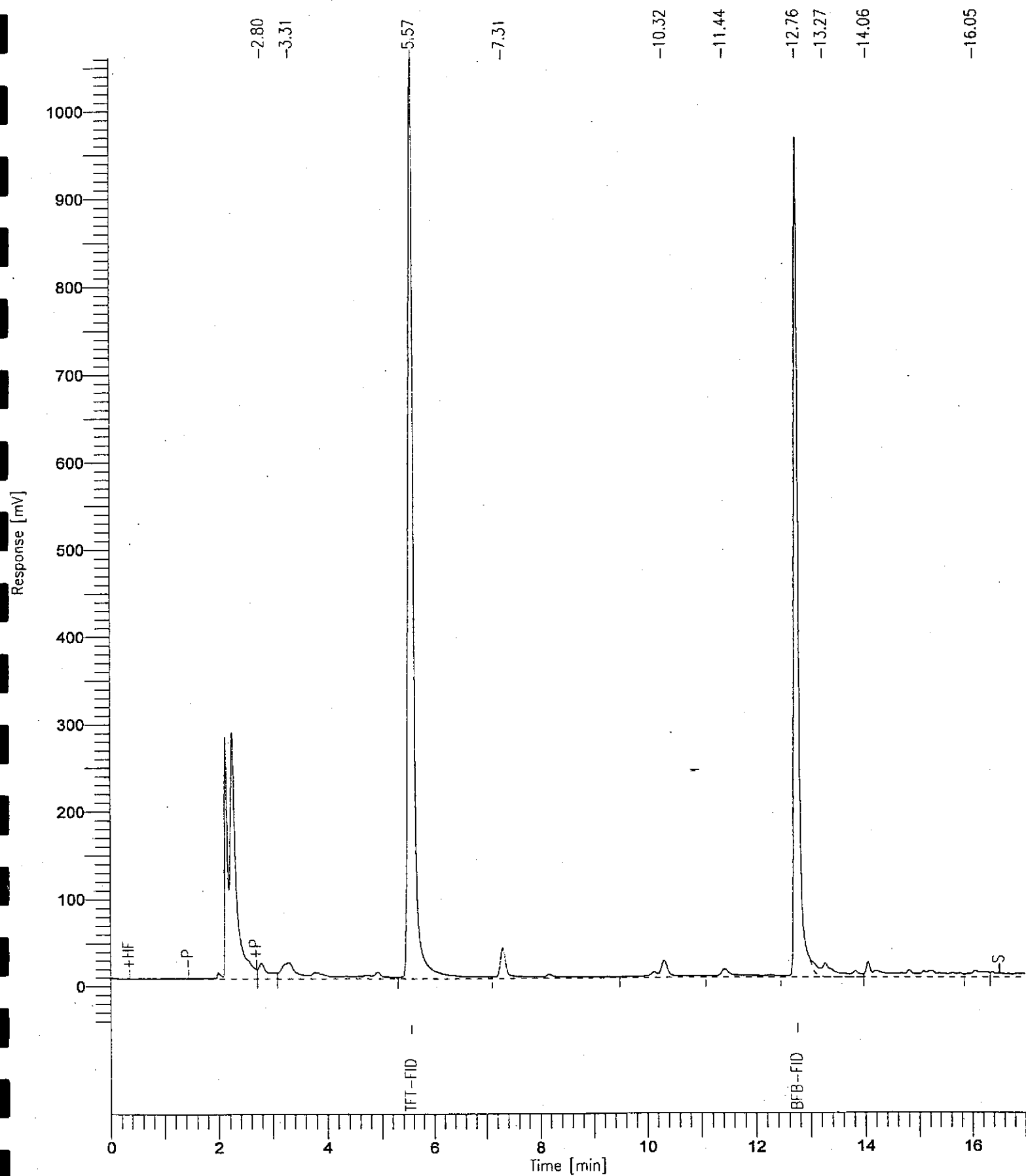


# asoline Chromatogra

Name : 199-05-1080/SB-22  
Name : O:\9905\3G51824.raw  
Method : 3B043099  
Start Time : 0.00 min  
Scale Factor: 1.0

End Time : 17.00 min  
Plot Offset: -44 mV

Sample #: 016  
Date : 5/18/99 19:50  
Time of Injection: 5/18/99 19:33  
Low Point : -43.75 mV  
Plot Scale: 1105.7 mV  
Page 1 of 1  
High Point : 1061.94 mV



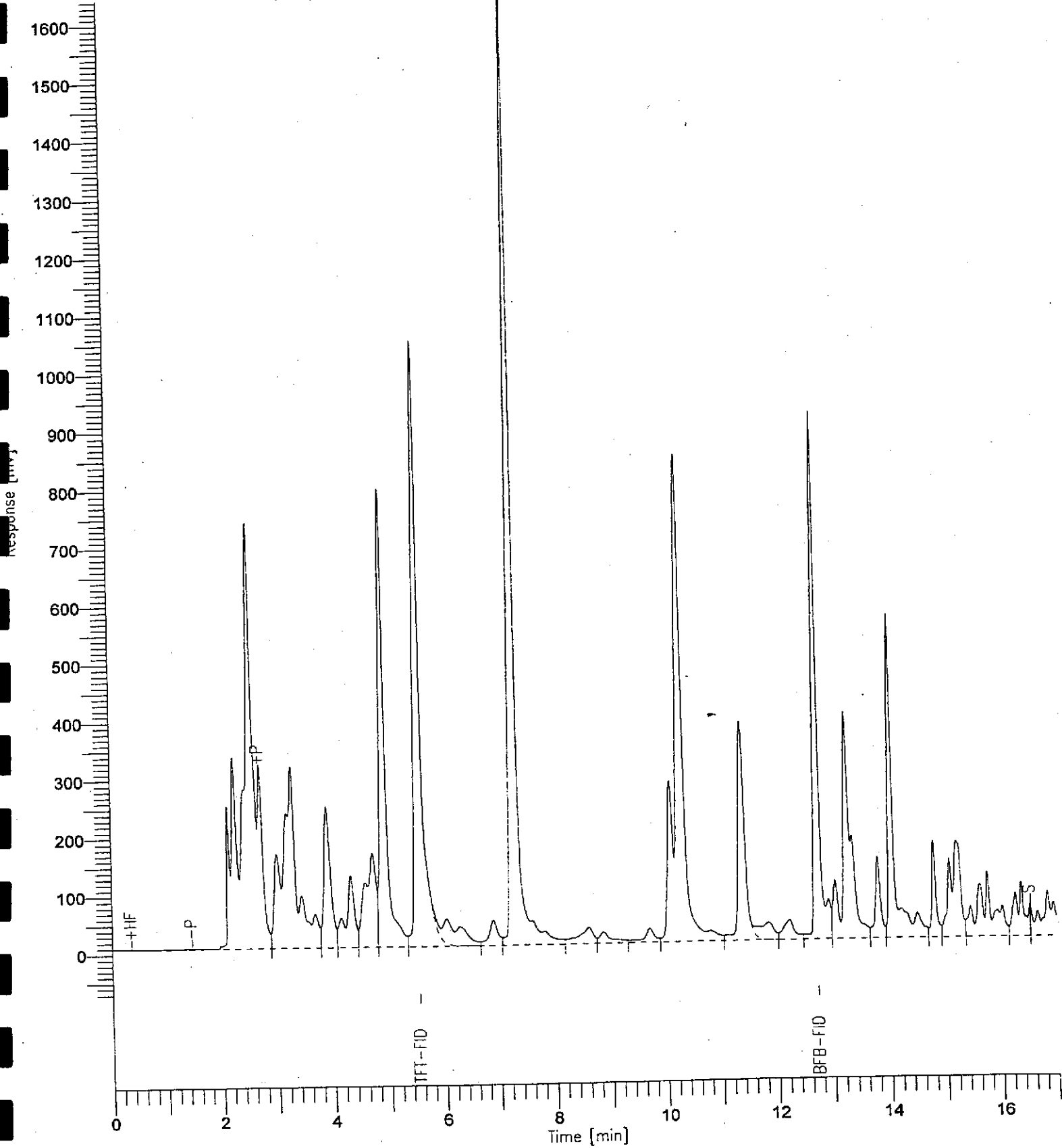
# Gasoline Chromatogram

Sample Name : 199-05-1080/SB-23  
FileName : O:\9905\3G51827.raw  
Method : 3B043099  
Start Time : 0.00 min  
Scale Factor: 1.0

End Time : 17.00 min  
Plot Offset: -73 mV

Sample #: 017  
Date : 5/18/99 21:11  
Time of Injection: 5/18/99 20:53  
Low Point : -72.95 mV  
High Point : 1644.19 mV  
Plot Scale: 1717.1 mV

- 3.28
- 3.90
- 4.32
- 4.60
- 5.53
- 6.04
- 6.89
- 7.27
- 8.60
- 8.86
- 9.70
- 10.28
- 11.39
- 11.84
- 12.22
- 12.72
- 13.25
- 13.80
- 14.03
- 14.79
- 15.20
- 15.75
- 16.36



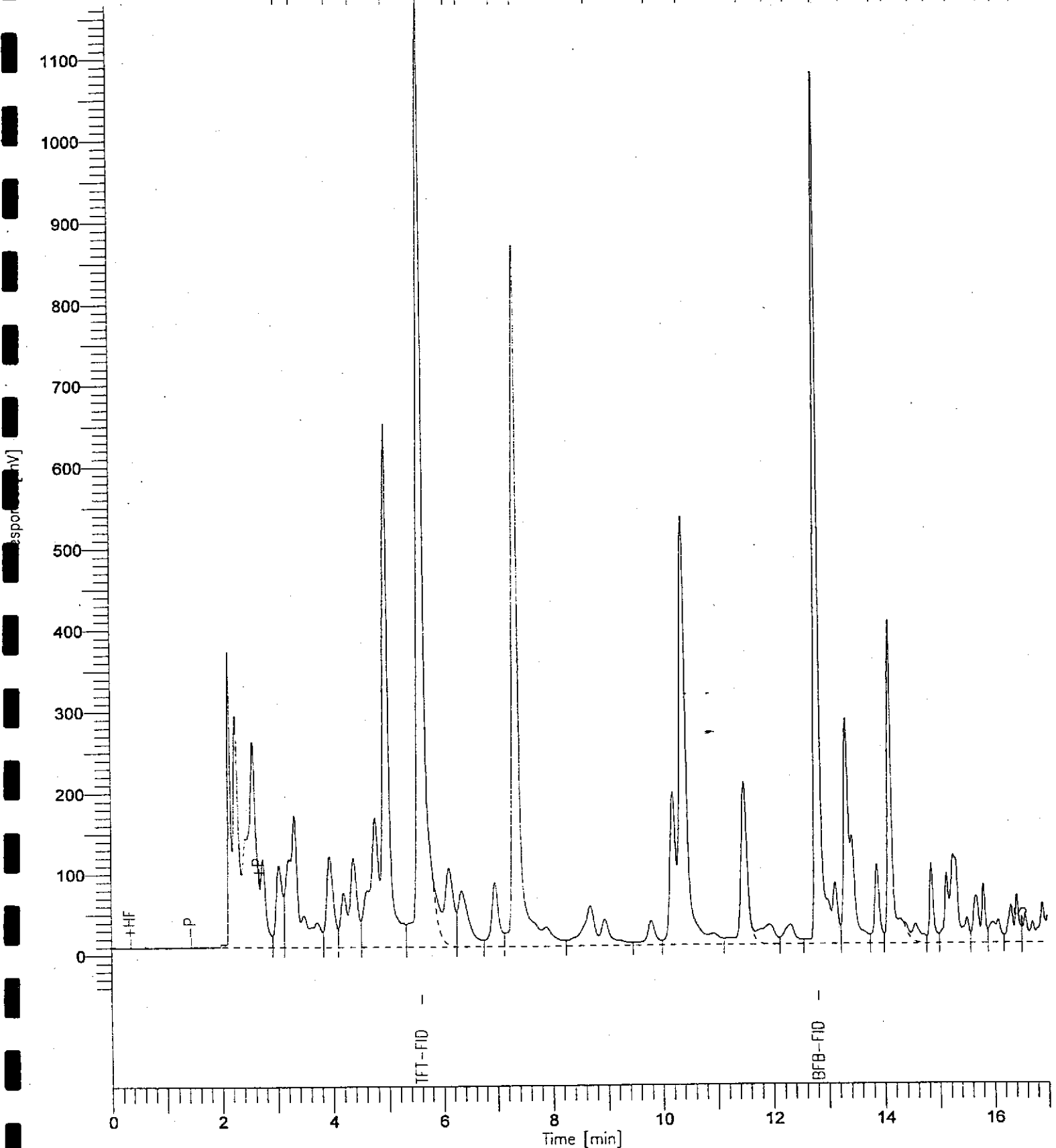
# Gasoline Chromatogram

File Name : 1999-05-1080/SB24  
FileName : O:\9905\3G51920.raw  
Method : 3B043099  
Start Time : 0.00 min  
Scale Factor: 1.0

End Time : 17.00 min  
Plot Offset: -49 mV

Sample #: 018  
Date : 5/19/99 16:03  
Time of Injection: 5/19/99 15:45  
Low Point : -48.53 mV  
Plot Scale: 1216.0 mV

- 3.05
- 3.33
- 3.96
- 4.39
- 4.97
- 5.61
- 6.12
- 6.35
- 6.97
- 7.36
- 8.70
- 9.81
- 10.40
- 11.51
- 11.96
- 12.33
- 12.82
- 13.34
- 13.89
- 14.12
- 14.58
- 14.87
- 15.27
- 15.82
- 16.09
- 16.43





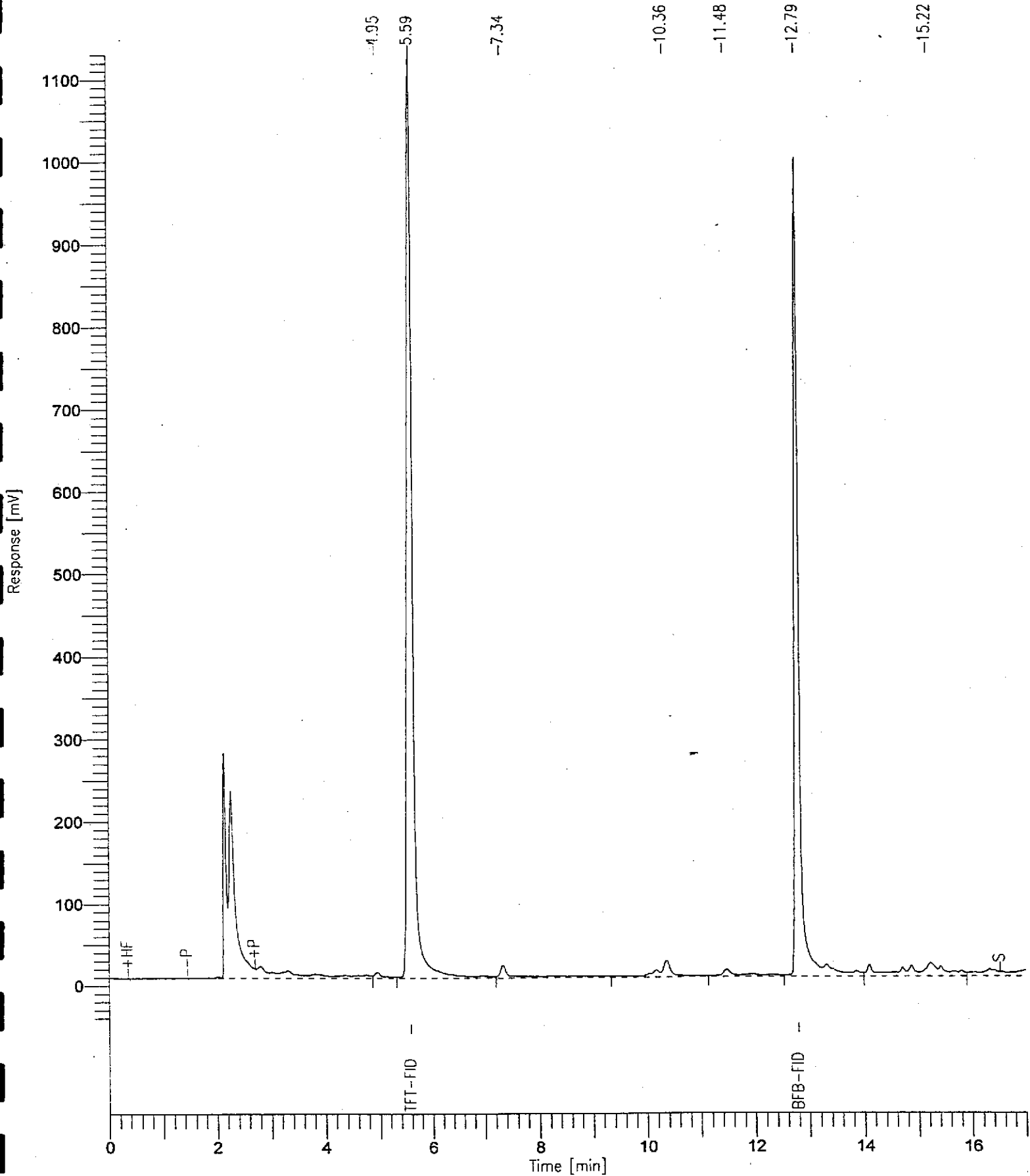
# Gasoline Chromatogram

Sample Name : 1999-05-1080/DUP  
FileName : O:\9905\3G51916.raw  
Method : 3B043099  
Start Time : 0.00 min  
Scale Factor: 1.0

End Time : 17.00 min  
Plot Offset: -47 mV

Sample #: 019  
Date : 5/19/99 14:13  
Time of Injection: 5/19/99 13:56  
Low Point : -47.16 mV  
Plot Scale: 1177.7 mV  
High Point : 1130.50 mV

Page 1 of 1

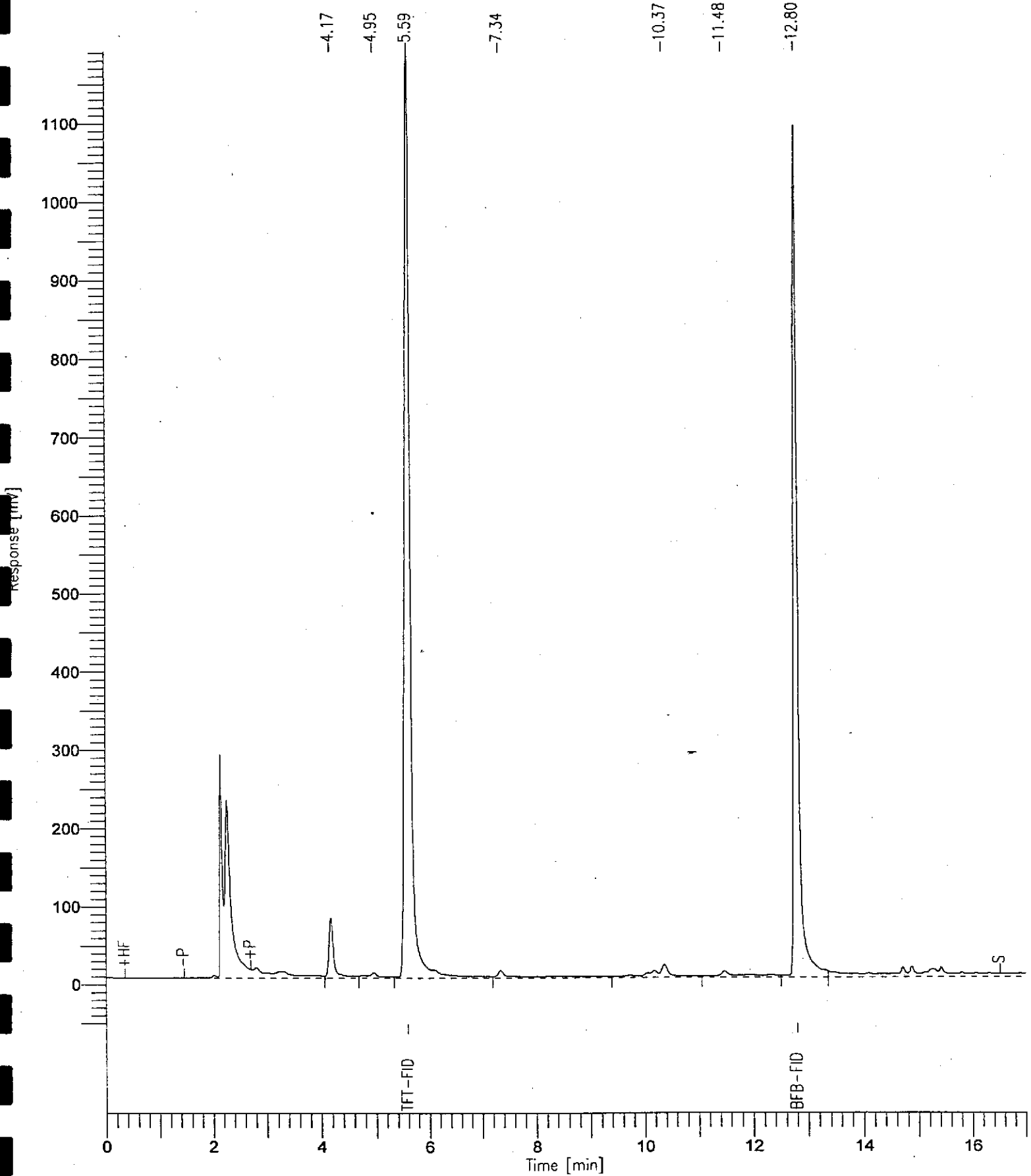


# Gasoline Chromatogra

Sample Name : 1999-05-1080/EB  
FileName : O:\9905\3G51917.raw  
Method : 3B043099  
Start Time : 0.00 min  
Scale Factor: 1.0

End Time : 17.00 min  
Plot Offset: -51 mV

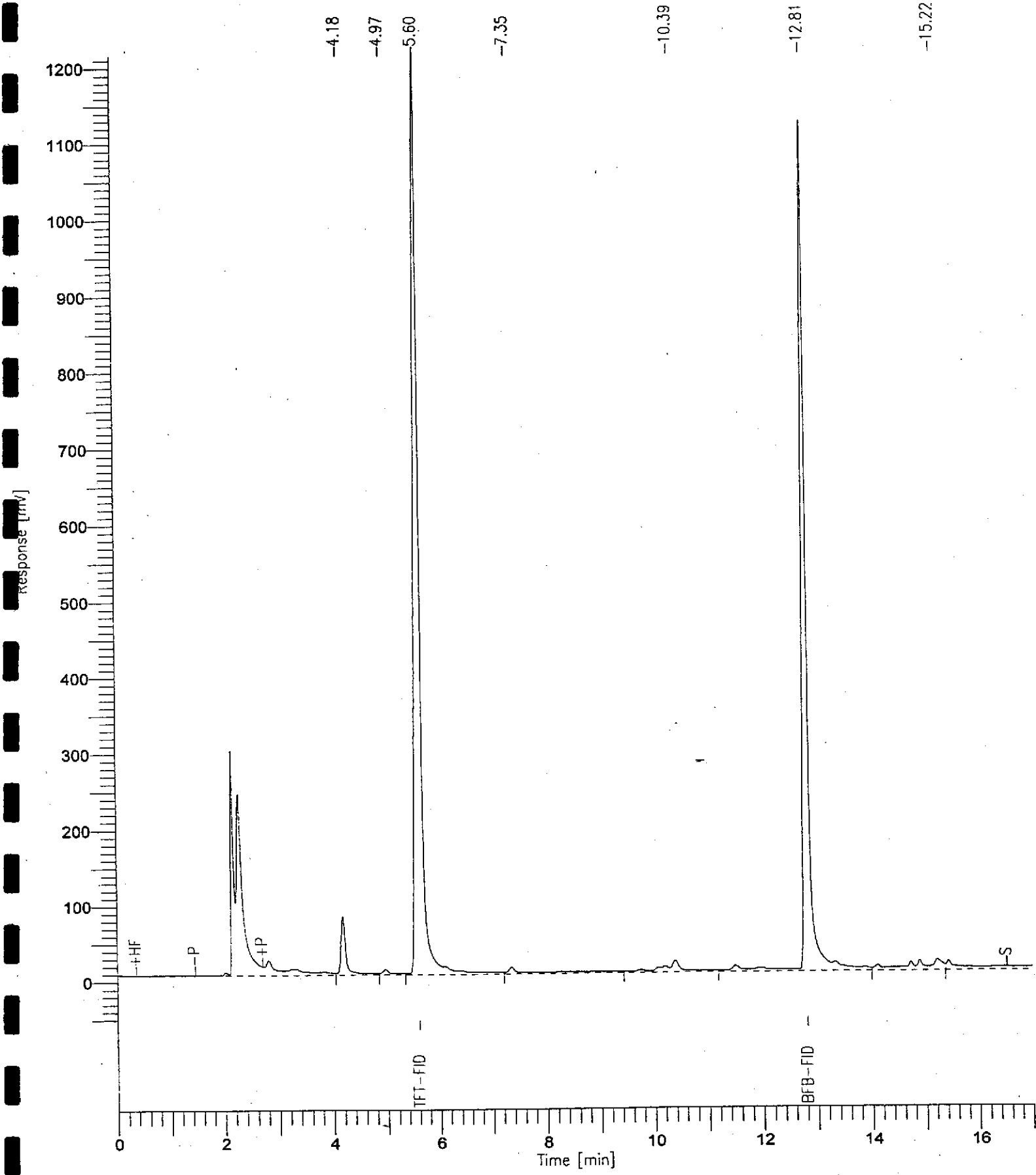
Sample #: 020  
Date : 5/19/99 14:41  
Time of Injection: 5/19/99 14:23  
Low Point : -50.62 mV  
Plot Scale: 1243.0 mV  
Page 1 of 1  
High Point : 1192.42 mV



# Gasoline Chromatogram

Sample Name : 1999-05-1080/TRIP BLANK  
File Name : O:\9905\3G51919.raw  
Method : 3B043099  
Start Time : 0.00 min  
Scale Factor : 1.0  
End Time : 17.00 min  
Plot Offset : -51 mV

Sample #: 021  
Date : 5/19/99 15:35  
Time of Injection: 5/19/99 15:18  
Low Point : -51.44 mV  
Plot Scale: 1267.8 mV  
High Point : 1216.33 mV



# CHROMALAB, INC.

Environmental Services (SDB) (DOIS 1094)

1220 Quarry Lane • Pleasanton, California 94566-4756  
510/484-1910 • Facsimile 510/484-1098

Reference #: 2543.01

## Chain of Custody

DATE 5/11/99 PAGE 82 OF 26

PROJECT INFORMATION						ANALYSIS REPORT					
PROJ. MGR: <u>Michael McGuire</u> COMPANY: <u>Treadwell &amp; Rollo</u> ADDRESS: <u>2 THEATRE SQUARE, SUITE 216</u> <u>OKINDA, CA 94563</u>						TPH-EPA 8015, 8020 <input type="checkbox"/> Gas w/ <input type="checkbox"/> BTEX DMTE					
SAMPLES (SIGNATURE): <u>[Signature]</u> (PHONE NO.): <u>(925) 253-2683</u> (FAX NO.): <u>(925) 253-4985</u>						PURGEABLE AROMATICS BTEX (EPA 8020)					
SAMPLE ID: <u>TR-1-5</u> DATE: <u>5/11/99</u> TIME: <u>0750</u> MATRIX: <u>Soil</u> PRESERV.: <u>-</u>						TPH-Diesel (EPA 8015M)					
<u>SB-17-4</u> <u>5/11/99</u> <u>0850</u> <u>Soil</u> <u>-</u>						TEPH (EPA 8015M) <input type="checkbox"/> Diesel <input type="checkbox"/> M.O. <input type="checkbox"/> Other					
<u>TR-2-5</u> <u>5/11/99</u> <u>1010</u> <u>Soil</u> <u>-</u>						PURGEABLE HALOCARBONS (BVOCs) (EPA 8010)					
<u>SB-18-5</u> <u>5/11/99</u> <u>0935</u> <u>Soil</u> <u>-</u>						VOLATILE ORGANICS (VOCs) (EPA 8260)					
<u>SB-18-10</u> <u>5/11/99</u> <u>0937</u> <u>Soil</u> <u>-</u>						SEMIVOLATILES (EPA 8270)					
<u>TR-2-10</u> <u>5/11/99</u> <u>1012</u> <u>Soil</u> <u>-</u>						TOTAL OIL AND GREASE (SM 5520 B + F, E + F)					
<u>TR-3-5</u> <u>5/11/99</u> <u>1037</u> <u>Soil</u> <u>-</u>						<input type="checkbox"/> PESTICIDES (EPA 8060) <input type="checkbox"/> PCB'S (EPA 8080)					
<u>SB-20-5</u> <u>5/11/99</u> <u>1142</u> <u>Soil</u> <u>-</u>						PNA's by <input type="checkbox"/> 8270 <input type="checkbox"/> 8310					
<u>SB-21-5</u> <u>5/11/99</u> <u>1202</u> <u>Soil</u> <u>-</u>						<input type="checkbox"/> Spec. Cond. <input type="checkbox"/> TSS <input type="checkbox"/> TDS					
						LUFT METALS: Cd, Cr, Pb, Ni, Zn					
						CAM 17 METALS (EPA 6010/7470/7471)					
						TOTAL LEAD					
						D.W.E.T. (SLG) <input type="checkbox"/> TCLP					
						<input type="checkbox"/> Hexavalent Chromium <input type="checkbox"/> pH (24 hr hold time for H2O)					
						NUMBER OF CONTAINERS					
PROJECT NAME: <u>2855 MANDELA PARKWAY</u> PROJECT NUMBER: <u>2043.01</u> P.O. #						HELD INQUIRISHED BY 1. <u>[Signature]</u> 5/11/99 (SIGNATURE) (TIME) <u>Michael Rapoport</u> 1330 (PRINTED NAME) (DATE) <u>Treadwell &amp; Rollo</u> (COMPANY)					
SAMPLE RECEIPT TOTAL NO. OF CONTAINERS: <u>14</u> HEAD SPACE: <u>-</u> TEMPERATURE: CONTAINERS TO RECORD:						HELD INQUIRISHED BY 2. <u>Storage: MRL</u> 1200 (SIGNATURE) (TIME) <u>Michael Rapoport</u> 5/12/99 (PRINTED NAME) (DATE) <u>Treadwell &amp; Rollo</u> (COMPANY)					
SPECIAL INSTRUCTIONS/COMMENTS: Report: <input type="checkbox"/> Routine <input type="checkbox"/> Level 2 <input type="checkbox"/> Level 3 <input type="checkbox"/> Level 4 <input type="checkbox"/> Electronic Report <u>Ph. Hold pending possible future ANALYSIS</u>						HELD INQUIRISHED BY 3. <u>[Signature]</u> 1200 (SIGNATURE) (TIME) <u>Michael Rapoport</u> 5/12/99 (PRINTED NAME) (DATE) <u>Treadwell &amp; Rollo</u> (COMPANY)					
TAT: STANDARD 5 DAY    24    48    72    OTHER						RECEIVED BY 1. <u>Storage: MRL</u> 5/11/99 (SIGNATURE) (TIME) <u>Michael Rapoport</u> 1330 (PRINTED NAME) (DATE) <u>Treadwell &amp; Rollo</u> (COMPANY)					
						RECEIVED BY 2. <u>[Signature]</u> 1200 (SIGNATURE) (TIME) <u>Michael Rapoport</u> 5/12/99 (PRINTED NAME) (DATE) <u>Treadwell &amp; Rollo</u> (COMPANY)					
						RECEIVED BY (LABORATORY) 3. <u>[Signature]</u> 1200 (SIGNATURE) (TIME) <u>Michael Rapoport</u> 5/12/99 (PRINTED NAME) (DATE) <u>Treadwell &amp; Rollo</u> (COMPANY)					

*Sam Wright 5/10/99 1300*  
*Ken Wright 5/12/99 1300*

# CHROMALAB, INC.

1220 Quinry Lane • Pleasanton, California 94566-4756  
510/404-1919 • Facsimile 510/404-1098

Reference #: 2543.01

## Chain of Custody

Environmental Services (SDD) (DOHS 1094)

DATE 5/11/99 PAGE 1 OF 6

PROJECT INFORMATION					ANALYSIS REPORT																	
PROJECT NAME <b>2855 Mandela Parkway</b>	TOTAL NO. OF CONTAINERS				TPH-EPA 8015, 8020 <input type="checkbox"/> Gas <input type="checkbox"/> BTEX <input type="checkbox"/> MTBE	PURGEABLE AROMATICS BTEX (EPA 8020)	TPH-Diesel (EPA 8015M)	TEPH (EPA 8015M) <input type="checkbox"/> Diesel <input type="checkbox"/> M.O. <input type="checkbox"/> Other	PURGEABLE HALOCARBONS (EYOCs) (EPA 8010)	VOLATILE ORGANICS (VOCs) (EPA 8260)	SEMI-VOLATILES (EPA 8270)	TOTAL OIL AND GREASE (SM 5520 B+F, E+F)	<input type="checkbox"/> PESTICIDES (EPA 8080) <input type="checkbox"/> PCB'S (EPA 8080)	PNA's by <input type="checkbox"/> 8270 <input type="checkbox"/> 8310	<input type="checkbox"/> Spec. Cond. <input type="checkbox"/> TSS <input type="checkbox"/> TDS	LUFT METALS: Cd, Cr, Pb, Ni, Zn	CAM 17 METALS (EPA 6010/7470/7471)	TOTAL LEAD	D.W.E.T. (STLC) GTCLP	<input type="checkbox"/> Hexavalent Chromium <input type="checkbox"/> pH (24 hr hold time for H2O)	NUMBER OF CONTAINERS	
PROJECT NUMBER <b>2643.01</b>	HEAD SPACE				<p style="text-align: center; font-size: 2em; font-weight: bold;">VOA'S</p> <p style="text-align: right; font-size: 1.5em;">Tom Wright 5/12/99 1200 Ken Wacker 5/12/99 1300</p>																	
P.O. #	TEMPERATURE																					
TAT	STANDARD	OTHER			RECEIVED BY				RECEIVED BY				RECEIVED BY (LABORATORY)									
5 DAY	24	48	72	OTHER	RECEIVED BY: STORAGE: MWL 1710 (SIGNATURE) <i>Michael Rapoport</i> (NAME) (PRINTED NAME) Michael Rapoport (DATE) 5/11/99 (COMPANY) Treadwell & Rollo				RECEIVED BY: STORAGE: MWL 1200 (SIGNATURE) <i>Michael Rapoport</i> (NAME) (PRINTED NAME) Michael Rapoport (DATE) 5/11/99 (COMPANY) Treadwell & Rollo				RECEIVED BY (LABORATORY): Tom Wright 1200 (SIGNATURE) <i>Tom Wright</i> (NAME) (PRINTED NAME) Tom Wright (DATE) 5/12/99 (LAB) c/c									
SPECIAL INSTRUCTIONS/COMMENTS:																						
Report: (1) Routine (1) Level 2 (1) Level 3 (1) Level 4 (1) Electronic Report																						
Please include CHROMATOGRAMS High Concentrations																						
SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH-EPA 8015, 8020	PURGEABLE AROMATICS	TPH-Diesel (EPA 8015M)	TEPH (EPA 8015M)	PURGEABLE HALOCARBONS	VOLATILE ORGANICS	SEMI-VOLATILES	TOTAL OIL AND GREASE	PESTICIDES/PCB'S	PNA's	Spec. Cond./TSS/TDS	LUFT METALS	CAM 17 METALS	TOTAL LEAD	D.W.E.T./GTCLP	Hexavalent Chromium/pH	NUMBER OF CONTAINERS	
TR-2	5/11/99	1510	GW	HCl	X																	
TR-3	5/11/99	1430	GW	HCl	X																	
GB-17	5/11/99	1700	GW	HCl	X																	
GB-19	5/11/99	1450	GW	HCl	X																	
GB-20	5/11/99	1530	GW	HCl	X																	
GB-21	5/11/99	1545	GW	HCl	X																	
GB-22	5/11/99	1600	GW	HCl	X																	
GB-23	5/11/99	1415	GW	HCl	X																	
GB-24	5/11/99	1630	GW	HCl	X																	

PROJ MGR: **MICHAEL McGUIRE**  
 COMPANY: **TREADWELL & ROLLO**  
 ADDRESS: **2 THEATRE SQUARE, SUITE 216**  
**ORINDA, CA 94563**

SAMPLER'S SIGNATURE: *[Signature]*  
 (PHONE NO.) **(925) 253-2683**  
 (FAX NO.) **(925) 253-4985**

RECEIVED BY STORAGE: MWL 1710 (SIGNATURE) <i>Michael Rapoport</i> (NAME) (PRINTED NAME) Michael Rapoport (DATE) 5/11/99 (COMPANY) Treadwell & Rollo	RECEIVED BY STORAGE: MWL 1200 (SIGNATURE) <i>Michael Rapoport</i> (NAME) (PRINTED NAME) Michael Rapoport (DATE) 5/11/99 (COMPANY) Treadwell & Rollo	RECEIVED BY (LABORATORY) Tom Wright 1200 (SIGNATURE) <i>Tom Wright</i> (NAME) (PRINTED NAME) Tom Wright (DATE) 5/12/99 (LAB) c/c
---	---	--

# CHROMALAB, INC.

Environmental Services (SDD) (DOIIS 1094)

1220 Quince Lane • Pleasanton, California 94566-4750  
510/484-1910 • Facsimile 510/484-1096

Reference #: 2543.01

## Chain of Custody

DATE 5/11/99 PAGE 3 OF 6

1999.05.1080

PROJECT MGR: MICHAEL MCGUIRE  
COMPANY: TREADWELL & ROLLO  
ADDRESS: 2 THEATRE SQUARE  
ORINDA, CA 94563

SAMPLERS (SIGNATURE): [Signature] (PHONE NO.) (25) 253-2683  
(FAX NO.) (25) 253-4985

### ANALYSIS REPORT

SAMPLE ID	DATE	TIME	MATRIX	PRESERV.	TPH-EPA 8015, 8020 Gas w/ BTEX/AR/BTE	PURGEABLE AROMATICS BTEX (EPA 8020)	TPH-Diesel (EPA 8015M)	TEPH (EPA 8015M) Diesel <input type="checkbox"/> M.O. <input type="checkbox"/> Other	PURGEABLE HALOCARBONS, (HYOC) (EPA 8010)	VOLATILE ORGANICS (VOCs) (EPA 8260)	SEMIVOLATILES (EPA 8270)	TOTAL OIL AND GREASE (SM 5520 8 + F, E + F)	PESTICIDES (EPA 8080) PCS'S (EPA 8080)	PNA's by <input type="checkbox"/> 8270 <input type="checkbox"/> 8310	Spec. Cond. TSS TDS	LUFT METALS: Cd, Cr, Pb, Ni, Zn	CAM 17 METALS (EPA 6010/7470/7471)	TOTAL LEAD	D.W.E.T. (SLG) DTCLP	Hesvalent Chromium pH (24 hr hold time for H2O)	NUMBER OF CONTAINERS
TR-2	5/11/99	1510	GW	none	X																
TR-3	5/11/99	1430	GW	none	X																
SB-17	5/11/99	1700	GW	none	X																
SB-19	5/11/99	1450	GW	none	X																
SB-20	5/11/99	1530	GW	none	X																
SB-21	5/11/99	1545	GW	none	X																
SB-22	5/11/99	1600	GW	none	X																
SB-23	5/11/99	1415	GW	none	X																
SB-24	5/11/99	1630	GW	none	X																

*litus 1st*

*Jan Wang 5/12/99 1300*  
*Ken Wang 5/11/99 1500*

PROJECT INFORMATION  
PROJECT NAME: 2855 Mandela Parkway  
PROJECT NUMBER: 2543.01  
P.O. #

SAMPLE RECEIPT  
TOTAL NO. OF CONTAINERS  
HEAD SPACE  
TEMPERATURE  
CONFORMS TO RECORD

RECEIVED BY 1  
[Signature] (DATE) 5/11/99  
Michael Rapoport (PRINTED NAME)  
Treadwell & Rollo (COMPANY)

RECEIVED BY 2  
George: MR 1200 (DATE)  
Michael Rapoport 5/11/99 (DATE)  
Michael Rapoport (PRINTED NAME)  
Treadwell & Rollo (COMPANY)

RECEIVED BY 3  
[Signature] (DATE) 1200  
Michael Rapoport (PRINTED NAME)  
Treadwell & Rollo (COMPANY)

SPECIAL INSTRUCTIONS/COMMENTS:  
Report:  Routine  Level 2  Level 3  Level 4  Electronic Report  
*please include CHROMATOGRAMS*  
*High Concentrations*

RECEIVED BY 1  
George: MR (DATE)  
Michael Rapoport 5/11/99 (DATE)  
Michael Rapoport (PRINTED NAME)  
Treadwell & Rollo (COMPANY)

RECEIVED BY 2  
[Signature] (DATE) 1200  
Michael Rapoport (DATE)  
Michael Rapoport (PRINTED NAME)  
Treadwell & Rollo (COMPANY)

RECEIVED BY (LABORATORY) 3  
Jan Wang 1200 (DATE)  
Ken Wang 5/12/99 (DATE)  
[Signature] (PRINTED NAME)  
RAD

# CHROMALAB, INC.

Environmental Services (SDD) (DOHS 1094)

1220 Quarry Lane • Pleasanton, California 94566-4756  
510/404-1919 • Facsimile 510/404-1098

Pls. COPY AND FAX CO-C

Reference #: 2843.01

## Chain of Custody

DATE 5/11/99 PAGE 4 OF 16

PROJECT INFORMATION					ANALYSIS REPORT													
PROJ. NO. <u>MICHAEL MCGUIRE</u> COMPANY <u>TREADWELL &amp; ROLLO</u> ADDRESS <u>2 THEATRE SQUARE, SUITE 216</u> <u>ORINDA, CA 94563</u>					TPB-EPA 8015, 8020 <input type="checkbox"/> Gas w/ <input type="checkbox"/> BTEX CMTE PURGEABLE AROMATICS BTEX (EPA 8020) TPH-Diesel (EPA 8015M) TEPH (EPA 8015M) <input type="checkbox"/> Diesel <input type="checkbox"/> M.O. <input type="checkbox"/> Other PURGEABLE HALOCARBONS (HYOCs) (EPA 8010) VOLATILE ORGANICS (VOCs) (EPA 8260) SEMIVOLATILES (EPA 8270) TOTAL OIL AND GREASE (SM 5520 B + F, E + F) <input type="checkbox"/> PESTICIDES (EPA 8080) <input type="checkbox"/> PCB'S (EPA 8080) PNA's by <input type="checkbox"/> 8270 <input type="checkbox"/> 8310 <input type="checkbox"/> Spec. Cond. <input type="checkbox"/> TSS <input type="checkbox"/> TDS LUFT METALS: Cd, Cr, Pb, Ni, Zn CAM 17 METALS (EPA 6010/7470/7471) TOTAL LEAD <input type="checkbox"/> W.E.T. (SILG) <input type="checkbox"/> TCCLP <input type="checkbox"/> Hexavalent Chromium <input type="checkbox"/> pH (24 hr hold time for H2O)													
SAMPLERS (SIGNATURE) <u>[Signature]</u> (PHONE NO.) <u>(925) 253-2683</u> (FAX NO.) <u>(925) 253-4985</u>																		
SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.														
SB-22-10	5/10/99	1228	4oil	-														
SB-22-4	5/11/99	1225	4oil	-														
SB-23-8.5	5/11/99	1252	4oil	-														
SB-24-10	5/11/99	1321	4oil	-														
SB-19-5	5/11/99	1112	4oil	-														
TRIP BLANKS	5/11/99	1200	W	-														
EDUC BLANKS	5/11/99	1700	W	-														

PROJECT INFORMATION				SAMPLE RECEIPT			
PROJECT NAME <u>2855 MANDELA PARKWAY</u>		TOTAL NO. OF CONTAINERS <u>14</u>		HEAD SPACE <u>-</u>		TEMPERATURE <u>ON ICE</u>	
PROJECT NUMBER <u>2843.01</u>		CONDITIONS TO RECORD		CONFORMS TO RECORD			
TAT	STANDARD 5 DAY	24	48	72	OTHER		
SPECIAL INSTRUCTIONS/COMMENTS: Report: (1) Routine (1) Level 2 (1) Level 3 (1) Level 4 (1) Electronic Report  <u>PLS. Hold pending possible future ANALYSIS</u>							

RECEIVED BY		RECEIVED BY		RECEIVED BY	
<u>[Signature]</u>	<u>5/11/99</u>	<u>[Signature]</u>	<u>1200</u>	<u>[Signature]</u>	<u>1200</u>
MICHAEL MCGUIRE	5/11/99	MICHAEL MCGUIRE	5/12/99	MICHAEL MCGUIRE	5/12/99
TREADWELL & ROLLO		TREADWELL & ROLLO		TREADWELL & ROLLO	
RECEIVED BY		RECEIVED BY		RECEIVED BY	
<u>[Signature]</u>	<u>1330</u>	<u>[Signature]</u>	<u>1200</u>	<u>[Signature]</u>	<u>1200</u>
MICHAEL MCGUIRE	5/11/99	MICHAEL MCGUIRE	5/12/99	MICHAEL MCGUIRE	5/12/99
TREADWELL & ROLLO		TREADWELL & ROLLO		TREADWELL & ROLLO	

[Signature] 5/12/99 1200  
[Signature] 5/12/99 1300







Treadwell & Rollo-Orinda  
2 Theater Square, Suite 216  
Orinda, CA 94563

Attn.: Carrie Austin

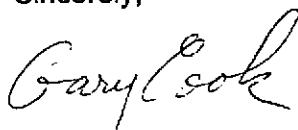
Project: 2543.01  
2855 Mandela Parkway

Carrie

Attached is our report for your samples received on Thursday July 1, 1999.  
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after July 31, 1999 unless you have requested otherwise. We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

Sincerely,



Gary Cook

Flashpoint

Treadwell & Rollo-Orinda



2 Theater Square, Suite 216  
Orinda, CA 94563

Attn: Carrie Austin

Phone: (925) 253-2681 Fax: (925) 253-2680

Project #: 2543.01

Project: 2855 Mandela Parkway

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
TR-6	Product	06/23/1999	1

# CHROMALAE INC.

Submission #: 1999-07-0042

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: EPA 1010

Attn.: Carrie Austin

Prep Method: 1010

Flashpoint

Sample ID: TR-6	Lab Sample ID: 1999-07-0042-001
Project: 2543.01 2855 Mandela Parkway	Received: 07/01/1999 10:23
Sampled: 06/23/1999	Extracted: 07/09/1999
Matrix: Product	QC-Batch: 1999/07/09-02.34
Sample/Analysis Flag: ,fla ( See Legend & Note section )	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Flashpoint	60	0.0	°F	1.00	07/09/1999	

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda  
Attn.: Carrie Austin

Test Method: EPA 1010  
Prep Method: 1010

Batch QC Report  
Flashpoint

Method Blank

Water

QC Batch # 1999/07/09-02.34

MB: 1999/07/09-02.34-001

Date Extracted: 07/09/1999

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Flashpoint	80.0		°F	07/09/1999	

To: Treadwell & Rollo-Orinda

Attn: Carrie Austin

Test Method: EPA 1010

Prep Method: 1010

## Legend & Notes

Flashpoint

## Analysis Notes

TR-6 ( Lab# 1999-07-0042-001 )

sample flammable at 60 degrees F.



# Treadwell & Rollo

Environmental and Geotechnical Consultants  
2 Theatre Square, Suite 216  
Orinda, California 94563  
Phone: 925/253-4980  
Fax: 925/253-4985

## FAX TRANSMITTAL

Date: 7/1/99 Send to fax #: \_\_\_\_\_

To: Chroma Lab

From: Carmie Austin 925-253-2681

Project name: \_\_\_\_\_ Project number: \_\_\_\_\_

Number of pages including cover: 2

Notes:

Pl's add analysis - flashpoint EPA 1010  
to this sample TR-6 99-06-0334

Thx Carmie

This document will also be mailed to you: \_\_\_\_\_

Should you encounter any difficulties with this fax, please call 925/253-4980.





**Treadwell & Rollo-Orinda**  
2 Theater Square, Suite 216  
Orinda, CA 94563

Attn.: Mr. Michael McGuire

Project: 2543.01  
2855 MANDELA PARKWAY

Dear Michael,

Attached is our report for your samples received on Thursday June 24, 1999.  
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after July 24, 1999 unless you have requested otherwise. We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

Sincerely,

  
Gary Cook

Environmental Services (SDB)

## Gas/BTEX (Methanol Extraction)

Treadwell &amp; Rollo-Orinda

✉ 2 Theater Square, Suite 216  
Orinda, CA 94563

Attn: Michael McGuire

Phone: (925) 253-2683 Fax: (925) 253-2680

Project #: 2543.01

Project: 2855 MANDELA PARKWAY

## Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
TR-5	Product	06/24/1999	1

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Michael McGuire

Prep Method: 5030

Gas/BTEX (Methanol Extraction)

Sample ID: TR-5	Lab Sample ID: 1999-06-0358-001
Project: 2543.01 2855 MANDELA PARKWAY	Received: 06/24/1999 19:44
Sampled: 06/24/1999	Extracted: 07/07/1999 09:30
Matrix: Product	QC-Batch: 1999/07/07-05.04
Sample/Analysis Flag: o ( See Legend & Note section )	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	830000	10	mg/Kg	.00	07/08/1999 11:27	
<i>Surrogate(s)</i> 4-Bromofluorobenzene-FID	NA	58-124	mg/Kg	.00	07/08/1999 11:27	sd

Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M

8020

Attn.: Michael McGuire

Prep Method: 5030

Batch QC Report  
Gas/BTEX (Methanol Extraction)

Method Blank

Soil

QC Batch # 1999/07/07-05.04

MB: 1999/07/07-05.04-001

Date Extracted: 07/07/1999 08:30

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	10	mg/Kg	07/07/1999 08:30	

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn: Michael McGuire

Prep Method: 5030

### Batch QC Report

Gas/BTEX (Methanol Extraction)

Laboratory Control Spike (LCS/LCSD)	Soil	QC Batch # 1999/07/07-05.04
LCS: 1999/07/07-05.04-002	Extracted: 07/07/1999 15:19	Analyzed: 07/07/1999 15:19
LCSD: 1999/07/07-05.04-003	Extracted: 07/07/1999 15:46	Analyzed: 07/07/1999 15:46

Compound	Conc. [ mg/Kg ]		Exp.Conc. [ mg/Kg ]		Recovery [%] RPD			Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	RPD [%]	Recovery	RPD	LCS	LCSD
Gasoline	0.584	0.625	0.625	0.625	93.4	100.0	6.8	75-125	35		
<b>Surrogate(s)</b>											
4-Bromofluorobenzene-FI	410	435	500	500	82.0	87.0		58-124			

Environmental Services (SDB)

---

To: Treadwell & Rollo-Orinda

Test Method: 8015M

8020

Attn: Michael McGuire

Prep Method: 5030

## Legend & Notes

Gas/BTEX (Methanol Extraction)

### Analysis Flags

o

Reporting limits were raised due to high level of analyte present in the sample.

### Analyte Flags

sd

Surrogate diluted out due to the presence of non-target materials.

### Total Extractable Petroleum Hydrocarbons (TEPH)

Treadwell & Rollo-Orinda

✉ 2 Theater Square, Suite 216  
Orinda, CA 94563

Attn: Michael McGuire

Phone: (925) 253-2683 Fax: (925) 253-2680

Project #: 2543.01

Project: 2855 MANDELA PARKWAY

### Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
TR-5	Product	06/24/1999	1



# CHROMALAB, INC.

Submission #: 1999-06-0358

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda  
Attn.: Michael McGuire

Test Method: 8015M  
Prep Method: 3550/8015M

## Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID: TR-5	Lab Sample ID: 1999-06-0358-001
Project: 2543.01 2855 MANDELA PARKWAY	Received: 06/24/1999 19:44
Sampled: 06/24/1999	Extracted: 06/28/1999 09:00
Matrix: Product	QC-Batch: 1999/06/28-02.10
Sample/Analysis Flag: sdo ( See Legend & Note section )	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	230000	500	mg/Kg	50.00	06/30/1999 07:52	ed
Motor Oil	ND	25000	mg/Kg	50.00	06/30/1999 07:52	
<i>Surrogate(s)</i> o-Terphenyl	NA	60-130	mg/Kg	50.00	06/30/1999 07:52	

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda  
Attn: Michael McGuireTest Method: 8015M  
Prep Method: 3550/8015M

**Batch QC Report**  
Total Extractable Petroleum Hydrocarbons (TEPH)

Method Blank:	Soil	QC Batch # 1999/06/28-02.10
MB: 1999/06/28-02.10-001		Date Extracted: 06/28/1999 14:29

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Diesel	1510	1	mg/Kg	06/29/1999 09:49	
Motor Oil	ND	50	mg/Kg	06/29/1999 09:49	
<i>Surrogate(s)</i> o-Terphenyl	87.5	60-130	%	06/29/1999 09:49	

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8015M

Attn: Michael McGuire

Prep Method: 3550/8015M

### Batch QC Report

### Total Extractable Petroleum Hydrocarbons (TEPH)

Laboratory Control Spike (LCS/LCSD)		Soil		QC Batch # 1999/06/28-02.10	
LCS:	1999/06/28-02.10-002	Extracted:	06/28/1999 14:29	Analyzed:	06/28/1999 18:45
LCSD:	1999/06/28-02.10-003	Extracted:	06/28/1999 14:29	Analyzed:	06/28/1999 19:31

Compound	Conc. [ mg/Kg ]		Exp.Conc. [ mg/Kg ]		Recovery [%] RPD			Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	RPD [%]	Recovery	RPD	LCS	LCSD
Diesel	21900	24300	25000	25000	87.6	97.2	10.4	60-130	25		
<b>Surrogate(s)</b>											
o-Terphenyl	20.2	22.2	20.0	20.0	101.0	111.0		60-130			

Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M

Attn.: Michael McGuire

Prep Method: 3550/8015M

**Batch QC Report**

## Total Extractable Petroleum Hydrocarbons (TEPH)

<b>Duplicate Sample</b>	<b>Product</b>	<b>QC Batch # 1999/06/28-02.10</b>
Sample ID: TR-6		Lab Sample ID: 1999-06-0334-001
DUP: 1999/06/28-02.10-004	Extracted: 06/28/1999 14:29	Analyze 06/30/1999 09:21 Dilution: 50.0

Compound	DUP Result	Sample Result	RL	Unit	RPD	RPD Limit	Flags
Diesel	172914.395	17500	10	mg/Kg	163.3		
Motor Oil	ND	ND	500	mg/Kg	0.0		
<b>Surrogate(s)</b> o-Terphenyl	0.0		60-130	%			

To: Treadwell & Rollo-Orinda  
Attn: Michael McGuire

Test Method: 8015M  
Prep Method: 3550/8015M

## Legend & Notes

### Total Extractable Petroleum Hydrocarbons (TEPH)

#### QC Sample Notes

Method Blank ( Lab# 1999/06/28-02.10-001 )

Concentration of analyte in sample is greater than ten times our reporting limit.

#### Analysis Flags

sdo

Surrogate(s) diluted out

#### Analyte Flags

ed

Hydrocarbon reported is in the early Diesel range, and does not match our Diesel standard

Volatile Organics by GC/MS - EPA8260A (Methanol Extraction)

Treadwell & Rollo-Orinda

✉ 2 Theater Square, Suite 216  
Orinda, CA 94563

Attn: Michael McGuire

Phone: (925) 253-2683 Fax: (925) 253-2680

Project #: 2543.01

Project: 2855 MANDELA PARKWAY

### Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
TR-5	Product	06/24/1999	1

# CHROMALAB, INC.

Submission #: 1999-06-0358

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda  
Attn.: Michael McGuireTest Method: 8260A  
Prep Method: 5030

Volatile Organics by GC/MS - EPA8260A (Methanol Extraction)

Sample ID: TR-5	Lab Sample ID: 1999-06-0358-001
Project: 2543.01 2855 MANDELA PARKWAY	Received: 06/24/1999 19:44
Sampled: 06/24/1999	Extracted: 07/07/1999 14:15
Matrix: Product	QC-Batch: 1999/07/07-03.07
Sample/Analysis Flag: o ( See Legend & Note section )	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Benzene	6800000	5000000	ug/Kg	4000.00	07/07/1999 14:15	
Ethylbenzene	11000000	5000000	ug/Kg	4000.00	07/07/1999 14:15	
Toluene	34000000	5000000	ug/Kg	4000.00	07/07/1999 14:15	
Total xylenes	51000000	10000000	ug/Kg	4000.00	07/07/1999 14:15	
MTBE	ND	50000000	ug/Kg	4000.00	07/07/1999 14:15	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	99.6	74-121	%	1.00	07/07/1999 14:15	
1,2-Dichloroethane-d4	97.8	70-121	%	1.00	07/07/1999 14:15	
Toluene-d8	110.3	81-117	%	1.00	07/07/1999 14:15	

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda  
Attn.: Michael McGuireTest Method: 8260A  
Prep Method: 5030**Batch QC Report**  
Volatile Organics by GC/MS - EPA8260A (Methanol Extraction)

Method Blank	Oil	QC Batch # 1999/07/07-03.07
MB: 1999/07/07-03.07-001		Date Extracted: 07/07/1999 16:13

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Benzene	ND	1250	ug/Kg	07/07/1999 16:13	
Ethylbenzene	ND	1250	ug/Kg	07/07/1999 16:13	
Toluene	ND	1250	ug/Kg	07/07/1999 16:13	
Total xylenes	ND	2500	ug/Kg	07/07/1999 16:13	
<b>Surrogate(s)</b>					
4-Bromofluorobenzene	108.0	74-121	%	07/07/1999 16:13	
1,2-Dichloroethane-d4	112.6	70-121	%	07/07/1999 16:13	
Toluene-d8	113.8	81-117	%	07/07/1999 16:13	



# CHROMALAE INC.

Submission #: 1999-06-0358

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda  
 Attn: Michael McGuire

Test Method: 8260A  
 Prep Method: 5030

## Batch QC Report

Volatile Organics by GC/MS - EPA8260A (Methanol Extraction)

Laboratory Control Spike (LCS/LCSD)		Oil		QC Batch # 1999/07/07-03.07	
LCS:	1999/07/07-03.07-002	Extracted:	07/07/1999 14:55	Analyzed:	07/07/1999 14:55
LCSD:	1999/07/07-03.07-003	Extracted:	07/07/1999 15:34	Analyzed:	07/07/1999 15:34

Compound	Conc. [ug/Kg]		Exp. Conc. [ug/Kg]		Recovery [%]			RPD		Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	RPD [%]	Recovery	RPD	LCS	LCSD		
Benzene	12000	13400	12500	12500	96.0	107.2	11.0	69-129	20				
Toluene	12100	13800	12500	12500	96.8	110.4	13.1	70-130	20				
<b>Surrogate(s)</b>													
4-Bromofluorobenzene	547	523	500	500	109.4	104.6		74-121					
1,2-Dichloroethane-d4	510	518	500	500	102.0	103.6		70-121					
Toluene-d8	542	535	500	500	108.4	107.0		81-117					

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
 Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

---

To: Treadwell & Rollo-Orinda

Test Method: 8260A

Attn: Michael McGuire

Prep Method: 5030

## Legend & Notes

Volatile Organics by GC/MS - EPA8260A (Methanol Extraction)

### Analysis Flags

0

Reporting limits were raised due to high level of analyte present in the sample.

---

1220 Quarry Lane \* Pleasanton, CA 94566-4756

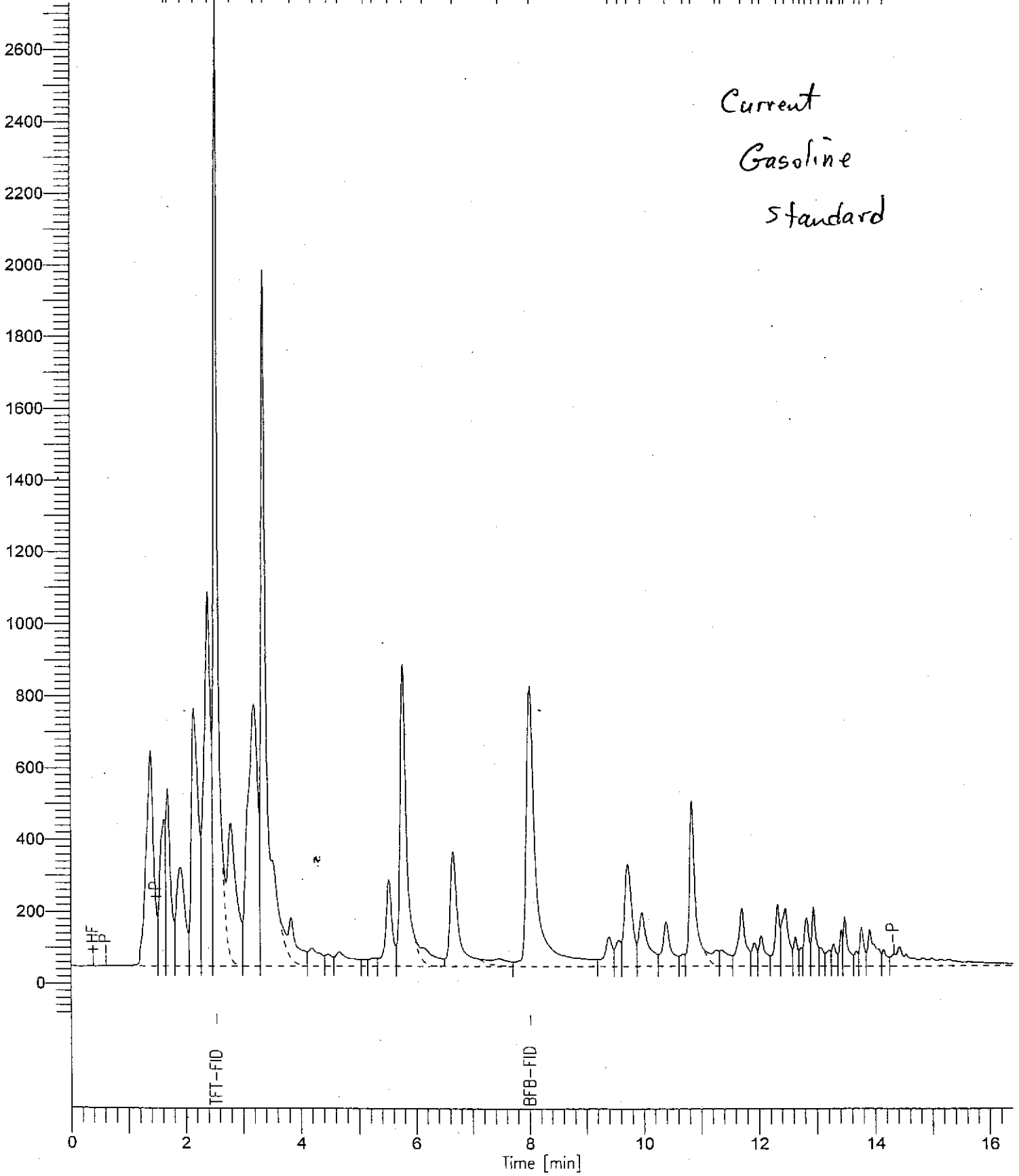
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

# Chromatogram

File Name : CG-CCV (Gas) -> MS1623  
Sample Name : F:\199909\DATA\1G092314.raw  
Method : 1GZ80999  
Start Time : 0.00 min  
Scale Factor : 1.0

Sample # :  
Date : 9/23/99 09:11  
Time of Injection: 9/23/99 08:54  
Low Point : -85.41 mV  
High Point : 2730.05 mV  
End Time : 16.40 min  
Plot Offset: -85 mV  
Plot Scale: 2815.5 mV

- 1.64
- 1.92
- 2.16
- 2.41
- 2.80
- 3.21
- 3.84
- 4.20
- 4.47
- 4.66
- 5.10
- 5.53
- 5.78
- 6.14
- 6.66
- 7.47
- 8.02
- 9.40
- 9.73
- 9.97
- 10.40
- 10.70
- 11.27
- 11.73
- 12.33
- 12.84
- 13.07
- 13.28
- 13.68
- 13.91
- 14.15



# Chromatogram

Sample Name : 1999-06-0358/TR5  
FileName : M:\9907\1G70809.raw  
Method : 1B062399  
Start Time : 0.00 min  
Scale Factor : 1.0

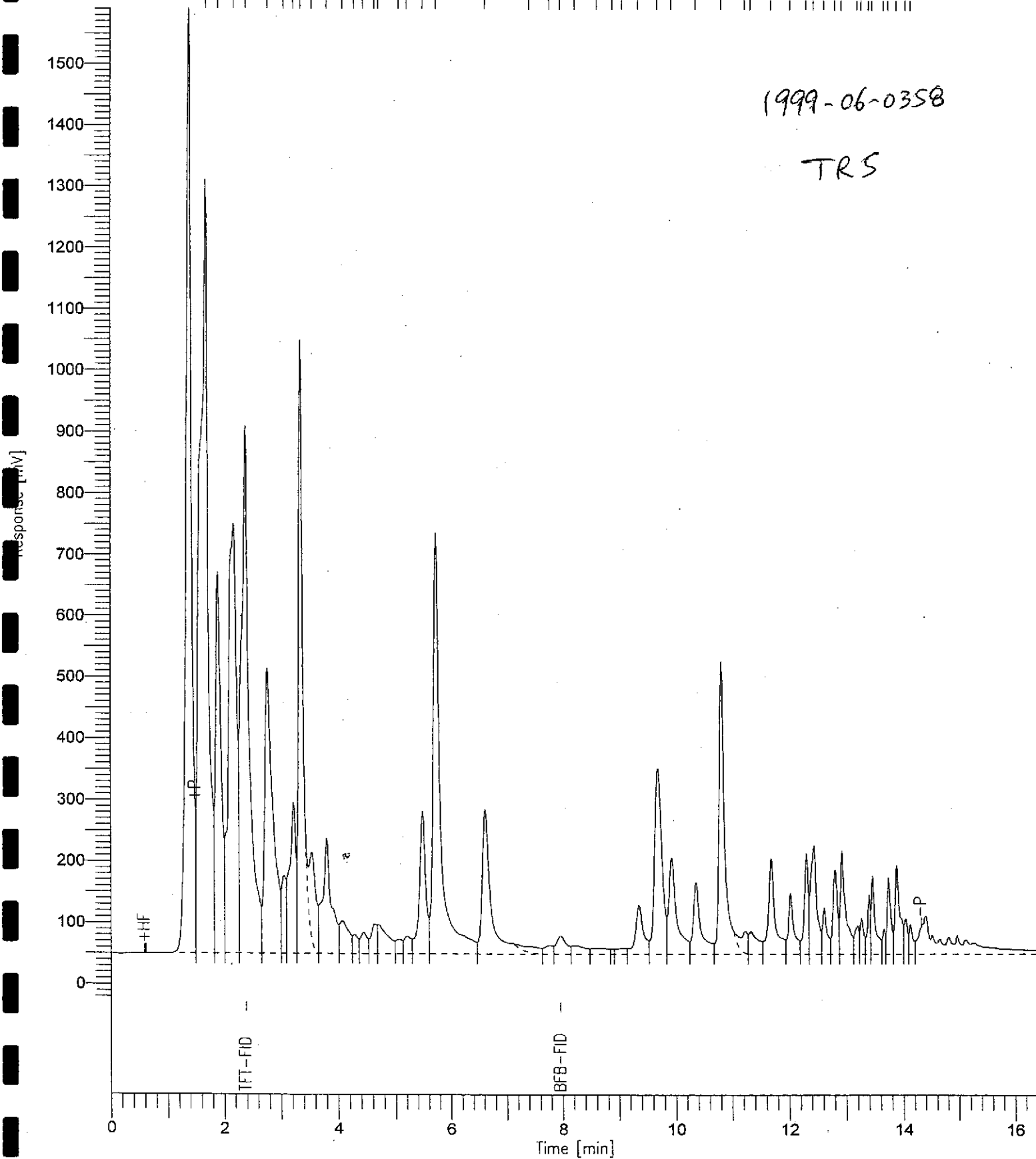
End Time : 16.40 min  
Plot Offset : -28 mV

Sample #: 001  
Date : 7/8/99 11:44  
Time of Injection: 7/8/99 11:27  
Low Point : -28.34 mV  
High Point : 1590.52 mV  
Plot Scale: 1618.9 mV

- 1.69
- 2.38
- 2.39
- 2.77
- 3.06
- 3.23
- 3.55
- 3.81
- 4.08
- 4.29
- 4.64
- 5.07
- 5.49
- 5.74
- 6.62
- 7.42
- 7.78
- 8.23
- 8.62
- 8.89
- 9.36
- 9.69
- 9.94
- 10.37
- 10.82
- 11.24
- 11.69
- 12.03
- 12.31
- 12.82
- 13.20
- 13.41
- 13.86
- 14.13

1999-06-0358

TRS



# GeoAnalytical Laboratories, inc.

1405 Kansas Avenue Modesto, CA 95351

Phone (209) 572-0900

Fax (209) 572-0916

## CERTIFICATE OF ANALYSIS

Report # K176-16

Date: 7/07/99

ChromaLab  
1220 Quarry Lane  
Pleasanton CA 94566

Project: 2543.01/2855 Mandela Parkway

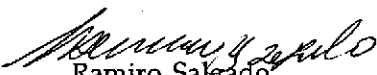
Date Rec'd: 6/25/99  
Date Started: 6/25/99  
Date Completed: 7/04/99

PO#

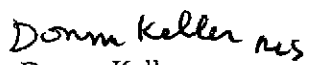
Date Sampled: 6/24/99  
Time:  
Sampler:

Sample ID: TR-5  
Lab ID: K22501

Method	MDL	Analyte	Results	Units
LUFT	0.1	Tetraethyl Lead	ND	mg/L

  
Ramiro Salgado  
Chemist

Certification # 1157

  
Donna Keller  
Laboratory Director

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351

Phone (209) 572-0900

Fax (209) 572-0916

Report# K176-16


## QC REPORT

ChromaLab  
1220 Quarry Lane  
Pleasanton

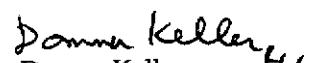
CA 94566

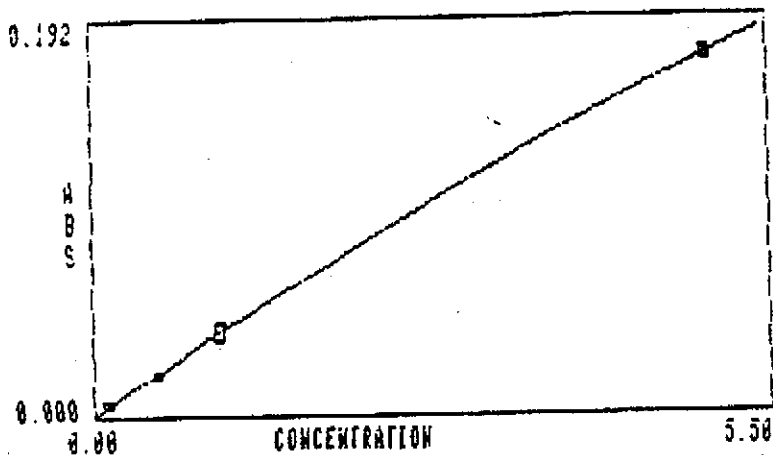
Dates Analyzed 7/4/99

Analyte	Batch #	Method	MS % Recovery	MSD % Recovery	RPD	Blank
Tetraethyl Lead	I02096	LUFT	105.0	102.5	2.4	ND

  
Ramiro Salgado  
Chemist

Certification # 1157

  
Donna Keller  
Laboratory Director



SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
1	0.12	20.3	0.005	0.006	0.004	0.005
1	-0.03	87.8	-0.001	-0.001	-0.003	-0.000
2	0.82	5.1	0.032	0.031	0.034	0.032
5	-0.06	23.8	-0.003	-0.003	-0.002	-0.003
4	-0.09	32.7	-0.004	-0.005	-0.002	-0.004
5	0.39	2.4	0.015	0.015	0.015	0.015
6	0.42	8.3	0.016	0.015	0.017	0.015
7	0.47	7.2	0.018	0.017	0.019	0.017
8	-0.03	99.9	-0.001	-0.003	0.000	-0.001
9	-0.02	99.9	-0.001	-0.001	0.001	-0.002
10	0.42	11.9	0.016	0.018	0.014	0.017
11	0.41	32.9	0.016	0.018	0.010	0.020
12	0.41	24.7	0.016	0.016	0.020	0.012
13	0.85	18.2	0.034	0.038	0.027	0.036

# Varian SpectraA 10/20 System Report

OPERATOR        6  
 DATE            07.04.99  
 BATCH NO.      01  
 PROGRAM 15     Pb

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP POSITION	3
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	1.0
WAVELENGTH (nm)	217.0
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	ON
OXIDANT FLOW	3.5
ACETYLENE FLOW	1.5

SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
BLANK	0.00		0.003	0.005	0.003	0.002
STANDARD 1	0.10	12.0	0.004	0.004	0.005	0.004
STANDARD 2	0.50	3.8	0.019	0.018	0.020	0.018
STANDARD 3	1.00	6.6	0.041	0.038	0.041	0.043
STANDARD 4	5.00	0.6	0.175	0.174	0.175	0.176



LOFT

Date 07/04/99

Ref. Std. Code: 120156

Analyst PLS

Standards / Code: 120115

Parameter ORGANIC LEAD  
 Wavelength 217.0 nm  
 Slit Width 1.0 nm  
 Light Current 5 mA  
 Background Correction ON  
 Mode FLAME

0.100	0.204
0.500	0.219
1.00	0.041
5.00	0.175

NO.	Sample ID	Destn.	mc/L	% Rec	NO.	Sample ID	Destn.	mc/L	% Rec
1	Blank		0.000		19				
2	0.80 REF. Std.	LOFT extraction	0.82	102%	20				
3	BLANK	WATER	0.000		21				
4	K335010	FAKES	0.10		22				
5	K33501MS		0.39	97.5%	23				
6	K33501MS		0.42	105%	24				
7	Standard		0.47	117%	25				
8	K33501800		0.000		26				
9	K33500		0.10		27				
10	K33500MS		0.42	105%	28				
11	K33500MS		0.41	102%	29				
12	Standard		0.41	102%	30				
13	0.80 REF		0.85	106%	31				
14					32				
15					33				
16					34				
17					35				
18					36				

add = 7.4%

add = 2.9%

9, 10, 11 circled

DIGESTION CODES

- 1 - D50MW
- 2 - D20HP
- 3 - Mercury/Hyd.
- 4 - As, Se/Hyd.
- 5 - STLC
- 6 - EPTGX
- 7 - D50HP
- 8 - D30
- 9 - D05

Reviewed by: \_\_\_\_\_

IS = Instrument Spike on digested sample  
 DI = Instrument Spike on undigested sample

1/1



# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue  
Modesto, CA 95351

Phone (209) 572-0900  
FAX (209) 572-0916

## FAX TRANSMITTAL SHEET

Date 10/22/99

Number of pages transmitted (inc. this page): 6

To: Gary Cook

From: \_\_\_\_\_

Concerning: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signed: \_\_\_\_\_

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

## CERTIFICATE OF ANALYSIS

Date: 7/07/99

Report # K176-16

ChromaLab  
1220 Quarry Lane  
Pleasanton CA 94566

Project: 2543.01/2855 Mandela Parkway

PO#

Date Rec'd: 6/25/99  
Date Started: 6/25/99  
Date Completed: 7/04/99

Date Sampled: 6/24/99  
Time:  
Sampler:

Sample ID: TR-5  
Lab ID: K22501

Method	MDL	Analyte	Results	Units
LUFT	0.1	Tetraethyl Lead	ND	mg/L

*Ramiro Salgado*  
Ramiro Salgado  
Chemist

Certification # 1157

*Donna Keller nes*  
Donna Keller  
Laboratory Director



Herguth Laboratories, Inc.

Gary Cook  
Chromalab, Inc.  
1220 Quarry Lane #C  
Pleasanton, CA 94566

10/07/1999  
15:05:01  
CHROML

Laboratory : 712350A                      Date: 06/24/1999  
Description: TR-5  
P.O. Number: 99060358

Test Performed	Proc-Rev	Result
Sp. Gravity @ 20 C, ASTM D1298-85(90)...	1298-1.2	0.7456

Revised report supercedes Lab No. 712350. Note change in reporting unit of Dynamic Viscosity. Dynamic Viscosity of sample at 20 deg. C is 0.487 mPa-s.

The unit of dynamic viscosity is millipascal-second. 1mPa-s = 1cP (centipoise)

Respectfully Submitted,  
Herguth Laboratories, Inc.

by William R. Herguth

BH:dk  
cc: Herguth File Copy



CHROMALAB

Change request received by: \_\_\_\_\_

Date Requested:    /    /   

SAMPLE STATUS CHANGE FORM				Requested by (Client's name)
Submission#	Client Samp.ID	Old Status Description	Description of Changes	
0906-0358	TR-5 <u>product</u>	-	8260 BTEX+MTBE	Tread & Rullo - Oicula -
334	TR-6	→	8260 BTEX+MTBE	"

Changes were done in lins by(login): \_\_\_\_\_ On:    /    /   

CC:  Lab.Director  Dept.manager  Analyst  Proj.Manager



**Treadwell & Rollo-Orinda**  
2 Theater Square, Suite 216  
Orinda, CA 94563

Attn.: Carrie Austin

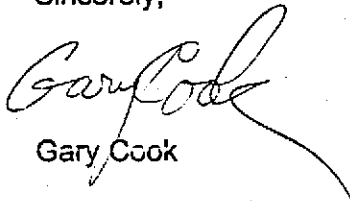
Project: 2543.01  
2855 MANDELA PARKWAY

Carrie

Attached is our report for your samples received on Wednesday June 23, 1999.  
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after July 23, 1999 unless you have requested otherwise. We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

Sincerely,



Gary Cook



Volatile Organics by GC/MS - EPA8260A (Methanol Extraction)

**Treadwell & Rollo-Orinda**

✉ 2 Theater Square, Suite 216  
Orinda, CA 94563

Attn: Carrie Austin

Phone: (925) 253-2681 Fax: (925) 253-2680

Project #: 2543.01

Project: 2855 MANDELA PARKWAY

**Samples Reported**

Sample ID	Matrix	Date Sampled	Lab #
TR-6	Product	06/23/1999	1

To: Treadwell &amp; Rollo-Orinda

Test Method: 8260A

Attn.: Carrie Austin

Prep Method: 5030

Volatile Organics by GC/MS - EPA8260A (Methanol Extraction)

Sample ID: TR-6	Lab Sample ID: 1999-06-0334-001
Project: 2543.01 2855 MANDELA PARKWAY	Received: 06/23/1999 19:42
Sampled: 06/23/1999	Extracted: 07/08/1999 10:05
Matrix: Product	QC-Batch: 1999/07/07-03.07
Sample/Analysis Flag: o ( See Legend & Note section )	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Benzene	7500000	500000	ug/Kg	400.00	07/08/1999 10:05	
Ethylbenzene	15000000	500000	ug/Kg	400.00	07/08/1999 10:05	
Toluene	40000000	500000	ug/Kg	400.00	07/08/1999 10:05	
Total xylenes	56000000	1000000	ug/Kg	400.00	07/08/1999 10:05	
MTBE	ND	5000000	ug/Kg	400.00	07/08/1999 10:05	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	100.2	74-121	%	1.00	07/08/1999 10:05	
1,2-Dichloroethane-d4	96.2	70-121	%	1.00	07/08/1999 10:05	
Toluene-d8	106.3	81-117	%	1.00	07/08/1999 10:05	

To: Treadwell & Rollo-Orinda  
Attn: Carrie Austin

Test Method: 8260A  
Prep Method: 5030

Batch QC Report  
Volatile Organics by GC/MS - EPA8260A (Methanol Extraction)

Method Blank	Oil	QC Batch # 1999/07/07-03.07
MB: 1999/07/07-03.07-001		Date Extracted: 07/07/1999 16:13

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Benzene	ND	1250	ug/Kg	07/07/1999 16:13	
Ethylbenzene	ND	1250	ug/Kg	07/07/1999 16:13	
Toluene	ND	1250	ug/Kg	07/07/1999 16:13	
Total xylenes	ND	2500	ug/Kg	07/07/1999 16:13	
<b>Surrogate(s)</b>					
4-Bromofluorobenzene	108.0	74-121	%	07/07/1999 16:13	
1,2-Dichloroethane-d4	112.6	70-121	%	07/07/1999 16:13	
Toluene-d8	113.8	81-117	%	07/07/1999 16:13	

Environmental Services (SDB)

Gas/BTEX (Methanol Extraction)

**Treadwell & Rollo-Orinda**2 Theater Square, Suite 216  
Orinda, CA 94563

Attn: Carrie Austin

Phone: (925) 253-2681 Fax: (925) 253-4985

Project #: 2543.01

Project: 2855 MANDELA PARKWAY

**Samples Reported**

Sample ID	Matrix	Date Sampled	Lab #
TR-6	Product	06/23/1999	1

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

Test Method: 8020  
8015M

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX (Methanol Extraction)

Sample ID: TR-6	Lab Sample ID: 1999-06-0334-001
Project: 2543.01 2855 MANDELA PARKWAY	Received: 06/23/1999 19:42
Sampled: 06/23/1999	Extracted: 06/28/1999 11:11
Matrix: Product	QC-Batch: 1999/06/28-05.02
Sample/Analysis Flag: o ( See Legend & Note section )	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	1,000,000	38000	mg/Kg	3846.15	06/29/1999 11:11	
<i>Surrogate(s)</i> 4-Bromofluorobenzene-FID	109.0	58-124	%	.00	06/29/1999 11:11	

Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M

8020

Attn.: Carrie Austin

Prep Method: 5030

**Batch QC Report**  
Gas/BTEX (Methanol Extraction)

<b>Method Blank</b>	<b>Soil</b>	<b>QC Batch # 1999/06/28-05.02</b>
MB: 1999/06/28-05.02-001		Date Extracted: 06/28/1999 08:53

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	10	mg/Kg	06/28/1999 08:53	
<i>Surrogate(s)</i> 4-Bromofluorobenzene-FID	111.0	58-124	%	06/28/1999 08:53	

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn: Carrie Austin

Prep Method: 5030

## Batch QC Report

Gas/BTEX (Methanol Extraction)

Laboratory Control Spike (LCS/LCSD)	Soil	QC Batch # 1999/06/28-05.02
LCS: 1999/06/28-05.02-002	Extracted: 06/28/1999 09:21	Analyzed: 06/28/1999 09:21
LCSD: 1999/06/28-05.02-003	Extracted: 06/28/1999 10:17	Analyzed: 06/28/1999 10:17

Compound	Conc. [ mg/Kg ]		Exp.Conc. [ mg/Kg ]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	0.567	0.623	0.625	0.625	90.7	99.7	9.5	75-125	35		
<b>Surrogate(s)</b>											
4-Bromofluorobenzene-Fl	510	525	500	500	102.0	105.0		58-124			

To: Treadwell & Rollo-Orinda

Test Method: 8020  
8015M

Attn: Carrie Austin

Prep Method: 5030

### Legend & Notes

Gas/BTEX (Methanol Extraction)

### Analysis Flags

o

Reporting limits were raised due to high level of analyte present in the sample.



## Total Extractable Petroleum Hydrocarbons (TEPH)

<b>Treadwell &amp; Rollo-Orinda</b>	✉ 2 Theater Square, Suite 216 Orinda, CA 94563
Attn: Carrie Austin	Phone: (925) 253-2681 Fax: (925) 253-4985
Project #: 2543.01	Project: 2855 MANDELA PARKWAY

### Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
TR-6	Product	06/23/1999	1

Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M

Attn.: Carrie Austin

Prep Method: 3550/8015M

## Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID: TR-6	Lab Sample ID: 1999-06-0334-001
Project: 2543.01 2855 MANDELA PARKWAY	Received: 06/23/1999 19:42
Sampled: 06/23/1999	Extracted: 06/28/1999 09:00
Matrix: Product	QC-Batch: 1999/06/28-02.10
Sample/Analysis Flag: sdo ( See Legend & Note section )	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	170000	500	mg/Kg	50.00	06/30/1999 08:36	ed
Motor Oil	ND	25000	mg/Kg	50.00	06/30/1999 08:36	
<b>Surrogate(s)</b> o-Terphenyl	NA	60-130	mg/Kg	50.00	06/30/1999 08:36	

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M

Attn.: Carrie Austin

Prep Method: 3550/8015M

**Batch QC Report**

## Total Extractable Petroleum Hydrocarbons (TEPH)

Method Blank

Soil

QC Batch # 1999/06/28-02.10

MB: 1999/06/28-02.10-001

Date Extracted: 06/28/1999 14:29

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Diesel	1510	1	mg/Kg	06/29/1999 09:49	
Motor Oil	ND	50	mg/Kg	06/29/1999 09:49	
<b>Surrogate(s)</b> o-Terphenyl	87.5	60-130	%	06/29/1999 09:49	

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8015M

Attn: Carrie Austin

Prep Method: 3550/8015M

## Batch QC Report

### Total Extractable Petroleum Hydrocarbons (TEPH)

Laboratory Control Spike (LCS/LCSD)	Soil	QC Batch # 1999/06/28-02.10
LCS: 1999/06/28-02.10-002	Extracted: 06/28/1999 14:29	Analyzed: 06/28/1999 18:45
LCSD: 1999/06/28-02.10-003	Extracted: 06/28/1999 14:29	Analyzed: 06/28/1999 19:31

Compound	Conc. [ mg/Kg ]		Exp. Conc. [ mg/Kg ]		Recovery [%] RPD			Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	RPD [%]	Recovery	RPD	LCS	LCSD
Diesel	21900	24300	25000	25000	87.6	97.2	10.4	60-130	25		
<b>Surrogate(s)</b>											
o-Terphenyl	20.2	22.2	20.0	20.0	101.0	111.0		60-130			

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M

Attn: Michael McGuire

Prep Method: 3550/8015M

**Batch QC Report****Total Extractable Petroleum Hydrocarbons (TEPH)****Duplicate Sample****Product****QC Batch # 1999/06/28-02.10**

Sample ID: TR-6

Lab Sample ID: 1999-06-0334-001

DUP: 1999/06/28-02.10-004 Extracted:06/28/1999 14:29 Analyzed 06/30/1999 09:21 Dilution: 50.0

Compound	DUP Result	Sample Result	RL	Unit	RPD	RPD Limit	Flags
Diesel	173000	175000	10	mg/Kg	1.1	25	
Motor Oil	ND	ND	500	mg/Kg	0.0	25	
<b>Surrogate(s)</b> o-Terphenyl	0.0		60-130	%			

Environmental Services (SDB)

---

To: Treadwell & Rollo-Orinda

Test Method: 8015M

Attn: Carrie Austin

Prep Method: 3550/8015M

## Legend & Notes

Total Extractable Petroleum Hydrocarbons (TEPH)

### QC Sample Notes

Method Blank ( Lab# 1999/06/28-02.10-001 )

Concentration of analyte in sample is greater than ten times our reporting limit.

### Analysis Flags

sdo

Surrogate(s) diluted out

### Analyte Flags

ed

Hydrocarbon reported is in the early Diesel range, and does not match our Diesel standard

HERE ARE THE CHROMATOGRAMS YOU  
REQUESTED

ATTENTION: Carrie Austin

AT: Treadwell & Rollo

SUBMISSION#: 1999-06-0334

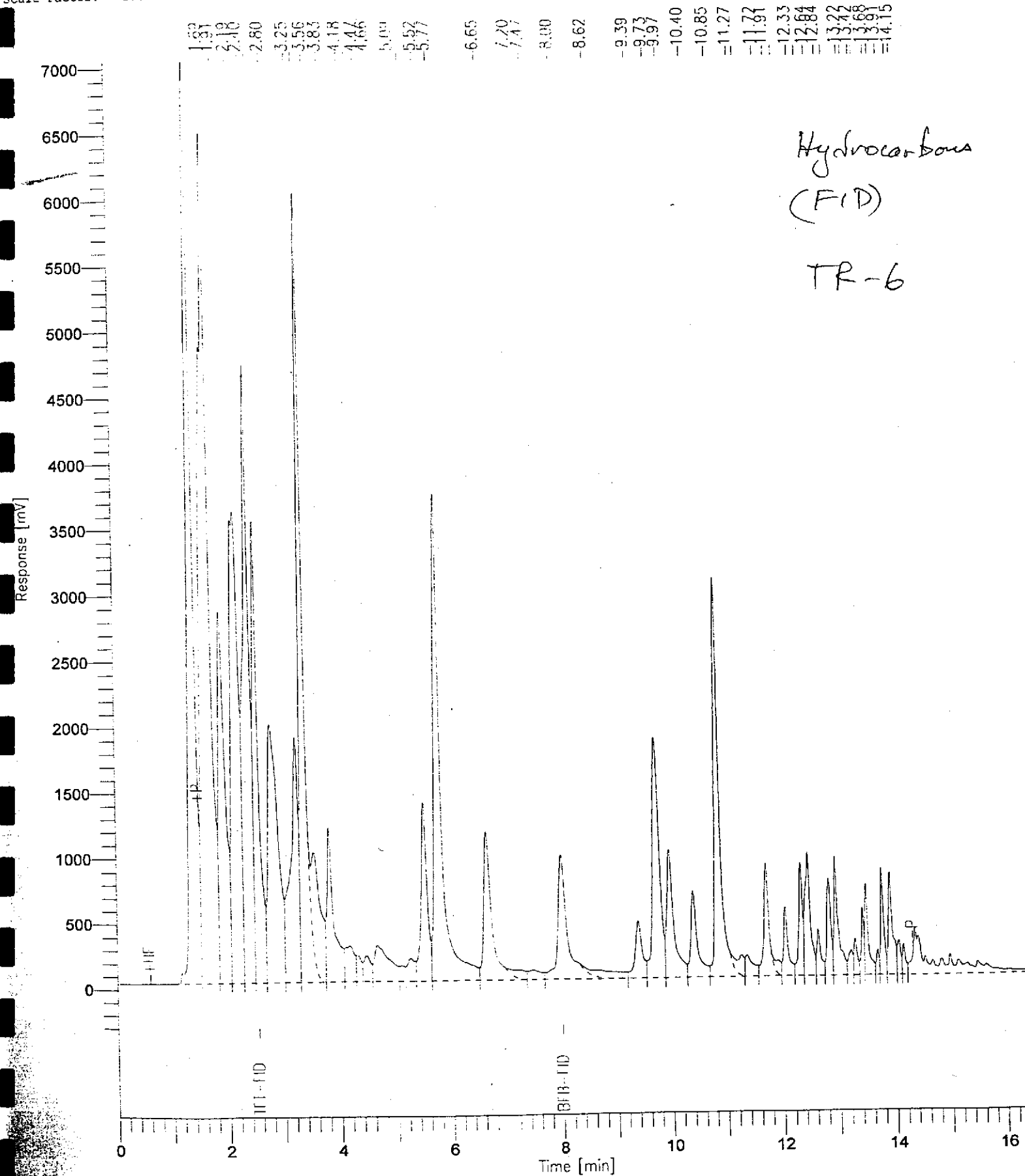
# of chromatograms: 3

# Chromatogram

Sample Name : 1999-06-0334/TR-6 EXT  
File Name : M:\9906\1G62911.raw  
Method : 1B062399  
Start Time : 0.00 min  
Scale Factor : 1.0

End Time : 16.40 min  
Plot Offset : -300 mV

Sample #: 001  
Date : 6/29/99 11:29  
Time of Injection: 6/29/99 11:11  
Low Point : -300.49 mV  
High Point : 7050.91 mV  
Plot Scale: 7351.4 mV





# Chromatogram

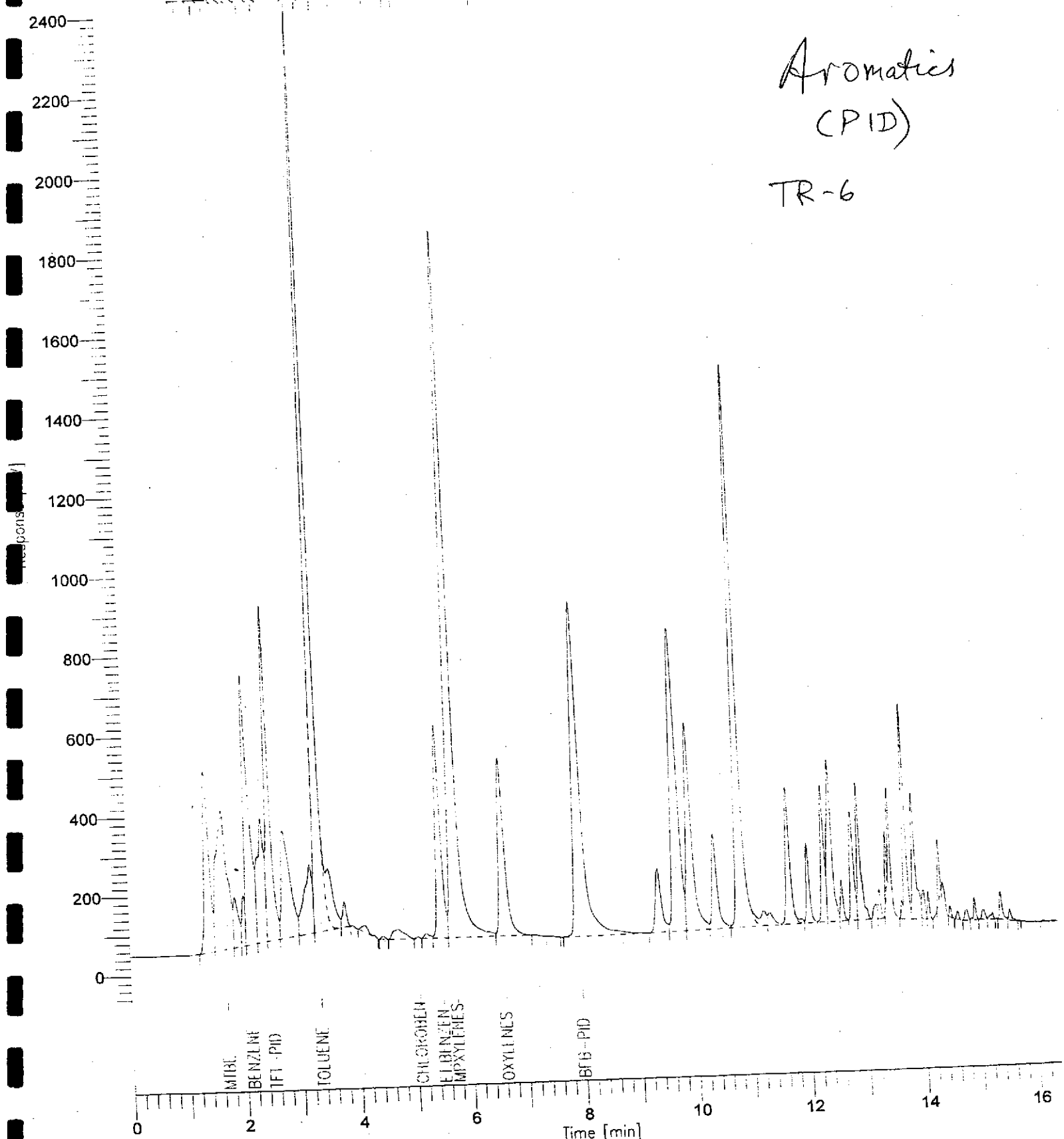
Name : 1999-06-0334/TR-6 EXT  
Name : M:\9906\1862911.raw  
Id : 18062399  
Start Time : 0.00 min  
Scale Factor : 1.0

End Time : 16.40 min  
Plot Offset : -68 mV

Sample #: 001  
Date : 6/29/99 11:29  
Time of Injection: 6/29/99 11:11  
Low Point : -67.56 mV  
Plot Scale: 2470.5 mV  
High Point : 2402.90 mV

- 1.41
- 1.70
- 1.89
- 2.13
- 2.59
- 2.78
- 3.25
- 3.55
- 3.82
- 4.14
- 4.46
- 4.73
- 5.08
- 5.50
- 5.76
- 6.63
- 7.45
- 7.99
- 9.38
- 9.71
- 9.96
- 10.38
- 10.83
- 11.25
- 11.79
- 12.32
- 12.82
- 13.21
- 13.40
- 13.73
- 14.04
- 14.32
- 14.51
- 14.79
- 15.09
- 15.23
- 15.56
- 16.15

Aromatics  
(PID)  
TR-6





# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

## CERTIFICATE OF ANALYSIS

Report # K176-15

Date: 7/07/99

ChromaLab  
1220 Quarry Lane  
Pleasanton CA 94566

Project: 2855 Mandela Parkway


PO#

Date Rec'd: 6/25/99  
Date Started: 6/25/99  
Date Completed: 7/04/99


Date Sampled: 6/23/99  
Time: 1818  
Sampler:

Sample ID: TR-6  
Lab ID: K33500

Method	MDL	Analyte	Results	Units
LUFT	0.1	Tetraethyl Lead	ND	mg/L

  
Ramiro Salgado  
Chemist

Certification # 1157

  
Donna Keller  
Laboratory Director

# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report# K176-15

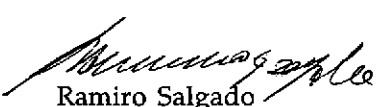
## QC REPORT

ChromaLab  
1220 Quarry Lane  
Pleasanton

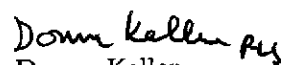
CA 94566

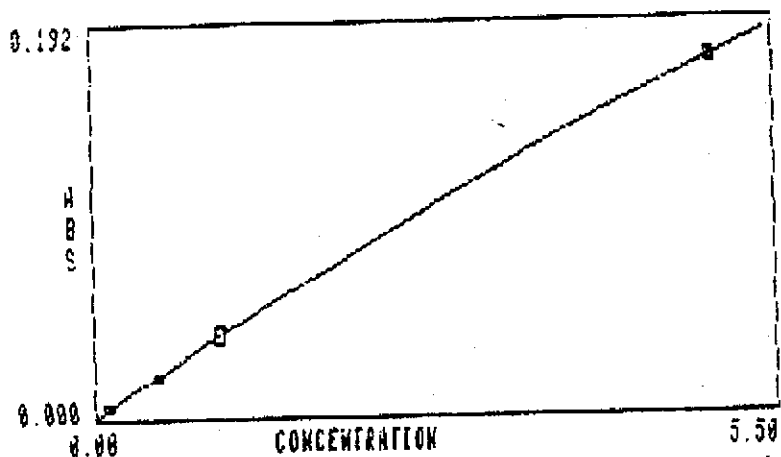
Dates Analyzed 7/4/99

Analyte	Batch #	Method	MS % Recovery	MSD % Recovery	RPD	Blank
Tetraethyl Lead	I02096	LUFT.	105.0	102.5	2.4	ND

  
Ramiro Salgado  
Chemist

Certification # 1157

  
Donna Keller  
Laboratory Director



SAMPLE

	CONC	%RSD	MEAN ABS	READINGS		
	0.12	20.3	0.005	0.006	0.004	0.005
1	-0.03	87.8	-0.001	-0.001	-0.003	-0.000
2	0.82	5.1	0.032	0.031	0.034	0.032
3	-0.06	23.8	-0.003	-0.003	-0.002	-0.003
4	-0.09	32.7	-0.004	-0.005	-0.002	-0.004
5	0.39	2.4	0.015	0.015	0.015	0.015
6	0.42	8.3	0.016	0.015	0.017	0.015
7	0.47	7.2	0.018	0.017	0.019	0.017
8	-0.03	99.9	-0.001	-0.003	0.000	-0.001
9	-0.02	99.9	-0.001	-0.001	0.001	-0.002
10	0.42	11.9	0.016	0.018	0.014	0.017
11	0.41	32.9	0.016	0.018	0.010	0.020
12	0.41	24.7	0.016	0.016	0.020	0.012
13	0.85	18.2	0.034	0.038	0.027	0.036

# Varian SpectraAA 10/20 System Report

OPERATOR 6  
 DATE 07.04.99  
 BATCH NO. 01  
 PROGRAM 15 Pb

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP POSITION	3
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	1.0
WAVELENGTH (nm)	217.0
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	ON
OXIDANT FLOW	3.5
ACETYLENE FLOW	1.5

SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
BLANK	0.00		0.003	0.005	0.003	0.002
STANDARD 1	0.10	12.0	0.004	0.004	0.005	0.004
STANDARD 2	0.50	3.8	0.019	0.018	0.020	0.018
STANDARD 3	1.00	6.6	0.041	0.038	0.041	0.043
STANDARD 4	5.00	0.6	0.175	0.174	0.175	0.176

ATOMIC DESCRIPTION WORKSHEET

LOFT

Date 07/04/99

Ref. Std. Code: 120156

Analyst RLS

Standards / Code: 120115

Parameter ORGANIC LEAD  
 Wavelength 217.0 nm  
 Slit Width 1.0 nm  
 Light Current 5 mA  
 Background Correction ON  
 Mode FLAME

0.100	0.204
0.500	0.219
1.00	0.041
5.00	0.175

NO.	Sample ID	Destn.	mc/L	% Rec	NO.	Sample ID	Destn.	mc/L	% Rec
1	Blank		0.000		19				
2	0.80 REF. Std.	LOFT extraction	0.82	102%	20				
3	EXTRACTION PROBLEMS BLANK	LOFT	0.000		21				
4	K335010	STANDARD	0.10		22				
5	K33501MS		0.39	97.5%	23				
6	K33501MSD		0.42	105%	24				
7	EXTRACTION STANDARD		0.47	117%	25				
8	K33501D20		0.000		25				
9	K33500		0.10		27				
10	K33500MS		0.42	105%	28				
11	K33500MSD		0.41	102%	29				
12	EXTRACTION STANDARD		0.41	102%	30				
13	0.80 REF		0.85	106%	31				
14					32				
15					33				
16					34				
17					35				
18					36				

add = 7.4%

add = 2.9% 100096

Reviewed by: \_\_\_\_\_

IS = Instrument Spike on digested sample  
 DS = Instrument Spike on undigested sample

DIGESTION CODES

- 1 - 3050MX
- 2 - 3020HP
- 3 - Mercury/Hyd.
- 4 - As, Se/Hyd.
- 5 - STLC
- 6 - EPTGX
- 7 - 3050HP
- 8 - 3030
- 9 - 3005



# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue  
Modesto, CA 95351

Phone (209) 572-0900  
FAX (209) 572-0916

## FAX TRANSMITTAL SHEET

Date 10/22/99

Number of pages transmitted (inc. this page): 6

To: Gary Cook

From: \_\_\_\_\_

Concerning: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signed: \_\_\_\_\_



# GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

## CERTIFICATE OF ANALYSIS

Date: 7/07/99

Report # K176-15

ChromaLab  
1220 Quarry Lane  
Pleasanton CA 94566

Project: 2855 Mandela Parkway

PO#

Date Rec'd: 6/25/99  
Date Started: 6/25/99  
Date Completed: 7/04/99

Date Sampled: 6/23/99  
Time: 1818  
Sampler:

Sample ID: TR-6

Lab ID: K33500

Method	MDL	Analyte	Results	Units
LUFT	0.1	Tetraethyl Lead	ND	mg/L

*File w/  
1999-06-334  
-Treadwell & Kollo Orinda*

*Ramiro Salgado*  
Ramiro Salgado  
Chemist

Certification # 1157

*Donna Keller*  
Donna Keller  
Laboratory Director



06-0334



Herguth Laboratories, Inc.

Gary Cook  
Chromalab, Inc.  
1220 Quarry Lane #C  
Pleasanton, CA 94566

07/01/1999  
16:00:34  
CHROML

Laboratory : 712351  
Description: TR-6  
P.O. Number: 99060358

Date: 06/24/1999

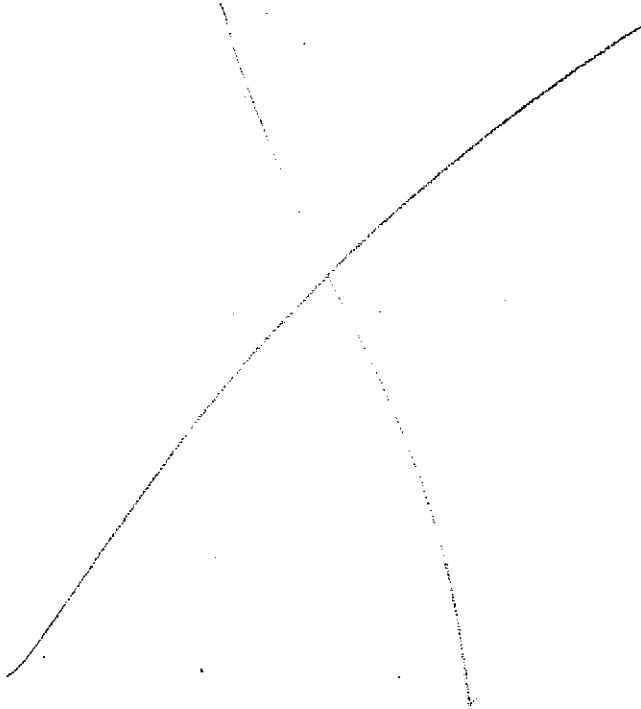
Test Performed	Proc-Rev	Result
Sp. Gravity @ 20 C, ASTM D1298-85(90)...	1298-1.2	0.7313

Dynamic Viscosity of sample at 20 deg. C is 0.478 Pa.

Respectfully Submitted,  
Herguth Laboratories, Inc.

by William R. Herguth

BH:mb





REVISED

Herguth Laboratories, Inc.

Gary Cook  
Chromalab, Inc.  
1220 Quarry Lane #C  
Pleasanton, CA 94566

10/07/1999  
15:05:01  
CHROML

Laboratory : 712351A                      Date: 06/24/1999  
Description: TR-6  
P.O. Number: 99060358

Test Performed	Proc-Rev	Result
Sp. Gravity @ 20 C, ASTM D1298-85(90)...	1298-1.2	0.7313

Revised report supercedes Lab No. 712351. Note change in reporting unit of Dynamic Viscosity. Dynamic Viscosity of sample at 20 deg. C is 0.478 mPa-s.  
The unit of dynamic viscosity is millipascal-second. 1mPa-s = 1cP (centipoise)

Respectfully Submitted,  
Herguth Laboratories, Inc.

by William R. Herguth

BH:dk  
cc: Herguth File Copy



# CHROMALAB, INC.

1220 Quarry Lane • Pleasanton, California 94566-4756  
510/484-1919 • Facsimile 510/484-1096

Reference #: 1106551

## Chain of Custody

Environmental Services (SDB) (DOHS 1094)

DATE 06-25-99 PAGE 1 OF 1

PROJ. IGR Gary Cook  
 COMPANY \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 SAMPLERS (SIGNATURE) \_\_\_\_\_ (PHONE NO.) \_\_\_\_\_  
 (FAX NO.) \_\_\_\_\_

### ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH-(EPA 8015, 8020) <input type="checkbox"/> Gas w/ <input type="checkbox"/> BTEX <input type="checkbox"/> MTBE	PURGEABLE AROMATICS BTEX (EPA 8020)	TPH-Diesel (EPA 8015M)	TEPH (EPA 8015M) <input type="checkbox"/> Diesel <input type="checkbox"/> M.O. <input type="checkbox"/> Other	PURGEABLE HALOCARBONS, (BVOCs) (EPA 8010)	VOLATILE ORGANICS (VOCs) (EPA 8260)	SEMIVOLATILES (EPA 8270)	TOTAL OIL AND GREASE (SM 5520 B + F, E + F)	PESTICIDES (EPA 8080) <input type="checkbox"/> PCB'S (EPA 8080)	PNA's by <input type="checkbox"/> 8270 <input type="checkbox"/> 8310	<input type="checkbox"/> Spec. Cond. <input type="checkbox"/> TDS	LUFT METALS: Cd, Cr, Pb, Ni, Zn	CAM 17 METALS (EPA 6010/7470/7471)	TOTAL LEAD	DW.E.T. (STLC) <input type="checkbox"/> TCLP	<input type="checkbox"/> Hexavalent Chromium <input type="checkbox"/> pH (24 hr hold time for H2O)	Specific Gravity	Dynamic Viscosity (temp 80)	NUMBER OF CONTAINERS
TR-6	6/23/99	1800	Product																		X	X	

**PROJECT INFORMATION**  
 PROJECT NAME: 2855 Miranda Parkway  
 PROJECT NUMBER: 99060334  
 P.O.# \_\_\_\_\_

**SAMPLE RECEIPT**  
 TOTAL NO. OF CONTAINERS: \_\_\_\_\_  
 HEAD SPACE: \_\_\_\_\_  
 TEMPERATURE: \_\_\_\_\_  
 CONFORMS TO RECORD: \_\_\_\_\_

**RELINQUISHED BY**  
 Signature: Maras (TIME) 11:05  
 (PRINTED NAME) CRISELDA (DATE) 06-25-99  
 (COMPANY) next UPS

**RELINQUISHED BY**  
 (SIGNATURE) \_\_\_\_\_ (TIME) \_\_\_\_\_  
 (PRINTED NAME) \_\_\_\_\_ (DATE) \_\_\_\_\_  
 (COMPANY) \_\_\_\_\_

**RELINQUISHED BY**  
 (SIGNATURE) \_\_\_\_\_ (TIME) \_\_\_\_\_  
 (PRINTED NAME) \_\_\_\_\_ (DATE) \_\_\_\_\_  
 (COMPANY) \_\_\_\_\_

**SPECIAL INSTRUCTIONS/COMMENTS:**  
 Report:  Routine  Level 2  Level 3  Level 4  Electronic Report  
\* free product

**RECEIVED BY**  
 Signature: Misty Bawn (TIME) 10:00  
 (PRINTED NAME) Misty Bawn (DATE) 6/28/99  
 (COMPANY) Herguth Labs

**RECEIVED BY**  
 (SIGNATURE) \_\_\_\_\_ (TIME) \_\_\_\_\_  
 (PRINTED NAME) \_\_\_\_\_ (DATE) \_\_\_\_\_  
 (COMPANY) \_\_\_\_\_

**RECEIVED BY (LABORATORY)**  
 (SIGNATURE) \_\_\_\_\_ (TIME) \_\_\_\_\_  
 (PRINTED NAME) \_\_\_\_\_ (DATE) \_\_\_\_\_  
 (LAB) \_\_\_\_\_



**Treadwell & Rollo-Orinda**  
2 Theater Square, Suite 216  
Orinda, CA 94563

Attn.: Carrie Austin

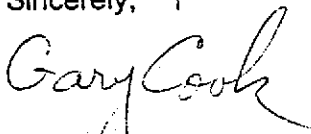
Project: 2543.01  
2855 Mandela Parkway

Carrie

Attached is our report for your samples received on Wednesday June 23, 1999.  
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after July 23, 1999 unless you have requested otherwise. We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

Sincerely,



Gary Cook

Gas/BTEX (Methanol Extraction)

**Treadwell & Rollo-Orinda**

✉ 2 Theater Square, Suite 216  
Orinda, CA 94563

Attn: Carrie Austin

Phone: (925) 253-2681 Fax: (925) 253-4985

Project #: 2543.01

Project: 2855 Mandela Parkway

**Samples Reported**

Sample ID	Matrix	Date Sampled	Lab #
TR-6-6.0	Soil	06/22/1999	1
TR-5-5.5	Soil	06/23/1999	3



Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX (Methanol Extraction)

Sample ID: TR-6-6.0	Lab Sample ID: 1999-06-0333-001
Project: 2543.01 2855 Mandela Parkway	Received: 06/23/1999 19:42
Sampled: 06/22/1999	Extracted: 06/28/1999 16:58
Matrix: Soil	QC-Batch: 1999/06/28-05.02

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	36	10	mg/Kg	1.00	06/30/1999 16:58	
Benzene	2.2	0.62	mg/Kg	1.00	06/30/1999 16:58	
Toluene	2.9	0.62	mg/Kg	1.00	06/30/1999 16:58	
Ethyl benzene	1.3	0.62	mg/Kg	1.00	06/30/1999 16:58	
Xylene(s)	2.6	0.62	mg/Kg	1.00	06/30/1999 16:58	
MTBE	ND	0.62	mg/Kg	1.00	06/30/1999 16:58	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	93.0	58-124	%	.00	06/30/1999 16:58	
4-Bromofluorobenzene-FID	97.0	58-124	%	.00	06/30/1999 16:58	

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX (Methanol Extraction)

Sample ID: TR-5-5.5	Lab Sample ID: 1999-06-0333-003
Project: 2543.01 2855 Mandela Parkway	Received: 06/23/1999 19:42
Sampled: 06/23/1999	Extracted: 06/28/1999 16:58
Matrix: Soil	QC-Batch: 1999/06/28-05.02

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	2100	50	mg/Kg	5.00	06/30/1999 17:29	
Benzene	24	3.1	mg/Kg	5.00	06/30/1999 17:29	
Toluene	92	3.1	mg/Kg	5.00	06/30/1999 17:29	
Ethyl benzene	40	3.1	mg/Kg	5.00	06/30/1999 17:29	
Xylene(s)	170	3.1	mg/Kg	5.00	06/30/1999 17:29	
MTBE	5.1	3.1	mg/Kg	5.00	06/30/1999 17:29	
<i>Surrogate(s)</i>						
4-Bromofluorobenzene	65.0	58-124	%	.00	06/30/1999 17:29	
Trifluorotoluene-FID	1360.0	53-125	%	.00	06/30/1999 17:29	sh

Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M

8020

Attn: Carrie Austin

Prep Method: 5030

**Batch QC Report**  
Gas/BTEX (Methanol Extraction)

Method Blank

Soil

QC Batch # 1999/06/28-05.02

MB: 1999/06/28-05.02-001

Date Extracted: 06/28/1999 08:53

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	10	mg/Kg	06/28/1999 08:53	
Benzene	ND	0.62	mg/Kg	06/28/1999 08:53	
Toluene	ND	0.62	mg/Kg	06/28/1999 08:53	
Ethyl benzene	ND	0.62	mg/Kg	06/28/1999 08:53	
Xylene(s)	ND	0.62	mg/Kg	06/28/1999 08:53	
MTBE	ND	0.62	mg/Kg	06/28/1999 08:53	
<b>Surrogate(s)</b>					
Trifluorotoluene	120.0	53-125	%	06/28/1999 08:53	
4-Bromofluorobenzene-FID	111.0	58-124	%	06/28/1999 08:53	

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8020  
8015M

Attn: Carrie Austin

Prep Method: 5030

## Batch QC Report

Gas/BTEX (Methanol Extraction)

Laboratory Control Spike (LCS/LCSD)		Soil	QC Batch # 1999/06/28-05.02		
LCS:	1999/06/28-05.02-002	Extracted:	06/28/1999 09:21	Analyzed:	06/28/1999 09:21
LCSD:	1999/06/28-05.02-003	Extracted:	06/28/1999 10:17	Analyzed:	06/28/1999 10:17

Compound	Conc. [mg/Kg]		Exp. Conc. [mg/Kg]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	0.567	0.623	0.625	0.625	90.7	99.7	9.5	75-125	35		
Benzene	0.146	0.148	0.125	0.125	116.8	118.4	1.4	77-123	35		
Toluene	0.147	0.150	0.125	0.125	117.6	120.0	2.0	78-122	35		
Ethyl benzene	0.146	0.150	0.125	0.125	116.8	120.0	2.7	70-130	35		
Xylene(s)	0.415	0.427	0.375	0.375	110.7	113.9	2.8	75-125	35		
<b>Surrogate(s)</b>											
Trifluorotoluene	615	580	500	500	123.0	116.0		53-125			
4-Bromofluorobenzene-Fl	510	525	500	500	102.0	105.0		58-124			

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn: Carrie Austin

Prep Method: 5030

### Legend & Notes

Gas/BTEX (Methanol Extraction)

### Analyte Flags

sh

Surrogate recoveries were higher than QC limits due to matrix interference.

Volatile Hydrocarbons by 8015/8020

Treadwell & Rollo-Orinda

✉ 2 Theater Square, Suite 216  
Orinda, CA 94563

Attn: Carrie Austin

Phone: (925) 253-2681 Fax: (925) 253-4985

Project #: 2543.01

Project: 2855 Mandela Parkway

**Samples Reported**

Sample ID	Matrix	Date Sampled	Lab #
TR-4-5.5	Soil	06/22/1999	2

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Volatile Hydrocarbons by 8015/8020

Sample ID: TR-4-5.5	Lab Sample ID: 1999-06-0333-002
Project: 2543.01 2855 Mandela Parkway	Received: 06/23/1999 19:42
Sampled: 06/22/1999	Extracted: 07/02/1999 15:25
Matrix: Soil	QC-Batch: 1999/07/02-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	07/02/1999 15:25	
Benzene	ND	0.0050	mg/Kg	1.00	07/02/1999 15:25	
Toluene	ND	0.0050	mg/Kg	1.00	07/02/1999 15:25	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	07/02/1999 15:25	
Xylene(s)	ND	0.0050	mg/Kg	1.00	07/02/1999 15:25	
MTBE	ND	0.0050	mg/Kg	1.00	07/02/1999 15:25	
<b>Surrogate(s)</b>						
Trifluorotoluene	77.9	53-125	%	.00	07/02/1999 15:25	
Trifluorotoluene-FID	80.5	53-125	%	.00	07/02/1999 15:25	

Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M

8020

Attn.: Carrie Austin

Prep Method: 5030

Batch QC Report  
Volatile Hydrocarbons by 8015/8020

Method Blank

Soil

QC Batch # 1999/07/02-01.01

MB: 1999/07/02-01.01-001

Date Extracted: 07/02/1999 06:22

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	07/02/1999 06:22	
Benzene	ND	0.0050	mg/Kg	07/02/1999 06:22	
Toluene	ND	0.0050	mg/Kg	07/02/1999 06:22	
Ethyl benzene	ND	0.0050	mg/Kg	07/02/1999 06:22	
Xylene(s)	ND	0.0050	mg/Kg	07/02/1999 06:22	
MTBE	ND	0.0050	mg/Kg	07/02/1999 06:22	
<b>Surrogate(s)</b>					
Trifluorotoluene	88.0	53-125	%	07/02/1999 06:22	



Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8020  
8015M

Attn: Carrie Austin

Prep Method: 5030

## Batch QC Report

Volatile Hydrocarbons by 8015/8020

Laboratory Control Spike (LCS/LCSD)	Soil	QC Batch # 1999/07/02-01.01
LCS: 1999/07/02-01.01-002	Extracted: 07/02/1999 06:48	Analyzed: 07/02/1999 06:48
LCSD: 1999/07/02-01.01-003	Extracted: 07/02/1999 07:41	Analyzed: 07/02/1999 07:41

Compound	Conc. [ mg/Kg ]		Exp. Conc. [ mg/Kg ]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	0.560	0.549	0.500	0.500	112.0	109.8	2.0	75-125	35		
Benzene	0.102	0.102	0.1000	0.1000	102.0	102.0	0.0	77-123	35		
Toluene	0.0970	0.0960	0.1000	0.1000	97.0	96.0	1.0	78-122	35		
Ethyl benzene	0.100	0.0980	0.1000	0.1000	100.0	98.0	2.0	70-130	35		
Xylene(s)	0.294	0.289	0.300	0.300	98.0	96.3	1.7	75-125	35		
<b>Surrogate(s)</b>											
Trifluorotoluene	504	498	500	500	100.8	99.6		53-125			



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Charlene Jensen, M.S.  
Bradley T. Benson, B.S.  
Kurt Johnson, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044  
e-mail: fbi@isomedia.com

November 8, 1999

Michael McGuire, Project Manager  
Treadwell & Rollo  
555 Montgomery St., Suite 1300  
San Francisco, CA 94111

Dear Mr. McGuire:

Included are the results from the testing of material submitted on October 8, 1999 from your 2543.01 project. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Kurt Johnson  
Chemist



Enclosures  
c: Bradley Benson, Friedman & Bruya  
TRR1108R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/08/99  
Date Received: 10/08/99  
Project: 2543.01  
Date Extracted: 10/11/99  
Date Analyzed: 10/11/99

**RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE  
FOR ORGANIC LEAD SPECIES AND METHYLCYCLOPENTADIENYL  
MANGANESE TRICARBONYL (MMT)**

**BY GC/ECD**

Results Reported as D (Detect) and ND (Non-detect)

<u>Sample ID</u> Laboratory ID	<u>TR-4</u> 910056-01	<u>Method Blank</u>
Analyte:		
Tetramethyl lead	ND	ND
Trimethylethyl lead	ND	ND
Dimethyldiethyl lead	ND	ND
Methyltriethyl lead	D	ND
Tetraethyl lead	D	ND
MMT	ND	ND
Surrogate (% Recovery)	61	100

ND - Material not detected above approximately 5 µg/g.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/08/99  
Date Received: 10/08/99  
Project: 2543.01  
Date Extracted: 10/20/99  
Date Analyzed: 10/20/99

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE  
FOR ORGANIC LEAD AND MANGANESE BY ICP  
(METHOD 6010)

Results Reported as  $\mu\text{g/g}$  (ppm)

<u>Sample ID</u>	<u>Organic Lead</u>	<u>Organic Manganese</u>
TR-4	360	<1
Method Blank	<1	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/08/99  
 Date Received: 10/08/99  
 Project: 2543.01  
 Date Analyzed: 10/08/99

**RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE  
 FOR PARAFFINS, ISOPARAFFINS, OLEFINS,  
 NAPHTHENES, AND AROMATICS  
 Results Reported as % by Weight**

Laboratory ID 910056-01  
 Client ID TR-4

<u>Compound</u>	<u>Weight Percent</u>
Propane	<0.01
Methanol	<0.01
Isobutane	0.22
Ethanol	<0.01
n-Butane	0.74
t-2-Butene	0.05
c-2-Butene	0.06
Isopropanol	<0.01
3-Methyl-1-butene	0.04
Isopentane	3.16
tert-Butanol	<0.01
1-Pentene	0.15
2-Methyl-1-butene	0.19
n-Propanol	<0.01
n-Pentane	2.21
t-2-Pentene	0.22
c-2-Pentene	0.12
2-Methyl-2-butene	0.44
MTBE	<0.01
sec-Butanol	<0.01
4-Methyl-1-pentene	0.08
Isobutanol	<0.01
2,3-Dimethylbutane	0.66
Cyclopentane	0.34
2-Methylpentane	2.68
DIPE	<0.01
3-Methylpentane	1.87
n-Butanol	<0.01
1-Hexene	<0.01
ETBE	<0.01
n-Hexane	2.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/08/99  
Date Received: 10/08/99  
Project: 2543.01  
Date Analyzed: 10/08/99

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE  
FOR PARAFFINS, ISOPARAFFINS, OLEFINS,  
NAPHTHENES, AND AROMATICS  
Results Reported as % by Weight

Laboratory ID 910056-01  
Client ID TR-4

<u>Compound</u>	<u>Weight Percent</u>
t-2-Hexene	0.12
2-Methyl-1-pentene	0.16
2-Methyl-2-pentene	0.11
c-2-Hexene	0.07
2,2-Dimethylpentane	0.09
2,4-Dimethylpentane	0.30
Methylcyclopentane	2.58
2,2,3-Trimethylbutane	0.03
Benzene	0.52
1-Methylcyclopentene	0.27
TAME	<0.01
3,3-Dimethylpentane	0.13
Cyclohexane	1.04
2-Methylhexane	1.62
2,3-Dimethylpentane	0.67
1,1-Dimethylcyclopentane	0.19
3-Methylhexane	1.76
c-1,3-Dimethylcyclopentane	0.77
3-Ethylpentane	0.16
Isooctane	1.04
t-1,2-Dimethylcyclopentane	0.43
1-Heptene	0.12
n-Heptane	1.88
t-3-Heptene	0.06
c-3-Heptene	0.86
t-2-Heptene	0.03
c-2-Heptene	0.03
2,2-Dimethylhexane	0.08
2,5-Dimethylhexane	0.37
Methylcyclohexane	1.97
2,4-Dimethylhexane	0.43
Ethylcyclopentane	0.40

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/08/99  
 Date Received: 10/08/99  
 Project: 2543.01  
 Date Analyzed: 10/08/99

**RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE  
 FOR PARAFFINS, ISOPARAFFINS, OLEFINS,  
 NAPHTHENES, AND AROMATICS  
 Results Reported as % by Weight**

Laboratory ID 910056-01  
 Client ID TR-4

<u>Compound</u>	<u>Weight Percent</u>
t-1,c-2,4-Trimethylcyclopentane	0.42
t-1,c-2,3-Trimethylcyclopentane	0.41
2,3,4-Trimethylpentane	0.53
Toluene	3.73
2,3-Dimethylhexane	0.83
2-Methylheptane	0.95
3-Methylheptane	1.02
4-Methylheptane	0.38
3-Ethylhexane	0.19
1-Octene	0.01
1,2,3-Trimethylcyclopentane	0.08
t-1,2-Dimethylcyclohexane	0.54
n-Octane	0.96
1-Ethyl-1-methylcyclopentane	0.03
c-2-Octene	0.06
c-1,2-Dimethylcyclohexane	0.20
Isopropylcyclopentane	0.16
2,5-Dimethylheptane	0.25
3,5-Dimethylheptane	0.08
n-Propylcyclopentane	0.08
Ethylbenzene	1.70
2,3-Dimethylheptane	0.19
3,4-Dimethylheptane	0.08
2-Methyloctane	0.29
m-Xylene	1.27
p-Xylene	3.32
3-Methyloctane	0.45
1-Nonene	0.01
3,3-Diethylpentane	<0.01
4-Nonene	0.04
o-Xylene	1.69
n-Nonane	0.46



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/08/99

Date Received: 10/08/99

Project: 2543.01

Date Analyzed: 10/08/99

**RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE  
FOR PARAFFINS, ISOPARAFFINS, OLEFINS,  
NAPHTHENES, AND AROMATICS  
Results Reported as % by Weight**

Laboratory ID 910056-01  
Client ID TR-4

<u>Compound</u>	<u>Weight Percent</u>
Isobutylcyclopentane	0.04
t-2-Nonene+c-2-Nonene	<0.01
Isopropylbenzene	0.23
3,3-Dimethyloctane	0.03
n-Butylcyclopentane	0.03
n-Propylbenzene	0.71
2,3-Dimethyloctane	0.06
1-Methyl-3-ethylbenzene	2.11
1-Methyl-4-ethylbenzene	1.07
2-Methylnonane	0.15
3-Ethyloctane	0.05
3-Methylnonane	0.21
1,3,5-Trimethylbenzene	1.11
1-Methyl-2-ethylbenzene	0.81
1,2,4-Trimethylbenzene	3.36
tert-Butylbenzene	<0.01
n-Decane	0.35
Isobutylbenzene	0.16
Isopropylcyclohexane	<0.01
sec-Butylbenzene	0.09
1-Methyl-3-isopropylbenzene	0.06
sec-Butylcyclohexane	<0.01
1-Methyl-4-isopropylbenzene	0.09
1,2,3-Trimethylbenzene	0.84
Indan	0.42
1-Methyl-3-n-propylbenzene	0.65
1-Methyl-4-n-propylbenzene	0.44
n-Butylbenzene	0.28
1,3-Dimethyl-5-ethylbenzene	0.73
1,2-Diethylbenzene	0.23
1-Methyl-2-n-propylbenzene	0.28
1,4-Dimethyl-2-ethylbenzene	0.42

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/08/99  
Date Received: 10/08/99  
Project: 2543.01  
Date Analyzed: 10/08/99

**RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE  
FOR PARAFFINS, ISOPARAFFINS, OLEFINS,  
NAPHTHENES, AND AROMATICS  
Results Reported as % by Weight**

Laboratory ID 910056-01  
Client ID TR-4

<u>Compound</u>	<u>Weight Percent</u>
1,2-Dimethyl-4-ethylbenzene	0.63
1,3-Dimethyl-2-ethylbenzene	0.02
1,2-Dimethyl-3-ethylbenzene	<0.01
n-Undecane	0.12
1,2,4,5-Tetramethylbenzene	0.13
2-Methylbutylbenzene	0.04
1-tert-Butyl-2-methylbenzene	<0.01
n-Pentylbenzene	<0.01
Methylindan	0.30
1-tert-Butyl-3,5-dimethylbenzene	<0.01
1-tert-Butyl-4-ethylbenzene	<0.01
n-Dodecane	0.04
1,3,5-Triethylbenzene	<0.01
1,2,4-Triethylbenzene	<0.01
Naphthalene	0.50
n-Hexylbenzene	0.02
2-Methylnaphthalene	0.45
n-Tridecane	0.08
1-Methylnaphthalene	0.21
n-Tetradecane	0.02
n-Pentadecane	0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/08/99

Date Received: 10/08/99

Project: 2543.01

Date Analyzed: 10/08/99

**RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE  
FOR PARAFFINS, ISOPARAFFINS, OLEFINS,  
NAPHTHENES, AND AROMATICS  
Results Reported as % by Weight**

Laboratory ID 910056-01  
Client ID TR-4

PIANO SUMMARY

	<u>Weight Percent</u>
Total Identified Compounds	71.95
Oxygenated Compounds	<0.01
Hydrocarbon Compounds	71.95
Unidentified Compounds	28.05
Total	100.00

	Paraffins	Isoparaffins	Aromatics	Naphthenes	Olefins	Total
C3	<0.01				<0.01	<0.01
C4	0.74	0.22			0.11	1.06
C5	2.21	3.16		0.34	1.24	6.95
C6	2.44	5.21	0.52	4.19	0.47	12.83
C7	1.88	4.48	3.73	3.75	1.09	14.93
C8	0.96	5.83	7.98	1.92	0.07	16.76
C9	0.46	1.34	10.65	0.07	0.05	12.57
C10	0.35	0.51	5.00	<0.01		5.85
C11	0.12		0.69			0.82
C12	0.04		0.02			0.06
C13	0.08					0.08
C14	0.02					0.02
C15	0.02					0.02
Total	9.32	20.74	28.60	10.27	3.02	71.95

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/08/99

Date Received: 10/08/99

Project: 2543.01

**QUALITY ASSURANCE RESULTS  
FOR ORGANIC LEAD  
BY METHOD 6010 MODIFIED**

Laboratory Code: 910056-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Organic Lead	ug/g (ppm)	360	300	18	0-20

Laboratory Code: 910056-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	RPD
Organic Lead	ug/g (ppm)	11.70	360	ai	ai	80-120	ai

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD
Organic Lead	ug/g (ppm)	11.70	83	85	80-120	2

ai - The amount spiked was insufficient to give meaningful recovery data.



**Treadwell & Rollo-Orinda**  
2 Theater Square, Suite 216  
Orinda, CA 94563

Attn.: Ms. Carrie Austin

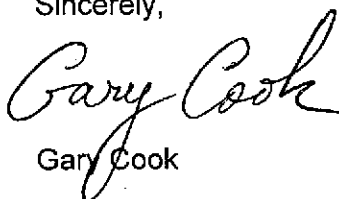
Project: 2543.01-3200  
2855 Mandela

Dear Carrie,

Attached is our report for your samples received on Wednesday November 17, 1999  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after December 17, 1999  
unless you have requested otherwise. We appreciate the opportunity to be of service to you.  
If you have any questions, please call me at (925) 484-1919

Sincerely,

  
Gary Cook

Gas/BTEX

<b>Treadwell &amp; Rollo-Orinda</b>	☒ 2 Theater Square, Suite 216 Orinda, CA 94563
Attn: Carrie Austin	Phone: (925) 253-2681 Fax: (925) 253-2680
Project #: 2543.01-3200	Project: 2855 Mandela

**Samples Reported**

Sample ID	Matrix	Date Sampled	Lab #
SB-31-5	Soil	11/17/1999	1
SB-28-6	Soil	11/16/1999 09:15	2
SB-25-3.5	Soil	11/16/1999 09:55	3
DUP	Water	11/16/1999 10:25	5
SB-26-GW	Water	11/16/1999 13:10	6
TB	Water	11/16/1999 12:45	7
SB-31-P	Water	11/16/1999 08:20	8
SB-31-GW	Water	11/16/1999 11:20	9
SB-28-P	Water	11/16/1999 10:25	10
SB-27-GW	Water	11/16/1999 13:30	11
SB-28-16	Soil	11/16/1999 15:30	12
SB-33-GW	Water	11/16/1999 16:50	13

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-31-5</b>	Lab Sample ID: <b>1999-11-0317-001</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/17/1999	Extracted: 11/25/1999 13:48
Matrix: Soil	QC-Batch: 1999/11/25-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	11/25/1999 13:48	
Benzene	ND	0.0050	mg/Kg	1.00	11/25/1999 13:48	
Toluene	ND	0.0050	mg/Kg	1.00	11/25/1999 13:48	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	11/25/1999 13:48	
Xylene(s)	ND	0.0050	mg/Kg	1.00	11/25/1999 13:48	
<b>Surrogate(s)</b>						
Trifluorotoluene	61.9	53-125	%	1.00	11/25/1999 13:48	
Trifluorotoluene-FID	74.1	53-125	%	1.00	11/25/1999 13:48	

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096



# CHROMALAB, INC.

Submission #: 1999-11-0317

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-28-6</b>	Lab Sample ID: <b>1999-11-0317-002</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 09:15	Extracted: 11/25/1999 14:16
Matrix: Soil	QC-Batch: 1999/11/25-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	11/25/1999 14:16	
Benzene	ND	0.0050	mg/Kg	1.00	11/25/1999 14:16	
Toluene	ND	0.0050	mg/Kg	1.00	11/25/1999 14:16	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	11/25/1999 14:16	
Xylene(s)	ND	0.0050	mg/Kg	1.00	11/25/1999 14:16	
<b>Surrogate(s)</b>						
Trifluorotoluene	87.6	53-125	%	1.00	11/25/1999 14:16	
Trifluorotoluene-FID	74.5	53-125	%	1.00	11/25/1999 14:16	

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-25-3.5</b>	Lab Sample ID: <b>1999-11-0317-003</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 09:55	Extracted: 11/25/1999 13:20
Matrix: Soil	QC-Batch: 1999/11/25-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	11/25/1999 13:20	
Benzene	ND	0.0050	mg/Kg	1.00	11/25/1999 13:20	
Toluene	ND	0.0050	mg/Kg	1.00	11/25/1999 13:20	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	11/25/1999 13:20	
Xylene(s)	ND	0.0050	mg/Kg	1.00	11/25/1999 13:20	
<b>Surrogate(s)</b>						
Trifluorotoluene	80.5	53-125	%	1.00	11/25/1999 13:20	
Trifluorotoluene-FID	71.4	53-125	%	1.00	11/25/1999 13:20	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: DUP	Lab Sample ID: 1999-11-0317-005
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 10:25	Extracted: 11/22/1999 15:02
Matrix: Water	QC-Batch: 1999/11/22-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	11/22/1999 15:02	
Benzene	ND	0.50	ug/L	1.00	11/22/1999 15:02	
Toluene	ND	0.50	ug/L	1.00	11/22/1999 15:02	
Ethyl benzene	ND	0.50	ug/L	1.00	11/22/1999 15:02	
Xylene(s)	ND	0.50	ug/L	1.00	11/22/1999 15:02	
<i>Surrogate(s)</i>						
Trifluorotoluene	102.0	58-124	%	1.00	11/22/1999 15:02	
4-Bromofluorobenzene-FID	64.2	50-150	%	1.00	11/22/1999 15:02	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-26-GW</b>	Lab Sample ID: <b>1999-11-0317-006</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 13:10	Extracted: 11/22/1999 15:30
Matrix: Water	QC-Batch: 1999/11/22-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	11/22/1999 15:30	
Benzene	ND	0.50	ug/L	1.00	11/22/1999 15:30	
Toluene	ND	0.50	ug/L	1.00	11/22/1999 15:30	
Ethyl benzene	ND	0.50	ug/L	1.00	11/22/1999 15:30	
Xylene(s)	ND	0.50	ug/L	1.00	11/22/1999 15:30	
<b>Surrogate(s)</b>						
Trifluorotoluene	106.8	58-124	%	1.00	11/22/1999 15:30	
4-Bromofluorobenzene-FID	62.5	50-150	%	1.00	11/22/1999 15:30	

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# CHROMALAB, INC.

Submission #: 1999-11-0317

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: TB	Lab Sample ID: 1999-11-0317-007
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 12:45	Extracted: 11/22/1999 13:03
Matrix: Water	QC-Batch: 1999/11/22-01.05

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	11/22/1999 13:03	
Benzene	ND	0.50	ug/L	1.00	11/22/1999 13:03	
Toluene	ND	0.50	ug/L	1.00	11/22/1999 13:03	
Ethyl benzene	ND	0.50	ug/L	1.00	11/22/1999 13:03	
Xylene(s)	ND	0.50	ug/L	1.00	11/22/1999 13:03	
<b>Surrogate(s)</b>						
Trifluorotoluene	59.0	58-124	%	1.00	11/22/1999 13:03	
4-Bromofluorobenzene-FID	58.3	50-150	%	1.00	11/22/1999 13:03	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-31-P</b>	Lab Sample ID: <b>1999-11-0317-008</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 08:20	Extracted: 11/22/1999 15:58
Matrix: Water	QC-Batch: 1999/11/22-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	11/22/1999 15:58	
Benzene	ND	0.50	ug/L	1.00	11/22/1999 15:58	
Toluene	ND	0.50	ug/L	1.00	11/22/1999 15:58	
Ethyl benzene	ND	0.50	ug/L	1.00	11/22/1999 15:58	
Xylene(s)	ND	0.50	ug/L	1.00	11/22/1999 15:58	
<b>Surrogate(s)</b>						
Trifluorotoluene	99.7	58-124	%	1.00	11/22/1999 15:58	
4-Bromofluorobenzene-FID	60.8	50-150	%	1.00	11/22/1999 15:58	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: SB-31-GW	Lab Sample ID: 1999-11-0317-009
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 11:20	Extracted: 11/23/1999 17:16
Matrix: Water	QC-Batch: 1999/11/23-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	11/23/1999 17:16	
Benzene	ND	0.50	ug/L	1.00	11/23/1999 17:16	
Toluene	ND	0.50	ug/L	1.00	11/23/1999 17:16	
Ethyl benzene	ND	0.50	ug/L	1.00	11/23/1999 17:16	
Xylene(s)	ND	0.50	ug/L	1.00	11/23/1999 17:16	
<b>Surrogate(s)</b>						
Trifluorotoluene	80.6	58-124	%	1.00	11/23/1999 17:16	
Trifluorotoluene-FID	115.9	58-124	%	1.00	11/23/1999 17:16	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: SB-28-P	Lab Sample ID: 1999-11-0317-010
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 10:25	Extracted: 11/22/1999 16:54
Matrix: Water	QC-Batch: 1999/11/22-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	11/22/1999 16:54	
Benzene	ND	0.50	ug/L	1.00	11/22/1999 16:54	
Toluene	ND	0.50	ug/L	1.00	11/22/1999 16:54	
Ethyl benzene	ND	0.50	ug/L	1.00	11/22/1999 16:54	
Xylene(s)	ND	0.50	ug/L	1.00	11/22/1999 16:54	
<b>Surrogate(s)</b>						
Trifluorotoluene	100.9	58-124	%	1.00	11/22/1999 16:54	
4-Bromofluorobenzene-FID	59.3	50-150	%	1.00	11/22/1999 16:54	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-27-GW</b>	Lab Sample ID: <b>1999-11-0317-011</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 13:30	Extracted: 11/23/1999 11:33
Matrix: Water	QC-Batch: 1999/11/23-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	120	50	ug/L	1.00	11/23/1999 11:33	g
Benzene	1.8	0.50	ug/L	1.00	11/23/1999 11:33	
Toluene	ND	0.50	ug/L	1.00	11/23/1999 11:33	
Ethyl benzene	1.1	0.50	ug/L	1.00	11/23/1999 11:33	
Xylene(s)	ND	0.50	ug/L	1.00	11/23/1999 11:33	
<b>Surrogate(s)</b>						
Trifluorotoluene	92.9	58-124	%	1.00	11/23/1999 11:33	
4-Bromofluorobenzene-FID	61.7	50-150	%	1.00	11/23/1999 11:33	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: SB-28-16	Lab Sample ID: 1999-11-0317-012
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 15:30	Extracted: 11/26/1999 21:01
Matrix: Soil	QC-Batch: 1999/11/26-01.04

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	11/26/1999 21:01	
Benzene	ND	0.0050	mg/Kg	1.00	11/26/1999 21:01	
Toluene	ND	0.0050	mg/Kg	1.00	11/26/1999 21:01	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	11/26/1999 21:01	
Xylene(s)	ND	0.0050	mg/Kg	1.00	11/26/1999 21:01	
<b>Surrogate(s)</b>						
Trifluorotoluene	66.5	53-125	%	1.00	11/26/1999 21:01	
Trifluorotoluene-FID	66.8	53-125	%	1.00	11/26/1999 21:01	

**Treadwell & Rollo-Orinda**  
2 Theater Square, Suite 216  
Orinda, CA 94563

Attn.: Ms. Carrie Austin

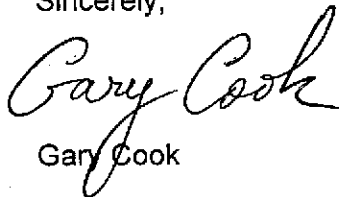
Project: 2543.01-3200  
2855 Mandela

Dear Carrie,

Attached is our report for your samples received on Wednesday November 17, 1999  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after December 17, 1999  
unless you have requested otherwise. We appreciate the opportunity to be of service to you.  
If you have any questions, please call me at (925) 484-1919

Sincerely,

  
Gary Cook

Gas/BTEX

**Treadwell & Rollo-Orinda**

✉ 2 Theater Square, Suite 216  
Orinda, CA 94563

Attn: Carrie Austin

Phone: (925) 253-2681 Fax: (925) 253-2680

Project #: 2543.01-3200

Project: 2855 Mandela

**Samples Reported**

Sample ID	Matrix	Date Sampled	Lab #
SB-31-5	Soil	11/17/1999	1
SB-28-6	Soil	11/16/1999 09:15	2
SB-25-3.5	Soil	11/16/1999 09:55	3
DUP	Water	11/16/1999 10:25	5
SB-26-GW	Water	11/16/1999 13:10	6
TB	Water	11/16/1999 12:45	7
SB-31-P	Water	11/16/1999 08:20	8
SB-31-GW	Water	11/16/1999 11:20	9
SB-28-P	Water	11/16/1999 10:25	10
SB-27-GW	Water	11/16/1999 13:30	11
SB-28-16	Soil	11/16/1999 15:30	12
SB-33-GW	Water	11/16/1999 16:50	13

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: **Treadwell & Rollo-Orinda**

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-31-5</b>	Lab Sample ID: <b>1999-11-0317-001</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/17/1999	Extracted: 11/25/1999 13:48
Matrix: Soil	QC-Batch: 1999/11/25-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	11/25/1999 13:48	
Benzene	ND	0.0050	mg/Kg	1.00	11/25/1999 13:48	
Toluene	ND	0.0050	mg/Kg	1.00	11/25/1999 13:48	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	11/25/1999 13:48	
Xylene(s)	ND	0.0050	mg/Kg	1.00	11/25/1999 13:48	
<b>Surrogate(s)</b>						
Trifluorotoluene	61.9	53-125	%	1.00	11/25/1999 13:48	
Trifluorotoluene-FID	74.1	53-125	%	1.00	11/25/1999 13:48	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-28-6</b>	Lab Sample ID: <b>1999-11-0317-002</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 09:15	Extracted: 11/25/1999 14:16
Matrix: Soil	QC-Batch: 1999/11/25-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	11/25/1999 14:16	
Benzene	ND	0.0050	mg/Kg	1.00	11/25/1999 14:16	
Toluene	ND	0.0050	mg/Kg	1.00	11/25/1999 14:16	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	11/25/1999 14:16	
Xylene(s)	ND	0.0050	mg/Kg	1.00	11/25/1999 14:16	
<b>Surrogate(s)</b>						
Trifluorotoluene	87.6	53-125	%	1.00	11/25/1999 14:16	
Trifluorotoluene-FID	74.5	53-125	%	1.00	11/25/1999 14:16	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: SB-25-3.5	Lab Sample ID: 1999-11-0317-003
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 09:55	Extracted: 11/25/1999 13:20
Matrix: Soil	QC-Batch: 1999/11/25-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	11/25/1999 13:20	
Benzene	ND	0.0050	mg/Kg	1.00	11/25/1999 13:20	
Toluene	ND	0.0050	mg/Kg	1.00	11/25/1999 13:20	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	11/25/1999 13:20	
Xylene(s)	ND	0.0050	mg/Kg	1.00	11/25/1999 13:20	
<b>Surrogate(s)</b>						
Trifluorotoluene	80.5	53-125	%	1.00	11/25/1999 13:20	
Trifluorotoluene-FID	71.4	53-125	%	1.00	11/25/1999 13:20	

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Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>DUP</b>	Lab Sample ID: <b>1999-11-0317-005</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 10:25	Extracted: 11/22/1999 15:02
Matrix: Water	QC-Batch: 1999/11/22-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	11/22/1999 15:02	
Benzene	ND	0.50	ug/L	1.00	11/22/1999 15:02	
Toluene	ND	0.50	ug/L	1.00	11/22/1999 15:02	
Ethyl benzene	ND	0.50	ug/L	1.00	11/22/1999 15:02	
Xylene(s)	ND	0.50	ug/L	1.00	11/22/1999 15:02	
<b>Surrogate(s)</b>						
Trifluorotoluene	102.0	58-124	%	1.00	11/22/1999 15:02	
4-Bromofluorobenzene-FID	64.2	50-150	%	1.00	11/22/1999 15:02	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-26-GW</b>	Lab Sample ID: <b>1999-11-0317-006</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 13:10	Extracted: 11/22/1999 15:30
Matrix: Water	QC-Batch: 1999/11/22-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	11/22/1999 15:30	
Benzene	ND	0.50	ug/L	1.00	11/22/1999 15:30	
Toluene	ND	0.50	ug/L	1.00	11/22/1999 15:30	
Ethyl benzene	ND	0.50	ug/L	1.00	11/22/1999 15:30	
Xylene(s)	ND	0.50	ug/L	1.00	11/22/1999 15:30	
<b>Surrogate(s)</b>						
Trifluorotoluene	106.8	58-124	%	1.00	11/22/1999 15:30	
4-Bromofluorobenzene-FID	62.5	50-150	%	1.00	11/22/1999 15:30	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: TB	Lab Sample ID: 1999-11-0317-007
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 12:45	Extracted: 11/22/1999 13:03
Matrix: Water	QC-Batch: 1999/11/22-01.05

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	11/22/1999 13:03	
Benzene	ND	0.50	ug/L	1.00	11/22/1999 13:03	
Toluene	ND	0.50	ug/L	1.00	11/22/1999 13:03	
Ethyl benzene	ND	0.50	ug/L	1.00	11/22/1999 13:03	
Xylene(s)	ND	0.50	ug/L	1.00	11/22/1999 13:03	
<b>Surrogate(s)</b>						
Trifluorotoluene	59.0	58-124	%	1.00	11/22/1999 13:03	
4-Bromofluorobenzene-FID	58.3	50-150	%	1.00	11/22/1999 13:03	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-31-P</b>	Lab Sample ID: <b>1999-11-0317-008</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 08:20	Extracted: 11/22/1999 15:58
Matrix: Water	QC-Batch: 1999/11/22-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	11/22/1999 15:58	
Benzene	ND	0.50	ug/L	1.00	11/22/1999 15:58	
Toluene	ND	0.50	ug/L	1.00	11/22/1999 15:58	
Ethyl benzene	ND	0.50	ug/L	1.00	11/22/1999 15:58	
Xylene(s)	ND	0.50	ug/L	1.00	11/22/1999 15:58	
<i>Surrogate(s)</i>						
Trifluorotoluene	99.7	58-124	%	1.00	11/22/1999 15:58	
4-Bromofluorobenzene-FID	60.8	50-150	%	1.00	11/22/1999 15:58	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-31-GW</b>	Lab Sample ID: <b>1999-11-0317-009</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 11:20	Extracted: 11/23/1999 17:16
Matrix: Water	QC-Batch: 1999/11/23-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	11/23/1999 17:16	
Benzene	ND	0.50	ug/L	1.00	11/23/1999 17:16	
Toluene	ND	0.50	ug/L	1.00	11/23/1999 17:16	
Ethyl benzene	ND	0.50	ug/L	1.00	11/23/1999 17:16	
Xylene(s)	ND	0.50	ug/L	1.00	11/23/1999 17:16	
<b>Surrogate(s)</b>						
Trifluorotoluene	80.6	58-124	%	1.00	11/23/1999 17:16	
Trifluorotoluene-FID	115.9	58-124	%	1.00	11/23/1999 17:16	

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

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Environmental Services (SDB)

Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-28-P</b>	Lab Sample ID: <b>1999-11-0317-010</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 10:25	Extracted: 11/22/1999 16:54
Matrix: Water	QC-Batch: 1999/11/22-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	11/22/1999 16:54	
Benzene	ND	0.50	ug/L	1.00	11/22/1999 16:54	
Toluene	ND	0.50	ug/L	1.00	11/22/1999 16:54	
Ethyl benzene	ND	0.50	ug/L	1.00	11/22/1999 16:54	
Xylene(s)	ND	0.50	ug/L	1.00	11/22/1999 16:54	
<b>Surrogate(s)</b>						
Trifluorotoluene	100.9	58-124	%	1.00	11/22/1999 16:54	
4-Bromofluorobenzene-FID	59.3	50-150	%	1.00	11/22/1999 16:54	

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To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-27-GW</b>	Lab Sample ID: <b>1999-11-0317-011</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 13:30	Extracted: 11/23/1999 11:33
Matrix: Water	QC-Batch: 1999/11/23-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	120	50	ug/L	1.00	11/23/1999 11:33	g
Benzene	1.8	0.50	ug/L	1.00	11/23/1999 11:33	
Toluene	ND	0.50	ug/L	1.00	11/23/1999 11:33	
Ethyl benzene	1.1	0.50	ug/L	1.00	11/23/1999 11:33	
Xylene(s)	ND	0.50	ug/L	1.00	11/23/1999 11:33	
<b>Surrogate(s)</b>						
Trifluorotoluene	92.9	58-124	%	1.00	11/23/1999 11:33	
4-Bromofluorobenzene-FID	61.7	50-150	%	1.00	11/23/1999 11:33	

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Submission #: 1999-11-0317

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-28-16</b>	Lab Sample ID: <b>1999-11-0317-012</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 15:30	Extracted: 11/26/1999 21:01
Matrix: Soil	QC-Batch: 1999/11/26-01.04

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	11/26/1999 21:01	
Benzene	ND	0.0050	mg/Kg	1.00	11/26/1999 21:01	
Toluene	ND	0.0050	mg/Kg	1.00	11/26/1999 21:01	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	11/26/1999 21:01	
Xylene(s)	ND	0.0050	mg/Kg	1.00	11/26/1999 21:01	
<b>Surrogate(s)</b>						
Trifluorotoluene	66.5	53-125	%	1.00	11/26/1999 21:01	
Trifluorotoluene-FID	66.8	53-125	%	1.00	11/26/1999 21:01	

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To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-33-GW</b>	Lab Sample ID: <b>1999-11-0317-013</b>
Project: 2543.01-3200 2855 Mandela	Received: 11/17/1999 16:31
Sampled: 11/16/1999 16:50	Extracted: 11/23/1999 12:01
Matrix: Water	QC-Batch: 1999/11/23-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	450	50	ug/L	1.00	11/23/1999 12:01	
Benzene	31	0.50	ug/L	1.00	11/23/1999 12:01	
Toluene	71	0.50	ug/L	1.00	11/23/1999 12:01	
Ethyl benzene	16	0.50	ug/L	1.00	11/23/1999 12:01	
Xylene(s)	68	0.50	ug/L	1.00	11/23/1999 12:01	
<b>Surrogate(s)</b>						
Trifluorotoluene	94.6	58-124	%	1.00	11/23/1999 12:01	
4-Bromofluorobenzene-FID	66.8	50-150	%	1.00	11/23/1999 12:01	

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Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

## Batch QC Report Gas/BTEX

Method Blank

Water

QC Batch # 1999/11/22-01.05

MB: 1999/11/22-01.05-001

Date Extracted: 11/22/1999 05:41

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	11/22/1999 05:41	
Benzene	ND	0.5	ug/L	11/22/1999 05:41	
Toluene	ND	0.5	ug/L	11/22/1999 05:41	
Ethyl benzene	ND	0.5	ug/L	11/22/1999 05:41	
Xylene(s)	ND	0.5	ug/L	11/22/1999 05:41	
<b>Surrogate(s)</b>					
Trifluorotoluene	113.6	58-124	%	11/22/1999 05:41	
4-Bromofluorobenzene-FID	54.6	50-150	%	11/22/1999 05:41	

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Submission #: 1999-11-0317

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

## Batch QC Report Gas/BTEX

Method Blank	Water	QC Batch # 1999/11/22-01.01
MB: 1999/11/22-01.01-001		Date Extracted: 11/22/1999 06:33

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	11/22/1999 06:33	
Benzene	ND	0.5	ug/L	11/22/1999 06:33	
Toluene	ND	0.5	ug/L	11/22/1999 06:33	
Ethyl benzene	ND	0.5	ug/L	11/22/1999 06:33	
Xylene(s)	ND	0.5	ug/L	11/22/1999 06:33	
<b>Surrogate(s)</b>					
Trifluorotoluene	104.0	58-124	%	11/22/1999 06:33	
4-Bromofluorobenzene-FID	53.8	50-150	%	11/22/1999 06:33	

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Submission #: 1999-11-0317

Environmental Services (SDB)

To: Treadwell &amp; Rollo-Orinda

Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

**Batch QC Report**  
Gas/BTEX**Method Blank****Water****QC Batch # 1999/11/23-01.01**

MB: 1999/11/23-01.01-001

Date Extracted: 11/23/1999 10:13

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	11/23/1999 10:13	
Benzene	ND	0.5	ug/L	11/23/1999 10:13	
Toluene	ND	0.5	ug/L	11/23/1999 10:13	
Ethyl benzene	ND	0.5	ug/L	11/23/1999 10:13	
Xylene(s)	ND	0.5	ug/L	11/23/1999 10:13	
<b>Surrogate(s)</b>					
Trifluorotoluene	96.4	58-124	%	11/23/1999 10:13	
4-Bromofluorobenzene-FID	58.4	50-150	%	11/23/1999 10:13	

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Test Method: 8015M  
8020

Attn.: Carrie Austin

Prep Method: 5030

## Batch QC Report Gas/BTEX

<b>Method Blank</b>	<b>Soil</b>	<b>QC Batch # 1999/11/25-01.01</b>
MB: 1999/11/25-01.01-001		Date Extracted: 11/25/1999 04:54

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	11/25/1999 04:54	
Benzene	ND	0.0050	mg/Kg	11/25/1999 04:54	
Toluene	ND	0.0050	mg/Kg	11/25/1999 04:54	
Ethyl benzene	ND	0.0050	mg/Kg	11/25/1999 04:54	
Xylene(s)	ND	0.0050	mg/Kg	11/25/1999 04:54	
<b>Surrogate(s)</b>					
Trifluorotoluene	87.8	53-125	%	11/25/1999 04:54	
Trifluorotoluene-FID	78.2	53-125	%	11/25/1999 04:54	

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Test Method: 8015M  
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Attn.: Carrie Austin

Prep Method: 5030

## Batch QC Report Gas/BTEX

<b>Method Blank</b>	<b>Soil</b>	<b>QC Batch # 1999/11/26-01.04</b>
MB: 1999/11/26-01.04-001		Date Extracted: 11/26/1999 10:35

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	11/26/1999 10:35	
Benzene	ND	0.0050	mg/Kg	11/26/1999 10:35	
Toluene	ND	0.0050	mg/Kg	11/26/1999 10:35	
Ethyl benzene	ND	0.0050	mg/Kg	11/26/1999 10:35	
Xylene(s)	ND	0.0050	mg/Kg	11/26/1999 10:35	
<b>Surrogate(s)</b>					
Trifluorotoluene	72.4	53-125	%	11/26/1999 10:35	
4-Bromofluorobenzene-FID	85.2	58-124	%	11/26/1999 10:35	

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To: Treadwell & Rollo-Orinda

Test Method: 8015M  
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Attn: Carrie Austin

Prep Method: 5030

## Batch QC Report

Gas/BTEX

Laboratory Control Spike (LCS/LCSD)		Water		QC Batch # 1999/11/22-01.05	
LCS:	1999/11/22-01.05-002	Extracted:	11/22/1999 06:13	Analyzed:	11/22/1999 06:13
LCSD:	1999/11/22-01.05-003	Extracted:	11/22/1999 06:46	Analyzed:	11/22/1999 06:46

Compound	Conc. [ug/L]		Exp. Conc. [ug/L]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	478	495	500	500	95.6	99.0	3.5	75-125	20		
Benzene	113	109	100.0	100.0	113.0	109.0	3.6	77-123	20		
Toluene	119	112	100.0	100.0	119.0	112.0	6.1	78-122	20		
Ethyl benzene	117	110	100.0	100.0	117.0	110.0	6.2	70-130	20		
Xylene(s)	324	306	300	300	108.0	102.0	5.7	75-125	20		
<b>Surrogate(s)</b>											
4-Bromofluorobenzene	514	519	500	500	102.8	103.8		50-150			
4-Bromofluorobenzene-FI	316	330	500	500	63.2	66.0		50-150			

Environmental Services (SDB)

To: Treadwell & Rollo-Orinda

Test Method: 8015M  
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Attn: Carrie Austin

Prep Method: 5030

**Batch QC Report**

Gas/BTEX

<b>Laboratory Control Spike (LCS/LCSD)</b>	<b>Water</b>	<b>QC Batch # 1999/11/22-01.01</b>
LCS: 1999/11/22-01.01-002	Extracted: 11/22/1999 07:00	Analyzed: 11/22/1999 07:00
LCSD: 1999/11/22-01.01-003	Extracted: 11/22/1999 07:28	Analyzed: 11/22/1999 07:28

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	523	438	500	500	104.6	87.6	17.7	75-125	20		
Benzene	98.3	101	100.0	100.0	98.3	101.0	2.7	77-123	20		
Toluene	101	103	100.0	100.0	101.0	103.0	2.0	78-122	20		
Ethyl benzene	101	103	100.0	100.0	101.0	103.0	2.0	70-130	20		
Xylene(s)	299	307	300	300	99.7	102.3	2.6	75-125	20		
<b>Surrogate(s)</b>											
Trifluorotoluene	530	542	500	500	106.0	108.4		58-124			
4-Bromofluorobenzene-FI	356	276	500	500	71.2	55.2		50-150			

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Prep Method: 5030

## Batch QC Report

Gas/BTEX

### Laboratory Control Spike (LCS/LCSD)

Water

QC Batch # 1999/11/23-01.01

LCS: 1999/11/23-01.01-002

Extracted: 11/23/1999 07:56

Analyzed: 11/23/1999 07:56

LCSD: 1999/11/23-01.01-003

Extracted: 11/23/1999 08:24

Analyzed: 11/23/1999 08:24

Compound	Conc. [ug/L]		Exp. Conc. [ug/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	512	433	500	500	102.4	86.6	16.7	75-125	20		
Benzene	94.3	100	100.0	100.0	94.3	100.0	5.9	77-123	20		
Toluene	97.7	104	100.0	100.0	97.7	104.0	6.2	78-122	20		
Ethyl benzene	97.6	104	100.0	100.0	97.6	104.0	6.3	70-130	20		
Xylene(s)	289	309	300	300	96.3	103.0	6.7	75-125	20		
<b>Surrogate(s)</b>											
Trifluorotoluene	523	538	500	500	104.6	107.6		58-124			
4-Bromofluorobenzene-Fi	357	269	500	500	71.4	53.8		50-150			

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Test Method: 8015M  
8020

Attn: Carrie Austin

Prep Method: 5030

## Batch QC Report

Gas/BTEX

Laboratory Control Spike (LCS/LCSD)		Soil		QC Batch # 1999/11/25-01.01	
LCS:	1999/11/25-01.01-002	Extracted:	11/25/1999 05:22	Analyzed:	11/25/1999 05:22
LCSD:	1999/11/25-01.01-003	Extracted:	11/25/1999 05:51	Analyzed:	11/25/1999 05:51

Compound	Conc. [ mg/Kg ]		Exp.Conc. [ mg/Kg ]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	0.508	0.383	0.500	0.500	101.6	76.6	28.1	75-125	35		
Benzene	0.0985	0.0986	0.1000	0.1000	98.5	98.6	0.1	77-123	35		
Toluene	0.102	0.0998	0.1000	0.1000	102.0	99.8	2.2	78-122	35		
Ethyl benzene	0.101	0.102	0.1000	0.1000	101.0	102.0	1.0	70-130	35		
Xylene(s)	0.301	0.298	0.300	0.300	100.3	99.3	1.0	75-125	35		
<b>Surrogate(s)</b>											
Trifluorotoluene	497	533	500	500	99.4	106.6		53-125			
4-Bromofluorobenzene-FI	337		500		67.4			58-124			

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Test Method: 8015M  
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Attn: Carrie Austin

Prep Method: 5030

## Batch QC Report

Gas/BTEX

Laboratory Control Spike (LCS/LCSD)		Soil	QC Batch # 1999/11/26-01.04	
LCS:	1999/11/26-01.04-002	Extracted: 11/26/1999 11:02	Analyzed: 11/26/1999 11:02	
LCSD:	1999/11/26-01.04-003	Extracted: 11/26/1999 11:30	Analyzed: 11/26/1999 11:30	

Compound	Conc. [ mg/Kg ]		Exp.Conc. [ mg/Kg ]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	0.541	0.550	0.500	0.500	108.2	110.0	1.6	75-125	35		
Benzene	0.106	0.0900	0.1000	0.1000	106.0	90.0	16.3	77-123	35		
Toluene	0.107	0.0921	0.1000	0.1000	107.0	92.1	15.0	78-122	35		
Ethyl benzene	0.108	0.0941	0.1000	0.1000	108.0	94.1	13.8	70-130	35		
Xylene(s)	0.318	0.276	0.300	0.300	106.0	92.0	14.1	75-125	35		
<b>Surrogate(s)</b>											
Trifluorotoluene	393	318	500	500	78.6	63.6		53-125			
4-Bromofluorobenzene-FI	438	444	500	500	87.6	88.8		58-124			

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To: Treadwell & Rollo-Orinda

Test Method: 8015M  
8020

Attn: Carrie Austin

Prep Method: 5030

## Legend & Notes

Gas/BTEX

### Analysis Notes

TB ( Lab# 1999-11-0317-007 )

### Analyte Flags

g

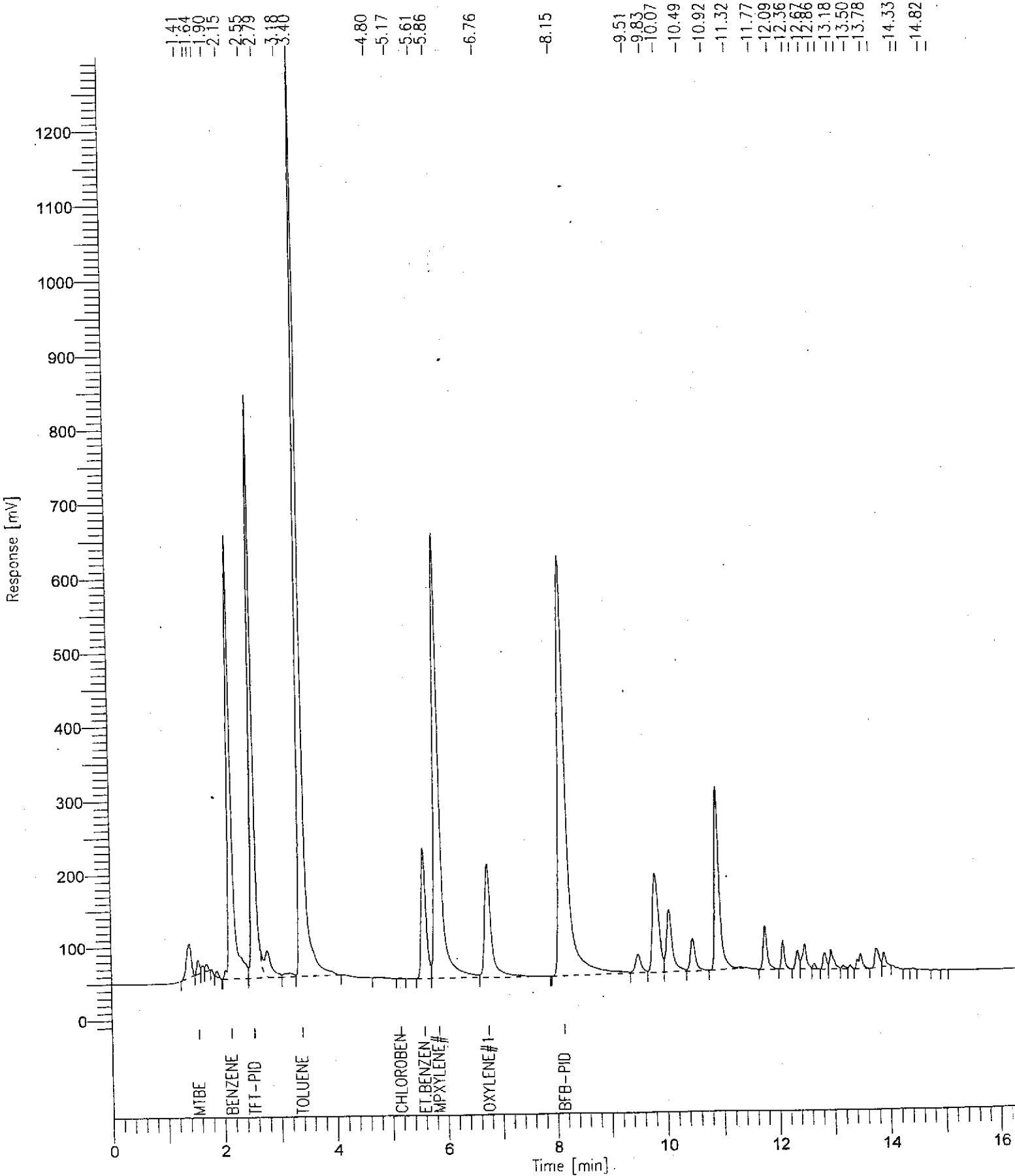
Hydrocarbon reported in the gasoline range does not match our gasoline standard.

# Chromatogram

Sample Name : SA-WA-1999-11-0317-013 => SB-33-GW  
FileName : F:\199911\DATA\1B112313.raw  
Method : 1BZN1999  
Start Time : 0.00 min  
Scale Factor: 1.0

End Time : 16.40 min  
Plot Offset: -12 mV

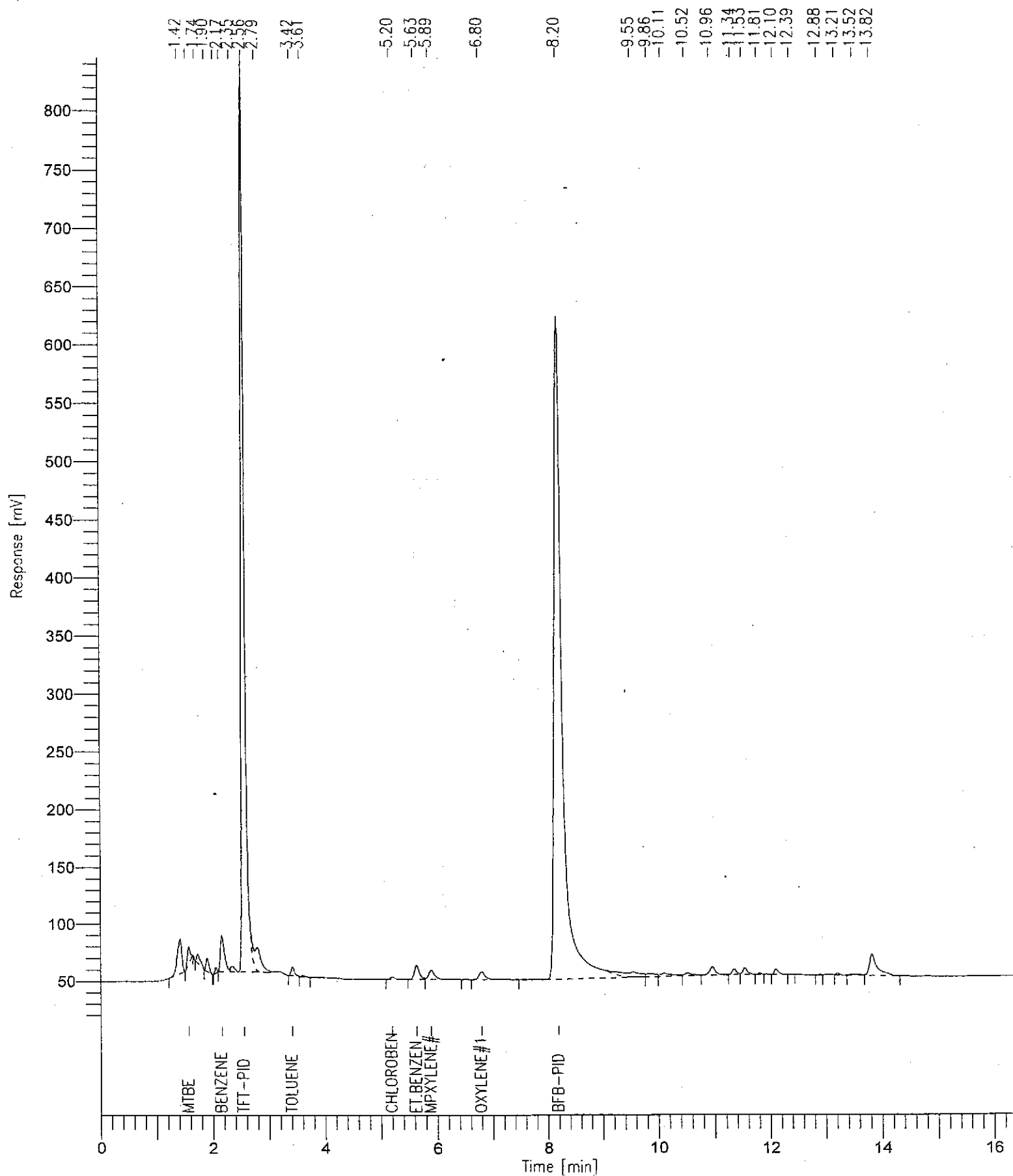
Sample #: Page 1 of 1  
Date : 11/23/1999 12:17  
Time of Injection: 11/23/1999 12:01  
Low Point : -12.36 mV High Point : 1299.97 mV  
Plot Scale: 1312.3 mV



# Chromatogram

File Name : SA-WA-1999-11-0317-011 => SB-27-GW  
fileName : F:\199911\DATA\18112312.raw  
Method : 1BZN1999  
Start Time : 0.00 min      End Time : 16.40 min  
Scale Factor: 1.0            Plot Offset: 10 mV

Sample # :  
Date : 11/23/1999 11:50      Page 1 of 1  
Time of Injection: 11/23/1999 11:33  
Low Point : 10.14 mV      High Point : 845.40 mV  
Plot Scale: 835.3 mV





HERE ARE THE CHROMATOGRAMS YOU  
REQUESTED

ATTENTION: Carrie Austin

AT: TRE ~~Edwards~~ & Kollo

SUBMISSION#: 1999-11-0317

# of chromatograms: 2

# CHROMALAB, INC.

Environmental Services (SDB)

FAX COVER SHEET

To: Carrie Austin

Company: T & R - Orinda

Fax Number: (925)

From: Gary

Phone Number: 925-484-1919 Fax Number: 925-484-1096

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Number of Pages: Cover + 2 SUB# 1999-11-0317

Message: Your chromatograms. Reports are/will  
arrive soon.

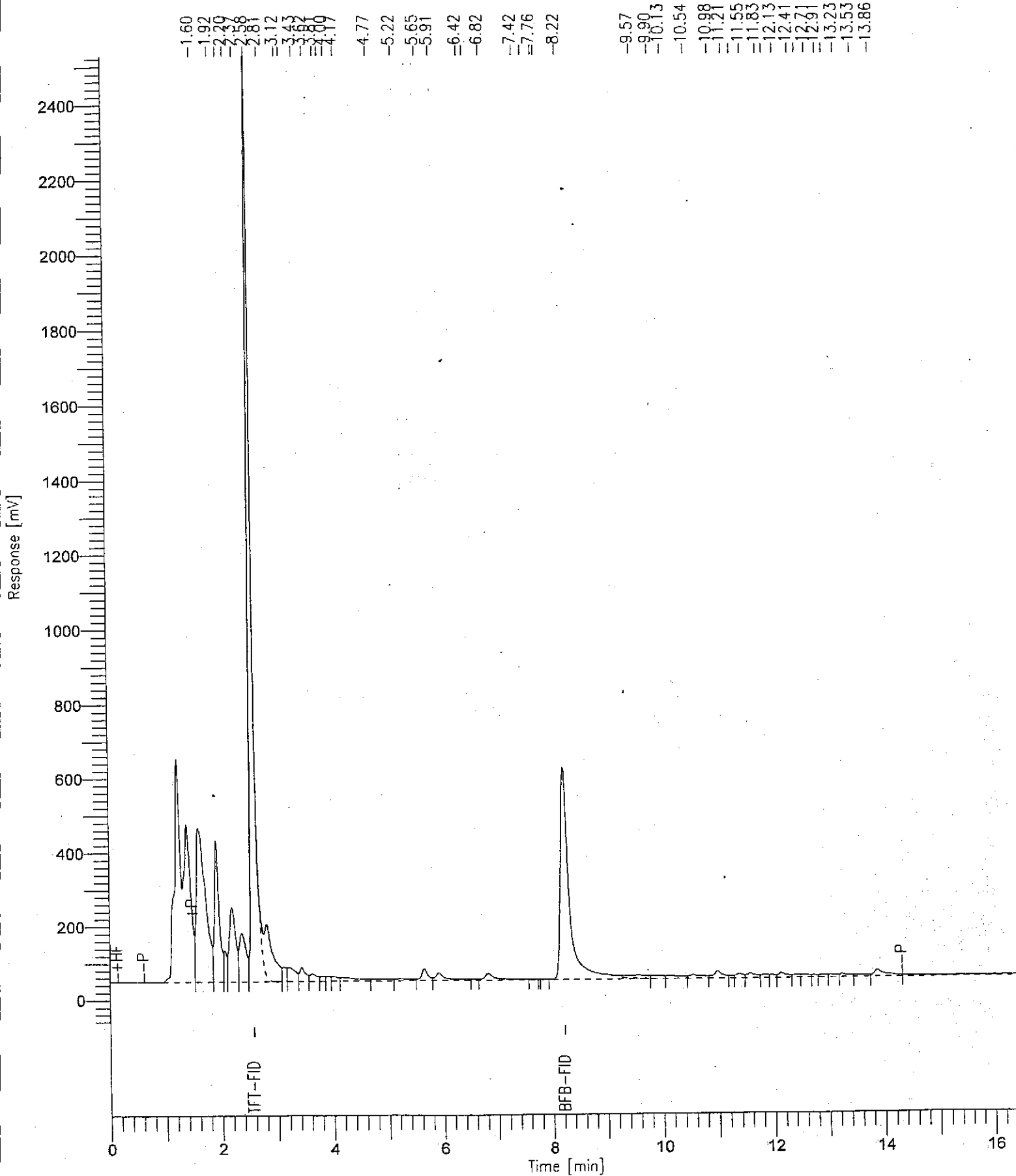


# Chromatogram

File : SA-WA-1999-11-0317-011 => SB-27-GW  
Path : F:\199911\DATA\1G112312.raw  
Sample ID : 1G102599  
Start Time : 0.00 min  
End Time : 16.40 min  
Scale Factor : 1.0  
Plot Offset : -74 mV

Sample # :  
Date : 11/23/1999 11:50  
Time of Injection : 11/23/1999 11:33  
Low Point : -73.99 mV  
High Point : 2527.90 mV  
Plot Scale : 2601.9 mV

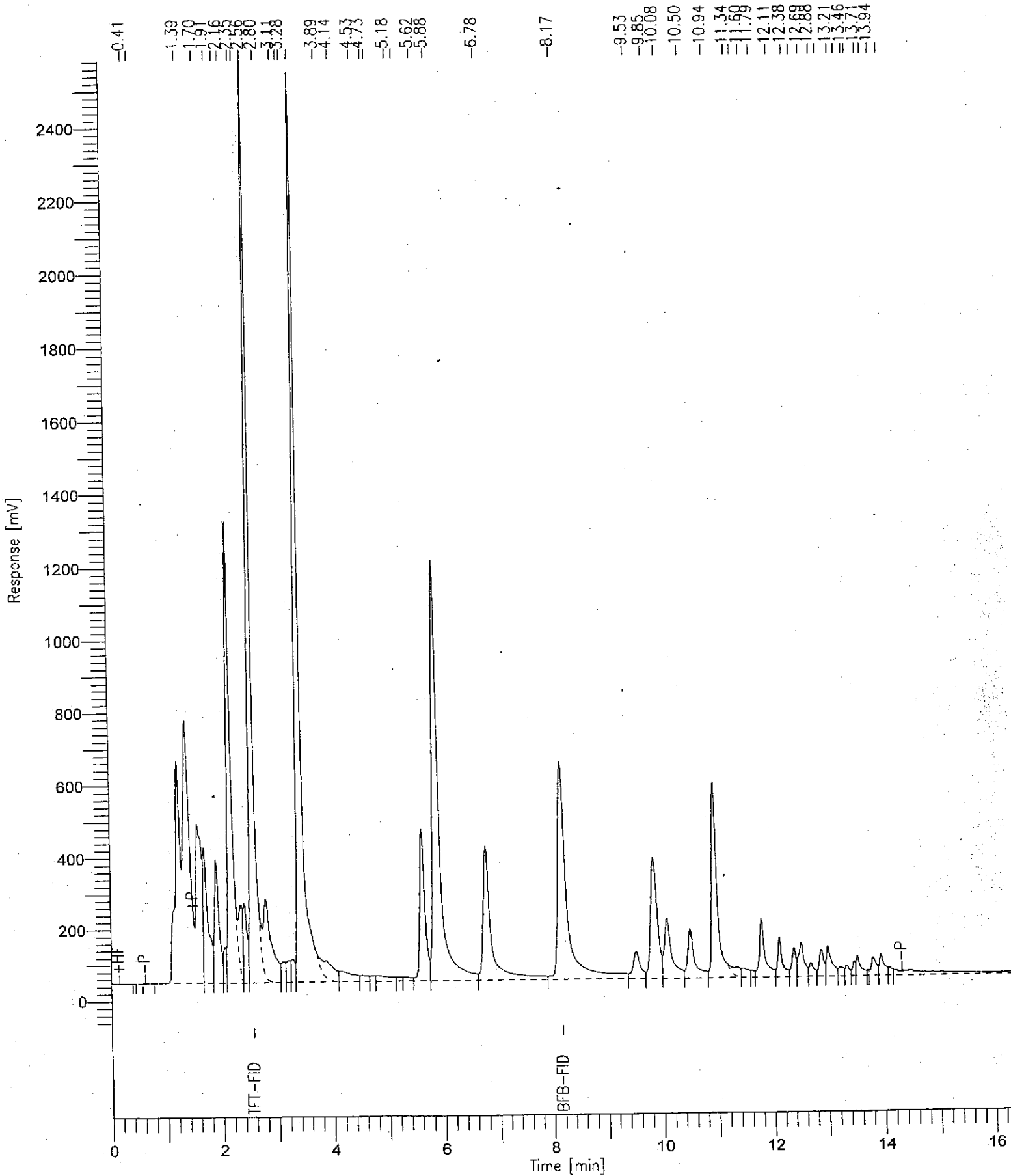
Page 1 of 1



# Chromatogram

File Name : SA-WA-1999-11-0317-013 => SB-33-GW  
FileName : F:\199911\DATA\1G112313.raw  
Method : 1G102599  
Start Time : 0.00 min      End Time : 16.40 min  
Scale Factor: 1.0      Plot Offset: -77 mV

Sample #:  
Date : 11/23/1999 12:18  
Time of Injection: 11/23/1999 12:01  
Low Point : -76.81 mV      High Point : 2584.90 mV  
Plot Scale: 2661.7 mV



**Treadwell & Rollo**

555 Montgomery Street, Suite 1300  
San Francisco, CA 94111-2554

Attn.: Carrie Austin

Project: 2543.01  
2855 Mandela Parkway

Attached is our report for your samples received on Friday December 3, 1999  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after January 2, 2000  
unless you have requested otherwise. We appreciate the opportunity to be of service to you.  
If you have any questions, please call me at (925) 484-1919

Sincerely,

  
Gary Cook

Gas/BTEX

**Treadwell & Rollo**



555 Montgomery Street, Suite 1300  
San Francisco, CA 94111-2554

Attn: Carrie Austin

Phone: (415) 955-9040 Fax: (415) 955-9041

Project #: 2543.01

Project: 2855 Mandela Parkway

**Samples Reported**

Sample ID	Matrix	Date Sampled	Lab #
SB-33A-5.5	Soil	12/02/1999 08:40	1
SB-33A-P	Water	12/02/1999 09:00	2
SB-34-4.5	Soil	12/02/1999 10:30	3
SB-29	Water	12/02/1999 13:45	4
SB-30	Water	12/02/1999 14:45	5
SB-32	Water	12/02/1999 15:45	6

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-12-0087

To: Treadwell & Rollo

Test Method: 8020  
8015M

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: SB-33A-5.5	Lab Sample ID: 1999-12-0087-001
Project: 2543.01 2855 Mandela Parkway	Received: 12/03/1999 16:36
Sampled: 12/02/1999 08:40	Extracted: 12/10/1999 13:27
Matrix: Soil	QC-Batch: 1999/12/10-01.04

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	12/10/1999 13:27	
Benzene	ND	0.0050	mg/Kg	1.00	12/10/1999 13:27	
Toluene	ND	0.0050	mg/Kg	1.00	12/10/1999 13:27	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	12/10/1999 13:27	
Xylene(s)	ND	0.0050	mg/Kg	1.00	12/10/1999 13:27	
<b>Surrogate(s)</b>						
Trifluorotoluene	58.5	53-125	%	1.00	12/10/1999 13:27	
4-Bromofluorobenzene-FID	61.4	58-124	%	1.00	12/10/1999 13:27	

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-12-0087

To: Treadwell & Rollo

Test Method: 8020  
8015M

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-33A-P</b>	Lab Sample ID: <b>1999-12-0087-002</b>
Project: 2543.01 2855 Mandela Parkway	Received: 12/03/1999 16:36
Sampled: 12/02/1999 09:00	Extracted: 12/09/1999 06:05
Matrix: Water	QC-Batch: 1999/12/08-01.05

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/09/1999 06:05	
Benzene	ND	0.50	ug/L	1.00	12/09/1999 06:05	
Toluene	ND	0.50	ug/L	1.00	12/09/1999 06:05	
Ethyl benzene	ND	0.50	ug/L	1.00	12/09/1999 06:05	
Xylene(s)	ND	0.50	ug/L	1.00	12/09/1999 06:05	
<b>Surrogate(s)</b>						
4-Bromofluorobenzene	61.9	50-150	ug/L	1.00	12/09/1999 06:05	
4-Bromofluorobenzene-FID	71.8	50-150	ug/L	1.00	12/09/1999 06:05	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-12-0087

To: Treadwell & Rollo

Test Method: 8020  
8015M

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-34-4.5</b>	Lab Sample ID: <b>1999-12-0087-003</b>
Project: 2543.01 2855 Mandela Parkway	Received: 12/03/1999 16:36
Sampled: 12/02/1999 10:30	Extracted: 12/10/1999 14:57
Matrix: Soil	QC-Batch: 1999/12/09-01.04

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	12/10/1999 14:57	
Benzene	ND	0.0050	mg/Kg	1.00	12/10/1999 14:57	
Toluene	ND	0.0050	mg/Kg	1.00	12/10/1999 14:57	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	12/10/1999 14:57	
Xylene(s)	ND	0.0050	mg/Kg	1.00	12/10/1999 14:57	
<b>Surrogate(s)</b>						
Trifluorotoluene	78.5	53-125	%	1.00	12/10/1999 14:57	
4-Bromofluorobenzene-FID	74.2	58-124	%	1.00	12/10/1999 14:57	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-12-0087

To: Treadwell & Rollo

Test Method: 8020  
8015M

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: SB-29	Lab Sample ID: 1999-12-0087-004
Project: 2543.01 2855 Mandela Parkway	Received: 12/03/1999 16:36
Sampled: 12/02/1999 13:45	Extracted: 12/08/1999 13:59
Matrix: Water	QC-Batch: 1999/12/08-01.05

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/08/1999 13:59	
Benzene	ND	0.50	ug/L	1.00	12/08/1999 13:59	
Toluene	ND	0.50	ug/L	1.00	12/08/1999 13:59	
Ethyl benzene	ND	0.50	ug/L	1.00	12/08/1999 13:59	
Xylene(s)	ND	0.50	ug/L	1.00	12/08/1999 13:59	
<i>Surrogate(s)</i>						
4-Bromofluorobenzene	79.4	50-150	%	1.00	12/08/1999 13:59	
4-Bromofluorobenzene-FID	67.4	50-150	%	1.00	12/08/1999 13:59	



# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-12-0087

To: Treadwell & Rollo

Test Method: 8020  
8015M

Attn.: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: SB-30	Lab Sample ID: 1999-12-0087-005
Project: 2543.01 2855 Mandela Parkway	Received: 12/03/1999 16:36
Sampled: 12/02/1999 14:45	Extracted: 12/09/1999 06:37
Matrix: Water	QC-Batch: 1999/12/08-01.05

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/09/1999 06:37	
Benzene	ND	0.50	ug/L	1.00	12/09/1999 06:37	
Toluene	ND	0.50	ug/L	1.00	12/09/1999 06:37	
Ethyl benzene	ND	0.50	ug/L	1.00	12/09/1999 06:37	
Xylene(s)	ND	0.50	ug/L	1.00	12/09/1999 06:37	
<i>Surrogate(s)</i>						
4-Bromofluorobenzene	70.0	50-150	ug/L	1.00	12/09/1999 06:37	
4-Bromofluorobenzene-FID	72.5	50-150	ug/L	1.00	12/09/1999 06:37	

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-12-0087

To: Treadwell & Rollo

Test Method: 8020  
8015M

Attn: Carrie Austin

Prep Method: 5030

Gas/BTEX

Sample ID: <b>SB-32</b>	Lab Sample ID: <b>1999-12-0087-006</b>
Project: 2543.01 2855 Mandela Parkway	Received: 12/03/1999 16:36
Sampled: 12/02/1999 15:45	Extracted: 12/09/1999 07:10
Matrix: Water	QC-Batch: 1999/12/08-01.05

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/09/1999 07:10	
Benzene	ND	0.50	ug/L	1.00	12/09/1999 07:10	
Toluene	ND	0.50	ug/L	1.00	12/09/1999 07:10	
Ethyl benzene	ND	0.50	ug/L	1.00	12/09/1999 07:10	
Xylene(s)	ND	0.50	ug/L	1.00	12/09/1999 07:10	
<i>Surrogate(s)</i>						
4-Bromofluorobenzene	71.2	50-150	ug/L	1.00	12/09/1999 07:10	
4-Bromofluorobenzene-FID	70.0	50-150	ug/L	1.00	12/09/1999 07:10	*S*

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

# CHROMALAB, INC.

Submission #: 1999-12-0087

Environmental Services (SDB)

To: Treadwell & Rollo

Test Method: 8020  
8015M

Attn.: Carrie Austin

Prep Method: 5030

## Batch QC Report Gas/BTEX

Method Blank	Water	QC Batch # 1999/12/08-01.05
MB: 1999/12/08-01.05-001		Date Extracted: 12/08/1999 09:12

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	12/08/1999 09:12	
Benzene	ND	0.5	ug/L	12/08/1999 09:12	
Toluene	ND	0.5	ug/L	12/08/1999 09:12	
Ethyl benzene	ND	0.5	ug/L	12/08/1999 09:12	
Xylene(s)	ND	0.5	ug/L	12/08/1999 09:12	
<b>Surrogate(s)</b>					
4-Bromofluorobenzene	77.2	50-150	%	12/08/1999 09:12	
4-Bromofluorobenzene-FID	69.8	50-150	%	12/08/1999 09:12	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-12-0087

To: Treadwell & Rollo

Test Method: 8020  
8015M

Attn.: Carrie Austin

Prep Method: 5030

## Batch QC Report Gas/BTEX

Method Blank	Soil	QC Batch # 1999/12/09-01.04
MB: 1999/12/09-01.04-001		Date Extracted: 12/09/1999 05:26

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	12/09/1999 05:26	
Benzene	ND	0.0050	mg/Kg	12/09/1999 05:26	
Toluene	ND	0.0050	mg/Kg	12/09/1999 05:26	
Ethyl benzene	ND	0.0050	mg/Kg	12/09/1999 05:26	
Xylene(s)	ND	0.0050	mg/Kg	12/09/1999 05:26	
<b>Surrogate(s)</b>					
Trifluorotoluene	65.8	53-125	%	12/09/1999 05:26	
4-Bromofluorobenzene-FID	71.0	58-124	%	12/09/1999 05:26	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-12-0087

To: Treadwell & Rollo

Test Method: 8020  
8015M

Attn.: Carrie Austin

Prep Method: 5030

## Batch QC Report Gas/BTEX

Method Blank	Soil	QC Batch # 1999/12/10-01.04
MB: 1999/12/10-01.04-001		Date Extracted: 12/10/1999 10:33

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	12/10/1999 10:33	
Benzene	ND	0.0050	mg/Kg	12/10/1999 10:33	
Toluene	ND	0.0050	mg/Kg	12/10/1999 10:33	
Ethyl benzene	ND	0.0050	mg/Kg	12/10/1999 10:33	
Xylene(s)	ND	0.0050	mg/Kg	12/10/1999 10:33	
<b>Surrogate(s)</b>					
Trifluorotoluene	57.4	53-125	%	12/10/1999 10:33	
4-Bromofluorobenzene-FID	59.0	58-124	%	12/10/1999 10:33	

# CHROMALAB, INC.

Submission #: 1999-12-0087

Environmental Services (SDB)

To: Treadwell & Rollo

Test Method: 8020  
8015M

Attn: Carrie Austin

Prep Method: 5030

## Batch QC Report

Gas/BTEX

Laboratory Control Spike (LCS/LCSD)		Water		QC Batch # 1999/12/08-01.05	
LCS:	1999/12/08-01.05-002	Extracted:	12/08/1999 09:44	Analyzed:	12/08/1999 09:44
LCSD:	1999/12/08-01.05-003	Extracted:	12/08/1999 10:17	Analyzed:	12/08/1999 10:17

Compound	Conc. [ug/L]		Exp. Conc. [ug/L]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	505	501	500	500	101.0	100.2	0.8	75-125	20		
Benzene	89.8	88.4	100.0	100.0	89.8	88.4	1.6	77-123	20		
Toluene	84.9	81.9	100.0	100.0	84.9	81.9	3.6	78-122	20		
Ethyl benzene	85.5	82.7	100.0	100.0	85.5	82.7	3.3	70-130	20		
Xylene(s)	254	248	300	300	84.7	82.7	2.4	75-125	20		
<b>Surrogate(s)</b>											
Trifluorotoluene	435	415	500	500	87.0	83.0		58-124			
4-Bromofluorobenzene-FI	402	399	500	500	80.4	79.8		50-150			

1220 Quarry Lane \* Pleasanton, CA 94566-4756

Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

# CHROMALAB, INC.

Submission #: 1999-12-0087

Environmental Services (SDB)

To: Treadwell & Rollo

Test Method: 8020  
8015M

Attn: Carrie Austin

Prep Method: 5030

## Batch QC Report

Gas/BTEX

Laboratory Control Spike (LCS/LCSD)		Water		QC Batch # 1999/12/08-01.05	
LCS:	1999/12/08-01.05-002	Extracted:	12/08/1999 09:44	Analyzed:	12/08/1999 09:44
LCSD:	1999/12/08-01.05-003	Extracted:	12/08/1999 10:17	Analyzed:	12/08/1999 10:17

Compound	Conc. [ug/L]		Exp. Conc. [ug/L]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	505	501	500	500	101.0	100.2	0.8	75-125	20		
Benzene	89.8	88.4	100.0	100.0	89.8	88.4	1.6	77-123	20		
Toluene	84.9	81.9	100.0	100.0	84.9	81.9	3.6	78-122	20		
Ethyl benzene	85.5	82.7	100.0	100.0	85.5	82.7	3.3	70-130	20		
Xylene(s)	254	248	300	300	84.7	82.7	2.4	75-125	20		
<b>Surrogate(s)</b>											
Trifluorotoluene	435	415	500	500	87.0	83.0		58-124			
4-Bromofluorobenzene-FI	402	399	500	500	80.4	79.8		50-150			

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Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

Environmental Services (SDB)

To: Treadwell & Rollo

Test Method: 8020  
8015M

Attn: Carrie Austin

Prep Method: 5030

## Batch QC Report

Gas/BTEX

<b>Laboratory Control Spike (LCS/LCSD)</b>		<b>Soil</b>		<b>QC Batch # 1999/12/09-01.04</b>	
LCS:	1999/12/09-01.04-002	Extracted:	12/09/1999 05:54	Analyzed:	12/09/1999 05:54
LCSD:	1999/12/09-01.04-003	Extracted:	12/09/1999 06:22	Analyzed:	12/09/1999 06:22

Compound	Conc. [mg/Kg]		Exp. Conc. [mg/Kg]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	0.477	0.505	0.500	0.500	95.4	101.0	5.7	75-125	35		
Benzene	0.0853	0.0916	0.1000	0.1000	85.3	91.6	7.1	77-123	35		
Toluene	0.0866	0.0935	0.1000	0.1000	86.6	93.5	7.7	78-122	35		
Ethyl benzene	0.0874	0.0937	0.1000	0.1000	87.4	93.7	7.0	70-130	35		
Xylene(s)	0.255	0.275	0.300	0.300	85.0	91.7	7.6	75-125	35		
<b>Surrogate(s)</b>											
Trifluorotoluene	355	356	500	500	71.0	71.2		53-125			
4-Bromofluorobenzene-FI	393	404	500	500	78.6	80.8		58-124			



# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-12-0087

To: Treadwell & Rollo

Test Method: 8020  
8015M

Attn: Carrie Austin

Prep Method: 5030

## Batch QC Report

Gas/BTEX

### Laboratory Control Spike (LCS/LCSD)

Soil

QC Batch # 1999/12/10-01.04

LCS: 1999/12/10-01.04-002

Extracted: 12/10/1999 16:17

Analyzed: 12/10/1999 16:17

LCSD: 1999/12/10-01.04-003

Extracted: 12/10/1999 11:29

Analyzed: 12/10/1999 11:29

Compound	Conc. [mg/Kg]		Exp. Conc. [mg/Kg]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Gasoline	0.437	0.415	0.500	0.500	87.4	83.0	5.2	75-125	35		
Benzene	0.0983	0.0920	0.1000	0.1000	98.3	92.0	6.6	77-123	35		
Toluene	0.0983	0.0944	0.1000	0.1000	98.3	94.4	4.0	78-122	35		
Ethyl benzene	0.0987	0.0941	0.1000	0.1000	98.7	94.1	4.8	70-130	35		
Xylene(s)	0.287	0.276	0.300	0.300	95.7	92.0	3.9	75-125	35		
<b>Surrogate(s)</b>											
Trifluorotoluene	398	345	500	500	79.6	69.0		53-125			
4-Bromofluorobenzene-FI	341	336	500	500	68.2	67.2		58-124			

To:  
Attn:

Test Method:  
Prep Method:

### Legend & Notes



**APPENDIX D**  
**CALCULATIONS**

**APPENDIX D  
CALCULATIONS**

**Product thickness in formation calculations based on American Petroleum Institute's,  
*Free-Product Recovery of Petroleum Hydrocarbon Liquids*, June 1999 LNAPL  
Distribution.xls methodology.**

TR-6 10/4/99

RJC (8/14/98)

**Data Sheet for van Genuchten Model of LNAPL Distribution and Permeability**

Basic data comes from the Brooks-Corey Worksheet

van Genuchten Parameters	
M =	0.083
N =	1.090
$\alpha$ =	0.796
$\alpha_{ao}$ =	1.799
$\alpha_{ow}$ =	0.279

$b_o$ =	3.222
$S_{wr}$ =	0.180
$S_{ors}$ =	0.150
$S_{orv}$ =	0.050
$Z_{orv}$ =	0.000
$Z_{ors}$ =	0.000
$S_m$ =	0.000
$Z_{ao}$ =	0.870
$Z_{ow}$ =	-2.352
$Z_{max}$ =	15.683

(length) *meters*

elev. vadose zone residual (length)

elev. saturated zone residual (length)

minimum liquid sat. (rel. perm. calc.)

maximum free-product elevation

Effective LNAPL Saturation and Relative Permeability	
$D_o$ =	0.622
$S_o$ =	0.508
$k_{ro}$ =	0.452

*meters*

$D_o$  = thickness floating product in formation  
= 2 feet

TR-5 10/4/99

RJC (8/14/98)

**Data Sheet for van Genuchten Model of LNAPL Distribution and Permeability**

Basic data comes from the Brooks-Corey Worksheet

van Genuchten Parameters	
M =	0.083
N =	1.090
$\alpha$ =	0.796
$\alpha_{ao}$ =	1.799
$\alpha_{ow}$ =	0.279

$b_o$ =	2.274	(length) meters
$S_{wr}$ =	0.180	
$S_{ors}$ =	0.150	
$S_{orv}$ =	0.050	
$Z_{orv}$ =	0.000	elev. vadose zone residual (length)
$Z_{ors}$ =	0.000	elev. saturated zone residual (length)
$S_m$ =	0.000	minimum liquid sat. (rel. perm. calc.)
$z_{ao}$ =	0.614	
$z_{ow}$ =	-1.660	
$Z_{max}$ =	12.991	maximum free-product elevation

Effective LNAPL Saturation and Relative Permeability	
$D_o$ =	0.487
$S_o$ =	0.564
$k_{ro}$ =	0.453

meters

$D_o$  = thickness of product  
in formation  
= 1.6 feet

TR-4 10/4/99

**Data Sheet for van Genuchten Model of LNAPL Distribution and Permeability**

Basic data comes from the Brooks-Corey Worksheet

van Genuchten Parameters	
M =	0.083
N =	1.090
$\alpha$ =	0.796
$\alpha_{ao}$ =	1.799
$\alpha_{ow}$ =	0.279

$b_o$ =	0.817
$S_{wr}$ =	0.180
$S_{ors}$ =	0.150
$S_{orv}$ =	0.050
$Z_{orv}$ =	0.000
$Z_{ors}$ =	0.000
$S_m$ =	0.000
$Z_{ao}$ =	0.221
$Z_{ow}$ =	-0.596
$Z_{max}$ =	8.913

(length) meters

elev. vadose zone residual (length)

elev. saturated zone residual (length)

minimum liquid sat. (rel. perm. calc.)

maximum free-product elevation

Effective LNAPL Saturation and Relative Permeability	
$D_o$ =	0.289
$S_o$ =	0.931
$k_{ro}$ =	0.491

meters

$D_o$  = thickness floating product in formation  
= 0.95 feet



**Brooks-Corey LNAPL Distribution Worksheet**

Enter Data in Yellow Region - Use Consistent Length Units

**Monitoring Well Thickness**

$b_o = 3.222$

(length) meters [TR-6 10/4/99 10.57 ft]

**Soil Characteristic**

$n =$	0.380	porosity
$\lambda =$	0.090	pore size dist. Index
$\Psi_{baw} =$	1.250	displacement pressure head (length)
$S_{wr} =$	0.180	irreducible water saturation
$S_{ors} =$	0.150	residual LNAPL saturation (saturated)
$S_{orv} =$	0.050	residual LNAPL saturation (vadose)
$S_{or} =$	0.000	resid. LNAPL sat. (rel. perm. calc.)
$Z_{orv} =$	0.000	elev. vadose zone residual (length)
$Z_{ors} =$	0.000	elev. saturated zone residual (length)

**Fluid Characteristics:**

$\rho_o =$	0.730	LNAPL density (g/cm <sup>3</sup> )
$\sigma_{BW} =$	65.000	air/water surface tension (dyne/cm)
$\sigma_{ow} =$	50.000	LNAPL/water surface tension (dyne/cm)
$\sigma_{ao} =$	21.000	air/LNAPL surface tension (dyne/cm)

**Copy data for Work Chart**

$b_o =$	3.222
$D_o =$	0.230
$S_o =$	0.188
$k_{ro} =$	0.005

monitoring well thickness in computation  
formation free-product volume (length)  
effective LNAPL layer saturation  
effective LNAPL layer rel. permeability

$\epsilon =$	25.222
$z_{ao} =$	0.870
$z_{ow} =$	-2.352
$z_r =$	9.525
$\Psi_{bao} =$	0.553
$\Psi_{bow} =$	3.561
$\Delta\Psi =$	3.008
$z_{ao} + \Psi_{bao} =$	1.423
$z_{ow} + \Psi_{bow} =$	1.209

**van Genuchten Parameters**

$M =$	0.083
$N =$	1.090
$\alpha =$	0.796
$\alpha_{ao} =$	1.799
$\alpha_{ow} =$	0.279

→ Data selected based on soil type and API recommendations

Appendix D  
Skimmer Pump Radius of Influence Calculations

Volume removed      =      Volume recovered  
from formation

$$\text{Pi}/4 \times R^2 \times D_o \times n \times (\text{change sat}) = \text{Volume recovered} = V_r$$

$\text{Pi}/4 \times R^2 \times D_o \times n$  = pore volume of cylinder in formation

R = lateral (radial) distance

$D_o$  = initial formation LNAPL thickness

n = porosity

(change sat) = change in LNAPL saturation within pore volume

(change sat) = (LNAPL initial saturation) - (LNAPL final saturation)

Re-arrange and solve for R:

$$R = \text{square root} \left( 4 / \text{Pi} \times V_r \times \frac{1}{[D_o \times n \times (\text{change sat})]} \right)$$

If  $D_o$  in meters, to solve for R in feet:

$$R (\text{ft}) = \text{sq rt} \left( 4 / \text{Pi} \times V_r \text{ gal} (0.13368 \text{ ft}^3/\text{gal}) \times \frac{1}{[D_o \text{ meters} \times n \times (\text{change sat}) \times 3.28 \text{ ft/m}]}\right)$$

Appendix D  
Skimmer Pump Radius of Influence Calculations

Well	Volume of Product Recovered $V_r^1$ (gal)	LNAPL Thickness in Formation $D_o^2$ (ft)	Porosity $n^3$	Change in LNAPL Saturation change sat <sup>4</sup>	Radius of Influence R (ft)
TR-6	62.1	0.622	0.38	0.05	17
TR-5	28.7	0.487	0.38	0.05	13
TR-4	7.3	0.289	0.38	0.05	8.3
Average:					12.5

References:

- 1) Actual volume of product extracted June and October 1999 (see Table 6).
- 2) Estimated from 4 October 1999 free product and water levels (Table 6) and API van Genuchten model using the LNAPL Distribution.xls spreadsheet (American Petroleum Institute, Free-Product Recovery of Petroleum Hydrocarbon Liquids, June 1999).
- 3) Assumed value obtained from tabulated porosity values based on soil type (Table 3.3.2, API June 99).
- 4) Assumed change in saturation of 5% based on *Soil Properties and Design Factors Influencing Free-Phase Hydrocarbon Cleanup*, in the journal Environmental Science and Technology, 1998, issue 32, pages 287-293.