ConocoPhillips
76 Broadway
Sacramento, California 95818

January 14, 2009

Barbara Jakub
Alameda County Health Agency
1131 Harbor Bay parkway, Suite250
Alameda, California 94502-577

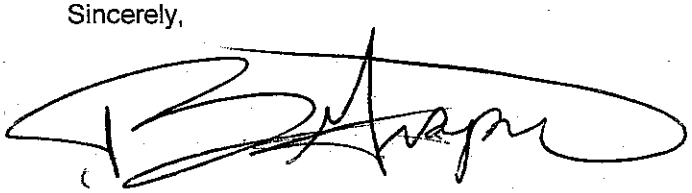
Re: ***Delineation of Hydrocarbon Affected Soil and Groundwater --Work Plan***
76 Service Station # 3737 RO 067
1400 Powell Street
Emeryville, CA

Dear Ms. Jakub,

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please call me at (916) 558-7666.

Sincerely,



Terry L. Grayson
Site Manager
Risk Management & Remediation

MS. BARBARA JAKUB
Alameda County Health Agency
Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

cc: Mr. Terry Grayson, ConocoPhillips (electronic copy)

DELTA

WORK PLAN
FOR DELINEATION OF HYDROCARBON AFFECTED SOIL AND GROUNDWATER

76 SERVICE STATION NO. 3737
1400 POWELL STREET
EMERYVILLE, CA
RO #067

DELTA PROJECT C103737
January 8, 2009

Prepared for:

ConocoPhilips Company
76 Broadway
Sacramento, CA 95818

Prepared by:

Delta Consultants

a member of: Inogen Environmental Alliance

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Phone +1 916.638.2085 / USA Toll Free 800.477.7411
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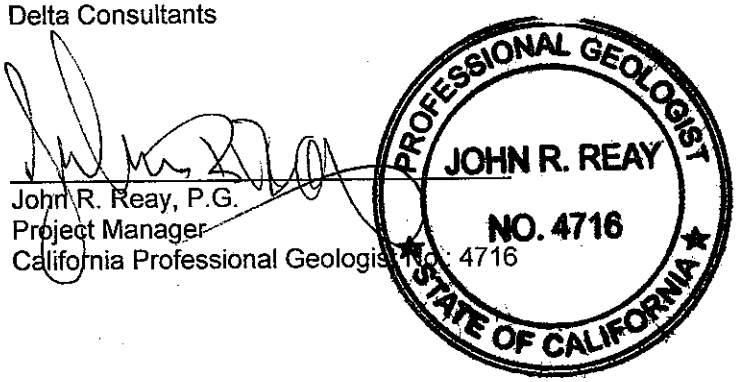
TABLE OF CONTENTS

1.0 CERTIFICATION

This report was prepared under the supervision and direction of the undersigned California Professional Geologist.

Delta Consultants



John R. Reay, P.G.
Project Manager
California Professional Geologist No: 4716

2.0 DECLARATION

On behalf of ConocoPhillips Company (COP), Delta Consultants (Delta) has prepared this Work Plan Addendum for Delineation of Hydrocarbon Affected Soil for 76 Station 3737, 1400 Powell Street, Emeryville, California (Figure 1).

3.0 PROJECT OBJECTIVES AND SCOPE OF WORK

The objective of this assessment is to determine if petroleum hydrocarbons are present in site soils and groundwater, and if so, to define their lateral and vertical extent. To evaluate site soils and groundwater, Delta will advance seven (7) CPT borings to approximately 60 feet below ground surface (bgs) at selected onsite locations and collect soil and groundwater samples at selected depth intervals to evaluate subsurface stratigraphy and potential hydrocarbon impacts to soil and groundwater. See Figure 2 for proposed CPT boring locations.

4.0 SITE DESCRIPTION AND BACKGROUND

4.1 SITE DESCRIPTION

The site is located at 1400 Powell Street, Emeryville, California and is currently an active service station (Figure 2). Properties in the immediate site vicinity are predominantly residential and commercial. Local topography is generally flat with an average site elevation of approximately 15 feet above mean sea level (MSL). Site soils consist of silts and clays and groundwater beneath the site is reportedly encountered at approximately 10 feet bgs.

4.2 SITE BACKGROUND

Between 1917 and 1964 Union Oil Company of California operated a Distribution Plant that was bounded by Powell Street to the south, 59th Street to the north, Peladeau Street to the west, and Hollis Street to the east. This distribution facility contained numerous above ground and underground storage tanks (ASTs and USTs), a garage along Hollis Street and an auto repair shop along Peladeau Street (Treadwell & Rollo, 2007 - Appendix A). The entire gasoline service station was constructed on what was Union Oil Company of California Distribution Plant property. On the portion of the former Distribution Plant that the subject site currently occupies, there were a total of eight ASTs containing oil and gasoline on the west side, and an oil warehouse, oil pump, and asphalt staging area on the east side. Figure 3 illustrates the approximate locations of these structures, based on a review of the Sanborn Map (Treadwell & Rollo, 2005 - Appendix B). The eight former ASTs located on the western portion of the Site had a combined storage capacity of 624,000 gallons, and were installed within the former berm as presented in Figure 3. The lateral extent of this former bermed area includes the location of the three existing USTs as well as a majority of the existing underground piping and dispensers currently at the site.

According to Treadwell & Rollo's Site Management Completion report for 5885 Hollis Street, Emeryville, dated January 5, 2007, elevated levels of hydrocarbons were observed in soils of the Emeryville Industrial Court, now Emerystation East, the property located north of the subject site. Soil samples collected from soil borings TR-25 and TR-28, located approximately 5 feet north of the Site's northern property line, contained maximum concentrations of 2,100 milligrams per kilogram (mg/kg) of total petroleum hydrocarbons as gasoline (TPH-g) and 280 mg/kg of total petroleum hydrocarbons as motor oil (TPH-mo), respectively, at 6 feet bgs. A grab groundwater sample collected from TR-25 contained 150,000 micrograms per liter (ug/L) TPH-g and 2,500 ug/L benzene. The entire Emerystation East property was excavated to a total depth of approximately 12 to 15 fbg to prepare the foundation of the building that currently occupies the site. Confirmation soil samples collected in the area just to the north of the subject site on the Emerystation East property indicated that TPH-g and TPH-mo were detected at maximum concentrations of 10 mg/kg and 6.0 mg/kg, respectively. Based on these results, it would appear that the majority of soil contamination in the vadose zone that could contribute significant contaminants to groundwater in the vicinity immediately north of the subject site has been removed.

During the excavation of the foundation for the Emerystation East building, three dewatering wells were installed and sampled on a weekly basis. Dewatering well DW-14, located in the southwestern corner of the property, had high levels of TPH-g, total petroleum hydrocarbons as diesel (TPH-d), and benzene, toluene, ethyl benzene, and total xylenes (BTEX) throughout the course of the excavation work. The maximum

concentrations of TPH-g and TPH-d detected in extracted groundwater were 1,800 ug/L and 370 ug/L, respectively (Treadwell & Rollo, 2007).

August 11, 1993: GeoStrategies removal of an Oil-Water separator.

September 10, 1997: Soil gas survey conducted by Pacific Environmental Group Inc.

May 7, 1999: Under the supervision of TRC, Norman and Norman completed the removal of product piping associated with the former fuel dispenser islands. Immediately following the piping removal soil samples D-I, D-2, PL-I, PL-2, PL-3, and PL-4 were collected at selected points along the former product line trench and at the former dispenser islands, at depths ranging from 1.5 to 4.0 bgs. The samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg), total petroleum hydrocarbons as diesel (TPHd), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and methyl tertiary butyl ether (MTBE) by EPA Methods 8015/8020.

May 11, 1999: Norman and Norman under the supervision of TRC and Robert Weston with Alameda County Environmental Health Services, over excavated soil from below the former northwest dispenser and product piping. Approximately six cubic yards of soil was removed. Soil sample PL-2 was collected from below the excavation, at a depth of 4 bgs. In addition, a groundwater sample (TCW-I) was collected and analyzed for TPHg, TPHd, BTEX, and MTBE by EPA Methods 8015/8020.

May 24, 1999: One single-walled 550-gallon steel waste oil UST, located west of the station building was removed under the direction of Susan Hugo with ACHCS and supervision of TRC. Soil samples WO-4 through WO-7 and WO-I were collected from the bottom and sidewalls of the excavation at depths of 7.5 and 10 bgs and analyzed for TPHg, TPHd, total petroleum hydrocarbons as motor oil (TPHmo), BTEX, and MTBE. November 6,2007: Site transferred to Delta Consultants.

5.0 PREVIOUS ASSESSMENT

No previous assessment has been conducted at the subject site.

5.1 SENSITIVE RECEPTOR SURVEY

A receptor survey has not been conducted. The completion of a sensitive receptor survey is proposed to identify water supply wells (municipal, agricultural and domestic) within a one-half mile radius of the site. Delta will also identify surface water bodies (streams, ponds, etc.), schools, daycare centers, and hospitals within 1000 feet of the site. MCDPH considers the underlying aquifer to be a potential drinking water supply.

5.2 HYDROGEOLOGIC SITE CONDITIONS

Site specific hydrologic conditions have not been determined.

6.0 PRE-FIELD ACTIVITIES, PERMITTING AND UTILITY LOCATION

6.1 PRE-FIELD ACTIVITIES

Prior to initiation of field activities, Delta will prepare a HASP specific to the site and work being performed in accordance with Title 8, Section 5192 of the California Code of Regulations. The will contain a list of emergency contacts, as well as a hospital route map to the nearest emergency facility, and was reviewed daily by field personnel.

6.2 PERMITTING

Drilling permits will be obtained for the boring and the monitoring wells as necessary from the appropriate parties prior to commencing field work. Delta will prepare a HASP specific to the site and work being performed in accordance with Title 8, Section 5192 of the California Code of Regulations. The HASP will contain a list of emergency contacts, as well as a hospital route map to the nearest emergency facility, and was reviewed daily by field personnel.

6.3 UNDERGROUND UTILITY LOCATION

The proposed boring locations will be marked in the field prior to drilling, and Underground Services Alert (USA) will be contacted at least 48 hours prior to initiating drilling to minimize the risk of damaging underground utilities. A private utility locator will also be retained to survey the locations and further minimize the risk of damaging underground utilities. Additionally, an air-knife vacuum truck will be used to clear the proposed boring and monitoring well locations to a depth of at least 5 feet bgs prior to drilling.

7.0 PROPOSED CONE PENETROMETER TESTING (CPT)

To define subsurface stratigraphy and to obtain an initial determination of the lateral and vertical extent of petroleum hydrocarbons that may be present in the soil and groundwater beneath the site, it is proposed that CPT borings be advanced at seven locations to approximately 60 feet bgs. A maximum of ten soil samples will be collected from field selected depths from each CPT boring, along with groundwater grab sample(s) from each boring at field selected depths. Soil and groundwater sample(s) will be collected from significant sands and/or significant changes in lithology based on real-time interpretation of CPT results. Proposed CPT boring locations are shown in Figure 2. Non-disposable sampling equipment will be decontaminated between samples in a non-phosphate detergent and double rinsed with potable water. Following sample collection push rods will be removed from the hole and neat cement grout will be pumped through the push rods as they are extracted from the borehole affecting borehole abandonment.

7.1 SOIL SAMPLING AND LABORATORY ANALYSIS

Soil samples will be collected for laboratory analysis at field selected depths based on CPT log analysis as described above. A pre-calibrated photo-ionization detector (PID) will be used to field screen soil samples for the presence of organic vapors. Discrete soil samples retained for analysis will be capped with Teflon sheeting and tight-fitting plastic end caps, properly labeled with a unique identification number, placed in an ice-chilled cooler, and transported to a California-certified analytical laboratory with chain of custody documentation. Soil samples will be analyzed for TPHg, TPHd by EPA Method 8015M, benzene, toluene, ethylbenzene, toluene, xylenes, methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE), di-isopropyl ether (DIPE), tertiary amyl methyl ether (TAME), tert butyl alcohol (TBA), ethylene dibromide (EDB), ethylene dichloride (EDC) and ethanol by EPA Method 8260.

7.2 GROUNDWATER SAMPLING AND LABORATORY ANALYSIS

Groundwater grab samples will be collected from all CPT borings. The groundwater samples will be placed into laboratory supplied sample bottles labeled with a unique identification number. The samples will then be placed into an ice-chilled cooler and transported to a California-certified analytical laboratory with chain of custody documentation. Groundwater samples will be analyzed for TPHg, TPHd by EPA Method 8015M, benzene, toluene, ethylbenzene, toluene, xylenes, methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE), di-isopropyl ether (DIPE), tertiary amyl methyl ether (TAME), tert butyl alcohol (TBA), ethylene dibromide (EDB), ethylene dichloride (EDC) and ethanol by EPA Method 8260.

7.3 SAMPLE POINT SURVEY

Following the completion of the sampling event, a California licensed surveyor will survey the northing and easting of the CPT boring locations using Datum NGVD29 or NAD 88. A global positioning system (GPS) will also be used to survey in the latitude and longitude of the wells to be uploaded into California's GeoTracker database system. The survey of the well locations will be to sub-meter accuracy.

7.4 DISPOSAL OF DRILL CUTTINGS AND WASTEWATER

Drill cuttings and decontamination water generated during the sampling event will be placed into properly labeled 55-gallon Department of Transportation (DOT) approved steel drums and temporarily stored on the property. Samples of the drill cuttings and wastewater will be collected, properly labeled and placed on ice for submittal to a California-certified laboratory and analyzed for TPHg by EPA Test Method 8015M, BTEX and MTBE by EPA Method 8260B, and total lead by EPA Method 6010B. A chain-of-custody will accompany the samples during transportation to the laboratory. Subsequent to receiving the laboratory analytical results, the

drummed drill cuttings and wastewater will be profiled, transported, and disposed of at a COP approved facility.

8.0 REPORTING

Following completion of the field work and receipt of analytical results, a site investigation report will be prepared and submitted within 60 days. The report will present the details of the boring activities, including copies of boring permits, and details of disposal activities and copies of disposal documents. Required electronic submittals will be uploaded to the State Geotracker database.

9.0 REMARKS

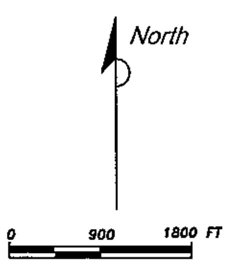
The recommendations contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This report is based upon a specific scope of work requested by the client. The Contract between Delta and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report will be performed. This report is intended only for the use of Delta's Client and anyone else specifically listed on this report. Delta will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Delta makes no express or implied warranty as to the contents of this report.

If you have questions regarding this report, please contact John Reay at (916) 503-1260 or Terry Grayson at 916-558-7666.

Sincerely,

DELTA CONSULTANTS

FIGURES



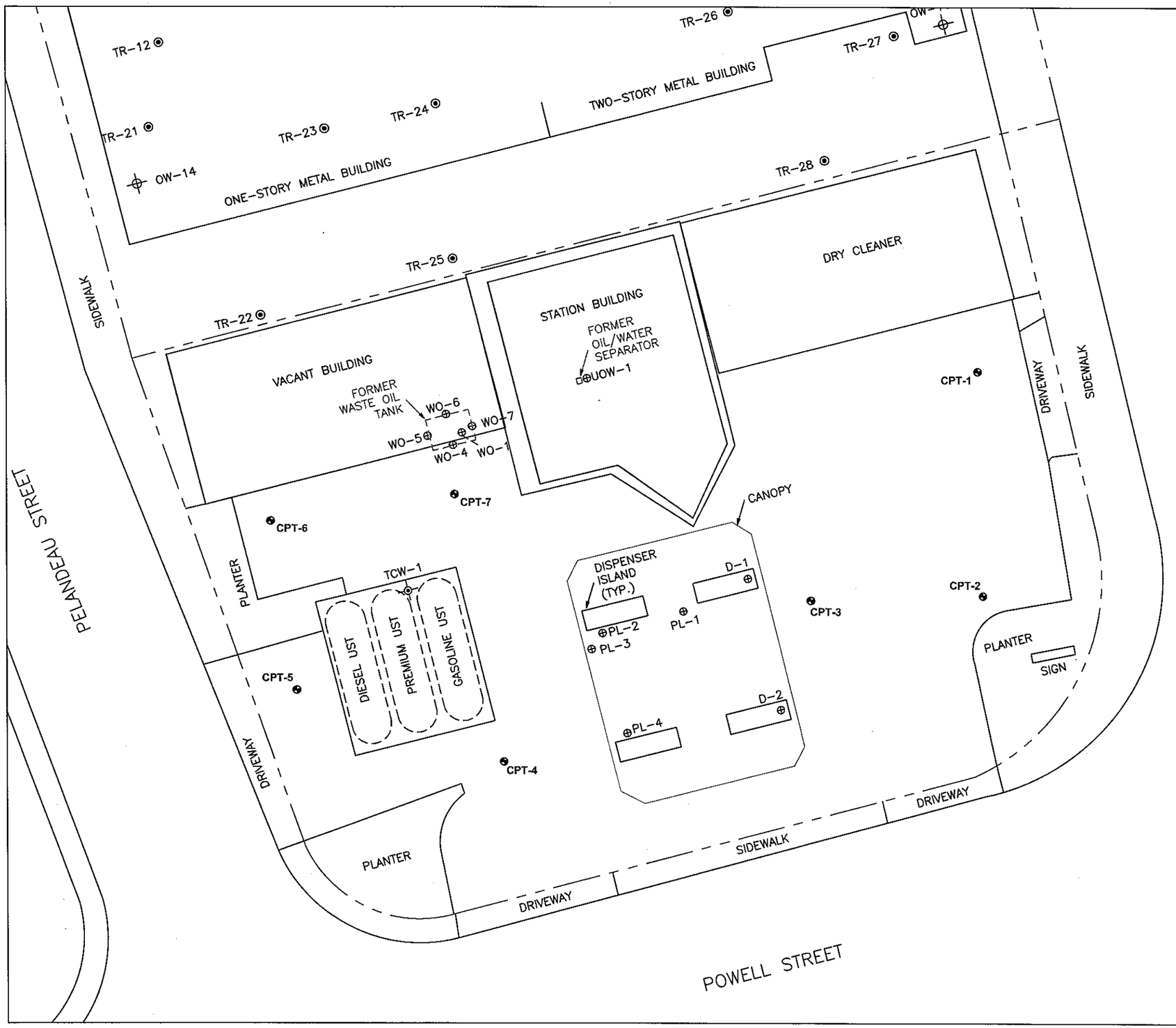
SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, OAKLAND WEST (1996) QUADRANGLE

FIGURE 1

SITE LOCATION MAP

FORMER 76 STATION #3737
1400 POWELL STREET
EMERYVILLE, CALIFORNIA

PROJECT NO. C1037-3705-1	DRAWN BY DR 12/31/08	DELTA®
FILE NO. 3737-SiteLocator	PREPARED BY JH	
REVISION NO.	REVIEWED BY EC	



LEGEND:

- TANK CAVITY WELL
- APPOROXIMATE LOCATION OF DEWATERING WELL (OFFSITE)
- APPROXIMATE BORING LOCATION BY TREADWELL AND ROLLO (OFFSITE), 2000–2005
- HISTORICAL BORING LOCATION (ONSITE)
- APPOROXIMATE LOCATION OF SITE FEATURES ON 1951 SANBORN MAP
- APPOROXIMATE LOCATION OF FORMER CONTAINMENT BERM
- APPOROXIMATE LOCATION PROPOSED CPT BORINGS

N

0 30 FT

SCALE

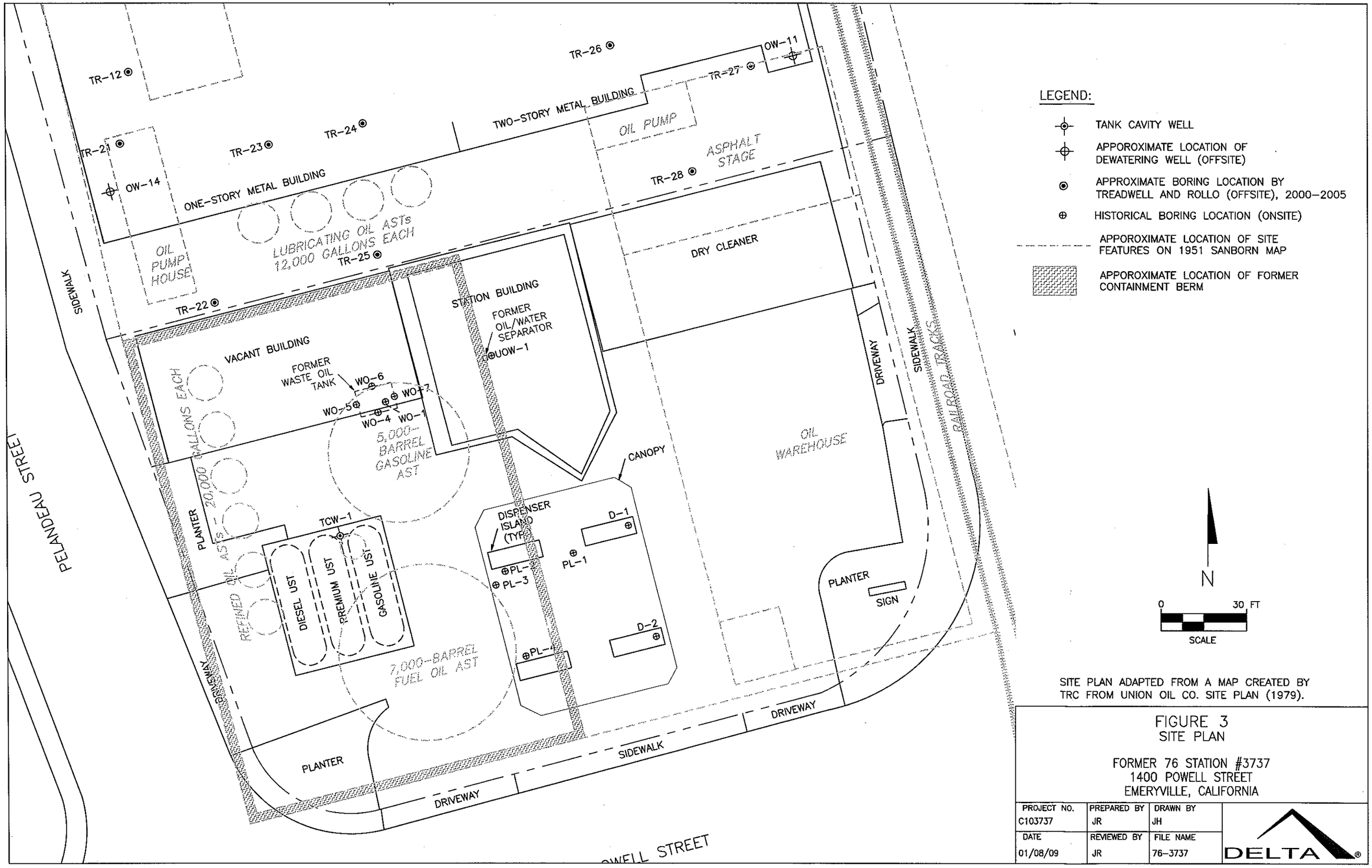
SITE PLAN ADAPTED FROM A MAP CREATED BY TRC FROM UNION OIL CO. SITE PLAN (1979).

FIGURE 2
SITE PLAN

FORMER 76 STATION #3737
1400 POWELL STREET
EMERYVILLE, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
C103737	JR	JH
DATE	REVIEWED BY	FILE NAME
01/08/09	JR	76-3737

DELTA®



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- APPOROXIMATE LOCATION OF SITE FEATURES ON 1951 SANBORN MAP
- APPOROXIMATE LOCATION OF FORMER CONTAINMENT BERM

N

0 30 FT

SCALE

SITE PLAN ADAPTED FROM A MAP CREATED BY TRC FROM UNION OIL CO. SITE PLAN (1979).

FIGURE 3
SITE PLAN

FORMER 76 STATION #3737
1400 POWELL STREET
EMERYVILLE, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
C103737	JR	JH
DATE	REVIEWED BY	FILE NAME
01/08/09	JR	76-3737

DELTA®

APPENDIX A

Treadwell & Rollo, 2007
Site Management Completion Report for 5885 Hollis St, Emeryville, CA

SITE MANAGEMENT COMPLETION REPORT
5885 HOLLIS STREET
Emeryville, California

E S East Associates, LLC
Emeryville, California

5 January 2007
Project No. 4069.01

Treadwell&Rollo
Environmental and Geotechnical Consultants

5 January 2007
Project 4069.01

Mr. Geoffrey Sears
E S East Associates, LLC, an affiliate of Wareham Development
1120 Nye Street, Suite 400
San Rafael, CA 94901

Subject: Site Management Completion Report
5885 Hollis Street
Emeryville, California

Dear Mr. Sears:

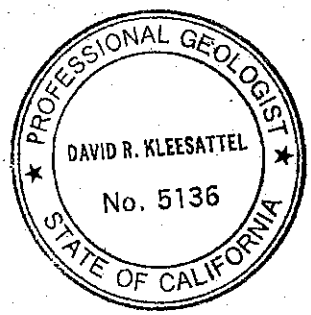
We have completed the Site Management Completion Report for the Site located at 5885 Hollis Street in Emeryville, California. We declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report are true and correct to the best of our knowledge.

Please call us at (510) 874-4500 if you have any questions.

Sincerely yours,
TREADWELL & ROLLO, INC.

Glenn M. Leong, R.E.A.
Senior Associate Scientist

David R. Kleesattel, P.G.
Senior Geologist



Eric T. Morita
Senior Staff Geologist

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

PHOTOGRAPHS

APPENDICES

SITE MANAGEMENT COMPLETION REPORT
5885 HOLLIS STREET
Emeryville, California

1.0 INTRODUCTION

This Site Management Completion Report has been prepared by Treadwell & Rollo, Inc. (Treadwell & Rollo) for the property located at 5885 Hollis Street in Emeryville, California (Site) (Figures 1 and 2). This Site Management Completion Report was prepared on behalf of E S East Associates, LLC (Client) to fulfill soil and groundwater removal requirements documented in the *Site Management Plan, 5885 Hollis Street, Emeryville, California* prepared by Treadwell & Rollo on 14 July 2005 (SMP) and the approval letter from the Alameda County Health Care Services Agency (ACHCSA) dated 8 December 2005.

2.0 PURPOSE

The purposes of this Site Management Completion Report are to:

- summarize soil and groundwater removal activities performed at the Site and to document that they were performed in accordance with the SMP and ACHCSA requirements
- summarize concentrations of residual contaminants that remain in soil and groundwater at the Site after redevelopment activities have been completed.

3.0 BACKGROUND

3.1 Site Description and History

The Site has a footprint of approximately 220 feet by 550 feet and is bounded by Hollis Street to the east, 59th Street to the north, Peladeau Street to the west, and a Chevron Service Station and Powell Street to the south (Figure 2).

The Site redevelopment consists of a multi-level commercial laboratory building with an underground parking garage that extends across the Site footprint. The building foundation has been completed with active vertical construction activities currently being performed. With the exception of raised beds for landscaping, no exposed soil is anticipated once construction is completed.

Union Oil Company of California occupied the Site and the property to the south of the Site and used it as a distribution facility from 1917 to 1964. During this period, the Site contained numerous above- and underground petroleum storage tanks, a garage along Hollis Street, and an auto repair shop along Peladeau Street. Along the southeastern portion of the Site, a total of 40,000-gallons of lubricating oil were reportedly stored in aboveground tanks that extended onto the property to the south (currently the Chevron Service Station).

During the remodeling of one of the buildings in 1985 and during the widening of 59th Street and replacement of an underground utility in 1999, petroleum hydrocarbons were discovered in the soil with total petroleum hydrocarbons (TPH) as diesel (TPH-d) detected at a maximum concentration of 13,000 milligrams per kilogram (mg/kg) and total petroleum hydrocarbons as motor oil (TPH-mo) at 15,000 mg/kg. The excavated soil was reportedly transported and disposed of at a regulated landfill.

In 1990, an unknown 10,000-gallon underground gasoline storage tank was reportedly located and removed from the Site by a tenant (S. B. Thomas). No records were found in regards to the removal of the underground storage tank. However, according to Marks Management, the previous property owners, soil contamination was noted during the tank removal and the affected soil was disposed at a regulated landfill.

3.1.1 Investigation performed in 2000

In April 2000, Treadwell & Rollo performed a subsurface investigation for Marks Management Company that included the collection of soil and grab groundwater samples. The investigation was conducted to provide additional soil and groundwater data to assist the redevelopment of the Site. Results of the soil sample analyses indicated the presence of:

- Total recoverable petroleum hydrocarbons (TRPH) at a maximum concentration of 9,900 mg/kg
- Total petroleum hydrocarbons as gasoline (TPH-g) at a maximum concentration of 160 mg/kg
- TPH-d at a maximum concentration of 360 mg/kg
- TPH-mo at a maximum concentration of 6,600 mg/kg
- Benzo(a)pyrene at a maximum concentration of 660 micrograms per kilogram (µg/kg)
- Carbon disulfide at a maximum concentration of 17 µg/kg
- Total chromium at a maximum concentration of 97 mg/kg
- Lead at a maximum concentration of 150 mg/kg
- Nickel at a maximum concentration of 110 mg/kg
- Zinc at a maximum concentration of 110 mg/kg.

The maximum concentration of TRPH and TPH-mo were each detected in sample TR-1 at 4 feet below ground surface (bgs) (TR-1-4.0), located near the northeast corner of the Site near 59th Street (Figure 3). The maximum detected concentration of TPH-g was detected in sample TR-12 at 10 feet bgs (TR-12-10), which is located near the former oil pump area near the southwest corner of the Site. When encountered elsewhere, TRPH, TPH-g, and TPH-mo were generally at concentrations one order of magnitude lower. The only volatile organic compound (VOC) detected at or above the laboratory reporting limits in the soil samples analyzed was carbon disulfide in sample TR-18 at 15 feet bgs (TR-18-15) at a concentration of 17 µg/kg. Benzo(a)pyrene, the only semi-volatile organic compounds (SVOC) detected, was found in 5 of the 9 soil samples analyzed in concentrations ranging from 540 to 600 µg/kg. Figure 4 presents the TPH-g and TPH-mo concentrations in soil.

In April 2000, grab groundwater samples were collected from four of the soil borings (TR-1, TR-6, TR-9, TR-12). These grab groundwater samples indicated the presence of:

- TRPH at a maximum concentration of 9,900 µg/L
- TPH-g at a maximum concentration of 3,300 µg/L
- TPH-d at a maximum concentration of 700 µg/L
- TPH-mo at a maximum concentration of 1,400 µg/L.

Grab groundwater samples were not analyzed for benzene, toluene, ethylbenzene or xylenes (BTEX) in the 2000 investigation.

3.1.2 Additional Information Requested from the ACHCSA

The results of the 2000 investigation (along with the 1995 Weiss Associates Environmental Site Assessment), were submitted by Marks Management Company to the ACHCSA for review related to their proposed development of the Site. In a letter dated 23 June 2000, ACHCSA indicated several issues would need to be addressed prior to development of the Site. Treadwell & Rollo submitted a letter dated 8 August 2000 that addressed the identified issues.

In January 2001, a meeting was held between ACHCSA, Marks Management, their architect, the City of Emeryville, and Treadwell & Rollo to discuss changes in the development plan documented in a letter prepared by Treadwell & Rollo dated 8 December 2000. The revision to the plan included excavation of the entire Site to a depth of approximately 10 feet bgs. The following issues were identified by ACHCSA to be addressed prior to development of the Site:

- potential future groundwater intrusion into the basement of the building
- evaluate and demonstrate that the proposed construction activities will not create migration of on-Site and off-Site contamination during construction and after completion of the development

- evaluate vapor seepage into the basement/building and identify human health risks to the occupants of the proposed building
- provide to ACHCSA Site development specifics, including proposed Site configuration and excavation depths
- development of a human and environmental risk assessment for the proposed use of the Site, including development of a Site conceptual model identifying sources of releases, chemicals of potential concern, routes of exposure (including vapor seepage), and sensitive receptors
- development of a short-term and long-term risk management plan to address construction health and safety, soil and groundwater management, dust control, stormwater prevention, institutional controls, and other protocols for handling soil and groundwater
- collect confirmation samples for chemicals in soil and groundwater.

3.1.3 Investigations Performed in 2005

In January and June 2005, Treadwell & Rollo performed additional subsurface investigations for E S East Associates, LLC that included the collection of soil and grab groundwater samples. E S East Associates, LLC is the current owner who purchased the Site from Marks Management in 2004. Results of the 2005 investigations are provided in the Site Management Plan (Appendix A).

January 2005 Investigation

The objective of the January 2005 investigation was to further assess whether hazardous substances or petroleum products that affected soil and/or groundwater were present beneath the Site. The information developed in the ESA prepared by Weiss Associates (1995) and the 2000 investigation suggested that activities from the Union Oil Company distribution facility, the Intermountain Terminal Company truck storage area and parts warehouse and a Chevron Service

Station located immediately adjacent to the Site to the south have likely affected soil and groundwater at the Site.

Soil samples were collected from nine environmental soil borings (TR-19 through TR-22, TR-25, and TR-28 through TR-31 (Figure 3) and four grab groundwater samples were collected from temporary wells placed in select borings (TR-25, TR-29 through TR-31). Soil and groundwater samples were selectively analyzed for TPH-d, TPH-mo, TPH-g, BTEX, volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), and total lead. Five additional sampling locations were proposed based on previous Site operations, but were inaccessible in January 2005 due to lack of Site access. These soil samples were collected later in June 2005 and are discussed in the following section.

Analytical results for soil samples collected in January 2005 indicated that TPH-d was detected in 17 of the 18 soil samples analyzed with concentrations that ranged from less than 1.0 mg/kg in TR-19 at 6.0 feet bgs to a maximum concentration of 1,100 mg/kg in TR-31 at 2.5 feet bgs. All detected concentrations of TPH-d were reported with one or more laboratory analytical qualifiers including "individual samples may exhibit a chromatographic pattern which does not resemble the laboratory standard for diesel fuel," "lighter hydrocarbons may have contributed to the analytical concentration," and "heavier hydrocarbons may have contributed to the analytical concentration." TPH-mo was detected in 14 of the 18 soil samples analyzed with concentrations ranging from less than 5.0 mg/kg in several samples to a maximum of 2,700 mg/kg in TR-31 at 2.5 feet bgs (Figure 4). Several detections of TPH-mo were reported with one or more laboratory qualifiers that indicate that "lighter or heavier hydrocarbons may have contributed to the analytical concentration."

TPH-g was detected in seven of the 18 soil samples analyzed with concentrations ranging from less than 1.0 mg/kg in several samples to a maximum concentration of 2,100 mg/kg in TR-25 at 6.0 feet bgs. Several detections of TPH-g were reported with a laboratory qualifier indicating the sample exhibited a chromatographic pattern that did not resemble the laboratory standard. Figure 4 present the TPH-g and TPH-mo concentrations in soil.

Total lead was detected in all four of the soil samples analyzed. Total lead concentrations in the samples ranged from 5.6 mg/kg in TR-28 at 2.0 feet bgs to a maximum concentration of 14 mg/kg in TR-25 at 2.0 feet bgs. No total lead concentrations were greater than ten times the STLC for lead; therefore no soluble lead tests were performed.

PCBs were detected in one soil sample analyzed. Aroclor-1260 was detected in soil sample TR-25 at 2.0 feet bgs at a concentration of 11 µg/kg. This concentration was below the residential surface soil ESL for PCBs of 220 µg/kg (RWQCB, 2005).

Groundwater was measured in one boring (TR-31) at 9.88 feet bgs, although this was not a stabilized water level measurement. TPH-d was detected in three of four groundwater samples analyzed and ranged from 270 µg/L in TR-31 to 640 µg/L in TR-30. All TPH-d detections had laboratory qualifiers indicating that both lighter and heavier hydrocarbons contributed to the total analytical concentration. TPH-mo was also detected in three of four groundwater samples analyzed and ranged from 340 µg/L in TR-29 to a maximum of 1,500 µg/L in TR-31. The TPH-mo detection in the groundwater sample from TR-29 had a laboratory qualifier indicating that lighter hydrocarbons contributed to the total analytical concentration.

TPH-g was only detected in groundwater from TR-25 with a concentration of 150,000 µg/L. This groundwater concentration is in excess of the residential groundwater ESL of 500 µg/L (RWQCB, 2005), and suggested the possible presence of free-phase hydrocarbons in the subsurface. Benzene was detected in groundwater from TR-25 at a concentration of 2,500 µg/L. Toluene was detected in groundwater from three of four samples analyzed with concentrations that ranged from 0.56 µg/L in TR-29 to a maximum of 0.85 µg/L in TR-30. Ethylbenzene was detected in groundwater from TR-25 at a concentration of 3,600 µg/L. Xylenes were detected in all four groundwater samples analyzed. In sample TR-25, total xylenes (the sum of the meta, para, and ortho isomers) were detected at a concentration of 1,720 µg/L. In the remaining three groundwater samples, m,p-xylenes were detected at concentrations ranging from 0.57 µg/L in TR-31 (GW) to 0.85 µg/L in TR-30 (GW).

June 2005 Investigation

Site access was granted in June 2005 at sampling at locations along the south end of the Site. Each location was within buildings that previously existed at the Site. Due to the elevated concentrations of TPH-g and benzene in groundwater detected at TR-25 during the January 2005 investigation, additional sampling in the area was considered necessary to evaluate the extent of benzene and TPH-g in groundwater. The June 2005 investigation included soil and groundwater sampling at the TR-23, TR-24, TR-26, and TR-27 (Figure 3).

The investigation plan included the collection of groundwater samples and soil samples near the groundwater interface from four locations by advancing a borehole to at least two feet below the groundwater surface. Because the sample locations are within existing buildings, the borings were advanced using hand auger equipment. At boring locations TR-26 and TR-27, an obstruction was encountered approximately 4 feet below ground surface. The obstruction was concrete from a second building slab or foundation. Therefore, no groundwater samples and only shallow soil samples were collected at TR-26 and TR-27.

TPH-d was detected in the 5 soil samples analyzed and concentrations ranged from 46 mg/kg in TR-24 at 4.0 feet bgs to a maximum concentration of 2,100 mg/kg in TR-26 at 4.0 feet bgs. All detections of TPH-d were reported with one or more laboratory analytical qualifiers including "individual samples may exhibit a chromatographic pattern which does not resemble the laboratory standard for diesel fuel," "lighter hydrocarbons may have contributed to the analytical concentration," and "heavier hydrocarbons may have contributed to the analytical concentration."

TPH-g was detected in three of the five soil samples analyzed and concentrations ranged from 2.3 mg/kg in TR-23 at 4.0 feet bgs to a maximum concentration of 390 mg/kg in TR-23 at 9.0 feet bgs. Several detections of TPH-g were reported with a laboratory qualifier indicating that the sample exhibited chromatographic pattern that did not resemble the laboratory standard. Figure 4 includes the TPH-g concentrations in soil.

Benzene was detected in soil only in TR-23 at 4 feet bgs with a concentration of 97 µg/kg and at 9 feet bgs with a concentration of 200 µg/kg. Other petroleum-related chemicals detected in the soil samples from TR-23 and TR-26 included the following compounds:

- Ethylbenzene at a maximum concentration of 600 µg/kg
- m,p-Xylenes at a maximum concentration of 190 µg/kg
- o-Xylenes at a maximum concentration of 22 µg/kg
- Isopropylbenzene at a maximum concentration of 180 µg/kg
- Propylbenzene at a maximum concentration of 480 µg/kg
- 1,3,5-Trimethylbenzene at a maximum concentration of 69 µg/kg
- 1,2,4-Trimethylbenzene at a maximum concentration of 250 µg/kg
- Sec-Butylbenzene at a maximum concentration of 42 µg/kg
- N-Butylbenzene at a maximum concentration of 290 µg/kg
- Naphthalene at a maximum concentration of 310 µg/kg.

The mix of petroleum related chemicals were also detected in the groundwater samples collected from TR-23 and TR-24.

The groundwater samples collected from borings TR-23 and TR-24 indicated the presence of TPH-d at 8,400 µg/L and 6,800 µg/L, respectively. The TPH-d results had laboratory qualifiers indicating that both lighter and heavier hydrocarbons contributed to the total analytical concentration. TPH-g was detected in groundwater at 28,000 µg/L from TR-23 and 91,000 µg/L from TR-24. These concentrations are in excess of the residential groundwater ESL of 500 µg/L (RWQCB, 2005), and suggested the presence of free-phase hydrocarbons in the subsurface. Benzene was also detected in groundwater at 4,300 µg/L from TR-23 and 2,500 µg/L from TR-

24. Other petroleum-related chemicals detected in groundwater from TR-23 and TR-24 included the following:

- Toluene up to 21 µg/L
- Ethylbenzene up to 990 µg/L
- m,p-Xylenes up to 380 µg/L
- o-Xylenes up to 380 µg/L
- Isopropylbenzene up to 210 µg/L
- Propylbenzene up to 240 µg/L
- 1,3,5-Trimethylbenzene up to 290 µg/L
- 1,2,4-Trimethylbenzene up to 160 µg/L
- Sec-Butylbenzene up to 70 µg/L
- Naphthalene up to 710 µg/L
- Acetone up to 35 µg/L.

3.2 Site Management Requirements

Since 2000, ACHCSA has provided regulatory oversight for the Site. Based on E S East Associates, LLC's intention to redevelop the Site, ACHCSA required that redevelopment activities include measures to mitigate worker and Site user and neighbor risks associated with the presence of petroleum hydrocarbons and benzene in subsurface soil and groundwater at the Site. Treadwell & Rollo prepared a Site Management Plan dated 14 July 2005 that included:

- Historical Site Use and Environmental Investigations
- Tier 1 Environmental Risk Assessment
- Short-Term and Long-Term Risk Management Measures including:
  - Construction Worker Health and Safety Recommendations
  - Soil Management Measures
  - Post-Excavation Confirmation Soil and Groundwater Sampling
  - Storm Water Pollution Controls
  - Groundwater Management for Construction-Phase Dewatering and Groundwater Intrusion Management
  - Site Encapsulation
  - Mechanical Ventilation of the Parking Garage
  - Maintenance Requirements
  - Contingency Plan
  - Restrictions on Future Groundwater Use.

The Tier 1 Environmental Risk Assessment was developed to identify potential risks to human health and environmental resources associated with chemicals in soil and groundwater under the proposed land use. An exposure assessment was previously conducted to evaluate potential exposure to chemicals in soil by the following pathways:

- incidental ingestion of soil
- direct dermal contact with soil

- inhalation of airborne particles as dust
- inhalation of VOCs in indoor air from subsurface emissions (VOCs only) from soil
- inhalation of VOCs in indoor air from subsurface emissions (VOCs only) from groundwater.

These five exposure pathways were evaluated for the risk evaluation, but the Site development design resulted in preclusion of direct contact with soil for future residents. For future residents, the only potentially complete exposure pathway evaluated for groundwater was inhalation of VOCs in indoor air from subsurface emissions.

The chemicals of potential concern identified during the risk assessment were TPH-g, TPH-d, TPH-mo, benzene, and lead present at the Site.

The risk evaluation included a comparison between the maximum soil and groundwater concentrations and residential land use ESLs (RWQCB, 2005). Based upon the results of the exposure assessment, detected concentrations were compared to the following ESLs to determine if Site encapsulation required for the redevelopment:

- Direct Exposure Screening Levels, Residential and Commercial Exposure Scenario (Table K-1 and K-2 of the RWQCB 2005 ESLs)
- Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (Table E-1a of the RWQCB 2005 ESLs)
- Soil Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (E-1b of the RWQCB 2005 ESLs)
- Environmental Screening Levels for Shallow Soils, Groundwater is Not a Current or Potential Source of Drinking Water (Table B of the RWQCB 2005 ESLs).

Comparison of the chemical concentrations in soil to the ESLs indicated that TPH-g, TPH-d, TPH-mo and TRPH in soil exceeded the residential and commercial direct contact ESLs. Benzo(a)pyrene in soil also exceeded the residential and commercial direct contact ESLs. No metals exceeded the residential or commercial ESLs. Consequently, potential residential and commercial risks would only exist if the TPH-g, TPH-d, TPH-mo, TRPH, and benzo(a)pyrene-affected soil remained uncovered and available for exposure.

Comparison of the chemical concentrations of volatile organic compounds in soil to the ESLs indicated that benzene exceeded the residential ESLs for potential vapor intrusion concerns. Consequently, potential residential risks exist if the benzene in soil remained and the potential inhalation exposures are not mitigated.

Comparison of the groundwater data to the ESLs indicates that TPH-g, TPH-d, TPH-mo and TRPH in groundwater exceeded the general water quality ESLs. Benzene in groundwater exceeded the groundwater ESL for protection of indoor air quality at TR-23, TR-24 and TR-25, which are were all located near the southwest corner of the Site. Consequently, potential residential and commercial indoor risks exist if the benzene in groundwater remained and if the potential inhalation exposures are not mitigated.

An additional hypothetical risk for the property was potential exposure through groundwater intrusion. Although typical residential or commercial direct contact with groundwater was not expected under future land use following redevelopment, potential groundwater intrusion into the redeveloped building could result in standing groundwater in the parking level (the lowest levels of the building). If the standing groundwater contained benzene, then the parking garage users may be subject to potential inhalation exposures.

Due to lack of habitat in a highly urbanized environment, no ecological risks were considered applicable. Because there is no surface water at the Site and drinking water at the Site is and will be supplied from off-site sources, the only potential exposure pathway for groundwater is inhalation of VOCs from indoor air vapor intrusion from volatilization of chemicals.

The previously mentioned measures included procedures and protocols for the identification, handling, management, and disposal of hazardous materials encountered in Site soil and groundwater during redevelopment. The procedures and protocols were designed to be in compliance with applicable federal, state, and local laws and regulations regarding hazardous and industrial waste management and are described in the SMP (T&R, 2005).

ACHCSA provided technical comments to the SMP on 28 October 2005 (ACHCSA, 2005a). A response letter with the requested information was sent to the ACHCSA on 30 November 2005 (Wareham, 2005). The SMP and redevelopment activities received final approval from the ACHCSA on 8 December 2005 (ACHCSA, 2005b) provided that additional soil and groundwater testing is performed as follows:

- Methyl tert-butyl ether (MTBE) to be analyzed by EPA Method 8260B to avoid false positives
- where total petroleum hydrocarbons (TPH) quantified as gas (TPH-g) is a contaminant of concern in soil and groundwater samples, also analyze for:
  - Isopropyl ether (DIPE), Ethyl tert-butyl ether (ETBE), methyl tert-amyl ether (TAME), and tert-butyl alcohol (TBA) (Fuel Oxygenates)
  - Ethanol
  - 1,2 dibromoethane (EDB) and 1,2 dichloroethane (EDC) (Lead Scavengers).
- collect additional post-excavation sampling at the loading rack, the southern border of the Site, and the current Chevron gasoline station in areas of potential and known contaminant releases and where commingle plumes may exist
- collect water samples from discrete locations from the dewatering system in the southeast, southwest, and northern portion of the Site.

The SMP and subsequent communications including the approval letter from the ACHCSA dated 8 December 2005 are provided in Appendix A.

4.0 PERFORMANCE OF SITE MANAGEMENT FIELD ACTIVITES

Site management activities were performed during the redevelopment. These activities included:

- Construction Worker Health and Safety Management
- Soil Excavation and Off-Site Disposal
- Post-Excavation Confirmation Soil Sampling
- Groundwater Intrusion Management
- Evaluation of Import Soil
- Site Encapsulation
- Monitoring Plan.

4.1 Construction Worker Health and Safety Management

During redevelopment, construction worker health and safety management included adherence to a Site-specific health and safety plan, notifications regarding the presence of hazardous materials on-Site, and controlling dust during excavation and grading. These activities were performed as follows:

- Under contract to DPR Construction Inc. (the general contractor) (DPR), Brighton Environmental Consulting prepared a Site-specific Health and Safety Plan, Demolition, Shoring Installation, Dewatering, and Soil Excavation, Emery Station, 5885 Hollis Street, Emeryville, California, dated February 2006 (HSP). During Treadwell and Rollo's periodic observations, DPR enforced the requirements stated in the HSP for Site activities performed by workers and visitors to the Site.

- Notifications regarding the presence of hazardous materials on site were posted, per California Proposition 65 requirements.

- During Treadwell and Rollo's periodic observations, dust from active excavations and during grading operations was controlled by wetting the soil.

4.2 Soil Excavation and Off-Site Disposal

Soil excavation activities began at the Site on 23 March 2006 and occurred over a period of 10 weeks through 15 June 2006. Due to inclement weather, there were delays in soil excavation from April 3-5, 2006 and April 12-17, 2006. During soil excavation, support lagging for sub-grade construction was being installed. Lagging and vehicle off-hauling routes were progressively installed with increasing depth by alternating soil removal between the northern and southern halves of the Site (Photograph 1).

Per the requirements of the SMP, soil was only excavated to the final construction depth (approximately 12 to 15 vertical feet below original grade). Soil excavation and removal activities were subcontracted to Pacific States Environmental Contractors (PSEC). PSEC relied on chemical information provided in the SMP to determine that the excavated soil was non-hazardous. Excavated soil was directly loaded and transported to Keller Canyon Landfill located in Pittsburg, California (as non-hazardous waste). Because soil was directly hauled off-Site, stockpiling was not necessary. Soil was transported by Double D Transportation based out of Hayward, California. According to bills of lading signed by PSEC for the Client, a total of 91,640 tons of soil were excavated and hauled from the Site. All bills of lading are provided on CD-ROM in Appendix B.

4.3 Post-Excavation Confirmation Soil Sampling

Post-excavation confirmation soil samples were collected at the completed excavation depth to develop residual concentrations of chemicals that may remain in soil beneath the building foundation after completion of the redevelopment project.

In accordance with ACHCSA requirements, eighteen soil samples (TR-39 through TR-56) were collected on May 4-12, 2006 as the final building construction depths were progressively attained (Figure 5). The completed depth ranged between 12 to 15 feet below original grade.

Rationale For Soil Sample Locations

- Rationale for the soil sample locations were based on previous knowledge of the Site, guidance from the SMP (T&R, 2005), and the approval letter from ACHCSA (ACHCSA, 2005b). Based upon the Site characterization information, chemicals of potential concern in soil vary based upon location and past use of the Site. The locations are shown on Figure 5 and described below:

- BMP Seismic Retrofitting – Soil sample TR-39 was collected from this the area to evaluate the potential presence of paint thinners in soil.

- Graphic Traffic – Soil sample TR-40 was collected from this area to evaluate the potential presence of solvents.

- Canova Marble – Soil sample TR-41 was collected from this area to evaluate the potential presence of solvents associated with paints and adhesives.

- S.B. Thomas – Soil samples TR-42 and TR-43 were collected from this area near the former 10,000 gallon gasoline UST.

- Correris Cabinets – Soil sample TR-44 was collected from the yard area near the former paint storage cabinets.

- Fleetcare Repair – Soil sample TR-45 was collected from the yard area near the former waste oil AST and soil sample TR-46A was collected near the two former 3,000 gallon waste oil ASTs.

- Ellerson Weaver – Soil sample TR-46 was collected from the yard area near the former drum locations.

- Subsurface contamination detected as part of the 59th Street Widening – Soil samples TR-47 and TR-48 were collected near the former area where diesel and motor oil were detected in subsurface soil.

- Southwest corner of the Site near TR-23, TR-24 and TR-25 – Soil samples TR-49 through TR-54 were collected from areas near TR-23, TR-24 and TR-25, which are near the former 5,000-barrel (210,000 gallon) gasoline AST and the former lubrication oil tanks. The locations may have also been impacted by the gasoline service station.

- Former Loading Rack – Soil samples TR-55 and TR-56 were collected from the area where a loading rack associated with the former Union Oil of California operations was located.

Soil samples were collected at the base of the excavation with a drive sampler in 2" x 6" stainless steel tubes, capped with Teflon™ sheeting and plastic caps, labeled, and placed in an ice-chilled cooler. Samples were submitted to a California-certified analytical laboratory (Curtis & Tompkins, Ltd., Berkeley, CA) under Chain-of-Custody protocol and documentation.

Depending on the previous use of the Site at the particular sample locations, soil samples were analyzed for specific analytes. The analytes included the following:

- TPH-g by EPA Method 8015M

- TPH-d and TPH-mo by EPA Method 8015M with silica gel cleanup by EPA Method 3630C

- Volatile organic compounds (VOCs) by EPA Method 8260B. Some soil samples were only analyzed for specific VOCs which included some or all of the following:

  - Isopropyl ether (DIPE), Ethyl tert-butyl ether (ETBE), methyl tert-amyl ether (TAME), and tert-butyl alcohol (TBA) (Fuel Oxygenates)

  - Ethanol

- 1,2 dibromoethane (EDB) and 1,2 dichloroethane (EDC) (Lead Scavengers)
- Benzene, toluene, ethylbenzene, and xylenes (BTEX)
- Methyl tert-butyl ether (MTBE).

Table 1 summarizes the analytical procedures performed for each post-excavation soil sample.

Laboratory analytical results from all post excavation soil samples are summarized on Tables 2 and 3. Total petroleum hydrocarbons detected in the post excavation soil samples are summarized on Figure 6. Laboratory analytical reports are provided in Appendix C.

All detected laboratory analytical results in soil were compared to Table D of the RWQCB 2005 ESLs for deep soil (greater than 3 meters) where groundwater is not a current source of drinking water for commercial use. All detected concentrations (TPH-g, TPH-d, TPH-mo, and VOCs) in the post excavation soil samples from the Site were below ESLs.

TPH-g was only detected in soil at TR-52 in the southwestern corner of the Site at a concentration of 10 mg/kg. TPH-d was detected in numerous soil samples at concentrations ranging from less than 0.93 mg/kg to 7.9 mg/kg. TPH-mo was detected in numerous soil samples ranging from ranging from less than 5.0 mg/kg to 33 mg/kg.

The only VOCs detected in soil were TBA, benzene, ethylbenzene, total xylenes, and methylene chloride. Methylene chloride is a laboratory contaminant commonly introduced during decontamination of laboratory equipment. Because methylene chloride has not been a historic contaminant of concern at the Site, it was likely a laboratory induced contaminant and therefore not representative of Site soil conditions. Therefore, excluding methylene chloride, the only VOCs detected in soil were identified in the southwestern corner of the Site in soil samples TR-51 and TR-52. TBA was detected only in soil sample TR-51 at 400 micrograms per kilogram (µg/kg), benzene was detected only in soil sample TR-51 at 8.2 µg/kg, ethylbenzene detected only in soil sample TR-52 at 7.6 µg/kg, and total xylenes detected only in soil sample TR-52 at 7.1 µg/kg. All other compounds in soil were not detected above laboratory detection limits.

4.4 Groundwater Intrusion Management

The base of the planned building foundation depth was expected to be near the historical water table elevation. To mitigate groundwater from flowing into the excavation area, a total of 27 temporary wells were installed along the perimeter of the Site (mid-March 2006). The 27 temporary wells included 25 dewatering and two monitoring wells (geotechnical purposes). All wells were installed to approximately 30 feet bgs with a 7 inch diameter PVC pipe (Photograph 2). Dewatering wells began pumping on 28 March 2006 and ended during the week of 31 July 2006. The rate of groundwater extraction could not be determined because each pump operated on a self-activating system.

Self-activating pumps were placed near the bottom of each dewatering well. When water levels rose above the sensor, the pump was automatically activated and water was pumped through a manifold, treated through carbon vessels, and stored in two-10,000 gallon Baker Tanks located along the southern edge of the Site. PSEC managed the treatment of all water that was discharged off-Site under an approved permit.

To meet the requirements of the SMP and ACHCSA approval letters, weekly water samples were collected from dewatering wells (DW) at locations determined by the ACHCSA. The ACHCSA requested that water from these locations be analyzed to further investigate whether off-Site releases have impacted the Site and if future groundwater monitoring would be necessary. These locations included the southeastern corner (DW-11), southwestern corner (DW-14), and the northern part of the Site (DW-24) (Figure 5). Water samples were collected on a weekly basis from these locations from 13 April 2006 through 27 July 2006. The following chemicals were analyzed in groundwater:

- TPH-g by EPA Method 8015M (analyzed in DW-11 and DW-14)
- TPH-d and TPH-mo by EPA Method 8015M with silica gel cleanup by EPA Method 3630C (analyzed in DW-11, DW-14, and DW-24)

- Specific volatile organic compounds (VOCs) by EPA Method 8260B (analyzed in DW-11 and DW-14):
    - Isopropyl ether (DIPE), Ethyl tert-butyl ether (ETBE), methyl tert-amyl ether (TAME), and tert-butyl alcohol (TBA) (a.k.a. Fuel Oxygenates)
    - Ethanol
    - Benzene, toluene, ethylbenzene, and xylenes (BTEX)
    - Methyl tert-butyl ether (MTBE)
    - 1,2 dibromoethane (EDB) and 1,2 dichloroethane (EDC) (Lead Scavengers).

Laboratory analytical results from all dewatering well samples are summarized on Table 3. All detected laboratory analytical results for groundwater were compared to Table B of the RWQCB 2005 ESLs where groundwater is not a current source of drinking water. The ESL for TPH-g (500 µg/L) was exceeded in numerous groundwater samples from dewatering well DW-14. The ESL for benzene (46 µg/L) was exceeded in one groundwater sample from dewatering well DW-14 at a concentration of 55 µg/L on 1 June 2006. All other detected concentrations in groundwater were below ESLs.

In the southeast corner of the Site (DW-11), the only detected compounds in groundwater were TPH-d ranging from less than 50 µg/L to 130 µg/L, and toluene ranging from less than 0.5 µg/L to 9.8 µg/L. In the northern part of the Site (DW-24), the only detected compound in groundwater was TPH-d at 63 µg/L on 3 May 2006.

In the southwestern corner of the Site (DW-14), numerous compounds were detected in groundwater including those with the following concentration ranges:

- TPH-g from 77 to 1,800 µg/L, TPH-d from less than 50 µg/L to 440 µg/L
- TBA from 24 to 83 µg/L

- Benzene from 10 to 55 µg/L, Toluene from less than 0.5 µg/L to 4.9 µg/L, Ethylbenzene from less than 0.5 µg/L to 41 µg/L, Xylenes from 0.6 to 28 µg/L
- EDC from 14 to 19 µg/L.

All other compounds in water were not detected above laboratory detection limits.

4.5 Evaluation of Import Soil

Although not a requirement of the SMP or the ACHCSA, Treadwell & Rollo assisted DPR in the evaluation of import soil to be used at the Site. According to PSEC, the import soil originated from a property located at 20th and Telegraph in Oakland, California (a.k.a., The Uptown Development) and was then transported to the Port of Oakland. Extra soil brought from the Uptown Development to the Port of Oakland was then transported to the Site as import fill. To determine if the extra soil brought from the Port of Oakland was environmentally appropriate for use at the Site, PSEC collected a combination of discrete samples and four point composite samples from the stockpiled material and analyzed the soil samples for the following:

- Volatile Organic Compounds (VOCs) by EPA 8260B
- TPH-g by EPA Method 8015M
- TPH-d and TPH-mo by EPA Method 8015M with Silica Gel Cleanup
- Semivolatile VOCs by EPA Method 8270B
- Organochlorine Pesticides by EPA Method 8081A
- Polychlorinated Biphenyls (PCBs) by EPA Method 8082
- California Title 26 Metals by EPA Method 6020.

PSEC certified that the sampling methods and locations were appropriately collected and representative of the import material. The laboratory analytical results for the import fill is provided in Appendix D.

Based on the chemical analytical results, PSEC determined that the import material was environmentally appropriate for use at the Site. Per the request of DPR, Treadwell and Rollo compared the chemical analytical results against Table B of the RWQCB 2005 ESLs for shallow soil (less than 3 meters) where groundwater is not a current source of drinking water for commercial land-use. Because PSEC certified that the analytical data was representative of the import soil and because all detected concentrations were below ESLs, Treadwell and Rollo found no conflicts with PSEC's determination that the import material was environmentally appropriate for use at the Site.

4.6 Site Encapsulation

Based on the analytical results of the post-excavation soil samples (Table 3) and dewatering well samples (Table 4), residual concentrations of chemicals will remain beneath the Site after construction is complete. As a result of the redevelopment activities, the residual chemicals remaining beneath the Site have been encapsulated by a water-proofing membrane, concrete foundation, and engineered planter areas with clean imported fill (cap). The cap eliminates exposures to soil vapor, inhalation of dusts, incidental ingestion of soil, and dermal contact with soil by providing a physical barrier between the contaminants in the subsurface and future Site users.

4.7 Cap Monitoring Plan

All contaminated soil at the Site is currently capped with asphalt/concrete pavement. This cap is to be inspected on an annual basis, repaired and sealed (if necessary) to prohibit incidental contact with the underlying soil or groundwater.

The annual Site inspection will consist of visual observation of all areas covered with pavement. The pavement will be inspected for cracks, breaks, erosion, groundwater infiltration into the

basement areas, or other conditions that may warrant repair or replacement to prohibit the soil or groundwater from being exposed. All cap disturbances during the cap inspection will be documented in the field, their locations identified on a figure of the Site, and photographs will be taken. An annual inspection report will include these observations and will also include a review of the previous annual inspection report to evaluate whether Site conditions have changed between inspections. Recommendations for additional maintenance or repair will be noted within the report which will be prepared as a summary letter. If future activities require that the cap be disturbed (i.e., drilling, demolishing), prior approval must be submitted to and approved by the ACHCSA before commencing.

5.0 CONCLUSION

Based on Treadwell and Rollo's observations and information provided to us by DPR and the Client, all substantive requirements of the SMP and ACHCSA approval letters have been fulfilled.

Residual petroleum compounds and volatile organic compounds remain in soil and groundwater at the Site. No chemical concentrations detected in soil exceeded Table D in the RWQCB 2005 ESLs for deep soil (greater than 3 meters) where groundwater is not a current source of drinking water for commercial land-use. All detected laboratory analytical results for groundwater were compared to Table B of the RWQCB 2005 ESLs where groundwater is not a current source of drinking water. The ESL for TPH-g (500 µg/L) was exceeded in numerous groundwater samples from dewatering well DW-14 located in the southwestern corner of the Site. The ESL for benzene (46 µg/L) was exceeded in one groundwater sample from dewatering well DW-14 at a concentration of 55 µg/L on 1 June 2006. Exposure to these groundwater concentrations have been mitigated by the installation of a cap at the Site (activities approved by the ACHCSA). All other detected concentrations in groundwater from the sampled dewatering wells were below ESLs.

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TABLES

Table 1
TABLE OF ANALYTICAL METHODS
5885 Hollis Street
Emeryville, California

	SAMPLE ID	TPH-g	TPH-d	TPH-mo	BTEX/ MTBE	VOCs	TAME	ETBE	DIPE	TBA	Ethanol	EDB	EDC
SOIL VAPOR SAMPLES	TR-39	X	--	--	--	X	X	X	X	X	X	X	X
	TR-40	X	--	--	--	X	X	X	X	X	X	X	X
	TR-41	X	--	--	--	X	X	X	X	X	X	X	X
	TR-42	X	--	--	X	--	X	X	X	X	X	X	X
	TR-43	X	--	--	X	--	X	X	X	X	X	X	X
	TR-44	X	--	--	--	X	X	X	X	X	X	X	X
	TR-45	--	X	X	--	--	--	--	--	--	--	--	--
	TR-46	--	X	X	--	--	--	--	--	--	--	--	--
	TR-47	--	X	X	--	--	--	--	--	--	--	--	--
	TR-48	--	X	X	--	--	--	--	--	--	--	--	--
	TR-49	X	X	X	X	--	X	X	X	X	X	X	X
	TR-50	X	X	X	X	--	X	X	X	X	X	X	X
	TR-51	X	X	X	X	--	X	X	X	X	X	X	X
	TR-52	X	X	X	X	--	X	X	X	X	X	X	X
	TR-53	X	X	X	X	--	X	X	X	X	X	X	X
	TR-54	X	X	X	X	--	X	X	X	X	X	X	X
	TR-55	X	X	X	X	--	X	X	X	X	X	X	X
	TR-56	X	X	X	X	--	X	X	X	X	X	X	X
GROUNDWATER SAMPLES	DW-11	X	X	X	X	--	X	X	X	X	X	X	X
	DW-14	X	X	X	X	--	X	X	X	X	X	X	X
	DW-24	--	X	X	--	--	--	--	--	--	--	--	--

Notes

Total Petroleum Hydrocarbons (TPH) quantified as gasoline (TPH-g), diesel fuel (TPH-d), and motor oil (TPH-mo) analyzed by EPA Method 8015M. TPH-d and TPH-mo anayzed with silica gel cleanup.

Volatile organic compounds (VOCs) analyzed by EPA Method 8260B.

BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes.

Fuel oxygenates include tert-Butyl Alcohol (TBA), Methyl tert-Butyl ether (MTBE), Isopropyl Ether (DIPE), Ethyl tert-Butyl Ether (ETBE), and Methyl tert-Amyl Ether (TAME). Fuel Oxygenates analyzed by EPA Method 8260B.

Lead scavengers include 1,2 dibromoethane (EDB) and 1,2 dichloroethane (EDC). Lead Scavengers analyzed by EPA Method 8260B.

X = Anaysis Performed

-- = Not Analyzed

Table 2
SOIL ANALYTICAL RESULTS
Total Petroleum Hydrocarbons in Soil
5885 Hollis Street
Emeryville, California

Sample ID	Date	TPH-g	TPH-d	TPH-mo
TR-39	5/4/2006	<1.0	--	--
TR-40	5/4/2006	<0.96	--	--
TR-41	5/4/2006	<1.0	--	--
TR-42	5/4/2006	<1.1	--	--
TR-43	5/4/2006	<0.98	--	--
TR-44	5/10/2006	<0.99	--	--
TR-45	5/10/2006	--	<1.0	<5.0
TR-46	5/12/2006	--	<1.0	<5.0
TR-46A	5/10/2006	--	<1.0	<5.0
TR-47	5/12/2006	--	<0.99	<5.0
TR-48	5/12/2006	--	**7.9 H Y**	**33 L**
TR-49	5/4/2006	<0.97	<1.0	<5.0
TR-50	5/4/2006	<0.93	**2.0 H Y**	**6.0**
TR-51	5/4/2006	<1.1	<0.99	<5.0
TR-52	5/4/2006	**10 H Y**	**1.9 H Y**	<5.0
TR-53	5/4/2006	<0.99	<1.0	<5.0
TR-54	5/4/2006	<1.1	**2.0 H Y**	**5.8**
TR-55	5/4/2006	<1.1	<1.0	<5.0
TR-56	5/4/2006	<0.94	**1.4 H Y**	<5.0
ESLs		400	500	1,000

Notes
All soil samples were collected from the completed grade, approximately 15 feet below sidewalk grade.
All results reported in milligrams per kilogram (mg/kg). Results shown in bold are detected concentrations.
Total Petroleum Hydrocarbons (TPH) quantified as gasoline (TPH-g), diesel fuel (TPH-d), and motor oil (TPH-mo) analyzed by EPA Method 8015. TPH-d and TPH-mo anayzed with silica gel cleanup.
<1.0 = Compound not detected above laboratory reporting limit.
H = Heavier hydrocarbons contributed to the quantitation
Y = Sample exhibits chromatographic pattern which does not resemble standard.
-- = Not Analyzed
ESLs = Environmental Screening Levels, California Regional Water Quality Control Board, San Francisco Bay Region, February 2005. ESL criteria based on deep soil (> 3 meters below ground surface) where water is not a current or potential source of drinking water for commercial land-use (Table D)

Table 3
SOIL ANALYTICAL RESULTS
Volatile Organic Compounds in Soil
5885 Hollis Street
Emeryville, California

		Fuel Oxygenates						BTEX				Lead Scavengers			
Sample ID	Sample Date	TBA	MTBE	DIPE	ETBE	TAME	Ethanol	Benzene	Toluene	Ethyl-benzene	Total Xylenes	EDB	EDC	Methylene Chloride	Other VOCs
TR-39	5/4/2006	<98	<4.9	<4.9	<4.9	<4.9	<980	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	**180**	All ND
TR-40	5/4/2006	<96	<4.8	<4.8	<4.8	<4.8	<960	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	**220**	All ND
TR-41	5/4/2006	<94	<4.7	<4.7	<4.7	<4.7	<940	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	**170**	All ND
TR-42	5/4/2006	<100	<5.0	<5.0	<5.0	<5.0	<1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--
TR-43	5/4/2006	<91	<4.5	<4.5	<4.5	<4.5	<910	<4.5	<4.5	<4.5	<4.5	<4.5	<4.5	--	--
TR-44	5/10/2006	<94	<4.7	<4.7	<4.7	<4.7	<940	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	**94**	All ND
TR-45	5/10/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-46	5/12/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-46A	5/10/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-47	5/12/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-48	5/12/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-49	5/4/2006	<96	<4.8	<4.8	<4.8	<4.8	960	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	--	--
TR-50	5/4/2006	<96	<4.8	<4.8	<4.8	<4.8	<960	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	--	--
TR-51	5/4/2006	**400**	<5.0	<5.0	<5.0	<5.0	<1,000	**8.2**	<5.0	<5.0	<5.0	<5.0	<5.0	--	--
TR-52	5/4/2006	<100	<5.0	<5.0	<5.0	<5.0	<1,000	<5.0	<5.0	**7.6**	**7.1**	<5.0	<5.0	--	--
TR-53	5/4/2006	<89	<4.5	<4.5	<4.5	<4.5	<890	<4.5	<4.5	<4.5	<4.5	<4.5	<4.5	--	--
TR-54	5/4/2006	<93	<4.6	<4.6	<4.6	<4.6	<930	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	--	--
TR-55	5/4/2006	<98	<4.9	<4.9	<4.9	<4.9	<980	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	--	--
TR-56	5/4/2006	<93	<4.6	<4.6	<4.6	<4.6	<930	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	--	--
ESLs		110,000	5,600	NE	NE	NE	45,000	510	9,300	32,000	11,000	20	70	1,500	NE

Notes
All soil samples were collected from the completed grade, approximately 15 feet below sidewalk grade.
All results reported in micrograms per kilogram (µg/kg). Results shown in **bold** are detected concentrations
Volatile organic compounds (VOCs) analyzed by EPA Method 8260B.
Fuel oxygenates include tert-Butyl Alcohol (TBA), Methyl tert-Butyl ether (MTBE), Isopropyl Ether (DIPE), Ethyl tert-Butyl Ether (ETBE), and Methyl tert-Amyl Ether (TAME)
Lead scavengers include 1,2 dibromoethane (EDB) and 1,2 dichloroethane (EDC)
Other VOCs = Other volatile organic compounds described in the laboratory analytical report
-- = Not Analyzed
NE = Not Established
<5.0 = Compound not detected above laboratory reporting limit.
ND = Not detected above laboratory detection limits. Detection limits vary for each constituent.
ESLs = Environmental Screening Levels, California Regional Water Quality Control Board, San Francisco Bay Region, February 2005. ESL criteria based on deep soil (> 3 meters below ground surface) where water is not a current or potential source of drinking water for commercial land-use (Table D)

Table 4
GROUNDWATER ANALYTICAL RESULTS
Dewatering Wells
5885 Hollis Street
Emeryville, California

Sample ID	Sample Date	TPH			VOCs												
		Gasoline	Diesel Fuel	Motor Oil	TBA	MTBE	DIPE	ETBE	TAME	Ethanol	B	T	E	X	EDB	EDC	Other VOCs
DW-11	4/13/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	--	--	--
	4/18/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	**0.6**	<0.5	<0.5	<0.5	<0.5	All ND
	4/26/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	**9.8**	<0.5	<0.5	<5.0	<5.0	--
	5/3/2006	<50	**130 Y**	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	**2.3**	<0.5	<0.5	<5.0	<5.0	--
	5/10/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	**0.9**	<0.5	<0.5	<5.0	<5.0	--
	5/17/2006	<50	**100 Y**	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	**0.6**	<0.5	<0.5	<5.0	<5.0	--
	5/23/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	**0.5**	<0.5	<0.5	<5.0	<5.0	--
	6/1/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	6/8/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	6/16/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	6/22/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	6/30/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	7/5/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	7/12/2006	<50	**78 Y**	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	7/18/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	7/27/2006	<50	<50	<300	<10	<0.5	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--
	ESLs	500	640	640	18,000	1,800	NE	NE	NE	50,000	46	130	290	100	NE	200	Varies

Table 4
GROUNDWATER ANALYTICAL RESULTS
Dewatering Wells
5885 Hollis Street
Emeryville, California

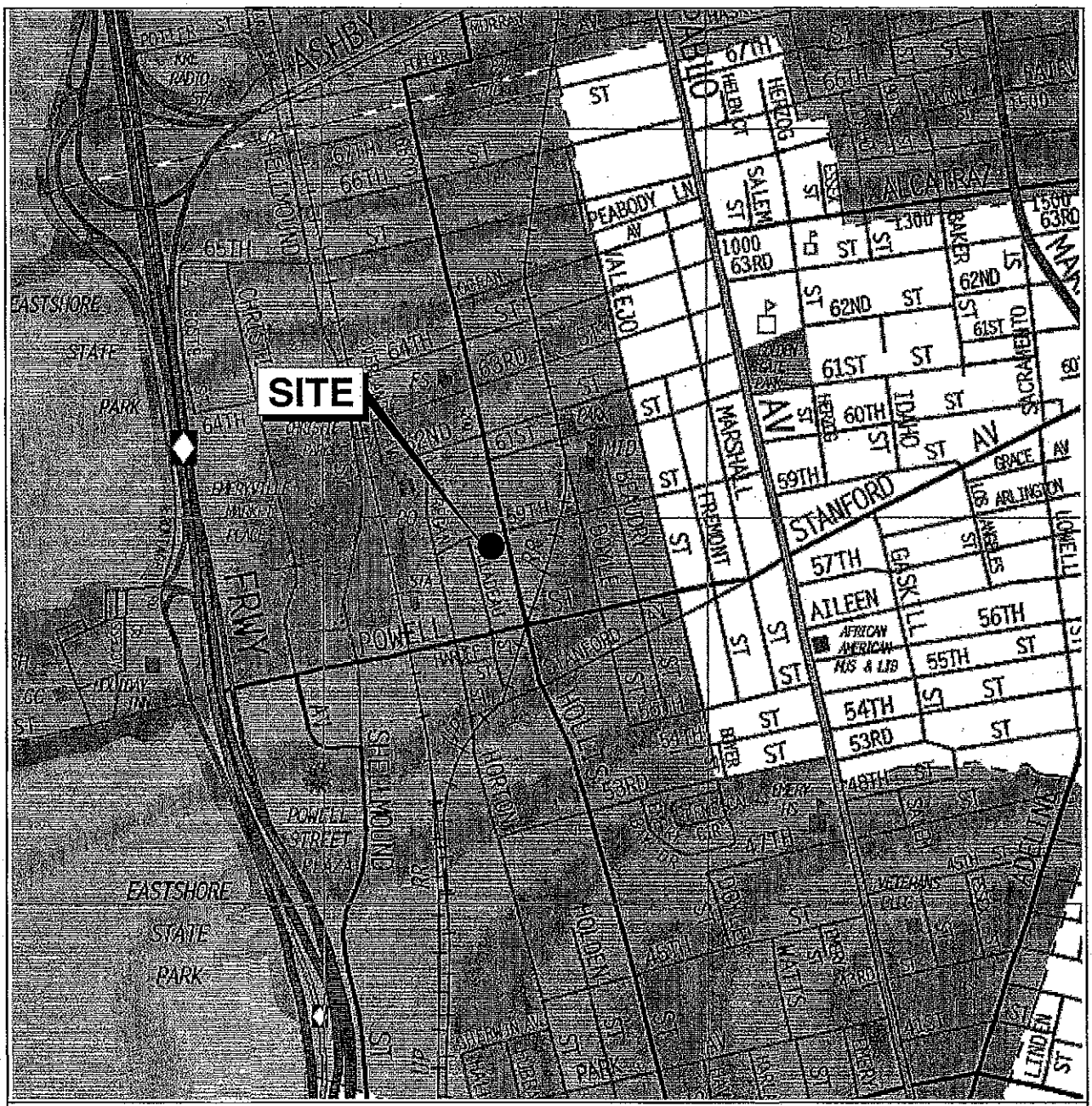
Sample ID	Sample Date	TPH			VOCs												
		Gasoline	Diesel Fuel	Motor Oil	TBA	MTBE	DIPE	ETBE	TAME	Ethanol	B	T	E	X	EDB	EDC	Other VOCs
DW-14	4/13/2006	77 L Y	<50	<300	72	<0.5	<0.5	<0.5	<0.5	<1,000	10	0.8	<0.5	0.6	--	--	--
	4/18/2006	250	110Y	<300	72	<0.5	<0.5	<0.5	<0.5	<1,000	22	1.3	6.4	5.7	<0.5	19	Isopropyl Benzene = 1.9 Propyl Benzene = 1.7 1,3,5 Trimethylbenzene = 1.9 1,2,4 Trimethylbenzene = 0.8 para-Isopropyl Toluene = 1.3 n-Butylbenzene = 0.6 All Others ND
	4/26/2006	630	440 L	<300	76	<0.5	<0.5	<0.5	<0.5	<1,000	42	4.9	14	6.8	<5.0	16	--
	5/3/2006	620	370 L Y	<300	64	<0.5	<0.5	<0.5	<0.5	<1,000	39	1.8	21	10	<5.0	18	--
	5/10/2006	450	250 L Y	<300	83	<0.5	<0.5	<0.5	<0.5	<1,000	11	2.4	8.6	4.9	<5.0	15	--
	5/17/2006	450	340 Y	<300	44	<0.5	<0.5	<0.5	<0.5	<1,000	37	0.6	9.1	6.2	<5.0	16	--
	5/23/2006	390	110 L Y	<300	30	<0.5	<0.5	<0.5	<0.5	<1,000	28	<0.5	4.9	3.3	<5.0	15	--
	6/1/2006	1,800	360 L Y	<300	58	<0.5	<0.5	<0.5	<0.5	<1,000	55	1.2	41	28	<5.0	16	--
	6/8/2006	520	130 L Y	<300	40	<0.5	<0.5	<0.5	<0.5	<1,000	37	<0.5	6.0	4.7	<5.0	16	--
	6/16/2006	580	150 L Y	<300	34	<0.5	<0.5	<0.5	<0.5	<1,000	35	<0.5	6.4	5.4	<5.0	15	--
	6/22/2006	1,200	320 L Y	<300	47	<0.5	<0.5	<0.5	<0.5	<1,000	34	0.5	7.6	9.7	<5.0	14	--
	6/30/2006	970	270 L Y	<300	35	<0.5	<0.5	<0.5	<0.5	<1,000	30	<0.5	6.7	5.6	<5.0	15	--
	7/5/2006	950	230 L Y	<300	37	<0.5	<0.5	<0.5	<0.5	<1,000	38	<0.5	6.1	5.2	<5.0	16	--
	7/12/2006	850 Y	<50	<300	24	<0.5	<0.5	<0.5	<0.5	<1,000	26	<0.5	6.9	4.6	<5.0	14	--
	7/18/2006	980	220 L Y	<300	57	<0.5	<0.5	<0.5	<0.5	<1,000	39	<0.5	6.5	4.8	<5.0	14	--
	7/27/2006	670	170 L Y	<300	51	<0.5	<0.5	<0.5	<0.5	<1,000	38	0.5	3.2	5.3	<5.0	15	--
	ESLs	500	640	640	18,000	1,800	NE	NE	NE	50,000	46	130	290	100	NE	200	Varies

Table 4
GROUNDWATER ANALYTICAL RESULTS
Dewatering Wells
5885 Hollis Street
Emeryville, California

Sample ID	Sample Date	TPH			VOCs													
		Gasoline	Diesel Fuel	Motor Oil	TBA	MTBE	DIPE	ETBE	TAME	Ethanol	B	T	E	X	EDB	EDC	Other VOCs
DW-24	4/13/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/18/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/26/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/3/2006	--	63 Y	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/10/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/17/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/23/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/1/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/8/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/16/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/22/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/30/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/5/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/12/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/18/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/27/2006	--	<50	<300	--	--	--	--	--	--	--	--	--	--	--	--	--
	ESLs	500	640	640	18,000	1,800	NE	NE	NE	50,000	46	130	290	100	--	200	Varies

Notes
All water results reported in micrograms per liter (µg/L). Detected concentrations shown in **bold**.
L = Lighter hydrocarbons contributed to the quantitation
Y = Sample exhibits chromatographic pattern which does not resemble standard.
Total petroleum hydrocarbons analyzed by EPA Method 8015M. Volatile organic compounds (VOCs) analyzed by EPA Method 8260B.
Fuel oxygenates include tert-Butyl Alcohol (TBA), Methyl tert-Butyl ether (MTBE), Isopropyl Ether (DIPE), Ethyl tert-Butyl Ether (ETBE), and Methyl tert-Amyl Ether (TAME)
B = Benzene, T = Toluene, E = Ethylbenzene, X = Total Xylenes
Lead scavengers include 1,2 dibromoethane (EDB) and 1,2 dichloroethane (EDC)
Other VOCs = Other volatile organic compounds described in the laboratory analytical report
<0.5 = Compound not detected above laboratory reporting limit.
-- = Not Analyzed
NE = Not Established
ND = Not detected above laboratory detection limits. Detection limits vary for each constituent.
ESLs = Environmental Screening Levels, California Regional Water Quality Control Board, San Francisco Bay Region, February 2005. Based on criteria where water is not a current or potential source of drinking water (Table B)
Shaded cells exceeded ESL criteria for their respective constituent.

FIGURES



Base map: The Thomas Guide
Alameda County
1999

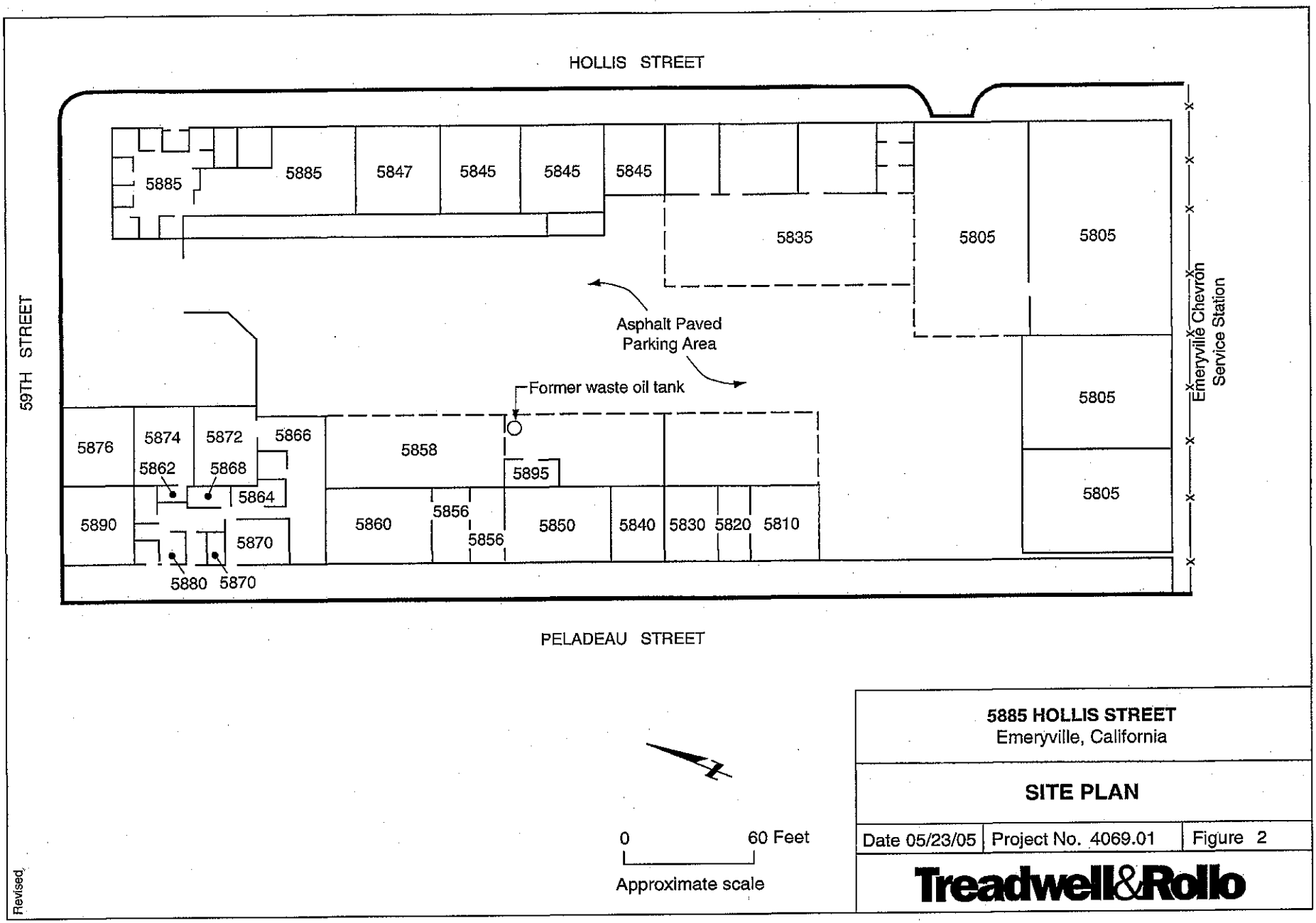
No scale

5885 HOLLIS STREET
Emeryville, California

SITE LOCATION MAP

Treadwell&Rollo

Date 05/13/05	Project No. 4069.01	Figure 1



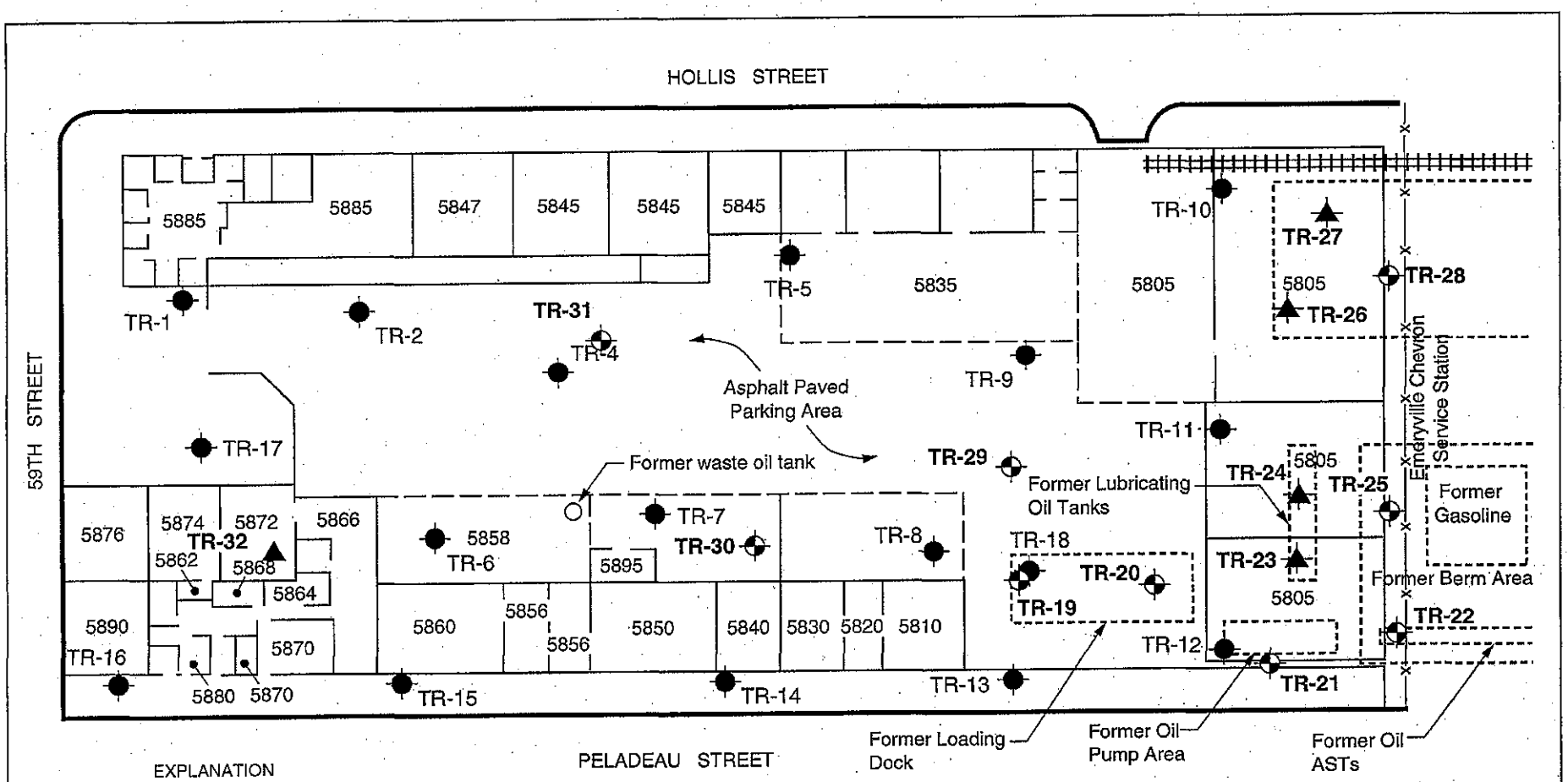
5885 HOLLIS STREET
Emeryville, California

SITE PLAN

Date 05/23/05	Project No. 4069.01	Figure 2

Treadwell&Rollo

Revised



EXPLANATION

- **TR-31** ⊕ Approximate location of current exploratory boring by Treadwell & Rollo, Inc., (January 2005)
- **TR-1** ● Approximate location of previous exploratory boring by Treadwell & Rollo, Inc. (April 2000)
- **TR-27** ▲ Approximate location of exploratory boring by Treadwell & Rollo, Inc., (June 2005)
- **TR-32** ▲ Proposed sampling locations that could not be accessed because of current buildings
- ▭ Approximate location of Union Oil of California Operations

0 60 Feet

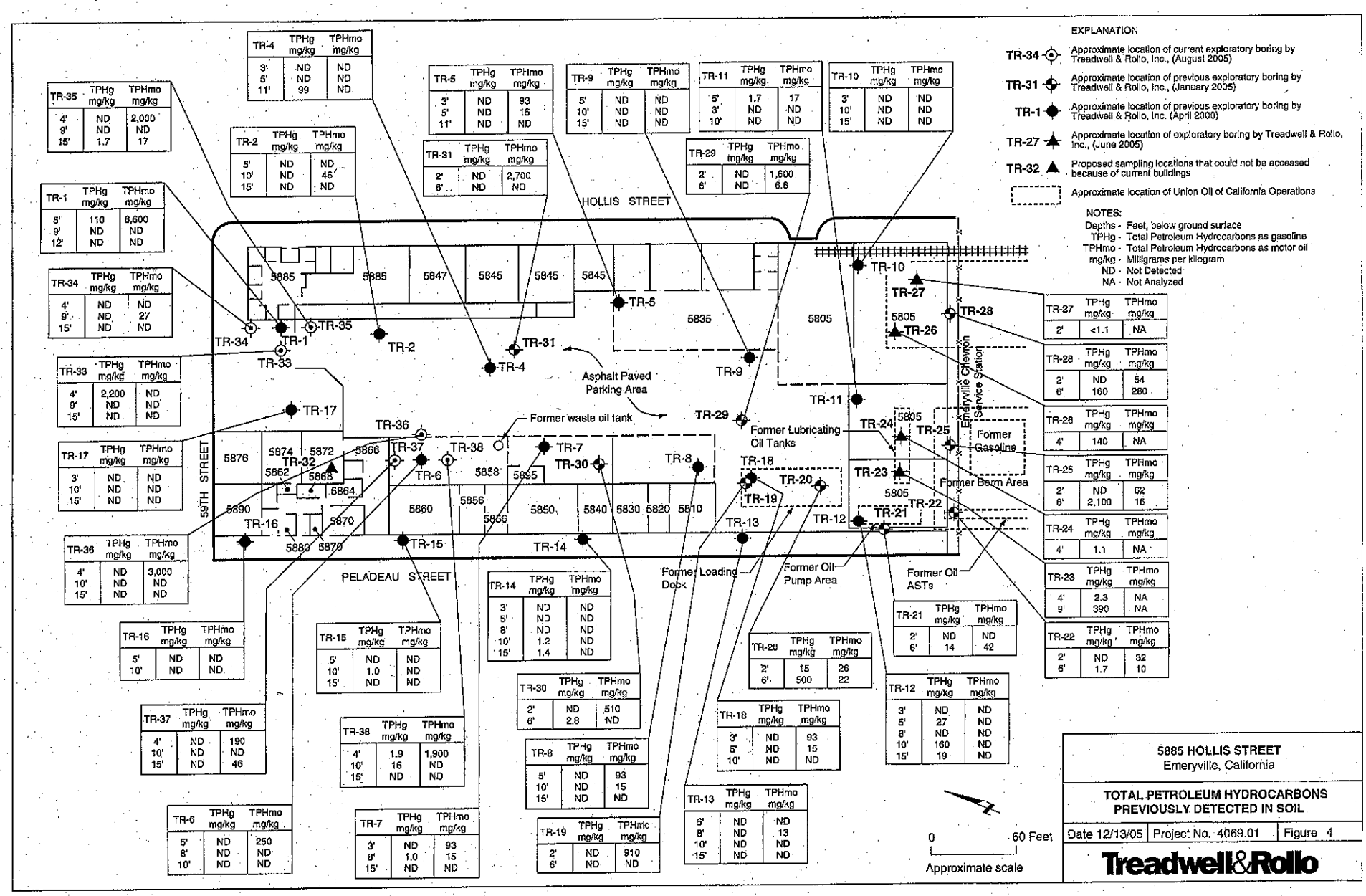
Approximate scale

5885 HOLLIS STREET
Emeryville, California

PREVIOUS SOIL SAMPLE LOCATIONS

Date 12/13/05 | Project No. 4069.01 | Figure 3

Treadwell&Rollo



TR-4	TPHg mg/kg	TPHmo mg/kg
3'	ND	ND
5'	ND	ND
11'	99	ND

TR-5	TPHg mg/kg	TPHmo mg/kg
3'	ND	93
5'	ND	15
11'	ND	ND

TR-9	TPHg mg/kg	TPHmo mg/kg
5'	ND	ND
10'	ND	ND
15'	ND	ND

TR-11	TPHg mg/kg	TPHmo mg/kg
5'	1.7	17
3'	ND	ND
10'	ND	ND

TR-10	TPHg mg/kg	TPHmo mg/kg
3'	ND	ND
10'	ND	ND
15'	ND	ND

TR-35	TPHg mg/kg	TPHmo mg/kg
4'	ND	2,000
9'	ND	ND
15'	1.7	17

TR-2	TPHg mg/kg	TPHmo mg/kg
5'	ND	ND
10'	ND	45
15'	ND	ND

TR-31	TPHg mg/kg	TPHmo mg/kg
2'	ND	2,700
6'	ND	ND

TR-29	TPHg mg/kg	TPHmo mg/kg
2'	ND	1,600
6'	ND	6.6

TR-1	TPHg mg/kg	TPHmo mg/kg
5'	110	6,600
9'	ND	ND
12'	ND	ND

TR-34	TPHg mg/kg	TPHmo mg/kg
4'	ND	ND
9'	ND	27
15'	ND	ND

TR-33	TPHg mg/kg	TPHmo mg/kg
4'	2,200	ND
9'	ND	ND
15'	ND	ND

TR-17	TPHg mg/kg	TPHmo mg/kg
3'	ND	ND
10'	ND	ND
15'	ND	ND

TR-36	TPHg mg/kg	TPHmo mg/kg
4'	ND	3,000
10'	ND	ND
15'	ND	ND

TR-16	TPHg mg/kg	TPHmo mg/kg
5'	ND	ND
10'	ND	ND

TR-15	TPHg mg/kg	TPHmo mg/kg
5'	ND	ND
10'	1.0	ND
15'	ND	ND

TR-14	TPHg mg/kg	TPHmo mg/kg
3'	ND	ND
5'	ND	ND
8'	ND	ND
10'	1.2	ND
15'	1.4	ND

TR-30	TPHg mg/kg	TPHmo mg/kg
2'	ND	510
6'	2.8	ND

TR-37	TPHg mg/kg	TPHmo mg/kg
4'	ND	190
10'	ND	ND
15'	ND	46

TR-38	TPHg mg/kg	TPHmo mg/kg
4'	1.9	1,900
10'	16	ND
15'	ND	ND

TR-8	TPHg mg/kg	TPHmo mg/kg
5'	ND	93
10'	ND	15
15'	ND	ND

TR-6	TPHg mg/kg	TPHmo mg/kg
5'	ND	250
8'	ND	ND
10'	ND	ND

TR-7	TPHg mg/kg	TPHmo mg/kg
3'	ND	93
8'	1.0	15
15'	ND	ND

TR-19	TPHg mg/kg	TPHmo mg/kg
2'	ND	910
6'	ND	ND

TR-20	TPHg mg/kg	TPHmo mg/kg
2'	15	26
6'	500	22

TR-18	TPHg mg/kg	TPHmo mg/kg
3'	ND	93
5'	ND	15
10'	ND	ND

TR-13	TPHg mg/kg	TPHmo mg/kg
5'	ND	ND
8'	ND	13
10'	ND	ND
15'	ND	ND

TR-12	TPHg mg/kg	TPHmo mg/kg
3'	ND	ND
5'	27	ND
8'	ND	ND
10'	160	ND
15'	19	ND

TR-21	TPHg mg/kg	TPHmo mg/kg
2'	ND	ND
6'	14	42

TR-27	TPHg mg/kg	TPHmo mg/kg
2'	<1.1	NA

TR-28	TPHg mg/kg	TPHmo mg/kg
2'	ND	54
6'	160	280

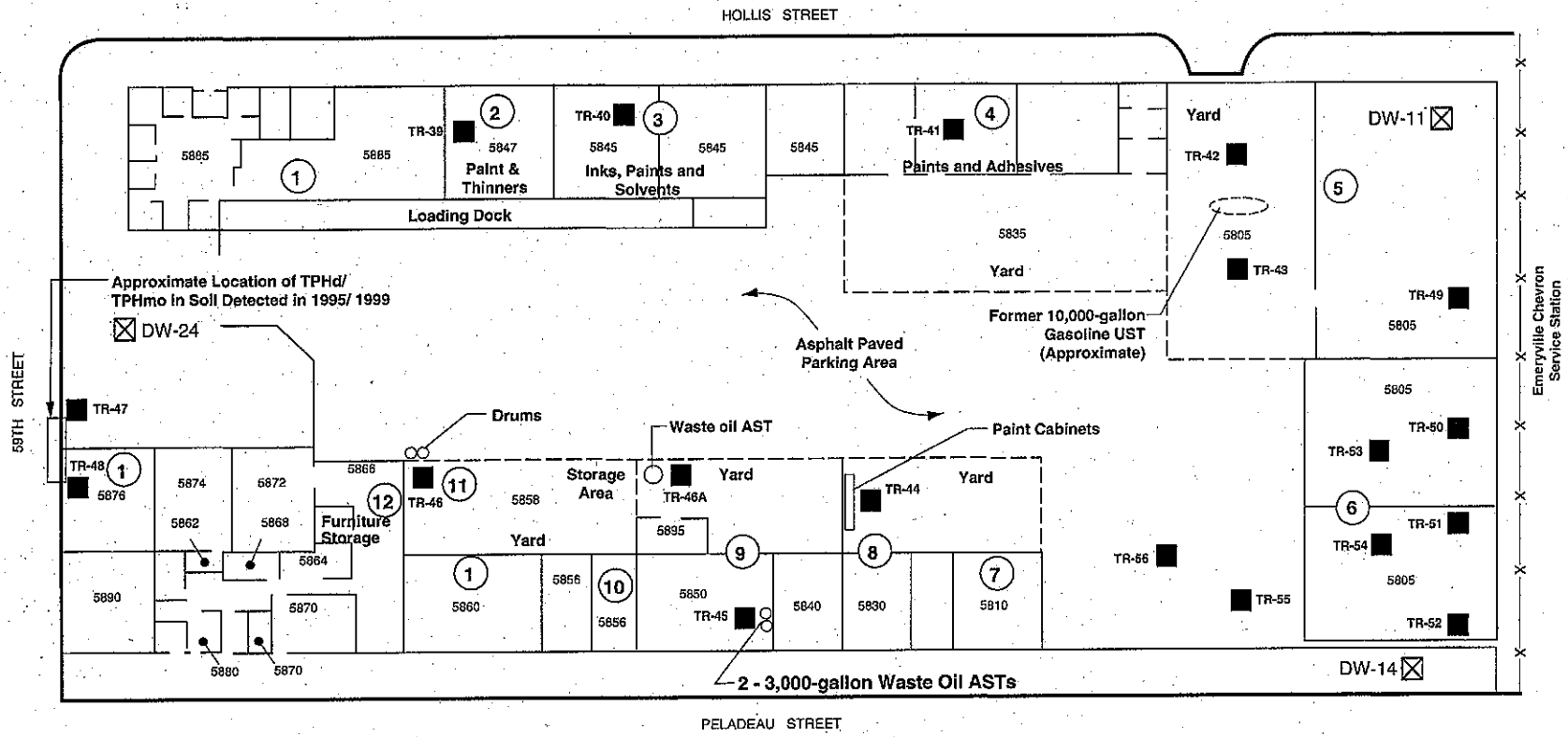
TR-26	TPHg mg/kg	TPHmo mg/kg
4'	140	NA

TR-25	TPHg mg/kg	TPHmo mg/kg
2'	ND	62
6'	2,100	16

TR-24	TPHg mg/kg	TPHmo mg/kg
4'	1.1	NA

TR-23	TPHg mg/kg	TPHmo mg/kg
4'	2.3	NA
9'	390	NA

TR-22	TPHg mg/kg	TPHmo mg/kg
2'	ND	32
6'	1.7	10



HISTORICAL TENANTS

1. McLaughlin Coffee
2. BMP Seismic Retrofitting
3. Graphic Traffic
4. Canova Marble
5. S.B. Thomas
6. Pro-Formance Lighting
7. Edy's Candy Kitchen
8. Correris Cabinets
9. Fleetcare Repair
10. TLC Windshield
11. Ellerson Weaver
12. Alpha Furniture Restoration

■ Location of Post Excavation Soil Sample

☒ Location of Dewatering Wells Sampled

Note: Site features from Environmental Site Assessment, March 19, 1995 (Weiss Associates). All locations are approximate.

0 40 Feet

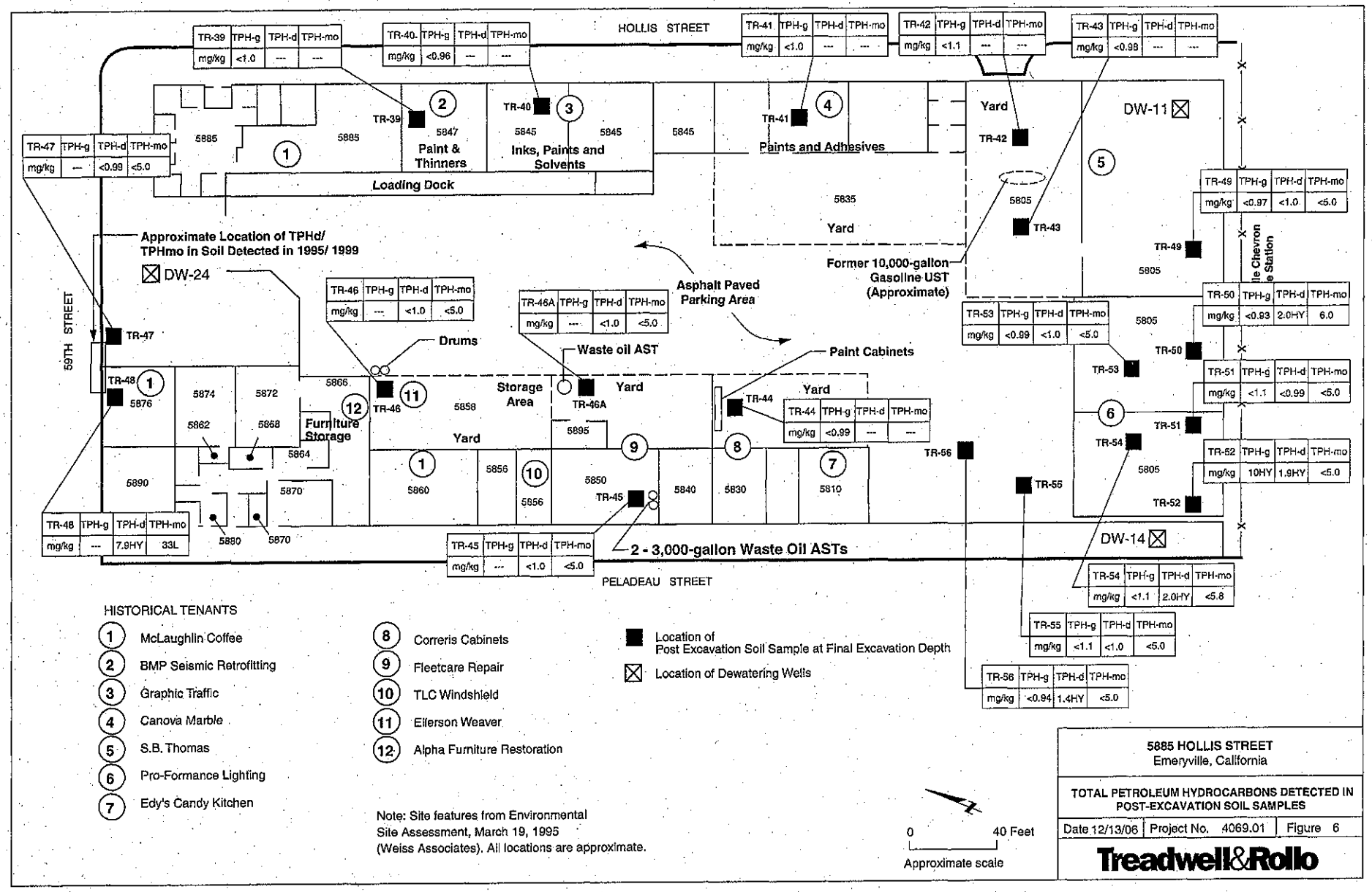
Approximate scale

5885 HOLLIS STREET
Emeryville, California

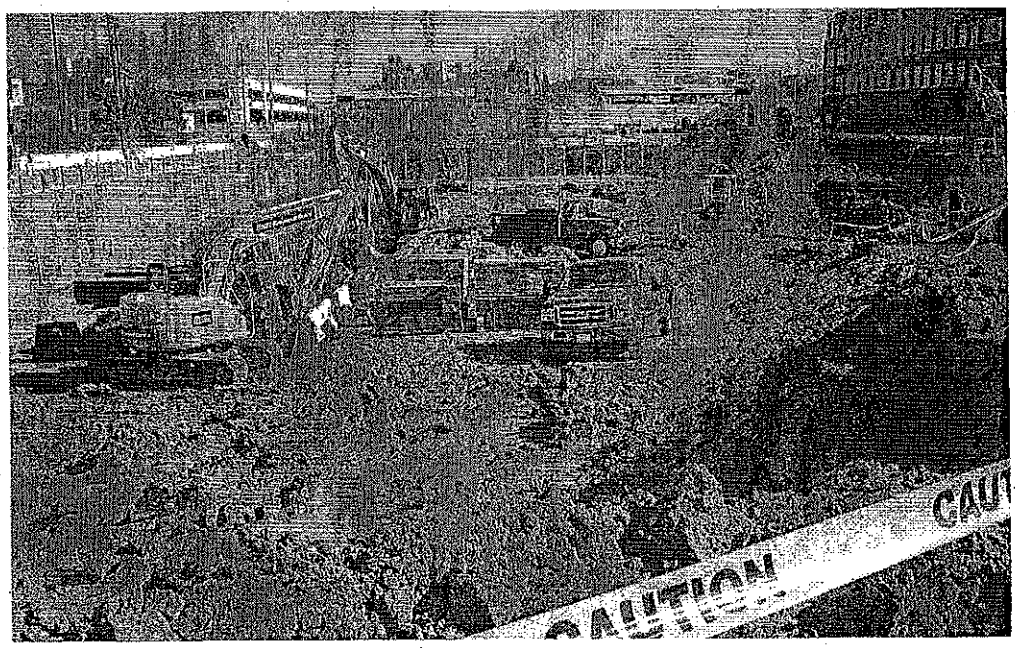
DEWATERING WELLS AND POST-EXCAVATION SOIL SAMPLE LOCATIONS

Date 12/13/06 | Project No. 4069.01 | Figure 5

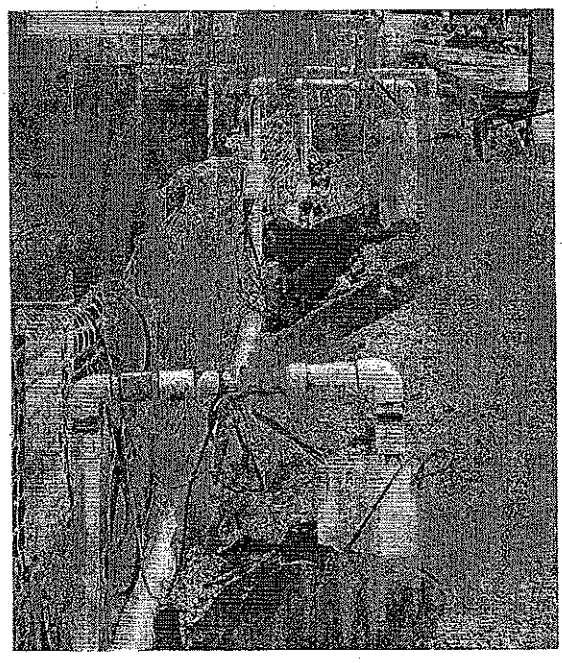
Treadwell&Rollo


HOLLIS STREET
PELADEAU STREET
59TH STREET
TR-39 | TPH-g | TPH-d | TPH-mo
mg/kg | <1.0 | --- | ---
TR-40 | TPH-g | TPH-d | TPH-mo
mg/kg | <0.96 | --- | ---
TR-41 | TPH-g | TPH-d | TPH-mo
mg/kg | <1.0 | --- | ---
TR-42 | TPH-g | TPH-d | TPH-mo
mg/kg | <1.1 | --- | ---
TR-43 | TPH-g | TPH-d | TPH-mo
mg/kg | <0.98 | --- | ---
TR-47 | TPH-g | TPH-d | TPH-mo
mg/kg | --- | <0.99 | <5.0
TR-46 | TPH-g | TPH-d | TPH-mo
mg/kg | --- | <1.0 | <5.0
TR-46A | TPH-g | TPH-d | TPH-mo
mg/kg | --- | <1.0 | <5.0
TR-44 | TPH-g | TPH-d | TPH-mo
mg/kg | <0.99 | --- | ---
TR-53 | TPH-g | TPH-d | TPH-mo
mg/kg | <0.99 | <1.0 | <5.0
TR-49 | TPH-g | TPH-d | TPH-mo
mg/kg | <0.97 | <1.0 | <5.0
TR-50 | TPH-g | TPH-d | TPH-mo
mg/kg | <0.93 | 2.0HY | 6.0
TR-51 | TPH-g | TPH-d | TPH-mo
mg/kg | <1.1 | <0.99 | <5.0
TR-52 | TPH-g | TPH-d | TPH-mo
mg/kg | 10HY | 1.9HY | <5.0
TR-54 | TPH-g | TPH-d | TPH-mo
mg/kg | <1.1 | 2.0HY | <5.8
TR-55 | TPH-g | TPH-d | TPH-mo
mg/kg | <1.1 | <1.0 | <5.0
TR-56 | TPH-g | TPH-d | TPH-mo
mg/kg | <0.94 | 1.4HY | <5.0
TR-48 | TPH-g | TPH-d | TPH-mo
mg/kg | --- | 7.9HY | 33L
TR-45 | TPH-g | TPH-d | TPH-mo
mg/kg | --- | <1.0 | <5.0
Loading Dock
Paint & Thinners
Inks, Paints and Solvents
Paints and Adhesives
Yard
DW-11
DW-24
DW-14
Approximate Location of TPHd/ TPHmo in Soil Detected in 1995/ 1999
Former 10,000-gallon Gasoline UST (Approximate)
Asphalt Paved Parking Area
Drums
Waste oil AST
Paint Cabinets
Storage Area
Furniture Storage
2 - 3,000-gallon Waste Oil ASTs
Chevron Station
HISTORICAL TENANTS
1 McLaughlin Coffee
2 BMP Seismic Retrofitting
3 Graphic Traffic
4 Canova Marble
5 S.B. Thomas
6 Pro-Formance Lighting
7 Edy's Candy Kitchen
8 Correris Cabinets
9 Fleetcare Repair
10 TLC Windshield
11 Ellerson Weaver
12 Alpha Furniture Restoration
Location of Post Excavation Soil Sample at Final Excavation Depth
Location of Dewatering Wells
Note: Site features from Environmental Site Assessment, March 19, 1995 (Weiss Associates). All locations are approximate.
0
40 Feet
Approximate scale
5885 HOLLIS STREET
Emeryville, California
TOTAL PETROLEUM HYDROCARBONS DETECTED IN POST-EXCAVATION SOIL SAMPLES
Date 12/13/06
Project No. 4069.01
Figure 6
Treadwell&Rollo

PHOTOGRAPHS



Photograph 1: Soil excavation and installation of lagging.



Photograph 2: Dewatering wells on the north part of the Site.

APPENDIX A
Site Management Plan and Approval Letter (on CD ROM)

APPENDIX B
Soil Manifests (on CD ROM)

APPENDIX C
Laboratory Analytical Reports (on CD ROM)

APPENDIX D
Import Fill Laboratory Analytical Reports (on CD ROM)

APPENDIX B

Treadwell & Rollo, 2007
Site Management Completion Report for 5885 Hollis St, Emeryville, CA

Treadwell&Rollo

14 July 2005
Project 4069.01

Ms. Donna Drogos
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Subject: Site Management Plan
5885 Hollis Street
Emeryville, California

Dear Ms. Drogos:

On behalf of Wareham Development, Treadwell & Rollo has prepared the enclosed Site Management Plan (SMP) for the proposed development of the 5885 Hollis Street property for your approval. Correspondence in 2000 and 2001 with Susan Hugo of the Alameda County Health Care Services Agency indicated that there were several environmental issues to be addressed prior to redevelopment of the property (under STID#6687). The previous redevelopment plan, by Marks Management, was for commercial use. Marks Management, the current property owner, is no longer planning on implementing their redevelopment plan. Wareham Development intends to purchase the property and demolish the existing buildings and construct a multi-story office building (likely to be laboratory space) with a sub-grade, mechanically-ventilated parking garage at the Site.

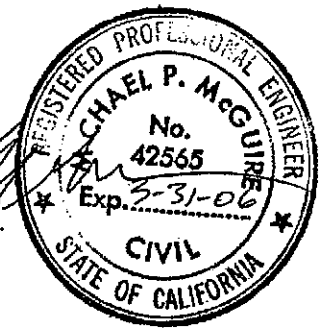
The enclosed SMP has been prepared to address concerns raised by the Alameda County Health Care Services Agency in 2001 regarding the Marks Management Development, as well as issues identified during Treadwell & Rollo's 2005 Phase II Environmental Site Assessment conducted during Wareham Development's due diligence period. A copy of the 3 March 2005 Phase II Environmental Site Assessment Report is also included for your review, although the data from the 2005 report is incorporated into the SMP.

.Please call me at (510) 874-4500 at extension 554 (Glenn) if you have any questions.

Sincerely yours,
TREADWELL & ROLLO, INC.

Glenn M. Leong
Senior Scientist

Michael P. McGuire, P.E.
Principal Engineer



41690102.OAK

cc: Geoff Sears, Wareham Development
Ignacio Dayrit, City of Emeryville

Treadwell & Rollo, Inc. *Environmental & Geotechnical Consultants*
501 14th Street, Third Floor, Oakland, CA 94612
Telephone (510) 874-4500 Facsimile (510) 874-4507

SITE MANAGEMENT PLAN
5885 HOLLIS STREET
Emeryville, California

Wareham Development
San Rafael, California

14 July 2005
Project No. 4069.01

Treadwell&Rollo
Environmental and Geotechnical Consultants

TABLE OF CONTENTS Treadwell&Rollo

APPENDICES

LIST OF TABLES

LIST OF FIGURES

SITE MANAGEMENT PLAN
5885 HOLLIS STREET
Emeryville, California

1.0 INTRODUCTION

This Site Management Plan (SMP) has been prepared by Treadwell & Rollo Inc. (Treadwell & Rollo) on behalf of Wareham Development for use during the redevelopment of the property located at 5885 Hollis Street in Emeryville, California (the Site), as shown on Figures 1 and 2. The SMP is intended to fulfill the redevelopment requirements provided by the Alameda County Health Care Services Agency (ACHCS) to Marks Management Company (the current property owner) in a letter dated 16 January 2001 regarding chemical concentrations in soil and groundwater at the Site. Marks Management previously considered a redevelopment plan at the Site that included construction of a two-story building with an above ground four-level parking structure. Marks Management is no longer pursuing the previously proposed commercial development. Wareham Development intends to purchase the property and demolish the existing buildings and construct a multi-story building with a mechanically ventilated sub-grade parking garage at the Site. The current plan is for the building to include commercial use, including laboratory space, but residential use has not been completely ruled out for the Site.

1.1 Purpose and Scope

The purpose of this SMP is to provide risk management measures to mitigate worker and Site user and neighbor risks associated with the presence of petroleum hydrocarbons and benzene in subsurface soil and groundwater underneath the Site during and after construction. The measures include procedures and protocols for the identification, handling, management, and disposal of hazardous materials encountered in Site soil and groundwater during redevelopment. The procedures and protocols are designed to facilitate compliance with applicable federal, state, and local laws and regulations regarding hazardous and industrial waste management.

1.2 Project Responsibilities and Points of Contact

Unless otherwise noted in this document, Wareham Development will be responsible for implementation of the procedures and protocols outlined in this document. Wareham may designate construction/excavation responsibilities to an excavation contractor. Primary contact for the Wareham Development will be Mr. Geoff Sears.

2.0 SITE BACKGROUND

The following subsections describe Site location, Site geology and hydrogeology, and development plans.

2.1 Site Location and Characteristics

The Site is approximately 220 feet by 500 feet in plan dimension and is bounded by Hollis Street to the east, 59th Street to the north, Peladeau Street to the west, and a Chevron Service Station and Powell Street to the south (Figure 1). The Site is currently occupied by four buildings: a one-story concrete building that occupies 5805 through 5885 Hollis Street, a one-story concrete building that occupies 5810 through 5890 Peladeau Street, and two one-story metal framed buildings that occupy the remainder of 5805 Hollis Street. The remaining area is asphalt paved parking (Figure 2).

2.2 Site Geology and Hydrogeology

Approximately 3 to 6 inches of asphalt over aggregate base cover the paved portions of the Site. The aggregate base is generally underlain by clays and clayey sands. Fine to course sands have been encountered at shallow intervals up to 3 feet below ground surface (bgs). Clay observed from the surface to 13 feet bgs apparently becomes stiffer (based on visual observations) with increasing depth.

Groundwater was measured at between 9 and 10 feet bgs in boring TR-31 (Figure 3). This approximate groundwater depth may not represent a stabilized level, as the actual groundwater level in a test boring can take from several hours to days to stabilize.

2.3 Development Plans

The development plans for the Site are still being completed at this time, but conceptually include either commercial/laboratory space or multi-family residential constructed over sub-grade parking. It is likely that the parking area will occupy much of the Site footprint. With the exception of raised beds for landscaping, no exposed soil is anticipated for the development.

3.0 HISTORICAL SITE USE AND ENVIRONMENTAL INVESTIGATIONS

Previous land use and environmental investigation information was derived from the following documents:

- Weiss Associates, 1995. *Environmental Site Assessment, Emeryville Industrial Court.* March 14.
- Environmental Resolutions, Inc., 2000. *Phase I Environmental Site Assessment, Former Unocal Distribution Plant 9926-999, 5885 Hollis Street, Emeryville, California.* June 22.
- Treadwell & Rollo, Inc., 2000a. *Environmental Site Characterization, 5885 Hollis Street, Emeryville, California.* May 12.
- Treadwell & Rollo, Inc., 2005. *Phase II Environmental Site Assessment, 5885 Hollis Street, Emeryville, California.* March 3.

Prior to 1917, the Site and vicinity appeared to be vacant land. Union Oil Company of California occupied the site from 1917 to 1964. Intermountain Terminal Company, an affiliate of Pacific Intermountain Express Company, owned the property from 1964 to 1974. In 1974, the

Marks Management Company purchased the property and the current buildings, with the exception of the portions of the 5805 building, which was constructed in 1985.

Union Oil Company of California reportedly used the property (including the Chevron service station property to the south of the Site) as a distribution facility, which contained many above- and underground petroleum storage tanks, a garage along Hollis Street, and an auto repair shop along Peladeau Street. Along the southeastern portion of the Site, a total of 40,000-gallons of lubricating oil were reportedly stored in aboveground tanks. Figure 2 indicates the approximate locations of some of the tanks and other features of the Union Oil operations.

During the remodeling of one of the buildings in 1985 and more recently during the widening of 59th Street and the replacement of an underground utility in 1999, petroleum hydrocarbons were discovered in the soil with total petroleum hydrocarbons as diesel (TPHd) detected at a maximum concentration of 13,000 milligrams per kilogram (mg/kg) and total petroleum hydrocarbons as motor oil (TPHmo) at 15,000 mg/kg. The excavated soil was reportedly transported and disposed of at a regulated landfill.

In 1990, an unknown 10,000-gallon underground gasoline storage tank was reportedly located and removed from the Site by a tenant (S. B. Thomas). No records were found in regards to the removal of the underground storage tank. However, according to the property owners, soil contamination was noted during the tank removal and the affected soil was disposed at a regulated landfill.

In April 2000, Treadwell & Rollo performed a subsurface investigation for Marks Management Company that included the collection of soil and grab groundwater samples. In January 2005, Treadwell & Rollo performed a subsurface investigation for Wareham Development that included the collection of soil and grab groundwater samples. Figure 3 presents the sampling locations for the 2000 and January and June 2005 investigations. The results of these investigations are summarized below.

3.1 2000 Investigation

The April 2000 investigation included collection of soil samples from 17 exploratory borings and collection of groundwater grab samples from four exploratory borings. The investigation was conducted to provide additional soil and groundwater data for a proposed development at the Site that was to include demolishing the existing buildings and the construction of a two-story office building with a four-level garage.

3.1.1 Soil Results

Results of the soil sample analyses indicated the presence of:

- total recoverable petroleum hydrocarbons (TRPH) up to 9,900 mg/kg,
- total petroleum hydrocarbons as gasoline (TPHg) up to 160 mg/kg,
- total petroleum hydrocarbons as diesel (TPHd) up to 360 mg/kg,
- total petroleum hydrocarbons as motor oil (TPHmo) up to 6,600 mg/kg
- benzo(a)pyrene up to 660 micrograms per kilogram (ug/kg),
- carbon disulfide up to 17 ug/kg,
- total chromium up to 97 mg/kg,
- lead up to 150 mg/kg,
- nickel up to 110 mg/kg; and,
- zinc up to 110 mg/kg.

The maximum concentration of TRPH and TPHmo were each detected in sample TR-1-4.0, which is located near the northeast corner of the Site near 59th Street. The maximum detected concentration of TPHg was detected at TR-12, which is located near the former oil pump area near the southwest corner of the Site. When encountered elsewhere, TRPH, TPHg, and TPHmo were generally at concentrations one order of magnitude lower. The only volatile organic

compound (VOC) detected at or above the laboratory reporting limits in the soil samples analyzed was carbon disulfide in sample TR-18-15 at a concentration of 17 ug/kg. Benzo(a)pyrene, the only semi-volatile organic compounds (SVOC) detected, was found in 5 of the 9 soil samples analyzed in concentrations ranging from 540 to 600 ug/kg. Figure 4 present the TPHg and TPHmo concentrations in soil.

3.1.2 Groundwater Results

Grab groundwater samples collected from four of the soil borings in 2000 indicated the presence of:

- TRPH up to 9,900 ug/L,
- TPHg up to 3,300 ug/L,
- TPHd up to 700 ug/L,
- TPHmo up to 1,400 ug/L

TPHg was detected in the groundwater collected from boring TR-1 and TR-12 at concentrations of 98 and 3,300 ug/L, respectively. TPHd was also detected in groundwater samples from these borings at concentrations of 130 and 700 ug/L, respectively.

TRPH and motor oil were detected in the groundwater samples collected from borings TR-6 and TR-12 at concentrations of 6,600 and 9,900 ug/L, respectively. TPHmo was detected in the groundwater samples collected from borings TR-6 and TR-9 at concentrations of 1,400 and 420 ug/L, respectively. Grab groundwater samples were not analyzed for benzene, toluene, ethylbenzene or xylenes in the 2000 investigation.

The results of the 2000 investigation, together with the 1995 Weiss Associates Environmental Site Assessment, were submitted by Marks Management Company to the Alameda County Health Care Services Agency (ACHCSA) for review related to their proposed development of the Site. In a letter dated 23 June 2000, ACHCSA indicated several issues would need to be

addressed prior to development of the Site. Treadwell & Rollo submitted a letter dated 8 August 2000 that addressed the identified issues.

In January 2001, a meeting was held between ACHCSA, Marks Management, their architect, the City of Emeryville, and Treadwell & Rollo to discuss changes in the development plan documented in a letter prepared by Treadwell & Rollo dated 8 December 2000. The revision to the plan included excavation of the entire site to a depth of approximately 10 feet bgs. The following issues were identified by ACHCSA to be addressed prior to development of the Site:

- Potential future groundwater intrusion into the basement of the building.
- Evaluate and demonstrate that the proposed construction activities will not create migration of on-site and off-site contamination during construction and after completion of the development.
- Evaluate vapor seepage into the basement/building and identify human health risks to the occupants of the proposed building.
- Provide to ACHCSA site development specifics, including proposed site configuration and excavation depths.
- Development of a human and environmental risk assessment for the proposed use of the Site, including development of a site conceptual model identifying sources of releases, chemicals of potential concern, routes of exposure (including vapor seepage), and sensitive receptors.
- Development of a short-term and long-term risk management plan to address construction health and safety, soil and groundwater management, dust control, stormwater prevention, institutional controls, and other protocols for handling soil and groundwater.
- Collect confirmation samples for chemicals in soil and groundwater.

- Preparation contingency plan for unexpected conditions encountered during construction.
- A report after completion of development that documents soil and/or groundwater disposed off-site and results of confirmation soil and groundwater sampling.

Copies of the ACHCSA and Treadwell & Rollo correspondence are included in Appendix A.

3.2 January 2005 Investigation

The objective of the January 2005 investigation was to further assess whether hazardous substances or petroleum products that affected soil and/or groundwater beneath the site. The information developed in the ESA prepared by Weiss Associates (1995) and the 2000 investigation indicates that activities from the Union Oil Company distribution facility, the Intermountain Terminal Company truck storage area and parts warehouse and a Chevron Service Station located immediately adjacent to the Site to the south have likely affected soil and groundwater at the Site. In addition, the Site is potentially underlain by artificial (imported) fill material, which frequently contains elevated concentrations of lead. Therefore, the 2005 investigation included advancing nine environmental soil borings (TR-19 through TR-22, TR-25, and TR-28 through TR-31 shown on Figure 2), with the collection of soil samples and the collection of grab groundwater samples from four borings. Soil and groundwater samples were selectively analyzed for TPHd, TPHmo, TPHg, benzene, toluene, ethylbenzene and total xylenes (BTEX), volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), and total lead.

Five additional sampling locations were proposed based on previous site operations, but were inaccessible in January 2005 due to lack of Site access.

3.2.1 Soil Results

TPHd was detected in 17 of 18 soil samples analyzed and ranged from less than 1.0 mg/kg in TR-19 (at 6.0 feet bgs) to a maximum of 1,100 mg/kg in TR-31 (at 2.5 feet bgs). All detections of TPHd were reported with one or more laboratory analytical qualifiers including "individual

samples may exhibit a chromatographic pattern which does not resemble the laboratory standard for diesel fuel", "lighter hydrocarbons may have contributed to the analytical concentration", and "heavier hydrocarbons may have contributed to the analytical concentration". TPHmo was detected in 14 of 18 soil samples analyzed and ranged from less than 5.0 mg/kg in several samples to a maximum of 2,700 mg/kg in TR-31 (at 2.5 feet bgs). Several detections of TPHmo were reported with one or more laboratory qualifiers that indicate that lighter or heavier hydrocarbons may have contributed to the analytical concentration.

TPHg was detected in seven of 18 soil samples analyzed and ranged from less than 1.0 mg/kg in several samples to a maximum of 2,100 mg/kg in TR-25 (at 6.0 feet bgs). Several detections of TPHg were reported with a laboratory qualifier indicating the sample exhibits chromatographic pattern which does not resemble the laboratory standard. Figure 4 present the TPHg and TPHmo concentrations in soil.

Total lead was detected in all four soil samples analyzed. Total lead concentrations in the samples ranged from 5.6 mg/kg in TR-28 (at 2.0 feet bgs) to a maximum of 14 mg/kg in TR-25 (at 2.0 feet bgs). No total lead concentrations were greater than ten times the STLC for lead, therefore no soluble lead tests were performed.

PCBs were detected in one soil sample analyzed. Aroclor-1260 was detected in soil sample TR-25 (at 2.0 feet bgs) at a concentration of 11 micrograms per kilogram (ug/kg). This concentration is below the residential surface soil ESL for PCBs of 220 ug/kg.

3.2.2 Groundwater Results

Groundwater was measured in one boring (TR-31) at 9.88 feet bgs, although this was not a stabilized water level measurement. TPHd was detected in three of four groundwater samples analyzed and ranged from 270 ug/L in TR-31 to 640 ug/L in TR-30. All TPHd detections had laboratory qualifiers indicating that both lighter and heavier hydrocarbons contributed to the total analytical concentration. TPHmo was also detected in three of four samples analyzed and ranged

from 340 ug/L in TR-29 to a maximum of 1,500 ug/L in TR-31. The TPH-MO detection in TR-29 had a laboratory qualifier indicating that lighter hydrocarbons contributed to the total analytical concentration.

TPHg was only detected in TR-25 with a concentration of 150,000 ug/L. This concentration is in excess of the residential groundwater ESL of 500 ug/L, and may suggest the presence of free-phase hydrocarbons in the subsurface. Benzene was also detected in TR-25 at a concentration of 2,500 ug/L. Toluene was detected in three of four samples analyzed and ranged from 0.56 ug/L in TR-29 to a maximum of 0.85 ug/L in TR-30. Ethylbenzene was detected in TR-25 at a concentration of 3,600 ug/L. Xylenes were detected in all four groundwater samples analyzed. In sample TR-25, total xylenes (the sum of the meta, para, and ortho isomers) were detected at a concentration of 1,720 ug/L. In the remaining three samples, m,p-xylenes were detected at concentrations ranging from 0.57 ug/L in TR-31 (GW) to 0.85 ug/L in TR-30 (GW).

3.3 June 2005 Investigation

Site access was granted in June 2005 at sampling at locations along the south end of the Site. Each of these locations are within the existing Site buildings. Because of the elevated concentrations of TPHg and benzene in groundwater detected at TR-25 during the January 2005 investigation, additional sampling in the area was considered necessary to evaluate the extent of benzene and TPHg in groundwater. The June 2005 investigation included soil and groundwater sampling near the TR-23, TR-24, TR-26, and TR-27 locations previously proposed.

The investigation plan included the collection of groundwater samples and soil samples near the groundwater interface from four locations by advancing a borehole to at least two feet below the groundwater surface. Because the sample locations are within existing buildings, the borings were advanced using hand augering equipment. At boring locations TR-26 and TR-27, an obstruction was encountered approximately 4 feet below ground surface. It appears that the obstruction was concrete and may be a second building slab or foundation. Therefore, no

groundwater samples and only shallow soil samples were collected at TR-26 and TR-27. The laboratory data for the June 2005 investigation are included in Appendix B.

3.3.1 Soil Results

TPHd was detected in the 5 soil samples analyzed and ranged from 46 mg/kg in TR-24 (at 4.0 feet bgs) to a maximum of 2,100 mg/kg in TR-26 (at 4.0 feet bgs). All detections of TPHd were reported with one or more laboratory analytical qualifiers including "individual samples may exhibit a chromatographic pattern which does not resemble the laboratory standard for diesel fuel", "lighter hydrocarbons may have contributed to the analytical concentration", and "heavier hydrocarbons may have contributed to the analytical concentration".

TPHg was detected in three of the five soil samples analyzed and ranged from 2.3 mg/kg in TR-23 (at 4.0 feet bgs) to a maximum of 390 mg/kg in TR-23 (at 9.0 feet bgs). Several detections of TPHg were reported with a laboratory qualifier indicating the sample exhibits chromatographic pattern which does not resemble the laboratory standard. Figure 4 includes the TPHg concentrations in soil.

Benzene was detected only in TR-23 at 97 ug/kg at 4 feet bgs and at 200 ug/kg at 9 feet bgs. Other petroleum-related chemicals detected in the soil samples from TR-23 and TR-26 include the following:

- Ethylbenzene up to 600 ug/kg
- m,p-Xylenes up to 190 ug/kg
- o-Xylenes up to 22 ug/kg
- Isopropylbenzene up to 180 ug/kg
- Propylbenzene up to 480 ug/kg

- 1,3,5-Trimethylbenzene up to 69 ug/kg
- 1,2,4-Trimethylbenzene up to 250 ug/kg
- Sec-Butylbenzene up to 42 ug/kg
- N-Butylbenzene up to 290 ug/kg
- Naphthalene up to 310 ug/kg

The mix of petroleum related chemicals were also detected in the groundwater samples collected from TR-23 and TR-24, as discussed in Section 3.3.2.

3.3.2 Groundwater Results

The groundwater samples collected from borings TR-23 and TR-24 indicated the presence of TPHd at 8,400 ug/L and 6,800 ug/L, respectively. The TPHd results had laboratory qualifiers indicating that both lighter and heavier hydrocarbons contributed to the total analytical concentration. TPHg was detected at 28,000 ug/L at TR-23 and 91,000 ug/L at TR-24. These concentrations are in excess of the residential groundwater ESL of 500 ug/L, and may suggest the presence of free-phase hydrocarbons in the subsurface. Benzene was also detected at 4,300 ug/L in TR-23 and 2,500 ug/L in TR-24. Other petroleum-related chemicals detected in TR-23 and TR-24 include the following:

- Toluene up to 21 ug/L
- Ethylbenzene up to 990 ug/L
- m,p-Xylenes up to 380 ug/L
- o-Xylenes up to 380 ug/L
- Isopropylbenzene up to 210 ug/L

- Propylbenzene up to 240 ug/L
- 1,3,5-Trimethylbenzene up to 290 ug/L
- 1,2,4-Trimethylbenzene up to 160 ug/L
- Sec-Butylbenzene up to 70 ug/L
- Naphthalene up to 710 ug/L
- Acetone up to 35 ug/L

4.0 TIER 1 ENVIRONMENTAL RISK ASSESSMENT

A Tier 1 Environmental Risk Assessment was developed to identify potential risks to human health and environmental resources associated with chemicals in soil and groundwater under the proposed land use. Included in this risk evaluation are the following subsections:

- Site Setting
- Summary of chemical characterization information
- Description of the exposure assessment methodology used in the risk evaluation, including the exposure setting and exposure pathways
- Evaluation of risk

4.1 Site Setting

Section 2.0 of this SMP presents a description of the Site location, current use, and development plans. The Site is currently under commercial land use and is occupied with four buildings: a one-story concrete building that occupies 5805 through 5885 Hollis Street, a one-story concrete building that occupies 5810 through 5890 Peladeau Street, and two one-story metal framed buildings that occupy 5805 Hollis Street. The remaining area is asphalt paved parking

(Figure 2). The surrounding area consists primarily of commercial land use (including laboratory space), with multi-family residential located within 1 block of the Site.

Groundwater was measured at the Site at 9.88 feet bgs in boring TR-31. This groundwater depth may not represent a stabilized level, as the actual groundwater level in a test boring can take from several hours to days to stabilize. The San Francisco Bay is located over 2000 feet to the west of the Site. Drinking water at the Site and in the surrounding areas is supplied by the East Bay Municipal Utility District from off-site sources.

4.2 Chemicals of Potential Concern

As noted in Section 3.0, TPHd, TPHmo, and TPHg are present in soil in isolated areas of the Site, with TPHg and benzene present near the southern portion of the Site. The list of chemicals of potential concern (COPC) for soil and groundwater were first developed using any chemical with a single detection. Tables 1 through 3 summarize the soil and groundwater data.

For metals in soil, the maximum concentration was compared to background levels of metals in soil (LBNL 2002) to evaluate which metals are present at the Site at or below background levels. The representative background levels were generally arithmetic mean concentrations. Where an arithmetic mean was not developed, the next available value from a list of values was selected (either a 95^{th} percentile, 99^{th} percentile, or median value). If the maximum concentration of a metal in soil did not exceed the background concentration, then the metal was not evaluated further. Tables 1 and 2 present the soil data, as well as the background data used for the metals evaluation.

Following the evaluation of background concentrations of metals, the maximum concentrations of chemicals in soil and groundwater were then used as representative chemical concentrations to evaluate potential human health risks. The use of the maximum concentration likely results in an overestimate of potential exposure and risk at the site, but is consistent with the highly conservative approach incorporated into this risk evaluation.

4.3 Exposure Assessment

Exposure may occur when a person comes into contact with a chemical in the environment. The amount of exposure is dependent upon the amount of the chemical in a specific environmental medium (e.g., soil, groundwater, and/or air), and the frequency, duration and mode of contact with the chemical. The Site is in a highly-urbanized setting, with most of the surface covered with concrete or asphalt. The Site is not adjacent to surface water or shoreline habitat; therefore, an evaluation of potential exposures and risks to terrestrial or ecological receptors is not applicable.

Future land use may include residential development and/or commercial land use. Therefore, this screening-level risk evaluation included an evaluation of potential exposure to a residential receptor and a commercial/industrial receptor.

In general terms, receptors are representative types of potentially exposed populations. Each receptor is evaluated based upon hypothetical exposures developed from an assumed combination of Site conditions, potential population activity patterns, chemical properties, chemical distribution and concentrations, and exposure to the chemical(s). In formal terms, receptors are sets of assumptions that describe "what if" scenarios, but are not actual persons. The assumptions were intended to describe what EPA terms reasonable maximum exposure. Each receptor addresses several "what if" questions that are unlikely to all apply to a single individual. In this way, receptors provide a useful tool for addressing a number of issues at once; however, they do not reflect predictions of actual exposures to any one individual, but are considered conservative points of reference.

The implementation of site-specific health and safety protocols and engineering controls will preclude significant construction worker exposures. Figure 5 presents the potentially complete exposure pathways for the construction worker if no health and safety controls are implemented for the construction worker.

Of the remaining potential site receptors, the residential receptor is the most sensitive receptor due to consideration of children exposures and the expected full-time theoretical exposure. The evaluation of a residential receptor is considered a conservative upper limit of potential exposure and risks for other potential receptors at the Site.

Domestic water in the area is and will continue to be supplied by the East Bay Municipal Utility District from off-site sources. Consequently, the domestic use of groundwater at the site was not considered a complete exposure pathway. Because of no domestic use of groundwater and the no surface water is present at the Site, no direct contact with groundwater is assumed.

The COPCs include TPH-related VOCs as well as non-VOCs. Potential exposure to a residential receptor under unrestricted land use includes direct contact with soil, as well as inhalation exposures from subsurface emissions of VOCs from soil and groundwater to an indoor air environment.

For purposes of this risk evaluation, the residential and commercial/industrial receptors were evaluated for potential exposure to chemicals in soil by including the following exposure pathways:

- Incidental ingestion of soil
- Direct dermal contact with soil
- Inhalation of airborne particles as dust
- Inhalation of VOCs in indoor air from subsurface emissions (VOCs only) from soil
- Inhalation of VOCs in indoor air from subsurface emissions (VOCs only) from groundwater

The only potentially complete exposure pathway evaluated for groundwater was inhalation of VOCs in indoor air from subsurface emissions. These five exposure pathways were evaluated

for the risk evaluation, but the proposed Site development would actually result in preclusion of direct contact with soil.

Under the proposed Site development, the only complete exposure pathways for residential and commercial/industrial receptors would include:

- Inhalation of VOCs in indoor air from subsurface emissions (VOCs only) from soil
- Inhalation of VOCs in indoor air from subsurface emissions (VOCs only) from groundwater

Although these exposure pathways are included in the risk evaluation, exposure will be mitigated by the mechanical ventilation of the lowest level of the garage underlying the occupied areas of the proposed Site development. As noted in Section 5.5.2, subsurface vapor intrusion will also be mitigated by a membrane-based waterproofing system to be installed beneath the lowest level of the parking garage to address potential groundwater intrusion.

The Site development-based exposure pathways are illustrated in the Site Conceptual Model presented in Figure 5. Although not included in the risk evaluation, the non-health and safety protocol-based construction worker exposure pathways are also included in Figure 5.

4.4 Risk Evaluation Results

The risk evaluation included a comparison between the maximum soil and groundwater concentrations and residential land use Environmental Screening Levels (ESLs)[1]. The ESLs were developed by the San Francisco Bay Regional Water Quality Control Board based upon residential land use, with an objective of protection of human health. Based upon the results of

[1] California Regional Water Quality Control Board. 2005. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater.

the exposure assessment in Section 4.0 and assuming the Site is not capped by asphalt, concrete or building foundations, the following ESLs were used in the risk evaluation:

- Direct Exposure Screening Levels, Residential and Commercial Exposure Scenario (Table K-1 and K-2)
- Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (Table E-1a)
- Soil Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (E-1b)
- Environmental Screening Levels for Shallow Soils, Groundwater is Not a Current or Potential Source of Drinking Water (Table B)

The direct exposure screening levels were developed by the RWQCB by integrating exposure from incidental ingestion of soil, dermal contact with soil, and inhalation of fugitive dust emissions from soil. The soil and groundwater screening levels for potential vapor intrusion concerns were developed by the RWQCB by using a computer program of the Johnson and Ettinger model (1991) to estimate indoor air concentrations via vapor intrusion into a theoretical building to evaluate inhalation exposures. The model assumes that the theoretical building has a slab-on-grade foundation and has high permeability vadose zone soils. The environmental screening levels for shallow soil where groundwater is not a current or potential source of drinking water are a summary of levels based upon various potential environmental concerns.

Tables 1 and 2 present the soil data, as well as the screening levels used in the risk evaluation. Table 3 presents the groundwater data, as well as the screening levels used in the risk evaluation. A lead in soil screening level of 255 mg/kg was used in the residential risk evaluation. This value was the 2003 lead in soil ESL for residential land use, and was based upon DTSC's screening level for school sites (2001). The DTSC value of 255 mg/kg value was based on a residential exposure that assumes no consumption of homegrown produce cultivated in lead-affected soil. The lead in soil ESL for residential land use was revised by the RWQCB in 2005 to 150 mg/kg, which is the Cal EPA Human Health Screening Levels (2004) (based on a

residential exposure that assumes consumption of homegrown produce cultivated in lead-affected soil). According to the RWQCB (2005), the 255 mg/kg lead in soil level is appropriate for schools and high-density housing areas, which is consistent with the land use at the proposed development (i.e., no residential gardens fore cultivation of produce). The lower value of 150 mg/kg is appropriate for potential exposures that assume the presence of single family homes. Therefore, the lead in soil screening value of 255 mg/kg was used to evaluate potential residential exposures for the Site.

Comparison of the chemical concentrations in soil to the ESLs indicates that TPHg, TPHd, TPHmo and TRPH in soil exceed the residential and commercial direct contact ESLs. Benzo(a)pyrene in soil also exceeds the residential and commercial direct contact ESLs. No metals exceed the residential or commercial ESLs. Consequently, potential residential and commercial risks exist if the TPHg-, TPHd-, TPHmo-, TRPH-, and benzo(a)pyrene-affected soil remains uncovered and available for exposure.

Comparison of the chemical concentrations of volatile organic compounds in soil to the ESLs indicates that benzene exceeds the residential ESLs for potential vapor intrusion concerns. Consequently, potential residential risks exist if the benzene in soil remains under the proposed development or if the potential inhalation exposures are not mitigated.

Comparison of the groundwater data to the ESLs indicates that TPHg, TPHd, TPHmo and TRPH in groundwater exceed the general water quality ESLs. Benzene in groundwater exceeds the groundwater ESL for protection of indoor air quality at TR-23, TR-24 and TR-25, which are all located near the southwest corner of the Site. Consequently, potential residential and commercial indoor risks exist if the benzene in groundwater remains under the proposed development or if the potential inhalation exposures are not mitigated.

An additional hypothetical risk for the property is potential exposure through groundwater intrusion. Although typical residential or commercial direct contact with groundwater is not expected under future land use following redevelopment, potential groundwater intrusion into the

proposed building could result in standing groundwater in the parking level (the lowest levels of the building). If the standing groundwater contained benzene, then the parking garage users may be subject to potential inhalation exposures.

Due to lack of habitat in a highly urbanized environment, no ecological risks were considered applicable. Because there is no surface water at the Site and drinking water at the Site is and will be supplied from off-site sources, the only potential exposure pathway for groundwater is inhalation of VOCs from indoor air vapor intrusion from volatilization of chemicals.

5.0 SHORT-TERM AND LONG TERM RISK MANAGEMENT MEASURES

The Tier 1 Environmental Risk Assessment indicated that selected areas of soil were affected by TPH and benzo(a)pyrene that would represent a potential residential and commercial risk if left uncovered. Benzene in groundwater in the southwest corner of the Site represents a potential vapor intrusion risk for residential and commercial indoor air inhalation exposures if the benzene concentrations are not reduced or the potential exposure is unmitigated. Potential groundwater intrusion into the Site building may represent an inhalation risk if benzene -affected groundwater intrudes into the subsurface parking structure to be built beneath the new building at the Site

As part of the proposed development, construction activities will likely require excavation of soil to account for building foundations and the sub-grade mechanically ventilated parking garage. Because foundation designs have not been finalized for the development, the final excavation depth cannot be determined at this time. Based on soil conditions and potential building type, it is speculated that soil excavation depths may reach 12 feet bgs. Construction dewatering may be required. During the planned subsurface activities, the chemicals in soil and groundwater pose risk management and potential health and safety concerns. These concerns, as well as the concerns from the Tier 1 Environmental Risk Assessment, will be addressed through the implementation of protocols and procedures in this SMP. The SMP includes the following short-term and long-term risk management measures to minimize adverse exposure of Site construction and maintenance workers, nearby residents, off-site workers and pedestrians to

hazardous materials during Site development activities and to on-site occupants following development of the Site:

- Construction Worker Health and Safety Recommendations
- Soil Management Measures
- Post-Excavation confirmation soil and groundwater sampling
- Stormwater Pollution Controls
- Groundwater Management
- Site Encapsulation
- Mechanical Ventilation of Parking Garage
- Maintenance Requirements
- Contingency Plan
- Completion Report
- Restriction on Future Groundwater Use

5.1 Construction Worker Health and Safety Recommendations

There are potential health and safety risks associated with the petroleum hydrocarbons and benzo(a)pyrene detected in site soils, as well as volatile organic compounds and petroleum hydrocarbons detected in groundwater. There is the potential for chemicals in soil to affect construction workers at the Site. The routes of potential exposure to the chemicals in soil are: (1) dermal (skin) contact with the soil; (2) inhalation of volatile emissions and dusts; and (3) ingestion of the soil. The greatest potential for human exposure to the chemicals in soil will be during soil excavation operations.

The routes of potential exposure to the petroleum hydrocarbons and volatile organic compounds in groundwater are: (1) dermal (skin) contact with groundwater; and (2) inhalation of emissions

from exposed water. The greatest potential for human exposure to the volatile organic compounds in water will be during deep soil excavation operations and dewatering activities.

The abovementioned health risks to on-Site construction workers will be minimized by developing and implementing a comprehensive health and safety plan (HSP), which will be prepared by a certified industrial hygienist. Wareham Development (through their construction contractor) will be responsible for establishing and maintaining proper health and safety procedures to minimize construction worker exposure to site contaminants.

At a minimum, the HSP will include: (1) health and safety training requirements for on-Site personnel; (2) personal hygiene and monitoring equipment to be used during construction to protect and verify the health and safety of the construction workers; (3) additional precautions to be undertaken to minimize direct contact with hazardous substances, including implementation of dust control measures; and (4) a description of the procedures to mitigate any potential health risk to bystanders during subsurface activities. The HSP will be submitted to ACHCSA and the City of Emeryville for review and approval prior to the start of any construction activities.

A Site health and safety officer (HSO) or designee will be onsite during excavation activities to ensure that all health and safety measures are maintained. The HSO will have the authority to direct and, if necessary, stop all construction activities in order to ensure compliance with the HSP.

5.2 Soil Management Measures

Depending on the final building design, soil at the Site may be excavated to 12 feet bgs for a subterranean parking level beneath the proposed building. The proposed construction activities will disturb limited amounts of native soil during the construction of the new foundations, elevator pits, utility lines, and sanitary sewer lines. No native soil will be used as backfill material within the top two feet in the landscape areas or within the utility trenches.

All soil handling activities shall comply with the Bay Area Air Quality Management District Regulation 8, Rule 40, including covering of trucks hauling soil on- and off-site. Soil disturbed during construction activities will be stockpiled at locations to be determined prior to any site activities. It is anticipated that the stockpiles will contain at a maximum about 500 cubic yards of soil and will be placed to a maximum height of about 7 feet.

Stockpiles will have one layer of 10-mil polyethylene sheeting (or equivalent), such as Visqueen, on the bottom and one layer of 10-mil polyethylene sheeting (or equivalent) as a covering at all times except when the material is being handled. The top sheeting will be adequately secured so that all surface areas are covered. Temporary berms will be constructed around the stockpile area to control precipitation run-on and run-off during wet weather.

Section 5.5 presents storm water pollution control information that is also applicable to soil stockpiles. In accordance with CCR Title 22, Section 66262.34, no hazardous wastes will be accumulated and stored on the Site longer than 90 days. The site will be secured by fencing at all times and temporary fencing will also be placed around the stockpiles.

The excavation contractor will establish appropriate soil stockpile locations on the Site to properly segregate, cover, moisture control, and profile the excavated soil. Soil profiling criteria will depend on which landfills the soil will be sent to. These procedures will be established by the excavation contractor and coordinated with the proposed landfills prior to initiating soil excavation. It is not anticipated that soil will be reused at the Site for construction-related activities.

The excavation contractor, on behalf of Wareham Development, will be responsible for tracking final soil dispositions. Although the currently available data indicates that no hazardous waste is anticipated from the excavations, any excavated soil considered hazardous waste will be tracked using the Uniform Hazardous Waste Manifest System (USEPA Form 8700-22), as applicable. Soil not considered hazardous waste will be tracked using nonhazardous bills of ladings. These two systems will be used to comply with appropriate state and local requirements.

The excavation contractor will arrange for transportation of all wastes off-site. Hazardous and non-hazardous waste will be transported to the appropriate disposal facility using a permitted, licensed, and insured transportation company. Transporters of hazardous waste must meet the requirements of 40 CFR 263 and 22 CCR 66263. All trucks transporting bulk hazardous waste will be properly lined and covered with compatible materials. Trucks will be decontaminated prior to any use other than hauling contaminated materials unless the contaminated material was already double-contained.

If soil to be exported off-site is considered a hazardous waste, an appropriate USEPA Generator Identification Number will be recorded on the hazardous waste manifests used to document transport of hazardous waste off-Site. The hazardous waste transporter, disposal facility, and U.S. Department of Transportation (DOT) waste description required for each manifest will be determined on a case-by-case basis. A description of the number of containers being shipped, the type of container, and the total quantity of waste being shipped will also be included on each manifest.

The excavation contractor will be responsible for accurate completion of the hazardous waste manifests and nonhazardous bills of lading. Records of all wastes shipped off-site will be maintained by Wareham Development and will be made available for inspection on request. The final destination of wastes transported off-site will be documented in the Completion Report (Section 5.10).

The following records will be kept by Wareham Development for the indicated length of time:

- Copies of uniform hazardous waste manifests signed by the designated waste disposal facility will be retained for at least five years from the date the waste was accepted by the initial transporter.
- All records pertaining to the characterization of hazardous or nonhazardous waste will be retained for a minimum of three years.

5.3 Post-Excavation Confirmation Soil and Groundwater Sampling

Once the soil excavation has been completed, confirmatory soil and groundwater samples will be collected and analyzed. The soil and groundwater samples will be analyzed for the following: TPHg, TPHd, and TPHmo by EPA Method 8015M; volatile organic compounds (VOCs) by EPA Method 8260; semi-volatile organic compounds by EPA Method 8270; and California Title 22 metals. The analytical results of the confirmation sampling will be presented in our certification report.

5.4 Storm Water Pollution Controls

Storm water pollution controls will be implemented to minimize storm water runoff and sediment transport from the Site. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared by the excavation contractor prior to soil-related activities. The SWPPP will identify Best Management Practices (BMPs) for activities as specified by the California Storm Water Best Management Practices Handbook (Stormwater Quality Task Force, 1993) and/or the Manual of Standards for Erosion and Sediment Control Measures (ABAG, 1995). The BMPs will include measures guiding the management and operation of the Site to control and minimize potential contribution of Site pollutants to storm runoff.

5.5 Groundwater Management

Groundwater may be encountered during construction activities. Additionally, due to the likely depth of the floor of the sub-grade parking level, there is a potential for groundwater intrusion into the parking level. The following subsections describe the protocols related to construction-phase dewatering and groundwater intrusion management.

5.5.1 Construction-Phase Dewatering

In the event that groundwater must be collected or otherwise extracted to prevent its intrusion into temporary construction pits or new structures, the groundwater will be removed by mechanical devices such as pumps, placed in an appropriate container, and tested to evaluate the

concentration of chemicals present. The groundwater will be disposed in accordance with all applicable local, state and federal regulations.

Discharge of extracted groundwater to the storm drain will require prior approval of the RWQCB. Discharge of extracted groundwater to the sanitary sewer will require prior approval from the East Bay Municipal Utility District (EBMUD). Transport and disposal of the groundwater at an appropriate off-Site facility will be subject to the facility-specific requirements. All relevant documentation related to construction-phase dewatering will be included in the Completion Report (Section 5.10).

5.5.2 Groundwater Intrusion Management

Since it is likely that below-grade structures extend into groundwater, groundwater intrusion management measures will be necessary. The proposed redevelopment will include installation of a membrane-based waterproof barrier underneath the floor of the parking garage to prevent groundwater intrusion. The membrane material will be compatible with the chemical concentrations detected in groundwater at the Site. The membrane-based waterproofing will eliminate the need for collection of groundwater for off-site discharge. Although not its primary purpose, the waterproofing membrane may also mitigate potential vapor intrusion from the subsurface into the parking garage.

5.6 Site Encapsulation

Potential future site occupant direct contact risks from TPH and benzo(a)pyrene in the soil will be mitigated by encapsulating the soil with the concrete floor slab and exterior walls of the garage and the waterproofing. The concrete floor slab and exterior walls will be considered the soil cap. The encapsulation will sufficiently reduce potential exposures through inhalation of dusts and incidental ingestion of soil and dermal contact with soil by providing a physical barrier, thereby eliminating the exposure pathway between the contaminants in soil and the future Site users.

5.7 Mechanical Ventilation of Parking Garage

The lowest level of the parking garage will be mechanically ventilated for vehicle exhaust as part of its normal operation. Incidentally, any potential vapors that reach the parking garage from subsurface emissions would be ventilated out of the garage, precluding potential vapor transport to occupied areas of the proposed building.

The membrane-based waterproofing for the below-grade structures (Section 5.5.2) and the mechanically ventilated garage together will mitigate potential inhalation of VOCs in indoor air in occupied areas from subsurface emissions from soil and groundwater will be mitigated.

5.8 Maintenance Requirements

The objective of these maintenance requirements is to ensure that the long-term risk management plan measures, specifically encapsulating soil beneath the floor slab, will remain effective during the building's and parking garage's use and occupancy period. The Site owner and operator will maintain this risk management plan, maintenance work plans, and maintenance records in a readily accessible on-site location and shall be responsible for informing any employee or contractor who will perform below grade construction of the environmental conditions, soil management concerns, and health and safety requirements stipulated in this SMP.

These measures will also be enforced during any post-development construction activities such as utility line repair, building expansion, and other activities that may disturb the underlying contaminated soil. To maintain the integrity of the encapsulation layer and to protect future site workers, who may disturb the encapsulation layer, the following procedures must be adhered to by the owner and/or operator of the site:

- Notify the ACHCSA and City of Emeryville of any proposed activity expected to disturb the integrity of the encapsulating layer or soil, thirty (30) calendar days before work commences. In cases of emergency, the ACHCSA and City of Emeryville shall be

notified within 24 hours and the work should commence in accordance with the mitigation measures described in this risk management plan.

- Prepare a specific work plan that includes a description of the proposed construction activities, soil management plan, and health and safety plan.
- Direct any contractor or employee who disturbs the encapsulating layer and is engaged in any excavation or earth movement at the property to comply with the appropriate local, State, and Federal regulations.
- Direct any contractor or employee engaged in any activities that involve penetrating the encapsulating layer to repair the disturbed area as soon as is practical.
- Direct any contractor or employee engaged in any activities that involve penetrating the membrane-based waterproofing to repair the membrane as soon as practical.
- Control dust by wetting and protect exposed or excavated soil from storm run-on and run-off during the period of excavation, soil movement, or exposure.
- Perform periodic inspections of the garage mechanical ventilation system.
- Determine by appropriate testing whether any excess material removed from the site is hazardous pursuant to State or Federal hazardous criteria. This material must be managed in accordance with all appropriate regulations.
- Provide the ACHCSA and the City of Emeryville with a report that describes the maintenance activities related to the encapsulating layer or excavation of soil.

5.9 Contingency Plan

If underground storage tanks, sumps, and/or associated piping are uncovered during the excavation activities, the following contingency plan will be followed. ACHCSA and the City of Emeryville will be notified and the underground storage tank, sump, and/or associated piping will be removed and properly disposed. The removal will be performed by a licensed contractor in accordance with current Federal and State regulations. In addition, confirmation soil and

groundwater samples will be collected. A tank closure report with be prepared and submitted to ACHCSA and the City of Emeryville.

If unknown areas of suspected petroleum hydrocarbons or other hazardous materials are discovered during the excavation activities, the following contingency plan will be followed. The impacted areas will be excavated, stockpiled on and covered with plastic sheeting, soil samples will be collected and tested for appropriate chemical constituents (petroleum hydrocarbons, volatile organic compounds, semivolatile organic compounds, and metals), and reported to ACHCSA and City of Emeryville. Based on the results of the testing, the soil will be properly disposed of off-site in accordance with the soil management procedures contained in this SMP.

5.10 Completion Report

A Completion Report will be prepared by a third party (other than the excavation contractor) that summarizes the soil and groundwater management activities and any subsequent investigative activities that were completed during redevelopment. Field notes and photographs will be included, as appropriate. The report will also contain laboratory analytical results and figures, as appropriate, to provide detail regarding the amount and type of contamination encountered during various activities.

This report will present a chronology of the construction events, a summary of analytical data, and a description of all mitigation activities at the site. It will also include a certification statement that indicates the mitigation activities have been performed in accordance with this SMP. The Completion Report will be submitted to the ACHCSA for review and approval within 60 days of the completion of all earthwork performed as part of the development project.

5.11 Restrictions on Future Groundwater Use

Chemicals are known to be present within the Site in shallow groundwater at concentrations that exceed U.S. and California maximum contaminant levels (MCLs) for drinking water. Groundwater within the Site will be restricted for all uses, including, but not limited to, drinking, irrigation, and industrial uses. This requirement will be implemented as a deed restriction on the Site.

6.0 LIMITATIONS

Treadwell & Rollo prepared this Site Management Plan in accordance with our proposal to Wareham Development., dated 30 December 2004. All conclusions and recommendations in this report concerning the property are the professional opinions of the Treadwell & Rollo, Inc., personnel involved with the project, and this report should not be considered a legal interpretation of existing environmental regulations. Opinions presented herein apply to site conditions existing at the time of our assessment, and cannot necessarily be taken to apply to site changes or conditions of which we are not aware and have not had the opportunity to evaluate.

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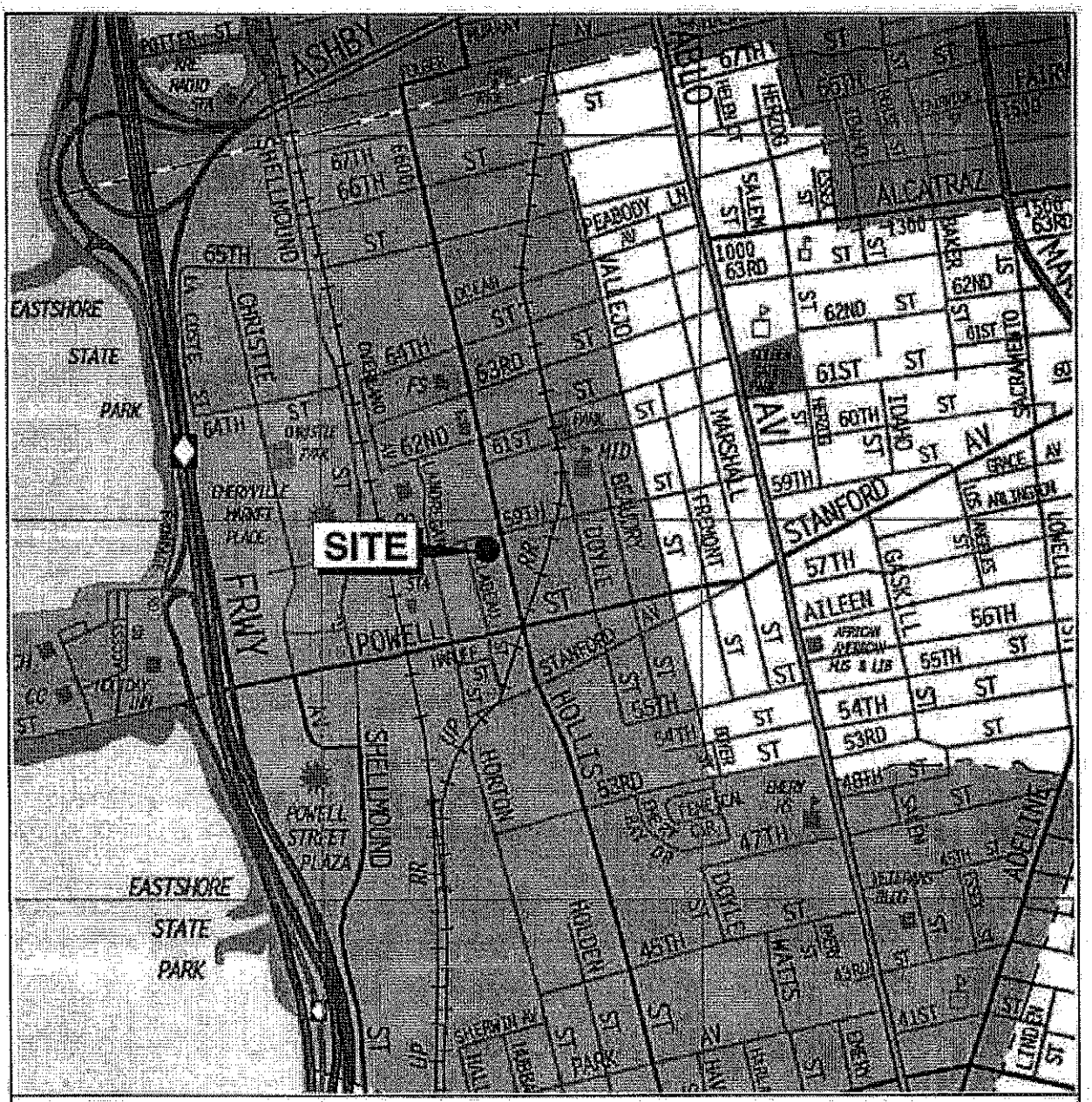


Base map: The Thomas Guide
Alameda County
1999

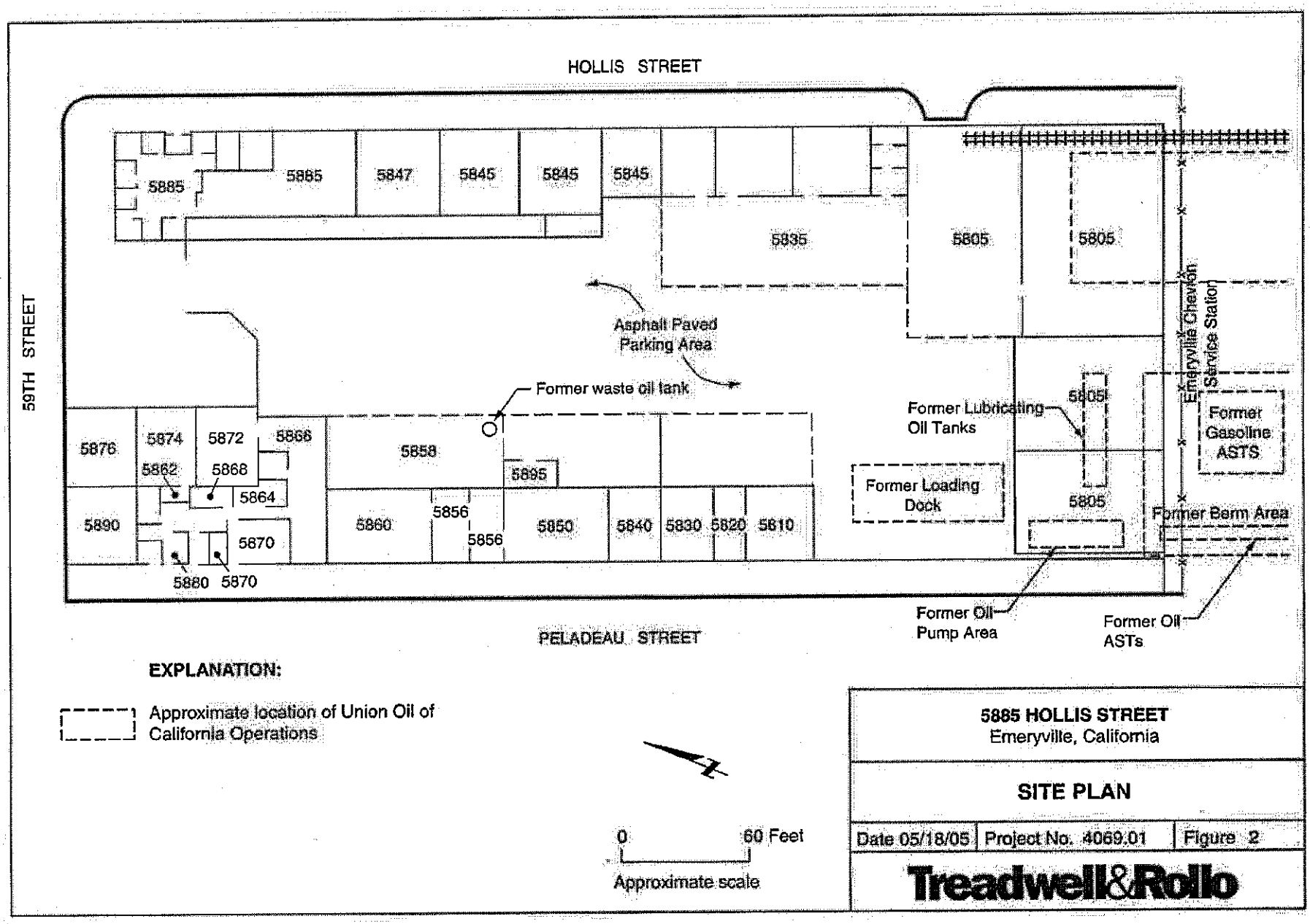
No scale

5885 HOLLIS STREET
Emeryville, California

SITE LOCATION MAP

Treadwell&Rollo

Date 05/13/05	Project No. 4069.01	Figure 1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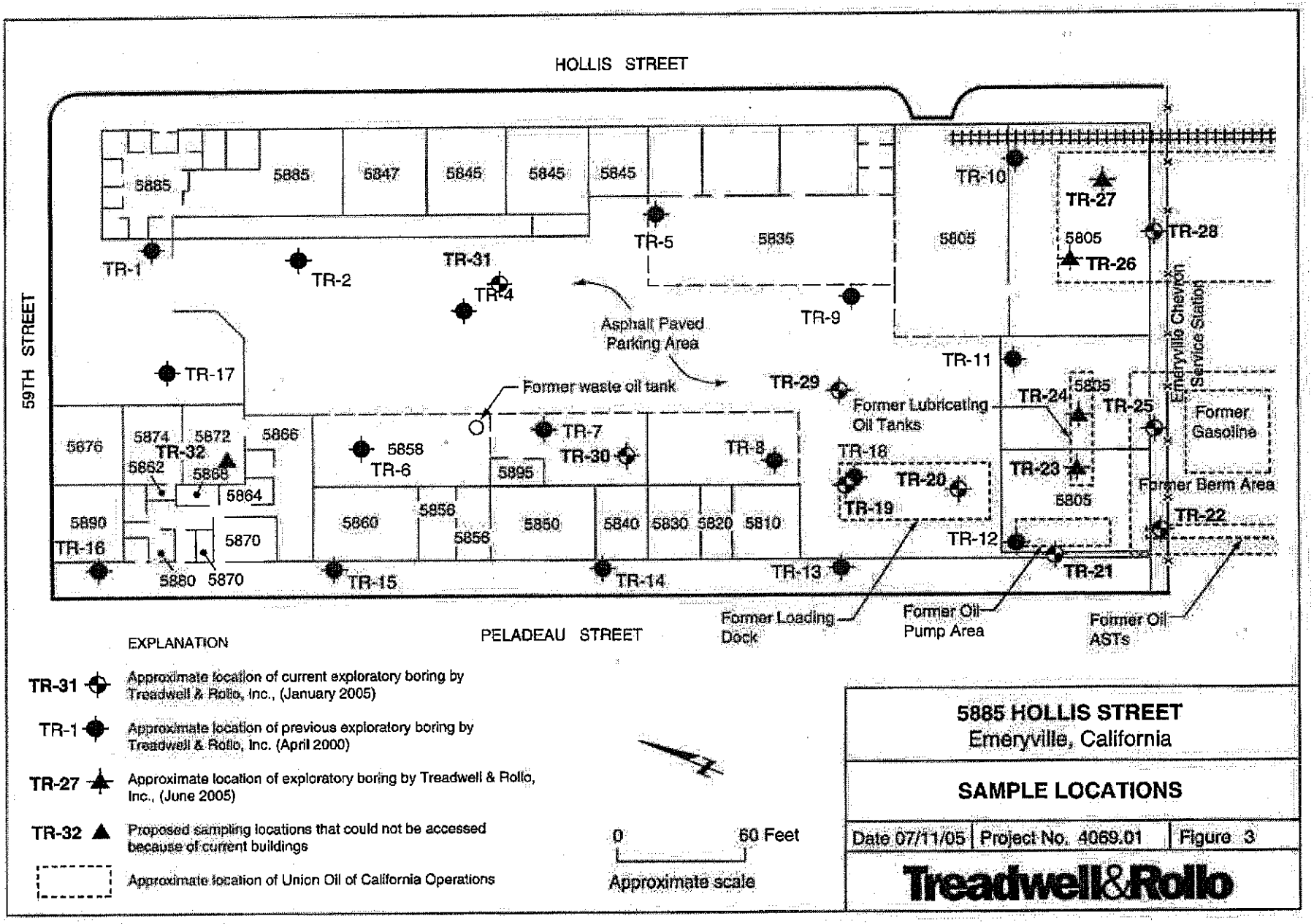
5805
5805
Asphalt Paved Parking Area
Former waste oil tank
Former Lubricating Oil Tanks
Former Loading Dock
Emeryville Chevron Service Station
Former Gasoline ASTS
Former Berm Area
Former Oil Pump Area
Former Oil ASTs
5876
5874
5872
5866
5862
5868
5864
5858
5895
5890
5870
5860
5856
5856
5850
5840
5830
5820
5810
5880
5870
EXPLANATION:
Approximate location of Union Oil of California Operations
0
60 Feet
Approximate scale
5885 HOLLIS STREET
Emeryville, California
SITE PLAN
Date 05/18/05
Project No. 4069.01
Figure 2
Treadwell&Rollo


HOLLIS STREET
59TH STREET
PELADEAU STREET
5885
5885
5847
5845
5845
5845
5835
5805
5805
5805
5805
5876
5874
5872
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5862
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5870
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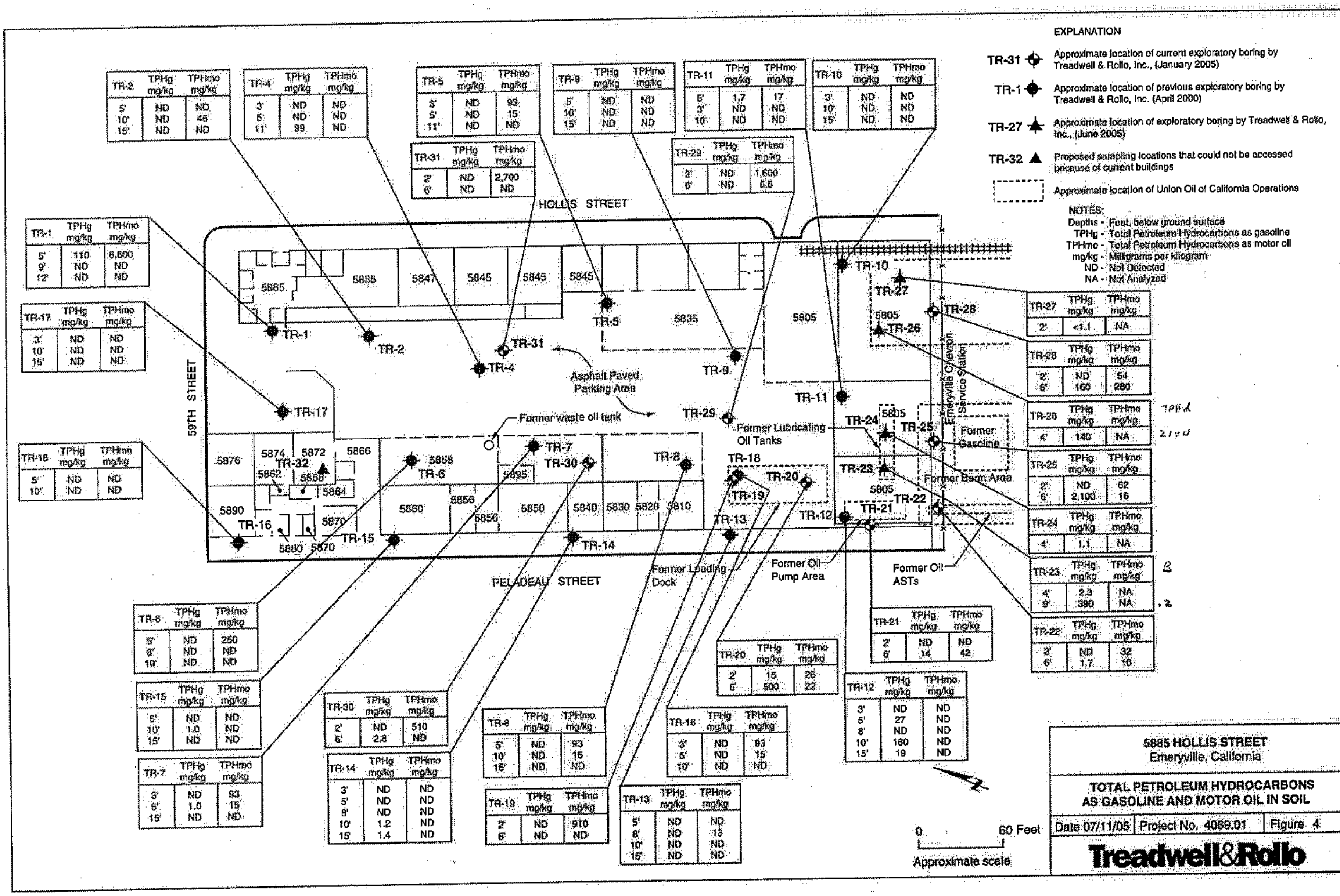
5895
5860
5856
5856
5850
5840
5830
5820
5810
TR-1
TR-2
TR-31
TR-4
TR-5
TR-9
TR-10
TR-11
TR-12
TR-13
TR-14
TR-15
TR-16
TR-17
TR-18
TR-19
TR-20
TR-21
TR-22
TR-23
TR-24
TR-25
TR-26
TR-27
TR-28
TR-29
TR-30
TR-32
TR-6
TR-7
TR-8
Asphalt Paved Parking Area
Former waste oil tank
Former Lubricating Oil Tanks
Former Loading Dock
Former Oil Pump Area
Former Oil ASTs
Former Gasoline
Former Berm Area
Emeryville Chevron Service Station
EXPLANATION
TR-31 Approximate location of current exploratory boring by Treadwell & Rollo, Inc., (January 2005)
TR-1 Approximate location of previous exploratory boring by Treadwell & Rollo, Inc. (April 2000)
TR-27 Approximate location of exploratory boring by Treadwell & Rollo, Inc., (June 2005)
TR-32 Proposed sampling locations that could not be accessed because of current buildings
Approximate location of Union Oil of California Operations
0
60 Feet
Approximate scale
5885 HOLLIS STREET
Emeryville, California
SAMPLE LOCATIONS
Date 07/11/05
Project No. 4069.01
Figure 3
Treadwell&Rollo



TR-1	TPHg mg/kg	TPHmo mg/kg
5'	110	6,600
9'	ND	ND
12'	ND	ND

TR-2	TPHg mg/kg	TPHmo mg/kg
5'	ND	ND
10'	ND	48
15'	ND	ND

TR-4	TPHg mg/kg	TPHmo mg/kg
3'	ND	ND
5'	ND	ND
11'	99	ND

TR-5	TPHg mg/kg	TPHmo mg/kg
3'	ND	93
5'	ND	15
11'	ND	ND

TR-31	TPHg mg/kg	TPHmo mg/kg
2'	ND	2,700
6'	ND	ND

TR-9	TPHg mg/kg	TPHmo mg/kg
5'	ND	ND
10'	ND	ND
15'	ND	ND

TR-11	TPHg mg/kg	TPHmo mg/kg
5'	1.7	17
3'	ND	ND
10'	ND	ND

TR-29	TPHg mg/kg	TPHmo mg/kg
2'	ND	1,600
6'	ND	5.8

TR-10	TPHg mg/kg	TPHmo mg/kg
3'	ND	ND
10'	ND	ND
15'	ND	ND

TR-17	TPHg mg/kg	TPHmo mg/kg
3'	ND	ND
10'	ND	ND
15'	ND	ND

TR-16	TPHg mg/kg	TPHmo mg/kg
5'	ND	ND
10'	ND	ND

TR-27	TPHg mg/kg	TPHmo mg/kg
2'	<1.1	NA

TR-28	TPHg mg/kg	TPHmo mg/kg
2'	ND	54
6'	160	280

TR-26	TPHg mg/kg	TPHmo mg/kg
4'	140	NA

TR-25	TPHg mg/kg	TPHmo mg/kg
2'	ND	62
6'	2,100	16

TR-24	TPHg mg/kg	TPHmo mg/kg
4'	1.1	NA

TR-23	TPHg mg/kg	TPHmo mg/kg
4'	2.3	NA
9'	390	NA

TR-22	TPHg mg/kg	TPHmo mg/kg
2'	ND	32
6'	1.7	10

TR-6	TPHg mg/kg	TPHmo mg/kg
5'	ND	250
8'	ND	ND
10'	ND	ND

TR-15	TPHg mg/kg	TPHmo mg/kg
5'	ND	ND
10'	1.0	ND
15'	ND	ND

TR-7	TPHg mg/kg	TPHmo mg/kg
3'	ND	83
8'	1.0	15
15'	ND	ND

TR-30	TPHg mg/kg	TPHmo mg/kg
2'	ND	510
6'	2.8	ND

TR-14	TPHg mg/kg	TPHmo mg/kg
3'	ND	ND
5'	ND	ND
8'	ND	ND
10'	1.2	ND
15'	1.4	ND

TR-8	TPHg mg/kg	TPHmo mg/kg
5'	ND	93
10'	ND	15
15'	ND	ND

TR-19	TPHg mg/kg	TPHmo mg/kg
2'	ND	910
6'	ND	ND

TR-18	TPHg mg/kg	TPHmo mg/kg
3'	ND	93
5'	ND	15
10'	ND	ND

TR-13	TPHg mg/kg	TPHmo mg/kg
5'	ND	ND
8'	ND	13
10'	ND	ND
15'	ND	ND

TR-20	TPHg mg/kg	TPHmo mg/kg
2'	15	26
6'	500	22

TR-21	TPHg mg/kg	TPHmo mg/kg
2'	ND	ND
6'	14	42

TR-12	TPHg mg/kg	TPHmo mg/kg
3'	ND	ND
5'	27	ND
8'	ND	ND
10'	160	ND
15'	19	ND

EXPLANATION

TR-31 Approximate location of current exploratory boring by Treadwell & Rollo, Inc., (January 2005)

TR-1 Approximate location of previous exploratory boring by Treadwell & Rollo, Inc. (April 2000)

TR-27 Approximate location of exploratory boring by Treadwell & Rollo, Inc., (June 2005)

TR-32 Proposed sampling locations that could not be accessed because of current buildings

Approximate location of Union Oil of California Operations

NOTES:
Depths - Feet, below ground surface
TPHg - Total Petroleum Hydrocarbons as gasoline
TPHmo - Total Petroleum Hydrocarbons as motor oil
mg/kg - Milligrams per kilogram
ND - Not Detected
NA - Not Analyzed

5885 HOLLIS STREET
Emeryville, California

TOTAL PETROLEUM HYDROCARBONS AS GASOLINE AND MOTOR OIL IN SOIL

Date 07/11/05 | Project No. 4059.01 | Figure 4

Treadwell&Rollo

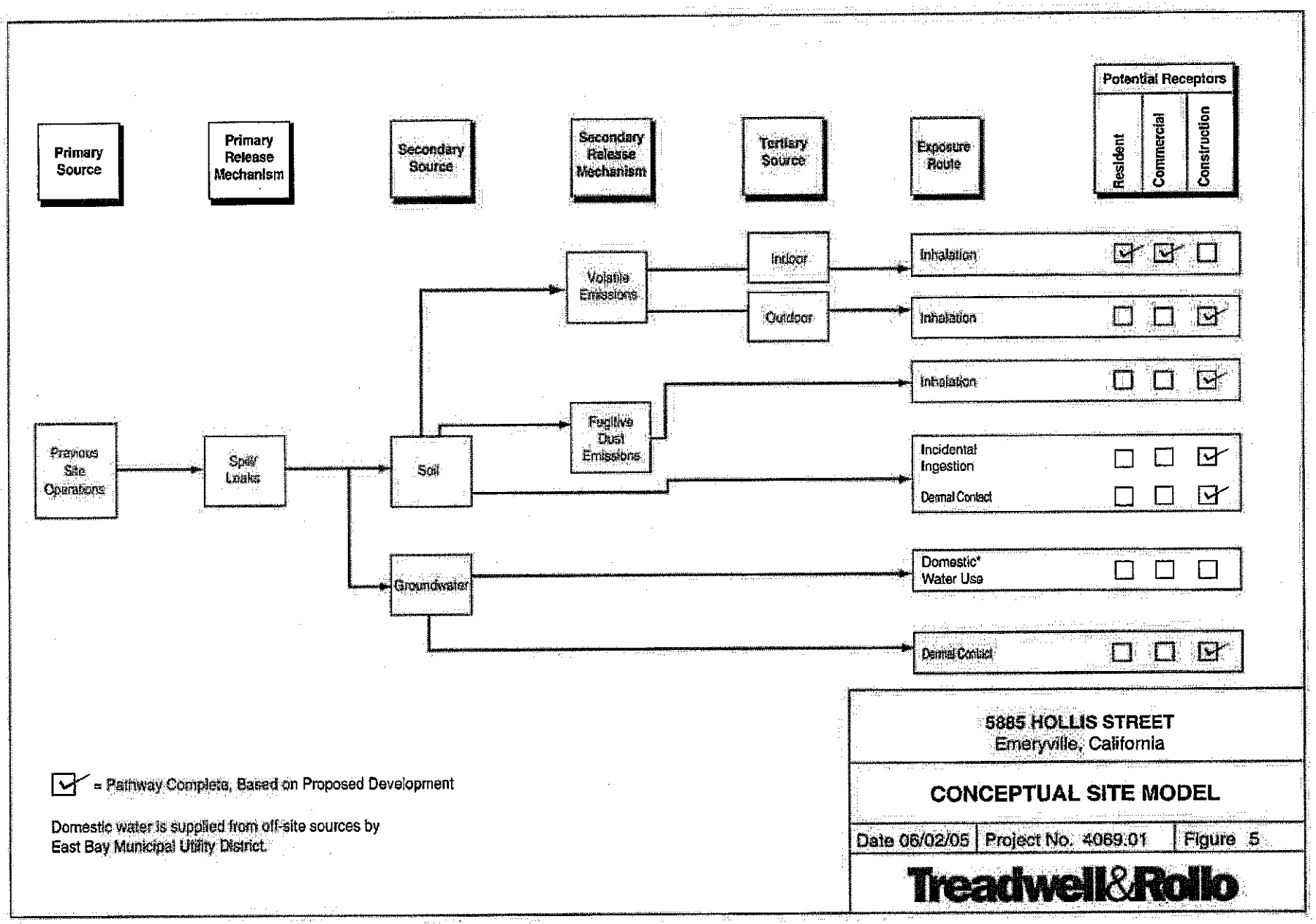

Primary Source
Primary Release Mechanism
Secondary Source
Secondary Release Mechanism
Tertiary Source
Exposure Route
Potential Receptors
Resident
Commercial
Construction
Previous Site Operations
Spill/ Leaks
Soil
Volatile Emissions
Fugitive Dust Emissions
Groundwater
Indoor
Outdoor
Inhalation
Inhalation
Inhalation
Incidental Ingestion
Dermal Contact
Domestic* Water Use
Dermal Contact
= Pathway Complete, Based on Proposed Development
Domestic water is supplied from off-site sources by East Bay Municipal Utility District.
5885 HOLLIS STREET
Emeryville, California
CONCEPTUAL SITE MODEL
Date 06/02/05
Project No. 4069.01
Figure 5
Treadwell&Rollo

TABLE 1
SUMMARY OF SOIL SAMPLE DATA - ORGANICS
5885 Hollis Street
Emeryville, California

Sample ID	Sample Date	Sample Depth	TPHd mg/kg	TPHmo mg/kg	TPHg mg/kg	TRPH mg/kg	VOCs by 8010 ug/kg	Benzene ug/kg	Acetone ug/kg	2-Butanone ug/kg	Isopropyl benzene ug/kg	Propyl benzene ug/kg	Ethyl benzene ug/kg	m,p-Xylenes ug/kg	o-Xylenes ug/kg
TR-1-4.0	4/6/2000	4	ND	6,600	110	9,900	--	--	--	--	--	--	--	--	--
TR-1-7.0	4/6/2000	7	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-1-9.0	4/6/2000	9	ND	ND	ND	ND	ND	< 5	< 100	< 20	< 5	< 5	< 5	< 5	< 5
TR-1-12.0	4/6/2000	12	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-1-15.0	4/6/2000	15	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-2-3.0	4/6/2000	3	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-2-5.0	4/6/2000	5	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-2-7.0	4/6/2000	7	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-2-10.0	4/6/2000	10	ND	46	ND	36	--	--	--	--	--	--	--	--	--
TR-2-15.0	4/6/2000	15	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-4-3.0	4/5/2000	3	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-4-5.0	4/5/2000	5	360	ND	99	420	< 500	< 10000	< 2000	< 500	< 500	< 500	< 500	< 500	< 500
TR-4-8.0	4/5/2000	7	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-4-11.0	4/5/2000	10	30	35	9.4	86	--	--	--	--	--	--	--	--	--
TR-5-3.0	4/5/2000	3	ND	93	ND	140	--	--	--	--	--	--	--	--	--
TR-5-4.0	4/5/2000	4	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-5-6.0	4/5/2000	6	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-5-8.0	4/5/2000	8	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-5-10.0	4/5/2000	10	ND	15	ND	ND	--	--	--	--	--	--	--	--	--
TR-5-15.0	4/5/2000	15	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-6-3.0	4/5/2000	3	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-6-5.0	4/5/2000	5	ND	250	ND	300	ND	--	--	--	--	--	--	--	--
TR-6-8.0	4/5/2000	8	ND	ND	ND	ND	--	< 5	< 100	< 20	< 5	< 5	< 5	< 5	< 5
TR-6-10.0	4/5/2000	10	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-6-15.0	4/5/2000	15	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-7-3.0	4/5/2000	3	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--
TR-7-5.0	4/5/2000	5	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-7-8.0	4/5/2000	8	ND	ND	1.0	ND	--	< 5	< 100	< 20	< 5	< 5	< 5	< 5	< 5
TR-7-10.0	4/5/2000	10	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-7-15.0	4/5/2000	15	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-8-3.0	4/5/2000	3	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-8-5.0	4/5/2000	5	6.8	ND	ND	ND	--	< 5	< 100	< 20	< 5	< 5	< 5	< 5	< 5
TR-8-8.0	4/5/2000	8	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-8-10.0	4/5/2000	10	7.8	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-8-15.0	4/5/2000	15	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-9-3.0	4/5/2000	3	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-9-5.0	4/5/2000	5	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-9-8.0	4/5/2000	8	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-9-10.0	4/5/2000	10	ND	ND	ND	ND	--	< 5	< 100	< 20	< 5	< 5	< 5	< 5	< 5
TR-9-15.0	4/5/2000	15	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-10-3.0	4/6/2000	3	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-10-5.0	4/6/2000	5	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-10-8.0	4/6/2000	8	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--
TR-10-10.0	4/6/2000	10	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-10-15.0	4/6/2000	15	ND	180	ND	330	--	--	--	--	--	--	--	--	--
TR-11-3.0	4/5/2000	3	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-11-5.0	4/5/2000	5	21	17	1.7	ND	ND	--	--	--	--	--	--	--	--
TR-11-8.0	4/5/2000	8	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-11-10.0	4/5/2000	10	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-11-15.0	4/5/2000	15	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-12-3.0	4/5/2000	3	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--

TABLE 1
SUMMARY OF SOIL SAMPLE DATA - ORGANICS
5885 Hollis Street
Emeryville, California

Sample ID	Sample Date	Sample Depth	TPHd mg/kg	TPHmo mg/kg	TPHg mg/kg	TRPH mg/kg	VOCs by 8010 ug/kg	Benzene ug/kg	Acetone ug/kg	2-Butanone ug/kg	Isopropyl benzene ug/kg	Propyl benzene ug/kg	Ethyl benzene ug/kg	m,p-Xylenes ug/kg	o-Xylenes ug/kg
TR-12-5.0	4/5/2000	5	2.9	ND	27	ND	--	--	--	--	--	--	--	--	--
TR-12-8.0	4/5/2000	8	ND	ND	ND	ND	--	< 5	< 100	< 20	< 5	< 5	< 5	< 5	< 5
TR-12-10.0	4/5/2000	10	30	ND	160	100	--	--	--	--	--	--	--	--	--
TR-12-15.0	4/5/2000	15	ND	ND	19	ND	--	--	--	--	--	--	--	--	--
TR-13-3.0	4/6/2000	3	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-13-5.0	4/6/2000	5	ND	ND	ND	30	ND	--	--	--	--	--	--	--	--
TR-13-8.0	4/6/2000	8	ND	39	ND	52	--	--	--	--	--	--	--	--	--
TR-13-10.0	4/6/2000	10	ND	ND	ND	ND	--	< 5	< 100	< 20	< 5	< 5	< 5	< 5	< 5
TR-13-15.0	4/6/2000	15	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-14-3.0	4/6/2000	3	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-14-5.0	4/6/2000	5	ND	ND	ND	ND	--	< 5	< 100	< 20	< 5	< 5	< 5	< 5	< 5
TR-14-8.0	4/6/2000	8	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-14-10.0	4/6/2000	10	2.3	ND	1.2	ND	--	< 5	< 100	< 20	< 5	< 5	< 5	< 5	< 5
TR-14-15.0	4/6/2000	15	4.0	ND	1.4	ND	--	--	--	--	--	--	--	--	--
TR-15-3.0	4/6/2000	3	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-15-5.0	4/6/2000	5	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-15-8.0	4/6/2000	8	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-15-10.0	4/6/2000	10	1.3	ND	1.0	ND	--	--	--	--	--	--	--	--	--
TR-15-15.0	4/6/2000	15	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-16-3.0	4/6/2000	3	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-16-5.0	4/6/2000	5	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--
TR-16-8.0	4/6/2000	8	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-16-10.0	4/6/2000	10	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-16-15.0	4/6/2000	15	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-17-3.0	4/6/2000	3	ND	ND	ND	37	--	--	--	--	--	--	--	--	--
TR-17-5.0	4/6/2000	5	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-17-8.0	4/6/2000	8	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-17-10.0	4/6/2000	10	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-17-15.0	4/6/2000	15	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-18-3.0	4/5/2000	3	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-18-5.0	4/5/2000	5	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
TR-18-8.0	4/5/2000	8	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-18-10.0	4/5/2000	10	ND	ND	ND	ND	ND	< 5	< 100	< 20	< 5	< 5	< 5	< 5	< 5
TR-18-15.0	4/5/2000	15	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-19-2.5'	1/20/05	2.5	97 H Y	910	< 1.0	--	--	--	--	--	--	--	--	--	--
TR-19-6.0'	1/20/05	6.0	< 1.0	< 5.0	< 1.1	--	--	--	--	--	--	--	--	--	--
TR-20-2.0'	1/20/05	2.0	65 L Y	26 H	15	--	--	--	--	--	--	--	--	--	--
TR-20-6.0'	1/20/05	6.0	320 L	22 L	500 Y	--	--	--	--	--	--	--	--	--	--
TR-21-2.0'	1/20/05	2.0	1.7 H Y	< 5.0	< 1.0	--	--	--	--	--	--	--	--	--	--
TR-21-6.0'	1/20/05	6.0	69 H L	42 L	19	--	--	--	--	--	--	--	--	--	--
TR-22-2.0'	1/20/05	2.0	5.5 H Y	32	< 1.0	--	--	--	--	--	--	--	--	--	--
TR-22-6.0'	1/20/05	6.0	8.5 H Y	10 H L	1.7 L Y	--	--	--	--	--	--	--	--	--	--
TR-23-4.0'	6/20/05	4.0	250 H, Y	--	2.3 Y	--	--	97	42	14	8.3	13	< 5	< 5	< 5
TR-23-9.0'	6/20/05	9.0	61 L Y	--	390 Y	--	--	200	36	23	180	480	600	190	22
TR-24-4.0'	6/15/05	4.0	46.0	--	< 1.1	--	--	< 5	35	< 10	< 5	< 5	< 5	< 5	< 5
TR-25-2.0'	1/20/05	2.0	11 H Y	62	< 1.1	--	--	--	--	--	--	--	--	--	--
TR-25-6.0'	1/20/05	6.0	44 H L Y	16	2,100 Y	--	--	--	--	--	--	--	--	--	--
TR-26-4.0	6/15/05	4.0	2100 H L Y	--	140	--	--	< 23	< 91	< 45	< 23	< 23	< 23	< 23	< 23
TR-27-2.0	6/15/05	2.0	61 H Y	--	< 1.0	--	--	< 5	21	< 10	< 5	< 5	< 5	< 5	< 5
TR-28-2.0'	1/20/05	2.0	4.3 H Y	54	< 0.93	--	--	--	--	--	--	--	--	--	--
TR-28-6.0'	1/20/05	6.0	140 H L Y	280	160 Y	--	--	--	--	--	--	--	--	--	--

TABLE 1
SUMMARY OF SOIL SAMPLE DATA - ORGANICS
5885 Hollis Street
Emeryville, California

Sample ID	Sample Date	Sample Depth	TPHd mg/kg	TPHmo mg/kg	TPHg mg/kg	TRPH mg/kg	VOCs by 8010 ug/kg	Benzene ug/kg	Acetone ug/kg	2-Butanone ug/kg	Isopropyl benzene ug/kg	Propyl benzene ug/kg	Ethyl benzene ug/kg	m,p-Xylenes ug/kg	o-Xylenes ug/kg
TR-29-2.0'	1/20/05	2.0	160 H Y	1,600	< 1.0	--	--	--	--	--	--	--	--	--	--
TR-29-6.0'	1/20/05	6.0	2.8 H Y	6.6 L	< 1.1	--	--	--	--	--	--	--	--	--	--
TR-30-2.0'	1/20/05	2.0	65 H Y	510	< 1.1	--	--	--	--	--	--	--	--	--	--
TR-30-6.0'	1/20/05	6.0	63 L	< 5.0	2.8 H Y	--	--	--	--	--	--	--	--	--	--
TR-31-2.5'	1/20/05	2.5	1,100 H L Y	2,700	< 1.0	--	--	--	--	--	--	--	--	--	--
TR-31-6.0'	1/20/05	6.0	3.1 H L Y	< 5.0	< 1.1	--	--	--	--	--	--	--	--	--	--
Representative concentration			2100	6600	2100	9900	ND	200	42	23	180	240	600	190	22
TTLC			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
STLC (TCLP) (ug/L)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ESL (Table K-1/E-1b) Residential			400	1000	400	1000	NA	180	1400000	490000	NA	NA	390000	310000	310000
ESL (Table K-2/E-1b) Commercial			750	4600	450	4600	NA	510	3300000	1300000	NA	NA	390000	420000	420000
Representative Concentration vs. Residential ESL			**Exceeds ESL**	**Exceeds ESL**	**Exceeds ESL**	**Exceeds ESL**	**ND**	**Exceeds ESL**	**Less than ESL**	**Less than ESL**	**NA**	**NA**	**Less than ESL**	**Less than ESL**	**Less than ESL**
Representative Concentration vs. Commercial ESL			**Exceeds ESL**	**Exceeds ESL**	**Exceeds ESL**	**Exceeds ESL**	**ND**	**Less than ESL**	**Less than ESL**	**Less than ESL**	**NA**	**NA**	**Less than ESL**	**Less than ESL**	**Less than ESL**

TABLE 1
SUMMARY OF SOIL SAMPLE DATA - ORGANICS
5885 Hollis Street
Emeryville, California

Sample ID	Sample Date	Sample Depth	1,3,5-Trimethylbenzene ug/kg	1,2,4-Trimethylbenzene ug/kg	sec-Butylbenzene ug/kg	para-Isopropyltoluene ug/kg	n-Butylbenzene ug/kg	Naphthalene ug/kg	Carbon Disulfide by 8260 ug/kg	Other VOCs by 8260 ug/kg	Benzo(a)pyrene by EPA 8270 ug/kg	Other SVOCs by 8270 ug/kg	Aroclor-1260 ug/kg	Other PCBs ug/kg
TR-1-4.0	4/6/2000	4	--	--	--	--	--	< 6600	--	--	< 6600	ND	--	--
TR-1-7.0	4/6/2000	7	--	--	--	--	--	--	--	--	--	--	--	--
TR-1-9.0	4/6/2000	9	< 5	< 5	< 5	< 5	< 5	< 5	< 5	ND	--	--	--	--
TR-1-12.0	4/6/2000	12	--	--	--	--	--	--	--	--	--	--	--	--
TR-1-15.0	4/6/2000	15	--	--	--	--	--	--	--	--	--	--	--	--
TR-2-3.0	4/6/2000	3	--	--	--	--	--	--	--	--	--	--	--	--
TR-2-5.0	4/6/2000	5	--	--	--	--	--	--	--	--	--	--	--	--
TR-2-7.0	4/6/2000	7	--	--	--	--	--	--	--	--	--	--	--	--
TR-2-10.0	4/6/2000	10	--	--	--	--	--	--	--	--	--	--	--	--
TR-2-15.0	4/6/2000	15	--	--	--	--	--	--	--	--	--	--	--	--
TR-4-3.0	4/5/2000	3	--	--	--	--	--	< 330	--	--	< 330	ND	--	--
TR-4-5.0	4/5/2000	5	< 500	< 500	< 500	< 500	< 500	< 500	< 500	ND	--	--	--	--
TR-4-8.0	4/5/2000	7	--	--	--	--	--	--	--	--	--	--	--	--
TR-4-11.0	4/5/2000	10	--	--	--	--	--	--	--	--	--	--	--	--
TR-5-3.0	4/5/2000	3	--	--	--	--	--	--	--	--	--	--	--	--
TR-5-4.0	4/5/2000	4	--	--	--	--	--	--	--	--	--	--	--	--
TR-5-6.0	4/5/2000	6	--	--	--	--	--	--	--	--	--	--	--	--
TR-5-8.0	4/5/2000	8	--	--	--	--	--	--	--	--	--	--	--	--
TR-5-10.0	4/5/2000	10	--	--	--	--	--	--	--	--	--	--	--	--
TR-5-15.0	4/5/2000	15	--	--	--	--	--	--	--	--	--	--	--	--
TR-6-3.0	4/5/2000	3	--	--	--	--	--	--	--	--	--	--	--	--
TR-6-5.0	4/5/2000	5	--	--	--	--	--	< 3300	--	--	< 3300	ND	--	--
TR-6-8.0	4/5/2000	8	< 5	< 5	< 5	< 5	< 5	< 5	< 5	ND	--	--	--	--
TR-6-10.0	4/5/2000	10	--	--	--	--	--	--	--	--	--	--	--	--
TR-6-15.0	4/5/2000	15	--	--	--	--	--	< 330	--	--	--	--	--	--
TR-7-3.0	4/5/2000	3	--	--	--	--	--	--	--	--	< 330	ND	--	--
TR-7-5.0	4/5/2000	5	--	--	--	--	--	--	--	--	--	--	--	--
TR-7-8.0	4/5/2000	8	< 5	< 5	< 5	< 5	< 5	< 5	< 5	ND	--	--	--	--
TR-7-10.0	4/5/2000	10	--	--	--	--	--	--	--	--	--	--	--	--
TR-7-15.0	4/5/2000	15	--	--	--	--	--	--	--	--	--	--	--	--
TR-8-3.0	4/5/2000	3	--	--	--	--	--	--	--	--	--	--	--	--
TR-8-5.0	4/5/2000	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	ND	--	--	--	--
TR-8-8.0	4/5/2000	8	--	--	--	--	--	--	--	--	--	--	--	--
TR-8-10.0	4/5/2000	10	--	--	--	--	--	--	--	--	--	--	--	--
TR-8-15.0	4/5/2000	15	--	--	--	--	--	--	--	--	--	--	--	--
TR-9-3.0	4/5/2000	3	--	--	--	--	--	--	--	--	--	--	--	--
TR-9-5.0	4/5/2000	5	--	--	--	--	--	--	--	--	--	--	--	--
TR-9-8.0	4/5/2000	8	--	--	--	--	--	--	--	--	--	--	--	--
TR-9-10.0	4/5/2000	10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	ND	--	--	--	--
TR-9-15.0	4/5/2000	15	--	--	--	--	--	--	--	--	--	--	--	--
TR-10-3.0	4/6/2000	3	--	--	--	--	--	--	--	--	--	--	--	--
TR-10-5.0	4/6/2000	5	--	--	--	--	--	--	--	--	--	--	--	--
TR-10-8.0	4/6/2000	8	--	--	--	--	--	< 330	--	--	< 330	ND	--	--
TR-10-10.0	4/6/2000	10	--	--	--	--	--	--	--	--	--	--	--	--
TR-10-15.0	4/6/2000	15	--	--	--	--	--	--	--	--	--	--	--	--
TR-11-3.0	4/5/2000	3	--	--	--	--	--	--	--	--	--	--	--	--
TR-11-5.0	4/5/2000	5	--	--	--	--	--	< 330	--	--	< 330	ND	--	--
TR-11-8.0	4/5/2000	8	--	--	--	--	--	--	--	--	--	--	--	--
TR-11-10.0	4/5/2000	10	--	--	--	--	--	--	--	--	--	--	--	--
TR-11-15.0	4/5/2000	15	--	--	--	--	--	--	--	--	--	--	--	--
TR-12-3.0	4/5/2000	3	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 1
SUMMARY OF SOIL SAMPLE DATA - ORGANICS
5885 Hollis Street
Emeryville, California

Sample ID	Sample Date	Sample Depth	1,3,5-Trimethylbenzene ug/kg	1,2,4-Trimethylbenzene ug/kg	sec-Butylbenzene ug/kg	para-Isopropyltoluene ug/kg	n-Butylbenzene ug/kg	Naphthalene ug/kg	Carbon Disulfide by 8260 ug/kg	Other VOCs by 8260 ug/kg	Benzo(a)pyrene by EPA 8270 ug/kg	Other SVOCs by 8270 ug/kg	Aroclor-1260 ug/kg	Other PCBs ug/kg
TR-12-5.0	4/5/2000	5	--	--	--	--	--	< 330	--	--	< 330	ND	--	--
TR-12-8.0	4/5/2000	8	< 5	< 5	< 5	< 5	< 5	< 5	< 5	ND	--	--	--	--
TR-12-10.0	4/5/2000	10	--	--	--	--	--	--	--	--	--	--	--	--
TR-12-15.0	4/5/2000	15	--	--	--	--	--	--	--	--	--	--	--	--
TR-13-3.0	4/6/2000	3	--	--	--	--	--	--	--	--	--	--	--	--
TR-13-5.0	4/6/2000	5	--	--	--	--	--	< 330	--	--	550	ND	--	--
TR-13-8.0	4/6/2000	8	--	--	--	--	--	--	--	--	--	--	--	--
TR-13-10.0	4/6/2000	10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	ND	--	--	--	--
TR-13-15.0	4/6/2000	15	--	--	--	--	--	--	--	--	--	--	--	--
TR-14-3.0	4/6/2000	3	--	--	--	--	--	--	--	--	--	--	--	--
TR-14-5.0	4/6/2000	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	ND	570	ND	--	--
TR-14-8.0	4/6/2000	8	--	--	--	--	--	--	--	--	--	--	--	--
TR-14-10.0	4/6/2000	10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	ND	--	--	--	--
TR-14-15.0	4/6/2000	15	--	--	--	--	--	< 330	--	--	540	ND	--	--
TR-15-3.0	4/6/2000	3	--	--	--	--	--	--	--	--	--	--	--	--
TR-15-5.0	4/6/2000	5	--	--	--	--	--	--	--	--	--	--	--	--
TR-15-8.0	4/6/2000	8	--	--	--	--	--	--	--	--	--	--	--	--
TR-15-10.0	4/6/2000	10	--	--	--	--	--	< 330	--	--	590	ND	--	--
TR-15-15.0	4/6/2000	15	--	--	--	--	--	--	--	--	--	--	--	--
TR-16-3.0	4/6/2000	3	--	--	--	--	--	--	--	--	--	--	--	--
TR-16-5.0	4/6/2000	5	--	--	--	--	--	--	--	--	--	--	--	--
TR-16-8.0	4/6/2000	8	--	--	--	--	--	--	--	--	--	--	--	--
TR-16-10.0	4/6/2000	10	--	--	--	--	--	< 330	--	--	600	ND	--	--
TR-16-15.0	4/6/2000	15	--	--	--	--	--	--	--	--	--	--	--	--
TR-17-3.0	4/6/2000	3	--	--	--	--	--	--	--	--	--	--	--	--
TR-17-5.0	4/6/2000	5	--	--	--	--	--	--	--	--	--	--	--	--
TR-17-8.0	4/6/2000	8	--	--	--	--	--	--	--	--	--	--	--	--
TR-17-10.0	4/6/2000	10	--	--	--	--	--	--	--	--	--	--	--	--
TR-17-15.0	4/6/2000	15	--	--	--	--	--	--	--	--	--	--	--	--
TR-18-3.0	4/5/2000	3	--	--	--	--	--	--	--	--	--	--	--	--
TR-18-5.0	4/5/2000	5	--	--	--	--	--	< 330	--	--	< 330	ND	--	--
TR-18-8.0	4/5/2000	8	--	--	--	--	--	--	--	--	--	--	--	--
TR-18-10.0	4/5/2000	10	< 5	< 5	< 5	< 5	< 5	< 5	< 5	ND	--	--	--	--
TR-18-15.0	4/5/2000	15	--	--	--	--	--	--	--	--	--	--	--	--
TR-19-2.5'	1/20/05	2.5	--	--	--	--	--	--	--	--	--	--	--	--
TR-19-6.0'	1/20/05	6.0	--	--	--	--	--	--	--	--	--	--	--	--
TR-20-2.0'	1/20/05	2.0	--	--	--	--	--	--	--	--	--	--	--	--
TR-20-6.0'	1/20/05	6.0	--	--	--	--	--	--	--	--	--	--	--	--
TR-21-2.0'	1/20/05	2.0	--	--	--	--	--	--	--	--	--	--	--	--
TR-21-6.0'	1/20/05	6.0	--	--	--	--	--	--	--	--	--	--	--	--
TR-22-2.0'	1/20/05	2.0	--	--	--	--	--	--	--	--	--	--	--	--
TR-22-6.0'	1/20/05	6.0	--	--	--	--	--	--	--	--	--	--	--	--
TR-23-4.0'	6/20/05	4.0	< 5	< 5	< 5	< 5	< 5	< 5	< 5.0	ND	--	--	--	--
TR-23-9.0'	6/20/05	9.0	69	250	42	57	290	310	< 4.7	ND	--	--	--	--
TR-24-4.0'	6/15/05	4.0	< 5	< 5	< 5	< 5	< 5	< 5	<4.6	ND	--	--	--	--
TR-25-2.0'	1/20/05	2.0	--	--	--	--	--	--	--	--	--	--	11	ND
TR-25-6.0'	1/20/05	6.0	--	--	--	--	--	--	--	--	--	--	--	--
TR-26-4.0	6/15/05	4.0	< 23	< 23	< 23	< 23	< 23	< 23	< 23	ND	--	--	--	--
TR-27-2.0	6/15/05	2.0	< 5	< 5	< 5	< 5	< 5	< 5	< 4.5	ND	--	--	--	--
TR-28-2.0'	1/20/05	2.0	--	--	--	--	--	--	--	--	--	--	< 9.6	ND
TR-28-6.0'	1/20/05	6.0	--	--	--	--	--	--	--	--	--	--	--	--

(38 ug/kg)

TABLE 1
SUMMARY OF SOIL SAMPLE DATA - ORGANICS
5885 Hollis Street
Emeryville, California

Sample ID	Sample Date	Sample Depth	1,3,5-Trimethylbenzene ug/kg	1,2,4-Trimethylbenzene ug/kg	sec-Butylbenzene ug/kg	para-Isopropyltoluene ug/kg	n-Butylbenzene ug/kg	Naphthalene ug/kg	Carbon Disulfide by 8260 ug/kg	Other VOCs by 8260 ug/kg	Benzo(a)pyrene by EPA 8270 ug/kg	Other SVOCs by 8270 ug/kg	Aroclor-1260 ug/kg	Other PCBs ug/kg
TR-29-2.0'	1/20/05	2.0	--	--	--	--	--	--	--	--	--	--	--	--
TR-29-6.0'	1/20/05	6.0	--	--	--	--	--	--	--	--	--	--	--	--
TR-30-2.0'	1/20/05	2.0	--	--	--	--	--	--	--	--	--	--	--	--
TR-30-6.0'	1/20/05	6.0	--	--	--	--	--	--	--	--	--	--	--	--
TR-31-2.5'	1/20/05	2.5	--	--	--	--	--	--	--	--	--	--	--	--
TR-31-6.0'	1/20/05	6.0	--	--	--	--	--	--	--	--	--	--	--	--
Representative concentration			69	250	42	57	290	310	0	35	600	ND	11	ND
TTLC			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17000	17000
STLC (TCLP) (ug/L)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1700	1700
ESL (Table K-1/E-1b) Residential			NA	NA	NA	NA	NA	NA	NA	NA	38	NA	220	NA
ESL (Table K-2/E-1b) Commercial			NA	NA	NA	NA	NA	NA	NA	NA	130	NA	740	NA
Representative Concentration vs. Residential ESL			NA	NA	NA	NA	NA	Less than ESL	Less than ESL	NA	Exceeds ESL	ND	Less than ESL	ND
Representative Concentration vs. Commercial ESL			NA	NA	NA	NA	NA	Less than ESL	Less than ESL	NA	Exceeds ESL	ND	Less than ESL	ND

-- = not analyzed
< 1 = Indicates not detected at the indicated laboratory detection limit
ESL = Environmental Screening Levels established by the SFBRWQCB
H = Laboratory flag indicating heavier hydrocarbons contributed to quantitation
L = Laboratory flag indicating lighter hydrocarbons contributed to quantitation
mg/kg = milligrams per kilogram
NA = Not available
ND = Not detected at or greater than laboratory detection limit which varies, see laboratory report
PCBs = Polychlorinated Biphenyls
SFBRWQCB = San Francisco Bay Regional Water Quality Control Board
STLC = Soluble Threshold Limit Concentration
Table K-1: ESL for Direct Exposure, Residential, 2005.
Table K-2: ESL for Direct Exposure, Commercial/Industrial, 2005.
TCLP = Toxic Characteristic Leaching Procedure
TPHd = Total Petroleum Hydrocarbons quantified as diesel fuel
TPHg = Total Petroleum Hydrocarbons quantified as gasoline
TPHmo = Total Petroleum Hydrocarbons quantified as motor oil
TTLC = Total Threshold Limit Concentration
ug/kg = micrograms per kilogram (parts per billion)
Y = Laboratory flag indicating sample exhibits chromatographic pattern which does not resemble standard

Treadwell&Rollo

APPENDIX A

ACHCSA AND TREADWELL & ROLLO CORRESPONDENCE

Treadwell&Rollo

23 January 2001
Project 2808.01

Susan Hugo
Alameda County Health Care Services
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Emeryville Industrial Court
5885 Hollis Street
Emeryville, California

Dear Ms. Hugo:

At our meeting with you and others at the City of Emeryville offices on 12 January 2001, you requested additional information prior to the construction of the proposed Emeryville Industrial Court project (Figures 1). This report incorporates the requested information and describes the relevant aspects of the revised project plans. Previous work by Treadwell & Rollo at the site is documented in two reports: *Environmental Site Characterization* (report dated 12 May 2000) and *Geotechnical Investigation* (report dated 27 July 2000).

EXISTING CONDITIONS

The project site is approximately 220 feet by 550 feet in plan dimension and is bounded by Hollis Street to the east, 59th Street to the north, Peladeau Street to the west, and a Chevron Service Station and Powell Street to the south (Figure 1). The site is currently occupied with four buildings: a one-story masonry and wood building that occupies 5835 through 5885 Hollis Street, a one-story masonry building that occupies 5810 through 5890 Peladeau Street, and two one-story metal framed buildings that occupy 5805 Hollis Street and 5801 through 5808 Peladeau Street. The remaining area of the site is used for at-grade parking and is paved with asphalt and concrete.

PROJECT DESCRIPTION

We understand the proposed development for the Emeryville Industrial Court project site will consist of demolishing the existing buildings and the construction of a two-story office building with one level of below ground parking. The parking structure will encompass the entire property, with the office building built over the garage.

Current excavation plans are to remove approximately the top 10 to 11 feet of soil for the building and garage foundation construction. The entirety of this soil will be excavated,

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555 Montgomery Street, Suite 1300, San Francisco, CA 94111
Telephone (415) 955-9040 Facsimile (415) 955-9041

stockpiled, chemically tested, and properly disposed of off-site. No excavated soil will be re-used on-site.

BACKGROUND INFORMATION

Previously, we reviewed the Environmental Site Assessment (ESA) of Emeryville Industrial Court, Emeryville, California dated 14 March 1995, prepared by Weiss Associates. We also reviewed historical Sanborn Fire Insurance Maps for the subject property.

Prior to 1917, the site and vicinity appeared to be vacant land. Union Oil Company of California occupied the site from 1917 to 1964. Intermountain Terminal Company, an affiliate of Pacific Intermountain Express Company owned the property from 1964 to 1974. In 1974, the current owners of the property purchased the property and the current buildings, with the exception of the 5806-5808 Peladeau Street building, which was constructed in 1985.

Union Oil Company of California reportedly used the property as a distribution facility, which contained many above- and underground petroleum storage tanks, a garage along Hollis Street, and an auto repair shop along Peladeau Street. Along the southeastern portion of the subject property, a total of 40,000 gallons of lubricating oil were reportedly stored in aboveground tanks.

On the basis of our review of historical maps, Intermountain Terminal Company used the property as a truck storage area and parts warehouses. From 1974, the property has been used as office/warehouse space.

During the remodeling of one of the buildings in 1985 and more recently during the widening of 59th Street and the replacement of an underground utility in 1999, petroleum hydrocarbons were discovered in the soil. Diesel was detected at a maximum concentration of 13,000 parts per million and motor oil at 15,000 ppm. The excavated soil was transported and disposed of at a regulated landfill.

In 1990, an unknown 10,000-gallon underground gasoline storage tank was reportedly located and removed from the 5805 Hollis Street property (S. B. Thomas). No records were found in regards to the removal of the underground storage tank. However, according to the property owners, soil contamination was noted during the tank removal and the affected soil was disposed at a regulated landfill. The records for the underground storage tank removal have been requested from the corporate headquarters of S. B. Thomas. When these records are received, a copy will be forwarded to Alameda County Health Care Services.

In April 2000, we performed a subsurface investigation that included collection of soil samples from 17 exploratory borings and collection of four groundwater grab samples from 4 exploratory

borings. The locations of the exploratory boring are presented on Figure 4. Analytical results are summarized on Tables 1 through 3.

Soil Analytical Results

A total of 59 soil samples were analyzed for gasoline, diesel, motor oil, TRPH, VOCs, SVOCs, and LUFT 5 metals. Low levels of gasoline were detected above method reporting limits in 11 of the 59 samples at concentrations ranging from 1.0 to 160 milligrams per kilograms (mg/kg) or parts per million (ppm). Diesel was detected above method reporting limits in 10 of the 59 soil samples analyzed in concentrations ranging from 1.3 to 360 ppm.

Motor oil was detected above method reporting limits in 11 of the 59 samples at concentrations ranging from 15 to 6,600 ppm. TRPH were detected above method reporting limits in 11 of the 59 samples at concentrations ranging from 30 to 9,900 ppm. The maximum concentrations of TRPH, TPH as gasoline, and TRP as motor oil were detected in sample TR-1-4.0. When encountered elsewhere, these contaminants were generally one order of magnitude lower.

The only volatile organic compounds (VOCs) detected at or above the method reporting limits in the soil samples analyzed was carbon disulfide in sample TR-18-15 at a concentration of 17 micrograms per kilograms (ug/kg) or parts per billion (ppb). Benzo(a)pyrene was the only semi-volatile organic compound (SVOC) detected; it was detected in 5 of the 9 soil samples analyzed in concentrations ranging from 540 to 600 ppb.

With two exceptions, the metal concentrations were within normal[1] background ranges found in the western United States. Elevated concentrations (150 ppm) of total lead were found in samplesTR-1-4.0 and TR-6-3.0.

Groundwater Analytical Results

Groundwater grab samples were collected from borings TR-1, TR-6, TR-9, and TR-12 contained detectable concentrations of total recoverable petroleum hydrocarbons (TRPH), total petroleum hydrocarbons as gasoline, diesel, and motor oil, the metal concentrations detected were within generally accepted background levels. No volatile organic compounds (VOCs) were detected in the groundwater samples.

Gasoline was detected in the groundwater collected from boring TR-1 and TR-12 at concentrations of 98 and 3,300 micrograms per liter (ug/L) or parts per billion (ppb),

---

[1] "U.S.G.S. Professional Paper 1270, Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States," 1984

respectively. Diesel was also detected in groundwater samples from these borings at concentrations of 130 and 700 ppb, respectively.

TRPH and motor oil were TRPH was detected in the groundwater samples collected from borings TR-6 and TR-12 at concentrations of 6,600 and 9,900 ppb, respectively. Motor oil was detected in the groundwater samples collected from borings TR-6 and TR-9 at concentrations of 1,400 and 420 ppb, respectively.

SHORT TERM AND LONG TERM RISK MANAGEMENT PLAN

This risk management plan (RMP) presents the measures recommended by Treadwell & Rollo to mitigate worker and site user and neighbor risks associated with the presence of certain constituents in the soil and groundwater at the 5885 Hollis Street project site both during and after construction. Current plans are to excavate about 10 to 11 feet of soil across the entire site, stockpile the excavated soil, chemically test the soil, and properly dispose of all the soil at the proper off-site locations.

The presence of organic and inorganic compounds in the native soil was identified by soil sample analyses, as described in our *Environmental Site Characterization* report dated 12 May 2000. Regulations stipulate that the "disturbance" or excavation of soil with these constituents must include special soil handling procedures and specific worker heath and safety measures. In addition, provisions for long-term maintenance and management practices will be necessary to minimize exposure to future site users. A description of the findings of previous environmental studies and our recommendations for further action are presented in the remainder of this plan.

Subsurface Conditions

Subsurface information from test borings indicates the site is blanketed by approximately 2 to 4 feet of fill. The fill consists of clayey sand and clayey gravel and is underlain by medium stiff to very stiff clay to maximum depths explored. Previous investigations reported encountering groundwater at various depths (from 6 to 14 feet) below existing grade. Groundwater levels are expected to fluctuate depending on rainfall and seasonal conditions, as well as manmade obstructions and possible tidal influences from the Bay.

The results of the laboratory analyses for soil and groundwater samples have detected concentrations of total recoverable petroleum hydrocarbons (TRPH), gasoline, diesel, volatile and semi-volatile organic compounds (VOCs and SVOCs), and heavy metals. Our recommended risk management procedures, including contingencies for undiscovered contamination, possible underground storage tanks and associated piping are described in the remainder of this report.

RECOMMENDATIONS FOR MITIGATIVE ACTIONS

The results of the environmental investigation indicate the soil and groundwater at the site contains elevated concentrations of primarily petroleum hydrocarbons. The presence of these and other compounds poses soil management and potential health and safety issues to be addressed as part of the site development activities.

Soil Management

The soil management objectives for the site are to minimize exposure to construction workers at the site, nearby residents, workers and/or pedestrians, and future users of the site to constituents in the soil. The soil that is disturbed during construction activities will be stockpiled at locations to be determined prior to any site activities. It is anticipated that the stockpiles will contain at a maximum about 500 cubic yards of soil and will be placed to a height of about 7 feet. The stockpiled soil will be placed on plastic sheeting, covered with anchored plastic sheeting and kept moist at all times. The site will be secured by fencing at all times and temporary fencing will also be placed around the stockpiles.

The excavation contractor should establish appropriate soil stockpile locations on the site to properly segregate, cover, moisture control, and profile the excavated soil. Soil profiling criteria depends on the proposed landfill location. These procedures should be established by the excavation contractor and coordinated with the proposed landfills prior to initiating soil excavation.

Groundwater Management

The proposed construction activities will most likely encounter groundwater in quantities that will require its removal from the subsurface. With the low permeability of the native soil, which is primarily a clayey material, migration of groundwater on-site and off-site would most likely be minimal. The groundwater will be pumped into appropriate aboveground containers and groundwater samples will be obtained for chemical analyses. The groundwater will be tested for parameters established by the East Bay Municipal Utility District (EBMUD) for discharge of groundwater into the sanitary sewer system. If contamination is detected in the groundwater, the groundwater will be properly treated, i.e. carbon units prior to disposal.

Groundwater Intrusion and Waterproofing

It is expected that the below grade garage will include a two foot thick concrete floor slab and that the exterior walls will be about one foot of concrete. The slab and wall will both be

waterproofed, so no water intrusion is expected. Once the building and waterproofing design has been completed, copies will be provided to ACHCS and the City of Emeryville.

CONTINGENCY PLAN

If underground storage tanks, sumps, and/or associated piping are uncovered during the excavation activities; the following contingency plan will be followed. ACHCS and the City of Emeryville will be notified and the underground storage tank, sump, and/or associated piping will be remove and properly disposed. The removals will be performed by a licensed contractor in accordance with current Federal and State regulations. In addition, soil and groundwater samples will be collected accordingly. A tank closure report with be prepared and submitted to ACHCS and the City of Emeryville.

If unknown areas of suspected petroleum hydrocarbons or other hazardous materials are discovered during the excavation activities, the following contingency plan will be followed. The impacted areas will be excavated, stockpiled on and covered with plastic sheeting, soil samples will be collected and tested for appropriate chemical constituents (petroleum hydrocarbons, HVOCs, SVOCs, metals), and reported to ACHCS and City of Emeryville. Based on the results of the testing, the soil will be properly disposed of off-site.

HEALTH AND SAFETY ISSUES

Based on our experience on similar sites, there are potential health and safety issues associated with the compounds detected at the site. We judge there may be the potential for these compounds to affect construction workers at the site, nearby residents, workers and/or pedestrians, and future users of the site. The routes of potential exposure to these compounds will be through three pathways: (1) dermal (skin) contact with the soil, (2) inhalation of dusts and/or vapors, and (3) ingestion of the soil.

The most likely potential for human exposure to the compounds in the soil will be during soil excavation operations. Because on-site materials may contain petroleum hydrocarbons and other concentrations in excess of the Proposition 65 guidelines, we recommend that proper health and safety procedures, as well as warning requirements be implemented during construction. The potential health risk to on-site construction workers and the public will be minimized by developing and implementing a comprehensive health and safety plan (HSP). This plan will be prepared for the contractor by a certified industrial hygienist and will be submitted to ACHCS and City of Emeryville for review and approval prior to the start of any construction activities.

The site contractor shall be responsible for establishing and maintaining proper health and safety procedures to minimize worker and public exposure to site contaminants during construction.

The HSP describes the health and safety training requirements, i.e. trained in accordance with Section 1910.120 of 29 Code of Federal Regulations (HazWoper training), specific personal hygiene, and monitoring equipment that will be used during construction to protect and verify the health and safety of the construction workers and the general public from exposure to constituents in the soil. It may also be necessary to conduct air monitoring to evaluate the amount of airborne particles during excavation and grading. A site health and safety officer (HSO) will be on site at all times during excavation activities to ensure that all health and safety measures are maintained. The HSO will have authority to direct and stop (if necessary) all construction activities in order to ensure compliance with the HSP.

Confirmation Soil and Groundwater Sampling

Once the excavation has been completed, confirmatory soil and groundwater samples will be collected and analyzed. The soil and groundwater samples will be analyzed for the following: total petroleum hydrocarbons as gasoline, diesel, motor oil, and mineral spirits by EPA Method 8015M, volatile organic compounds (VOCs) by EPA Method 8260, semi-volatile organic compounds by EPA Method 8270, and California Title 22 metals. The analytical results of the confirmation sampling will be presented in our certification report.

Site Encapsulation

The risk of direct contact with the soil by future site users will be mitigated by encapsulating the soil with the concrete floor slab and exterior walls of the garage and the waterproofing. The concrete floor slab and exterior walls will be considered the cap above the soil. The encapsulation will sufficiently reduce the health risk through dermal contact and ingestion by providing a physical barrier, thereby eliminating the exposure pathway between the contaminants and site users.

MAINTENANCE REQUIREMENTS

The objective of these maintenance requirements is to ensure that the long-term risk management plan measures, specifically encapsulating soil beneath the floor slab will remain effective during the building's and garage's use and occupancy period. The owner and operator will maintain this risk management plan, maintenance work plans, and maintenance records in a readily accessible on-site location and shall be responsible for informing any employee or contractor, who will perform below grade construction, of the environmental conditions, soil management concerns, and health and safety requirements stipulated in this risk management plan.

These measures will also be enforced during any post-development construction activities such as utility line repair, building expansion, and other activities that may disturb the underlying contaminated soil. To maintain the integrity of the encapsulation layer and to protect future site workers, who may disturb the encapsulation layer, the following procedures must be adhered to by the owner and/or operator of the site:

- Notify the ACHCS and City of Emeryville of any proposed activity expected to disturb the integrity of the encapsulating layer or soil, thirty (30) calendar days before work commences. In cases of emergency, the ACHCS and City of Emeryville shall be notified within 24 hours and the work should commence in accordance with the mitigation measures described in this risk management plan.

- Prepare a specific work plan that includes a description of the proposed construction activities, soil management plan, and health and safety plan.

- Direct any contractor or employee who disturbs the encapsulating layer and is engaged in any excavation or earth movement at the property to comply with the appropriate local, State, and Federal regulations.

- Direct any contractor or employee engaged in any activities that involve penetrating the encapsulating layer to repair the disturbed area as soon as is practical.

- Control dust by wetting and protect exposed or excavated soil from storm run-on and run-off during the period of excavation, soil movement, or exposure.

- Determine by appropriate testing whether any excess material removed from the site is hazardous pursuant to State or Federal hazardous criteria. This material must be managed in accordance with all appropriate regulations.

- Provide the ACHCS and the City of Emeryville with a report that describes the maintenance activities related to the encapsulating layer or excavation of soil.

CERTIFICATION REPORT

Upon completion of the soil management activities, a Certification Report will be prepared by a third party (other than the contractor). This report will present a chronology of the construction events, a summary of analytical data, and a description of all mitigation activities at the site. It will also include a certification statement that indicates the mitigation activities have been performed in accordance with this risk management plan. The Certification Report will be submitted to the Alameda County Health Care Services (ACHCS) for review and approval

Treadwell&Rollo

within 60 days of the completion of all earthwork performed as part of the Emeryville Industrial Court project.

We trust this report provides the required information. If you have any questions, please call either of us at 415-955-9040.

Sincerely yours,
TREADWELL & ROLLO, INC.

Peter J. Cusack
Senior Project Scientist

Donald D. Treadwell, PhD, PE
Principal Engineer

Enclosures

Post-it® Fax Note 7671 | Date | # of pages ▶ 2

To PETER CUSACK	From SUSAN HUGO
Co./Dept. TREADWELL & ROLLO	Co. ACEHS
Phone #	Phone #
Fax # 415-955-9041	Fax # 510 337-9335

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

January 16, 2001

Mr. Fillmore Marks
Marks Management Company
44 Montgomery, Suite 850
San Francisco, California 94104

RE: Proposed Emeryville Industrial Court (STID# 6687)
5885 Hollis Street, Emeryville, California 94608

Dear Mr. Fillmore:

This letter serves to follow up the meeting we had last Friday, January 12, 2001, attended by Marks Management (Elaine Kirk and yourself), City of Emeryville Building and Planning (Barrie Cromarti), Treadwell and Rollo (Donald Treadwell, Christian Divis and Peter Cusack) and your architect for the project. On July 5, 2000, this agency issued a letter approving the proposed development of the subject site for commercial use provided the issues listed in our June 23, 2000 letter are addressed. The submitted development plan included construction of a two-story building and above ground four level parking garage structure. Treadwell and Rollo submitted a letter report dated August 8, 2000 to address those issues.

As you know, the development plan has changed since that time. Treadwell and Rollo submitted a letter dated December 8, 2000 describing the proposed changes to the development plan which included one level of underground parking covering the entire site. It is my understanding that the entire site will be excavated between ten to eleven feet below ground surface. Because of these proposed changes to the previously submitted plan, the following issues (discussed in our meeting) must be addressed prior to development of the site:

1. Potential future groundwater intrusion into the basement of the building must be addressed.
2. Evaluate and demonstrate that the proposed construction activities will not create migration of on-site and off-site contamination during construction and after completion of the development of the site. Potential off-site sources should be identified.
3. Evaluate vapor seepage into the basement / building and identify human health risk to occupants of the building.
4. Site development plan should be revised to incorporate the proposed changes and should include at a minimum the following: description of the project, site map with the location of the proposed building, landscapes, underground parking, known sources or potential sources of contamination, extent of excavation, location of pile drives or elevator shafts if applicable.
5. Site conceptual model (SCM) should be prepared to include the proposed changes, identify sources of releases, chemicals of concern (COCs), routes of exposures and sensitive receptors. This should include evaluation of human health and environmental risk assessment for the proposed use of the site. Issue # 3 should be incorporated in the SCM.

Mr. Fillmore Marks
RE: 5885 Hollis Street, Emeryville, CA 94608
January 16, 2001

6. The short term and long-term risk management plan should be revised to incorporate the proposed changes. The short term (construction) risk management plan should include at a minimum the following elements: acceptable health & safety plan for construction workers, soil management plan, groundwater management plan, dust control, stormwater prevention plan, and preventive measures to not create any vertical conduits for contaminants to migrate from shallow to deeper groundwater. The long-term (future) risk management plan should include at a minimum the following items: health and safety plan for future construction workers such as utility workers who maybe exposed to residual contaminants that will be left at the site, institutional controls such as deed restriction and capping with clean soil cover at least three feet thick to minimize or eliminate exposure of gardeners and routine maintenance personnel (e.g. those who repair landscaping irrigation systems) to affected soil. Sidewalks should have at least three to four feet of clean soil cover.
7. Confirmation soil and groundwater samples should be collected at the site and should include the following chemicals of concern: TPH gasoline, TPH diesel, TPH motor oil, TPH mineral spirits, chlorinated solvents, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and metals.
8. The contingency plan should be revised to include the proposed changes.
9. Future groundwater monitoring plan for the site should include contamination found on 59th Street and Peleadeau.
10. A report should be submitted after completion of the development and should include at a minimum copies of any soil and /or groundwater disposed off site, results of soil and groundwater sampling, site map with location of residual contamination left at the site, etc.

A work plan addressing the above listed issues should be submitted and approved by this agency prior to development of the subject site.

If you have any questions about this letter or the subject site, please contact me at (510) 567-6780.

Sincerely,

Susan L. Hugo
Hazardous Materials Specialist

c: Ariu Levi /Thomas Peacock, Environmental Health Services
Ravi Arulanantham, San Francisco Bay RWQCB
Barrie Cromartie / Ignacio Dayrit, City of Emeryville, 1333 Park Street, Emeryville, CA 94608
Peter Cusack, Treadwell & Rollo, 555 Montgomery St., Suite 1300, San Francisco, CA 94111
SH / files

Treadwell&Rollo

8 August 2000
Project 2808.01

Ms. Susan Hugo
Alameda County Health Care Services
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Emeryville Industrial Court
5885 Hollis Street
Emeryville, California

Dear Ms. Hugo:

The following is in response to your letter dated 23 June 2000, in which you requested additional information prior to development of the proposed Emeryville Industrial Court project in Emeryville, California (Figure 1). Treadwell & Rollo, Inc. has previously performed an *Environmental Site Characterization* report dated 12 May 2000 and a *Geotechnical Investigation* report dated 27 July 2000.

EXISTING CONDITIONS

The project site is approximately 220 feet by 550 feet in plan dimension and is bounded by Hollis Street to the east, 59th Street to the north, Peladeau Street to the west, and a Chevron Service Station and Powell Street to the south (Figure 1). The site is currently occupied with four buildings: a one-story concrete building that occupies 5805 through 5885 Hollis Street, a one-story concrete building that occupies 5810 through 5890 Peladeau Street, and two one-story metal-framed buildings that occupy 5805 Hollis Street. The remaining area is asphalt-paved parking.

PROJECT DESCRIPTION

We understand the proposed development for the Emeryville Industrial Court project site will consist of demolishing the existing buildings and construct a two-story office building and a four-level parking garage. As shown on Figure 2, the proposed office building will have plan dimensions of about 292 by 196 feet and the proposed garage will have plan dimensions of about 194 by 119 feet. The remaining areas will be landscaped and walkways.

Current excavation plans are to remove approximately the top 5 feet of soil for the building and garage foundation construction. This soil will be excavated, stockpiled, and recompacted throughout the entire site. A schematic of select fill beneath the building and garage footings is shown on Figure 3.

Treadwell & Rollo, Inc. *Environmental & Geotechnical Consultants*
555 Montgomery Street, Suite 1300, San Francisco, CA 94111
Telephone (415) 955-9040 Facsimile (415) 955-9041

BACKGROUND

Prior to 1917, the site and vicinity appeared to be vacant land. Union Oil Company of California occupied the site from 1917 to 1964. Intermountain Terminal Company, an affiliate of Pacific Intermountain Express Company owned the property from 1964 to 1974. In 1974, the current owners of the property purchased the property and the current buildings, with the exception of the 5806-5808 Peladeau Street building, which was constructed in 1985.

Union Oil Company of California reportedly used the property as a distribution facility, which contained many above- and underground petroleum storage tanks, a garage along Hollis Street, and an auto repair shop along Peladeau Street. Along the southeastern portion of the subject property, a total of 40,000-gallons of lubricating oil were reportedly stored in aboveground tanks.

During the remodeling of one of the buildings in 1985 and more recently during the widening of 59th Street and the replacement of an underground utility in 1999, petroleum hydrocarbons were discovered in the soil with diesel detected at a maximum concentration of 13,000 parts per million (ppm) and motor oil at 15,000 ppm. The excavated soil was transported and disposed of at a regulated landfill.

In 1990, an unknown 10,000-gallon underground gasoline storage tank was reportedly located and removed from the 5805 Hollis Street property (S. B. Thomas). No records were found in regards to the removal of the underground storage tank. However, according to the property owners, soil contamination was noted during the tank removal and the affected soil was disposed at a regulated landfill.

Per your request, the records for the underground storage tank removal have been requested from the Corporate headquarters of S. B. Thomas. When they are received, we will forward a copy to Alameda County Health Care Services.

In April 2000, we performed a subsurface investigation that included collection of soil samples from 18 exploratory borings and collection of four groundwater grab samples from 4 exploratory borings. The locations of the exploratory boring are presented on Figure 4. Analytical results are summarized on Tables 1 through 3.

Soil Analytical Results

A total of 59 soil samples were analyzed for gasoline, diesel, motor oil, TRPH, VOCs, SVOCs, and LUFT 5 metals. Low levels of gasoline were detected above method reporting limits in 11 of the 59 samples at concentrations ranging from 1.0 to 160 milligrams per kilograms (mg/kg) or parts per million (ppm). Diesel was detected above method reporting limits in 10 of the 59 soil samples analyzed in concentrations ranging from 1.3 to 360 ppm.

Motor oil was detected above method reporting limits in 11 of the 59 samples at concentrations ranging from 15 to 6,600 ppm. TRPH were detected above method reporting limits in 11 of the 59 samples at concentrations ranging from 30 to 9,900 ppm. The maximum concentration of TRPH, TPH as gasoline, and TPH as motor oil were each detected in sample TR-1-4.0. When encountered elsewhere, these contaminants were generally one order of magnitude lower.

The only volatile organic compounds (VOCs) detected at or above the method reporting limits in the soil samples analyzed was carbon disulfide in sample TR-18-15 at a concentration of 17 micrograms per kilograms (ug/kg) or parts per billion (ppb). Benzo(a)pyrene was the only semi-volatile organic compounds (SVOCs) detected, it was detected in 5 of the 9 soil samples analyzed in concentrations ranging from 540 to 600 ppb.

The metal concentrations were within expected[1] background ranges found in the western United States, with the exception of elevated total lead in two samples, TR-1-4.0 and TR-6-3.0, whose concentrations were 150 ppm.

Groundwater Results

Groundwater samples collected from borings TR-1, TR-6, TR-9, and TR-12 contained detectable concentrations of total recoverable petroleum hydrocarbons (TRPH), and total petroleum hydrocarbons as gasoline, diesel, and motor oil. The metal concentrations detected were within expected background levels. No volatile organic compounds (VOCs) were detected in the groundwater samples tested.

Gasoline was detected in the groundwater collected from boring TR-1 and TR-12 at concentrations of 98 and 3,300 micrograms per liter (ug/L) or parts per billion (ppb), respectively. Diesel was also detected in groundwater samples from these borings at concentrations of 130 and 700 ppb, respectively.

TRPH and motor oil were detected in the groundwater samples collected from borings TR-6 and TR-12 at concentrations of 6,600 and 9,900 ppb, respectively. Motor oil was detected in the groundwater samples collected from borings TR-6 and TR-9 at concentrations of 1,400 and 420 ppb.

SHORT TERM AND LONG TERM RISK MANAGEMENT PLAN

This section describes the risk management plan (RMP) measures recommended by Treadwell & Rollo, Inc. to mitigate worker and site user and neighbor risks associated with the presence of

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1 "U.S.G.S. Professional Paper 1270, Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States," 1984

certain constituents in the soil and groundwater at the 5885 Hollis Street project site both during and after construction.

Current plans are to excavate approximately five feet of soil across the entire site, stockpile the excavated soil, and recompact and re-use the soil beneath the building and parking garage foundation slabs. At this time, minimal off-site disposal is planned for the site. Clean imported fill will be brought in to provide approximately two feet of cover placed on landscaping areas and within utility trenches.

The presence of organic and inorganic compounds in the native soil was identified by soil sample analyses, as described in our Environmental Site Characterization report dated 12 May 2000. Current California Health and Safety Code stipulate that the "disturbance" or excavation of soil with these constituents must include special soil handling procedures and specific worker heath and safety measures. In addition, provisions for long-term maintenance and management practices will be necessary to minimize exposure to future site users. A description of the findings of previous environmental studies and our recommendations for further action are presented in the remainder of this plan.

Subsurface Conditions

Subsurface information from test borings indicates the site is blanketed by approximately 2 to 4 feet of fill, consisting of clayey sand and clayey gravel. The fill is underlain by medium stiff to very stiff clay to maximum depths explored. Previous investigations reported encountering groundwater at various depths varying from 6 to 14 feet below existing grade. Groundwater levels are expected to fluctuate depending on rainfall and seasonal conditions, as well as manmade drainage and possible tidal influences of the Bay.

The results of the laboratory analyses for soil and groundwater samples have detected concentrations of total recoverable petroleum hydrocarbons (TRPH), gasoline, diesel, volatile and semi-volatile organic compounds (VOCs and SVOCs), and heavy metals. Our recommended risk management procedures, including contingencies for undiscovered contamination, possible underground storage tanks and associated piping are described in the remainder of this plan.

Recommendations for Mitigative Actions

The results of the environmental investigation indicate the soil and groundwater at the site contains elevated concentrations of primarily petroleum hydrocarbons. The presence of these and other compounds poses soil management and potential health and safety issues to be addressed as part of the site development activities. The soil management objectives for the site are to minimize exposure to constituents in the soil to construction workers at the site, nearby residents, workers and/or pedestrians, and future users of the site.

Soil Management

The proposed construction activities will disturb limited amounts of native soil during the construction of the new foundations, grade beams, elevator pits, utility lines, and sanitary sewer lines. During construction activities, dust control measures will be implemented to reduce exposure. These measures may include moisture-conditioning the soil, using dust suppressants, covering the exposed soil and stockpiles with weighed-down plastic sheeting to prevent exposure of the soil. The site's Health and Safety Plan (prepared by others) will contain additional dust monitoring, action levels, dust control measures, and work stoppage provisions to be followed during construction activities.

All existing soil that is disturbed during construction will be reused on-site as backfill beneath the concrete floor slabs of the proposed building and garage and limited off-site disposal will be performed. This encapsulation will mitigate any direct contact with the soil by future site users. No native soil will be used as backfill material within the top two feet in the landscape areas or within the utility trenches.

Groundwater Management

The proposed construction activities most likely will not encounter groundwater in quantities that will require removal measures. If significant groundwater quantities are encountered during construction, the groundwater will be pumped into appropriate containers and samples will be obtained for chemical analyses. The groundwater will be tested for parameters established by the East Bay Municipal Utility District (EBMUD) for discharge of groundwater into the sanitary sewer system. If contamination is detected in the groundwater, the groundwater will be properly treated prior to disposal.

CONTINGENCY PLAN

If underground storage tanks, sumps, and/or associated piping are uncovered during the excavation activities; the following contingency plan will be followed. ACHCS and the City of Emeryville will be notified and the underground storage tank, sump, and/or associated piping will be removed and properly disposed. The removal will be performed by a licensed contractor in accordance with current Federal and State regulations, and soil and groundwater samples will be collected accordingly. A tank closure report with be prepared and submitted to ACHCS and the City of Emeryville.

If unknown areas of suspected petroleum hydrocarbons or other hazardous materials are discovered during the excavation activities, the following contingency plan will be followed. The impacted area will be excavated, stockpiled on and covered with plastic sheeting, soil samples will be collected and tested for appropriate chemical constituent (petroleum

hydrocarbons, HVOCs, SVOCs, metals), and reported to ACHCS and City of Emeryville. Based on the results of the testing, the soil will be properly disposed of.

Prior to being re-used on-site as backfill, the existing soil that is disturbed will be stockpiled and tested for total petroleum hydrocarbons as gasoline, diesel, and mineral spirits by EPA Method 8015M, total petroleum hydrocarbons as motor oil by EPA Method 418.1, volatile organic compounds (VOCs) by EPA Method 8010, semi-volatile organic compounds (SVOCs) by EPA Method 8270, and Title 22 Metals by EPA Method 6010/7000. Approximately every 500 cubic yards of stockpiled soil will be sampled by collecting a four-point composite sample. The samples will be collected by using a hand-driven sampler with an inside diameter of two inches, lined with a clean stainless steel tube and driven into the soil. The ends of the sample tube will be covered with Teflon and sealed with plastic end caps, and placing the samples into and ice-cooled chest until delivery to an analytical laboratory. The soil samples collected from the stockpile will be identified by using a progressive numbering sequence with the date of the sample collection and the location. All appropriate regulatory sampling methods, holding times, and detection limits will be followed.

HEALTH AND SAFETY ISSUES

Based on our experience on similar sites, there are potential health and safety issues associated with the compounds detected at the site. The routes of potential exposure to construction workers at the site, nearby residents, workers and/or pedestrians, and future users of the site are via three pathways: (1) dermal (skin) contact with the soil, (2) inhalation of dusts and/or vapors, and (3) ingestion of the soil.

The most likely potential occurrence for human exposure to the compounds in the soil will be during soil excavation operations. Because on-site materials may contain lead and other concentrations in excess of the Proposition 65 guidelines, we recommend that proper health and safety procedures, as well as warning requirements be implemented during construction. The potential health risk to on-site construction workers and the public will be minimized by developing and implementing a comprehensive health and safety plan (HSP) and by minimizing the generation of dust during excavation and development activities. This HSP will be prepared for the contractor by a certified industrial hygienist and will be submitted to ACHCS and City of Emeryville prior to the start of any construction activities. The site contractor shall be responsible for establishing and maintaining proper health and safety procedures to minimize worker and public exposure to site contaminants during construction.

The HSP describes the health and safety training requirements, specific personal hygiene, and monitoring equipment that will be used during construction to protect and verify the health and safety of the construction workers and the general public from exposure to constituents in the soil. It may also be necessary to conduct air monitoring to evaluate the amount of airborne particles during grading. A site health and safety officer (HSO) will be on site at all times during

excavation activities to ensure that all health and safety measures are maintained. The HSO will have authority to direct and stop (if necessary) all construction activities in order to ensure compliance with the HSP.

Site Encapsulation

The risk of direct contact with the soil by future site users will be mitigated by encapsulating the soil with either the concrete floor slab for the proposed office and garage buildings, landscaped areas, asphaltic concrete pavement, and the concrete walkways. The concrete floor slab, landscape areas, asphaltic concrete pavement, and concrete walkways will be considered the cap above the fill. The encapsulation will sufficiently reduce the potential health risk through dermal contact and ingestion by providing a physical barrier, thereby eliminating the exposure pathway between the contaminants and site users.

MAINTENANCE REQUIREMENTS

The objective of these maintenance requirements is to ensure that the long-term risk management plan measures, specifically encapsulating soil beneath the floor slab, will remain effective during the building and garage's use and occupancy period. The owner and operator will maintain this risk management plan, maintenance work plans, and maintenance records in a readily accessible on-site location and shall be responsible for informing any employee or contractor, who will perform below grade construction, of the environmental conditions, soil management concerns, and health and safety requirements stipulated in this risk management plan.

These measures will also be enforced during any post-development construction activities such as utility line repair, building expansion, and other activities that may disturb the underlying contaminated soil. To maintain the integrity of the encapsulation layer and to protect future site workers who may disturb the encapsulation layer, the following procedures should be adhered to by the owner and/or operator of the site:

1. Notify the ACHCS and City of Emeryville of any proposed activity expected to disturb the integrity of the encapsulating layer or soil, thirty (30) calendar days before work commences. In case of emergency, the ACHCS and City of Emeryville shall be notified within 24 hours and the work should commence in accordance with the mitigation measures described in this risk management plan.

2. Prepare a specific work plan that includes a description of the proposed construction activities, soil management plan, and health and safety plan.

3. Direct any contractor or employee who disturbs the encapsulating layer and is engaged in any excavation or earth movement at the property to comply with the appropriate local, State, and Federal regulations.

4. Direct any contractor or employee engaged in any activities that involve penetrating the encapsulating layer to repair the disturbed area as soon as is practical.

5. Control dust by wetting exposed soil and protect exposed or excavated soil from storm run-on and run-off during the period of excavation, soil movement, or exposure.

6. Determine by appropriate testing whether any excess material removed from the site is hazardous pursuant to State or Federal hazardous criteria. This material must be managed in accordance with all appropriate regulations.

7. Provide the ACHCS and City of Emeryville with a report that describes the maintenance activities related to the encapsulating layer or excavation of soil.

CERTIFICATION REPORT

A Certification Report will be prepared by a third party (separate from the contractor) upon completion of soil mitigation activities. This report will present a chronology of the construction events, a summary of analytical data, and a description of all mitigation activities at the site. It will also include a certification statement that indicates the mitigation activities have been performed in accordance with this risk management plan. The Certification Report will be submitted to the Alameda County Health Care Services (ACHCS) for review and approval within 60 days of the completion of all earthwork on the Emeryville Industrial Court project.

We trust this plan provides the information that you require. If you have any questions, please call.

Sincerely yours,
TREADWELL & ROLLO, INC.

Peter J. Cusack
Senior Project Scientist

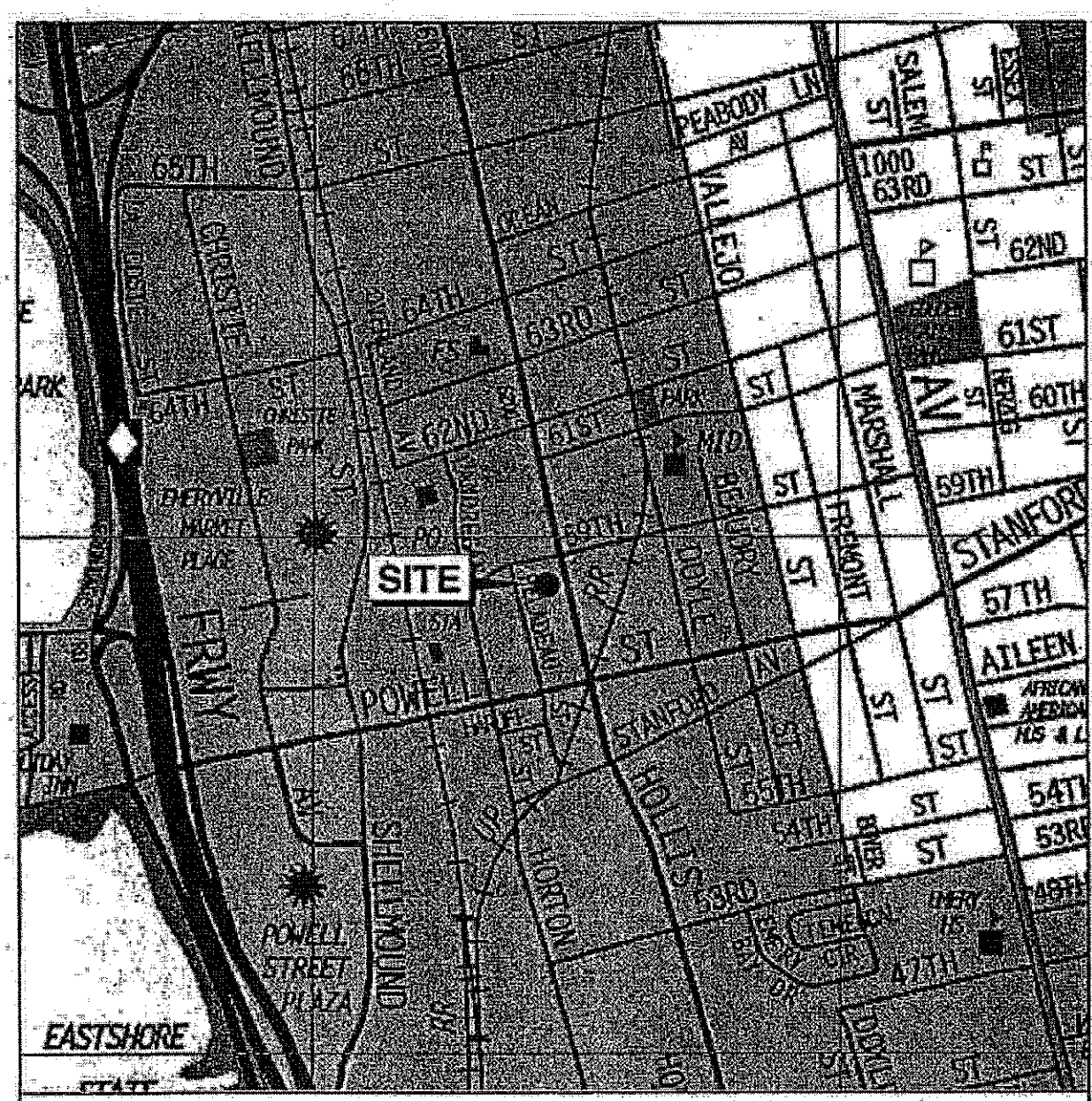
Philip G. Smith, R.E.A.
Principal

28080103.PJC

cc: Mr. Filmore Marks – Marks Management Company

Treadwell&Rollo

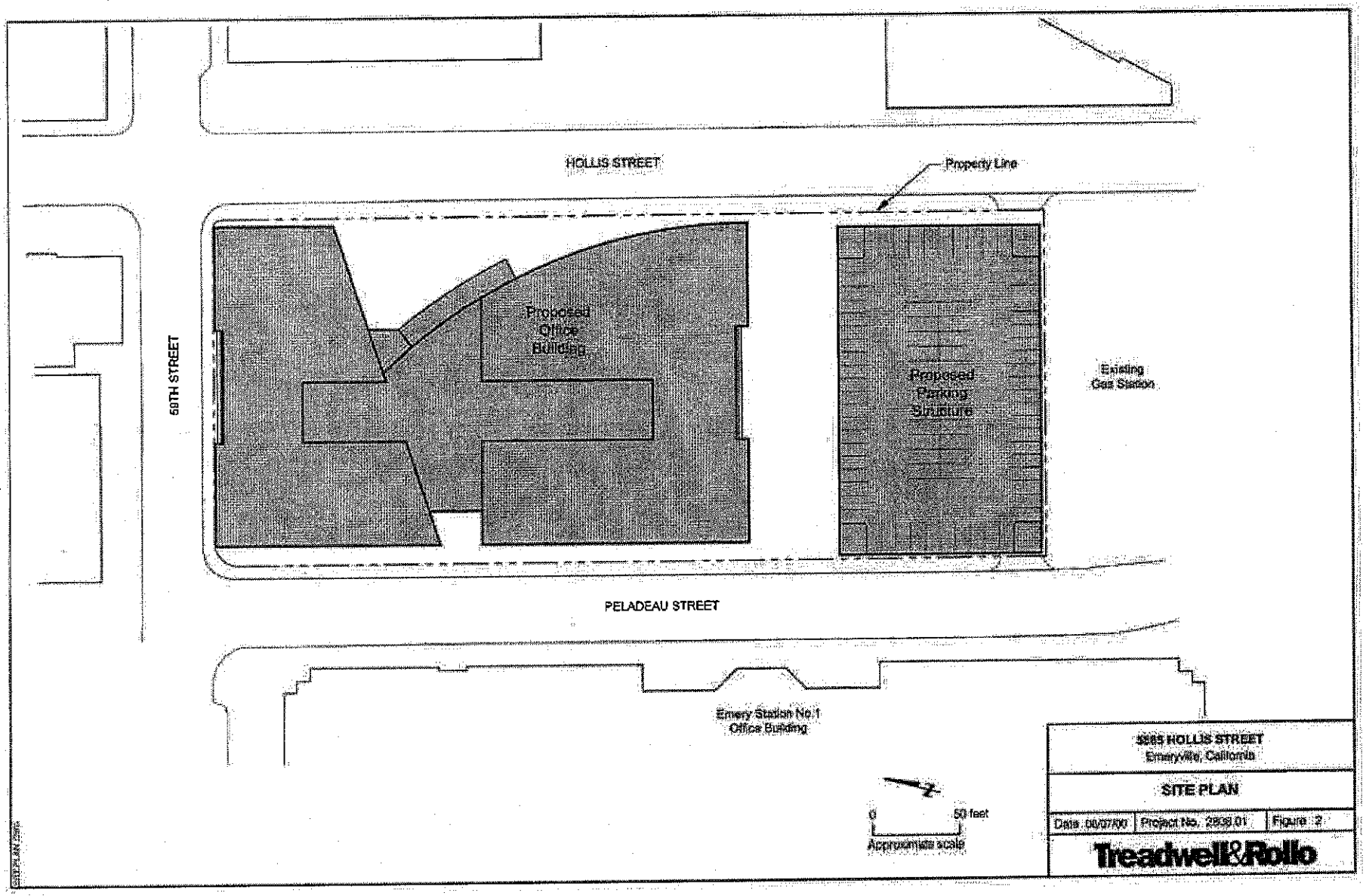
FIGURES

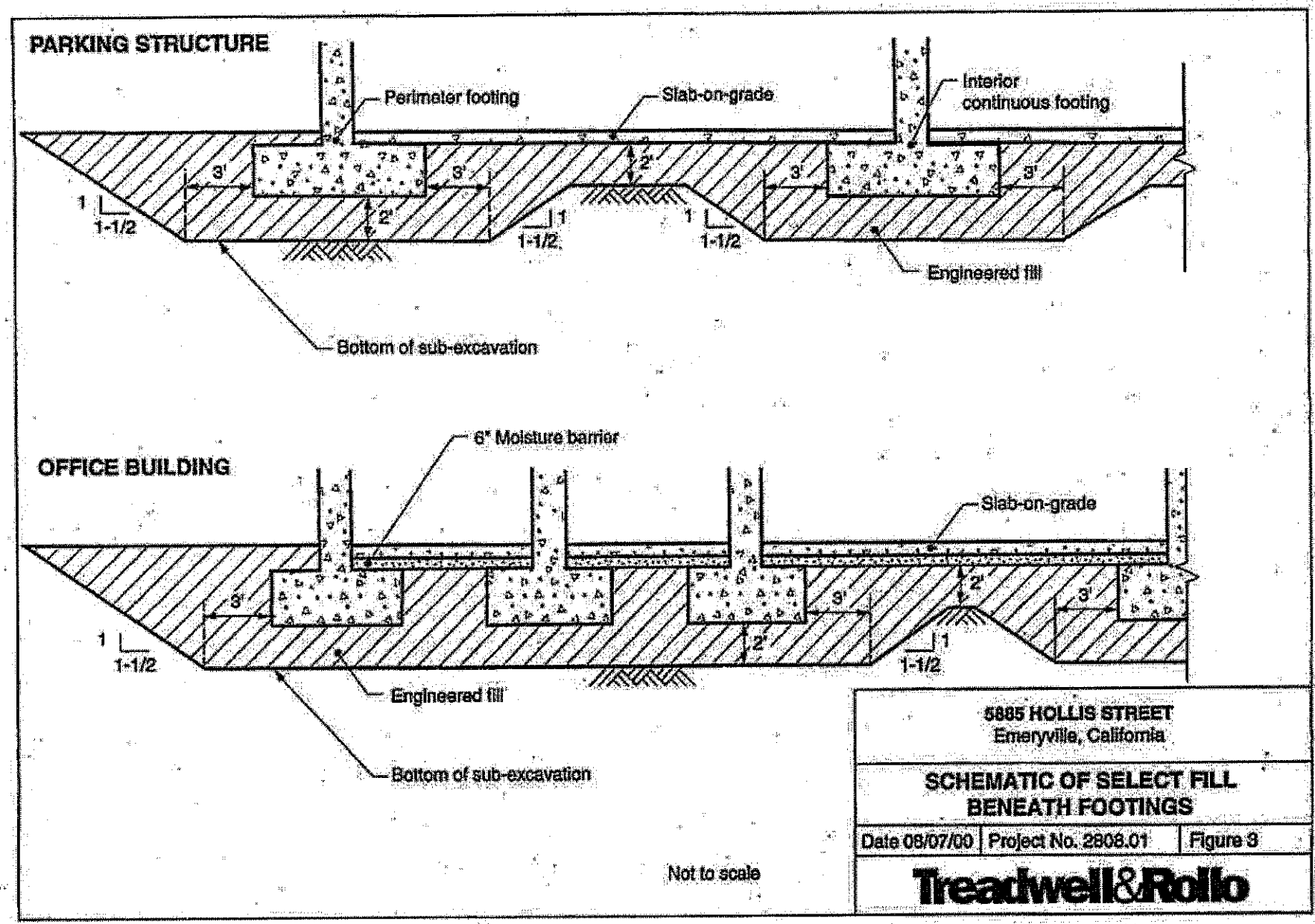


Base map: The Thomas Guide
Alameda County
1999

No scale

5885 HOLLIS STREET Emeryville, California	**SITE LOCATION MAP**	
Treadwell&Rollo	Date 07/06/00	Project No. 2606.01 | Figure 1


HOLLIS STREET
Property Line
Proposed Office Building
Proposed Parking Structure
Existing Gas Station
60TH STREET
PELADEAU STREET
Emery Station No.1 Office Building
N
0
50 feet
Approximate scale
5885 HOLLIS STREET
Emeryville, California
SITE PLAN
Date: 08/07/00
Project No. 2939.01
Figure 2
Treadwell&Rollo

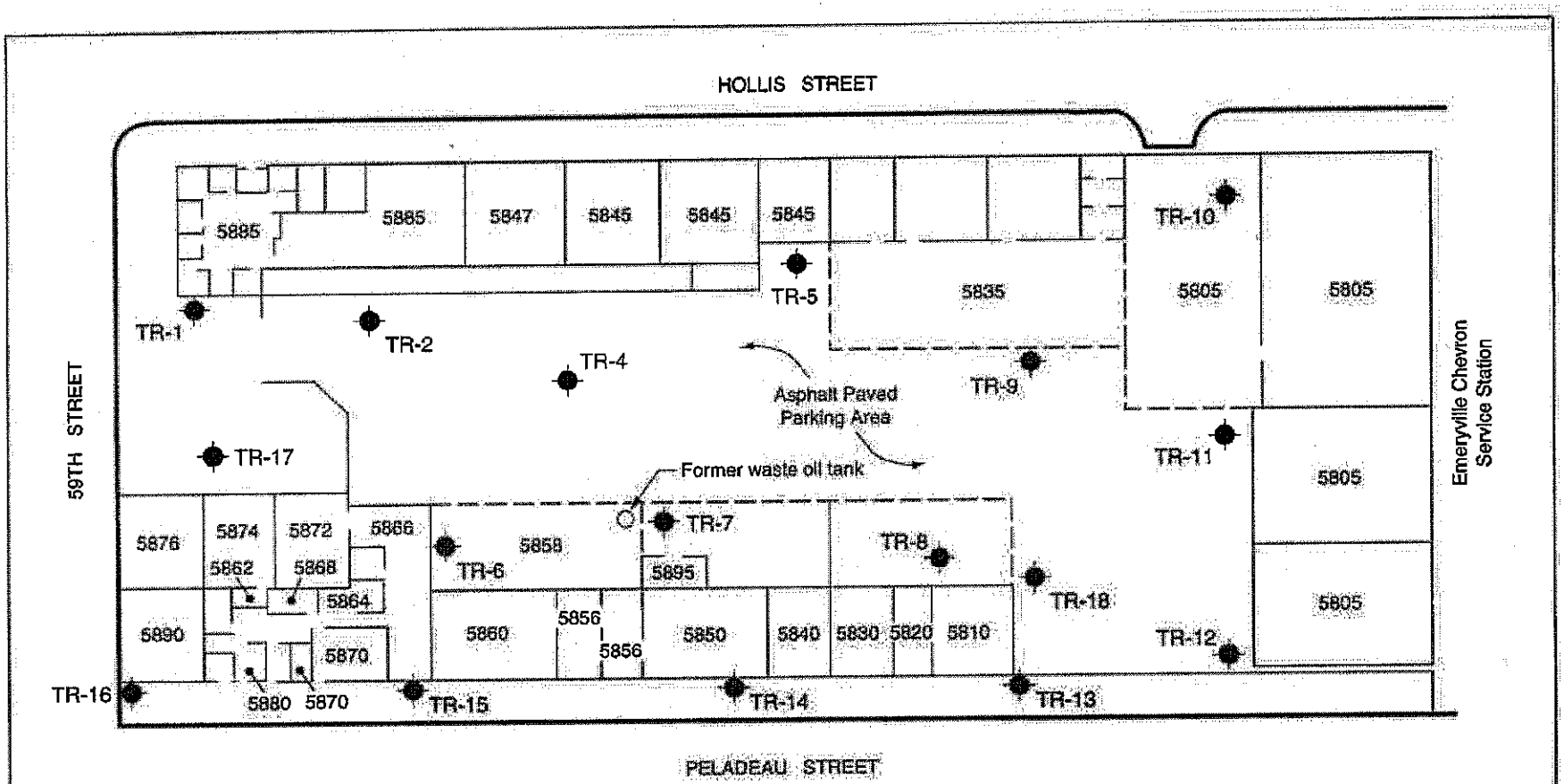


5885 HOLLIS STREET
Emeryville, California

SCHEMATIC OF SELECT FILL BENEATH FOOTINGS

Date 08/07/00	Project No. 2808.01	Figure 3

Treadwell&Rollo



EXPLANATION:

TR-1 ⊕ Approximate location of exploratory boring by Treadwell&Rollo, Inc.

0 60 Feet

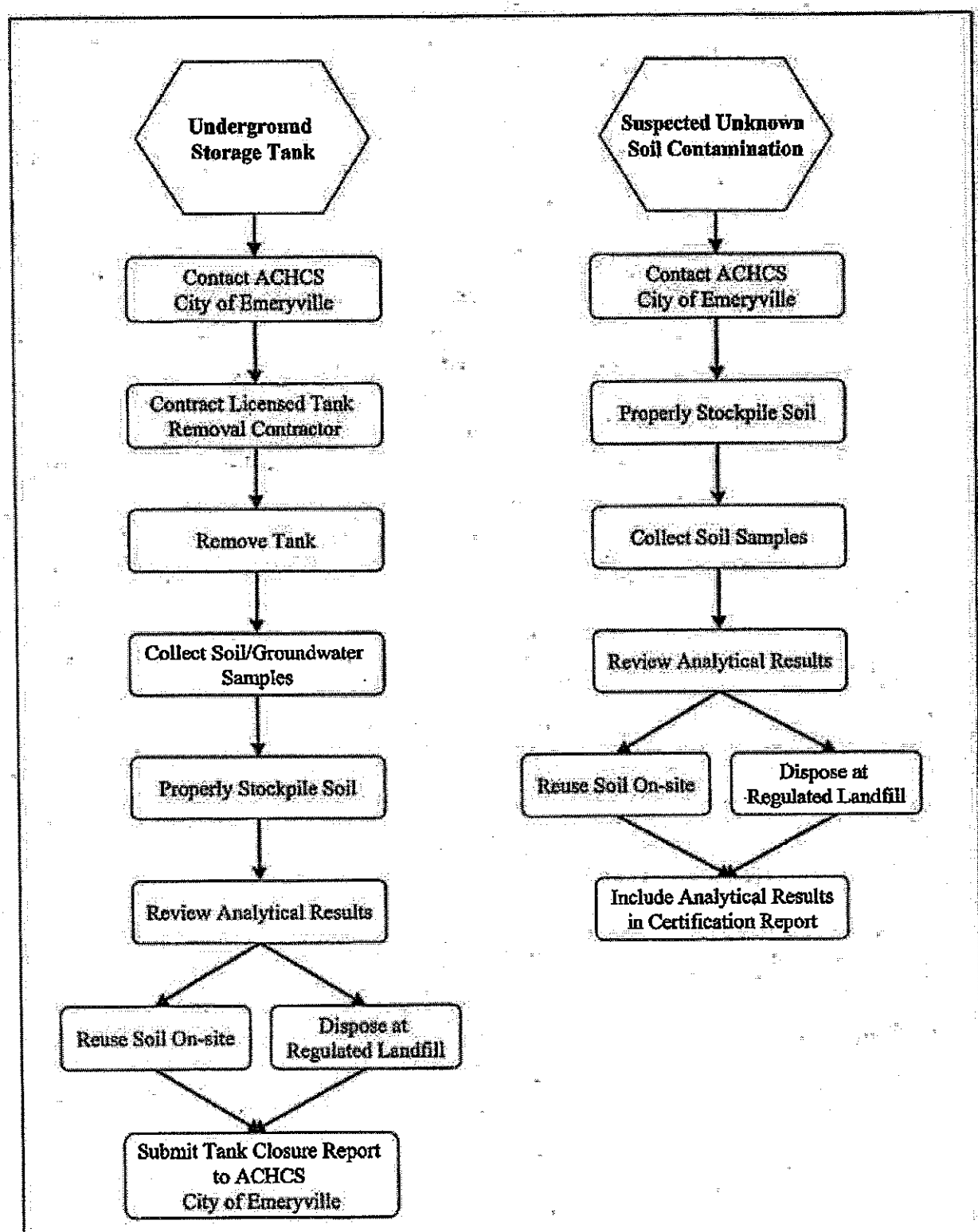
Approximate scale

EMERYVILLE INDUSTRIAL COURT
Emeryville, California

SITE PLAN

Date 08/07/00 | Project No. 2808.01 | Figure 4

Treadwell&Rollo



EMERYVILLE INDUSTRIAL COURT
Emeryville, California

Treadwell&Rollo

Date 08/07/00	Project No. 2808.01	Figure 5

Treadwell&Rollo

TABLES

Table 1
SOIL SAMPLE ANALYTICAL RESULTS
Emeryville Industrial Court
Emeryville, California

Sample Number	Sample Date	Sample Depth	TRPH (mg/kg)	TPH-g (mg/kg)	TPH-d (mg/kg)	TPH-mo (mg/kg)	8010 (ug/kg)	8260 (ug/kg)	8270 (ug/kg)
TR-1-4.0	4/6/00	4	[redacted]	[redacted]	ND	[redacted]	–	–	ND
TR-1-7.0	4/6/00	7	–	–	–	–	–	–	–
TR-1-9.0	4/6/00	9	ND	ND	ND	ND	ND	ND	–
TR-1-12.0	4/6/00	12	ND	ND	ND	ND	–	–	–
TR-1-15.0	4/6/00	15	–	–	–	–	–	–	–
TR-2-3.0	4/6/00	3	–	–	–	–	–	–	–
TR-2-5.0	4/6/00	5	ND	ND	ND	ND	–	–	–
TR-2-7.0	4/6/00	7	–	–	–	–	–	–	–
TR-2-10.0	4/6/00	10	[redacted]	ND	ND	[redacted]	–	–	–
TR-2-15.0	4/6/00	15	ND	ND	ND	ND	–	–	–
TR-4-3.0	4/5/00	3	ND	ND	ND	ND	–	–	ND
TR-4-5.0	4/5/00	5	[redacted]	[redacted]	[redacted]	ND	–	ND	–
TR-4-8.0	4/5/00	7	–	–	–	–	–	–	–
TR-4-11.0	4/5/00	10	[redacted]	[redacted]	[redacted]	[redacted]	–	–	–
TR-5-3.0	4/5/00	3	[redacted]	ND	ND	[redacted]	–	–	–
TR-5-4.0	4/5/00	4	–	–	–	–	–	–	–
TR-5-6.0	4/5/00	6	–	–	–	–	–	–	–
TR-5-8.0	4/5/00	8	–	–	–	–	–	–	–
TR-5-10.0	4/5/00	10	ND	ND	ND	[redacted]	–	–	–
TR-5-15.0	4/5/00	15	ND	ND	ND	ND	–	–	–
TR-6-3.0	4/5/00	3	–	–	–	–	–	–	–
TR-6-5.0	4/5/00	5	[redacted]	ND	ND	[redacted]	ND	–	ND
TR-6-8.0	4/5/00	8	ND	ND	ND	ND	–	ND	–
TR-6-10.0	4/5/00	10	ND	ND	ND	ND	–	–	–
TR-6-15.0	4/5/00	15	–	–	–	–	–	–	–
TR-7-3.0	4/6/00	3	ND	ND	ND	ND	ND	–	ND
TR-7-5.0	4/5/00	5	–	–	–	–	–	–	–
TR-7-8.0	4/5/00	8	ND	[redacted]	ND	ND	–	ND	–
TR-7-10.0	4/5/00	10	–	–	–	–	–	–	–
TR-7-15.0	4/5/00	15	ND	ND	ND	ND	–	–	–
TR-8-3.0	4/5/00	3	–	–	–	–	–	–	–
TR-8-5.0	4/5/00	5	ND	ND	[redacted]	ND	–	ND	–
TR-8-8.0	4/5/00	8	–	–	–	–	–	–	–
TR-8-10.0	4/5/00	10	ND	ND	[redacted]	ND	–	–	–
TR-8-15.0	4/5/00	15	ND	ND	ND	ND	–	–	–

Table 1
SOIL SAMPLE ANALYTICAL RESULTS
Emeryville Industrial Court
Emeryville, California

Sample Number	Sample Date	Sample Depth	TRPH (mg/kg)	TPH-g (mg/kg)	TPH-d (mg/kg)	TPH-mo (mg/kg)	8010 (ug/kg)	8250 (ug/kg)	8270 (ug/kg)
TR-9-3.0	4/5/00	3	--	--	--	--	--	--	--
TR-9-5.0	4/5/00	5	ND	ND	ND	ND	--	--	--
TR-9-8.0	4/6/00	8	--	--	--	--	--	--	--
TR-9-10.0	4/5/00	10	ND	ND	ND	ND	--	ND	--
TR-9-15.0	4/5/00	15	ND	ND	ND	ND	--	--	--
TR-10-3.0	4/6/00	3	ND	ND	ND	ND	--	--	--
TR-10-5.0	4/6/00	5	--	--	--	--	--	--	--
TR-10-8.0	4/5/00	8	ND	ND	ND	ND	ND	--	ND
TR-10-10.0	4/6/00	10	--	--	--	--	--	--	--
TR-10-15.0	4/6/00	15	[illegible]	ND	ND	[illegible]	--	--	--
TR-11-3.0	4/5/00	3	--	--	--	--	--	--	--
TR-11-5.0	4/5/00	5	ND	[illegible]	[illegible]	[illegible]	ND	--	ND
TR-11-8.0	4/5/00	8	ND	ND	ND	ND	--	--	--
TR-11-10.0	4/5/00	10	ND	ND	ND	ND	--	--	--
TR-11-15.0	4/5/00	15	--	--	--	--	--	--	--
TR-12-3.0	4/5/00	3	ND	ND	ND	ND	--	--	--
TR-12-5.0	4/5/00	5	ND	[illegible]	[illegible]	ND	--	--	ND
TR-12-8.0	4/5/00	8	ND	ND	ND	ND	--	ND	--
TR-12-10.0	4/5/00	10	[illegible]	[illegible]	[illegible]	ND	--	--	--
TR-12-15.0	4/5/00	15	ND	[illegible]	ND	ND	--	--	--
TR-13-3.0	4/6/00	3	--	--	--	--	--	--	--
TR-13-5.0	4/6/00	5	[illegible]	ND	ND	ND	ND	--	550**
TR-13-8.0	4/6/00	8	[illegible]	ND	ND	[illegible]	--	--	--
TR-13-10.0	4/6/00	10	ND	ND	ND	ND	--	ND	--
TR-13-15.0	4/6/00	15	ND	ND	ND	ND	--	--	--
TR-14-3.0	4/6/00	3	ND	ND	ND	ND	--	--	--
TR-14-5.0	4/6/00	5	ND	ND	ND	ND	--	ND	570**
TR-14-8.0	4/6/00	8	ND	ND	ND	ND	--	--	--
TR-14-10.0	4/6/00	10	ND	[illegible]	[illegible]	ND	--	ND	--
TR-14-15.0	4/6/00	15	ND	[illegible]	[illegible]	ND	--	--	540**
TR-15-3.0	4/6/00	3	--	--	--	--	--	--	--
TR-15-5.0	4/6/00	5	ND	ND	ND	ND	--	--	--
TR-15-8.0	4/6/00	8	--	--	--	--	--	--	--
TR-15-10.0	4/6/00	10	ND	[illegible]	[illegible]	ND	--	--	590**
TR-15-15.0	4/6/00	15	ND	ND	ND	ND	--	--	--

Table 1
SOIL SAMPLE ANALYTICAL RESULTS
Emeryville Industrial Court
Emeryville, California

Sample Number	Sample Date	Sample Depth	TRPH (mg/kg)	TPH-g (mg/kg)	TPH-d (mg/kg)	TPH-mo (mg/kg)	8010 (ug/kg)	8260 (ug/kg)	8270 (ug/kg)
TR-16-3.0	4/6/00	3	--	--	--	--	--	--	--
TR-16-5.0	4/6/00	5	ND	ND	ND	ND	ND	--	--
TR-16-8.0	4/6/00	8	--	--	--	--	--	--	--
TR-16-10.0	4/6/00	10	ND	ND	ND	ND	--	--	600**
TR-16-15.0	4/6/00	15	--	--	--	--	--	--	--
TR-17-3.0	4/6/00	3	[illegible]	ND	ND	ND	--	--	--
TR-17-5.0	4/6/00	5	--	--	--	--	--	--	--
TR-17-8.0	4/6/00	8	--	--	--	--	--	--	--
TR-17-10.0	4/6/00	10	ND	ND	ND	ND	--	--	--
TR-17-15.0	4/6/00	15	ND	ND	ND	ND	--	--	--
TR-18-3.0	4/5/00	3	ND	ND	ND	ND	--	--	--
TR-18-5.0	4/5/00	5	ND	ND	ND	ND	--	--	ND
TR-18-8.0	4/5/00	8	--	--	--	--	--	--	--
TR-18-10.0	4/5/00	10	ND	ND	ND	ND	ND	[illegible]	--
TR-18-15.0	4/5/00	15	--	--	--	--	--	--	--

Notes:
TPHH = EPA Method SM5520 - Total Recoverable Petroleum Hydrocarbons
TPH-g = EPA Method 8015M - Total Petroleum Hydrocarbons as gasoline
TPH-d = EPA Method 8015M - Total Petroleum Hydrocarbons as diesel
TPH-mo = EPA Method 8015 - Total Petroleum Hydrocarbons as motor oil.
8010 = EPA Method 8010 - Purgeable Halocarbons
8260 = EPA Method 8260 - Volatile Organic Compounds
8270 = EPA Method 8270 - Semi-volatile Organic Compounds
mg/kg = milligrams per kilogram (parts per million)
ug/kg = micrograms per kilogram (parts per billion)
BOLD Indicates detected at or above the laboratory reporting limit
ND = Not Detected Above Laboratory Reporting Limits
-- = Not Analyzed or Not Applicable
* = 17 represents Carbon Disulfide
** = Benzo[a]pyrene

Table 2
SOIL SAMPLE ANALYTICAL RESULTS
Emeryville Industrial Court
Emeryville, California

Sample Number	Sample Date	Sample Depth	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
TR-1-4.0	4/6/00	4	ND	24	150	21	110
TR-1-7.0	4/6/00	7	--	--	--	--	--
TR-1-9.0	4/6/00	9	--	--	--	--	--
TR-1-12.0	4/6/00	12	--	--	--	--	--
TR-1-15.0	4/6/00	15	--	--	--	--	--
TR-2-3.0	4/6/00	3	--	--	--	--	--
TR-2-5.0	4/6/00	5	ND	45	8.9	32	40
TR-2-7.0	4/6/00	7	--	--	--	--	--
TR-2-10.0	4/6/00	10	ND	50	ND	41	41
TR-2-15.0	4/6/00	15	ND	26	ND	37	48
TR-4-3.0	4/5/00	3	--	--	--	--	--
TR-4-5.0	4/5/00	5	ND	30	5.8	31	46
TR-4-8.0	4/5/00	7	--	--	--	--	--
TR-4-11.0	4/5/00	10	ND	45	ND	56	54
TR-5-3.0	4/5/00	3	--	--	--	--	--
TR-5-4.0	4/5/00	4	--	--	--	--	--
TR-5-6.0	4/5/00	6	--	--	--	--	--
TR-5-8.0	4/5/00	8	--	--	--	--	--
TR-5-10.0	4/5/00	10	ND	49	9.7	70	57
TR-5-15.0	4/5/00	15	--	--	--	--	--
TR-6-3.0	4/5/00	3	--	--	--	--	--
TR-6-5.0	4/5/00	5	ND	55	150	38	86
TR-6-8.0	4/5/00	8	--	--	--	--	--
TR-6-10.0	4/5/00	10	--	--	--	--	--
TR-6-15.0	4/5/00	15	--	--	--	--	--
TR-7-3.0	4/5/00	3	ND	28	ND	23	26
TR-7-5.0	4/5/00	5	--	--	--	--	--
TR-7-8.0	4/5/00	8	--	--	--	--	--
TR-7-10.0	4/5/00	10	--	--	--	--	--
TR-7-15.0	4/5/00	15	--	--	--	--	--
TR-8-3.0	4/5/00	3	--	--	--	--	--
TR-8-5.0	4/5/00	5	--	--	--	--	--
TR-8-8.0	4/5/00	8	--	--	--	--	--
TR-8-10.0	4/5/00	10	ND	43	8.3	56	49
TR-8-15.0	4/5/00	15	--	--	--	--	--
TR-9-3.0	4/5/00	3	--	--	--	--	--
TR-9-5.0	4/5/00	5	--	--	--	--	--
TR-9-8.0	4/5/00	8	--	--	--	--	--
TR-9-10.0	4/5/00	10	ND	8.8	7.6	25	39
TR-9-15.0	4/5/00	15	--	--	--	--	--
TR-10-3.0	4/6/00	3	ND	47	ND	35	31
TR-10-5.0	4/6/00	5	--	--	--	--	--
TR-10-8.0	4/6/00	8	--	--	--	--	--
TR-10-10.0	4/6/00	10	--	--	--	--	--
TR-10-15.0	4/6/00	15	ND	37	ND	110	61
TR-11-3.0	4/5/00	3	--	--	--	--	--
TR-11-5.0	4/5/00	5	ND	30	10	64	40
TR-11-8.0	4/5/00	8	--	--	--	--	--
TR-11-10.0	4/5/00	10	--	--	--	--	--
TR-11-15.0	4/5/00	15	--	--	--	--	--

Table 2
SOIL SAMPLE ANALYTICAL RESULTS
Emeryville Industrial Court
Emeryville, California

Sample Number	Sample Date	Sample Depth	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
TR-12-3.0	4/5/00	3	ND	17	6.8	14	28
TR-12-5.0	4/5/00	5	ND	35	8.2	64	52
TR-12-8.0	4/5/00	8	--	--	--	--	--
TR-12-10.0	4/5/00	10	--	--	--	--	--
TR-12-15.0	4/5/00	15	--	--	--	--	--
TR-13-3.0	4/6/00	3	--	--	--	--	--
TR-13-5.0	4/6/00	5	--	--	--	--	--
TR-13-8.0	4/6/00	8	ND	97	28	99	73
TR-13-10.0	4/6/00	10	--	--	--	--	--
TR-13-15.0	4/6/00	15	--	--	--	--	--
TR-14-3.0	4/6/00	3	--	--	--	--	--
TR-14-5.0	4/6/00	5	ND	18	ND	15	20
TR-14-8.0	4/6/00	8	--	--	--	--	--
TR-14-10.0	4/6/00	10	ND	32	ND	33	36
TR-14-15.0	4/6/00	15	--	--	--	--	--
TR-15-3.0	4/6/00	3	--	--	--	--	--
TR-15-5.0	4/6/00	5	ND	39	ND	64	42
TR-15-8.0	4/6/00	8	--	--	--	--	--
TR-15-10.0	4/6/00	10	--	--	--	--	--
TR-15-15.0	4/6/00	15	--	--	--	--	--
TR-16-3.0	4/6/00	3	--	--	--	--	--
TR-16-5.0	4/6/00	5	--	--	--	--	--
TR-16-8.0	4/6/00	8	--	--	--	--	--
TR-16-10.0	4/6/00	10	--	--	--	--	--
TR-16-15.0	4/6/00	15	--	--	--	--	--
TR-17-3.0	4/6/00	3	ND	28	ND	12	19
TR-17-5.0	4/6/00	5	--	--	--	--	--
TR-17-8.0	4/6/00	8	--	--	--	--	--
TR-17-10.0	4/6/00	10	ND	39	ND	53	39
TR-17-15.0	4/6/00	15	--	--	--	--	--
TR-18-3.0	4/5/00	3	ND	26	9.4	21	26
TR-18-5.0	4/5/00	5	--	--	--	--	--
TR-18-8.0	4/5/00	8	--	--	--	--	--
TR-18-10.0	4/5/00	10	ND	37	6.4	83	48
TR-18-15.0	4/6/00	15	--	--	--	--	--

Notes:
TPHH = EPA Method SM5520 - Total Recoverable Petroleum Hydrocarbons
TPH-g = EPA Method 8015M - Total Petroleum Hydrocarbons as gasoline
TPH-d = EPA Method 8015M - Total Petroleum Hydrocarbons as diesel
TPH-mo = EPA Method 8015 - Total Petroleum Hydrocarbons as motor oil.
mg/kg = milligrams per kilogram (parts per million)
ND = Not Detected Above Laboratory Reporting Limits
BOLD Indicates detected at or above the laboratory reporting limit
-- = Not Analyzed or Not Applicable

Table 3
WATER SAMPLE ANALYTICAL RESULTS
Emeryville Industrial Court
Emeryville, California

Sample Number	Sample Date	TPHH (ug/L)	TPH-g (ug/L)	TPH-d (ug/L)	TPH-mo (ug/L)	8010 (ug/L)	8260 (ug/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Nickel (mg/L)	Zinc (mg/L)
TR-1	4/6/00	--	88	180	ND	ND	--	ND	0.042	0.032	0.4	0.65
TR-6	4/5/00	5,600	ND	ND	1,400	ND	ND	--	--	--	--	--
TR-9	4/6/00	ND	ND	ND	420	--	--	--	--	--	--	--
TR-12	4/6/00	1,900	3,900	700	ND	ND	--	ND	0.018	ND	0.34	0.16

Notes:
TPHH = EPA Method SM5520 - Total Recoverable Petroleum Hydrocarbons
TPH-g = EPA Method 8015M - Total Petroleum Hydrocarbons as gasoline
TPH-d = EPA Method 8015M - Total Petroleum Hydrocarbons as diesel
TPH-mo = EPA Method 8015 - Total Petroleum Hydrocarbons as motor oil.
8010 = EPA Method 8010 - Purgeable Halocarbons
8260 = EPA Method 8260 - Gasoline Oxygenates
ug/L = micrograms per liter or parts per billion
mg/L = milligrams per liter or parts per million
-- = Not Analyzed or Not Applicable
BOLD indicates detected at or above the laboratory reporting limit
ND = Not Detected Above Laboratory Reporting Limits

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

RECEIVED
JUN 29 2000
TREADWELL & ROLLO

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

June 23, 2000

Mr. Fillmore Marks
Marks Management Company
44 Montgomery, Suite 850
San Francisco, California 94104

RE: Proposed Emeryville Industrial Court (STID# 6687)
5885 Hollis Street, Emeryville, California 94608

Dear Mr. Fillmore:

The Alameda County Environmental Health Services (ACEHS) has reviewed the following reports submitted for the above referenced site:

- Environmental Site Assessment (March 15, 1995) prepared by Weiss Associates
- Environmental Site Characterization (May 12, 2000) prepared by Treadwell & Rollo

The subject site has four buildings and currently occupied by tenants. The proposed development for the site consists of demolishing the existing buildings and construction of a two-story office building and a four-level parking garage.

Results of the soil samples collected from seventeen exploratory borings (TR-1 to TR-18) drilled at the site in April 2000 indicated the presence of the following contaminants: 9,900 parts per million (ppm) Total Recoverable Petroleum Hydrocarbons (TRPH), 160 ppm Total Petroleum Hydrocarbon (TPH) as gasoline, 360 ppm TPH diesel, 6600 ppm TPH motor oil, 600 ppm benzo[a] pyrene, 17 parts per billion (ppb) carbon disulfide and metals (97 ppm chromium, 150 ppm lead, 110 ppm nickel, 110 ppm zinc). Groundwater samples were collected from four borings (TR-1, TR-6, TR-9 and TR-12) and found up to 9900 ppb TRPH, 3300 ppb TPH gasoline, 700 ppb TPH diesel, 1400 ppb TPH motor oil, 20 ppb 1,4-dichlorobenzene, 18 ppb chloroform, 42 ppb chromium, 32 ppb lead, 400 ppb nickel and 650 ppb zinc.

Based on the review of the referenced reports, the following issues must be addressed prior to development of the subject site:

1. A 10,000-gallon underground storage tank was reportedly removed in 1990 at 5805 Hollis Street which is occupied by S.B.Thomas, one of the tenants at the site. The presence or absence of the tank must be verified. The tank's location must be identified. Records of the disposal of the tank and any stockpiled soil generated during the removal action should be submitted. Results of any soil and /or groundwater samples collected during the removal of the tank should also be submitted.

2. As you are aware, City of Emeryville acquired a portion of the subject site located on the corner of 59th Street and Peladeau (the former coffee roasters building). During the widening of 59th Street, petroleum hydrocarbon contamination (up to 13,000 ppm TPH diesel and 15,000 ppm TPH motor oil) was detected at the site. These data should be included in evaluating future groundwater monitoring requirements at the site.

3. A site conceptual model should be prepared which will identify sources of releases, chemicals of concern (COCs), routes of exposures, and sensitive receptors. This should include evaluation of the human and environmental risk assessment for the proposed use of the site.

4. A short term and long term risk management plan should be submitted for the site. The short term (construction) risk management plan should include at a minimum, the following elements: acceptable health & safety plans for construction workers, soil management plan, groundwater management plan, dust control, stormwater prevention plan and preventive measures to not create any vertical conduits for contaminants to migrate from shallow to deeper groundwater. The long term (future) risk management plan should include health and safety plan for future construction workers such as utility workers who maybe exposed to residual contaminants that will be left at the site and institutional controls such as capping and deed restrictions that may be required at the site.

5. Any reuse of soil at the site should have prior approval from this agency.

6. Confirmation soil and groundwater samples will be required at the site and should include the following chemicals of concern: TPH gasoline, TPH diesel, TPH motor oil, TPH as mineral spirits, chlorinated solvents, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and metals.

7. A site development plan should be submitted and should include at a minimum the following: description of the project; site map with the location of the proposed buildings, landscapes, basements, underground parking garages, known sources or potential sources of contamination and extent of any excavation associated with construction activities at the site.

8. A sump was identified at the site. Please provide more information about the location and usage of the reported sump and evaluate if the sump is a potential source of contamination.

9. Please provide us with the information of the type of business Cook Midwest, one of the tenants, used to operate at the site.

10. A contingency plan should be prepared for the site. The plan should include steps to be taken in the event that any unexpected or unusual condition is encountered during construction activities at the site. This may include uncovering abandoned tanks and associated pipings, hot spots and/ or contamination. Please include a flowchart of steps to be taken as part of the contingency plan.

11. A report should be submitted after completion of the development and should include at a minimum copies of any soil and /or groundwater disposed off site, results of soil and groundwater sampling, etc.

If you have any questions about this letter or the subject site, please contact me at (510) 567-6780.

Sincerely,

Susan L. Hugo

Susan L. Hugo
Hazardous Materials Specialist

c: Ariu Levi /Thomas Peacock, Environmental Health Services
Betty Graham, San Francisco Bay RWQCB
Barrie Cromartie / Ignacio Dayrit, City of Emeryville, 2200 Powell St., 12th Floor, Emeryville, CA 4608
Peter Cusack, Treadwell & Rollo, 555 Montgomery St., Suite 1300, San Francisco, CA 94111
SH / files

Treadwell&Rollo

FILE COPY

8 December 2000
Project 2808.01

Susan L. Hugo
Alameda County Health Care Services
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Emeryville Industrial Court
5885 Hollis Street
Emeryville, California

Dear Ms. Hugo:

We have prepared this letter in response to your recent request regarding the proposed Emeryville Industrial Court project in Emeryville, California (Figure 1). For the project, we previously performed an Environmental Site Characterization (report dated 12 May 2000) and a Geotechnical Investigation (report dated 27 July 2000). We also prepared a letter report dated 8 August 2000, in response to your letters dated 23 June 2000 and 5 July 2000.

Since our letter dated 8 August 2000, development plans have changed to include one level of below ground parking. In our previous letter report, excavation plans were to remove approximately the top 5 feet of soil for the building and garage foundation construction. This soil was to be excavated, stockpiled, and recompacted throughout the site.

Based on current development plans, including the below ground parking, new soil handling procedures will be followed. The proposed below ground parking area will include the entire site. All of the excavated soil will be properly stockpiled and soil samples will be collected and tested. Based on our review of the analytical results, the soil will be properly disposed at a licensed landfill.

Once the excavation has been completed, confirmatory soil samples will be collected and analyzed. Based on these analytical results, a deed restriction and/or additional soil management procedures may be required for the property.

We will be providing construction observation services to Mark Management Company. The Short and Long Term Risk Management Plan, Contingency Plan, Health and Safety Issues, Maintenance Requirements, and Certification Report presented in our 8 August 2000 letter report will be followed as part of the site development activities.

Treadwell & Rollo, Inc. *Environmental & Geotechnical Consultants*
555 Montgomery Street, Suite 1300, San Francisco, CA 94111
Telephone (415) 955-9040 Facsimile (415) 955-9041

Treadwell&Rollo

We trust this letter provides the information that you require. If you have any questions, please call either of us.

Sincerely yours,
TREADWELL & ROLLO, INC.

Peter J. Cusack
Senior Project Scientist

Donald D. Treadwell, PhD, PE
Principal Engineer

cc: Elaine Kirk – Mark Management Company

28080104.PJC

TABLE 2
SUMMARY OF SOIL SAMPLE DATA - METALS
5885 Hollis Street
Emeryville, California

Sample Number	Sample Date	Sample Depth	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
TR-1-4.0	4/6/2000	4	ND	24	150	21	110
TR-1-7.0	4/6/2000	7	--	--	--	--	--
TR-1-9.0	4/6/2000	9	--	--	--	--	--
TR-1-12.0	4/6/2000	12	--	--	--	--	--
TR-1-15.0	4/6/2000	15	--	--	--	--	--
TR-2-3.0	4/6/2000	3	--	--	--	--	--
TR-2-5.0	4/6/2000	5	ND	45	8.9	32	40
TR-2-7.0	4/6/2000	7	--	--	--	--	--
TR-2-10.0	4/6/2000	10	ND	50	ND	41	41
TR-2-15.0	4/6/2000	15	ND	26	ND	37	48
TR-4-3.0	4/5/2000	3	--	--	--	--	--
TR-4-5.0	4/5/2000	5	ND	30	5.8	31	40
TR-4-8.0	4/5/2000	7	--	--	--	--	--
TR-4-11.0	4/5/2000	10	ND	45	ND	56	54
TR-5-3.0	4/5/2000	3	--	--	--	--	--
TR-5-4.0	4/5/2000	4	--	--	--	--	--
TR-5-6.0	4/5/2000	6	--	--	--	--	--
TR-5-8.0	4/5/2000	8	--	--	--	--	--
TR-5-10.0	4/5/2000	10	ND	49	9.7	70	57
TR-5-15.0	4/5/2000	15	--	--	--	--	--
TR-6-3.0	4/5/2000	3	--	--	--	--	--
TR-6-5.0	4/5/2000	5	ND	55	150	38	86
TR-6-8.0	4/5/2000	8	--	--	--	--	--
TR-6-10.0	4/5/2000	10	--	--	--	--	--
TR-6-15.0	4/5/2000	15	--	--	--	--	--
TR-7-3.0	4/5/2000	3	ND	28	ND	23	26
TR-7-5.0	4/5/2000	5	--	--	--	--	--
TR-7-8.0	4/5/2000	8	--	--	--	--	--
TR-7-10.0	4/5/2000	10	--	--	--	--	--
TR-7-15.0	4/5/2000	15	--	--	--	--	--
TR-8-3.0	4/5/2000	3	--	--	--	--	--
TR-8-5.0	4/5/2000	5	--	--	--	--	--
TR-8-8.0	4/5/2000	8	--	--	--	--	--
TR-8-10.0	4/5/2000	10	ND	43	8.3	56	49
TR-8-15.0	4/5/2000	15	--	--	--	--	--
TR-9-3.0	4/5/2000	3	--	--	--	--	--
TR-9-5.0	4/5/2000	5	--	--	--	--	--
TR-9-8.0	4/5/2000	8	--	--	--	--	--
TR-9-10.0	4/5/2000	10	ND	8.8	7.6	25	39
TR-9-15.0	4/5/2000	15	--	--	--	--	--
TR-10-3.0	4/6/2000	3	ND	47	ND	35	31
TR-10-5.0	4/6/2000	5	--	--	--	--	--
TR-10-8.0	4/6/2000	8	--	--	--	--	--
TR-10-10.0	4/6/2000	10	--	--	--	--	--
TR-10-15.0	4/6/2000	15	ND	37	ND	110	61
TR-11-3.0	4/5/2000	3	--	--	--	--	--
TR-11-5.0	4/5/2000	5	ND	30	10	64	40
TR-11-8.0	4/5/2000	8	--	--	--	--	--
TR-11-10.0	4/5/2000	10	--	--	--	--	--
TR-11-15.0	4/5/2000	15	--	--	--	--	--
TR-12-3.0	4/5/2000	3	ND	17	6.8	14	28
TR-12-5.0	4/5/2000	5	ND	35	8.2	64	52
TR-12-8.0	4/5/2000	8	--	--	--	--	--
TR-12-10.0	4/5/2000	10	--	--	--	--	--
TR-12-15.0	4/5/2000	15	--	--	--	--	--
TR-13-3.0	4/6/2000	3	--	--	--	--	--
TR-13-5.0	4/6/2000	5	--	--	--	--	--
TR-13-8.0	4/6/2000	8	ND	97	28	99	73
TR-13-10.0	4/6/2000	10	--	--	--	--	--
TR-13-15.0	4/6/2000	15	--	--	--	--	--
TR-14-3.0	4/6/2000	3	--	--	--	--	--
TR-14-5.0	4/6/2000	5	ND	18	ND	15	20
TR-14-8.0	4/6/2000	8	--	--	--	--	--
TR-14-10.0	4/6/2000	10	ND	32	ND	33	36
TR-14-15.0	4/6/2000	15	--	--	--	--	--
TR-15-3.0	4/6/2000	3	--	--	--	--	--
TR-15-5.0	4/6/2000	5	ND	39	ND	64	42
TR-15-8.0	4/6/2000	8	--	--	--	--	--
TR-15-10.0	4/6/2000	10	--	--	--	--	--
TR-15-15.0	4/6/2000	15	--	--	--	--	--
TR-16-3.0	4/6/2000	3	--	--	--	--	--
TR-16-5.0	4/6/2000	5	--	--	--	--	--
TR-16-8.0	4/6/2000	8	--	--	--	--	--
TR-16-10.0	4/6/2000	10	--	--	--	--	--
TR-16-15.0	4/6/2000	15	--	--	--	--	--
TR-17-3.0	4/6/2000	3	ND	28	ND	12	19

TABLE 2
SUMMARY OF SOIL SAMPLE DATA - METALS
5885 Hollis Street
Emeryville, California

Sample Number	Sample Date	Sample Depth	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
TR-17-5.0	4/6/2000	5	--	--	--	--	--
TR-17-8.0	4/6/2000	8	--	--	--	--	--
TR-17-10.0	4/6/2000	10	ND	39	ND	53	39
TR-17-15.0	4/6/2000	15	--	--	--	--	--
TR-18-3.0	4/5/2000	3	ND	26	9.4	21	26
TR-18-5.0	4/5/2000	5	--	--	--	--	--
TR-18-8.0	4/5/2000	8	--	--	--	--	--
TR-18-10.0	4/5/2000	10	ND	37	6.4	83	48
TR-18-15.0	4/5/2000	15	--	--	--	--	--
TR-19-2.5'	1/20/05	2.5	--	--	--	--	--
TR-19-6.0'	1/20/05	6.0	--	--	--	--	--
TR-20-2.0'	1/20/05	2.0	--	--	--	--	--
TR-20-6.0'	1/20/05	6.0	--	--	--	--	--
TR-21-2.0'	1/20/05	2.0	--	--	--	--	--
TR-21-6.0'	1/20/05	6.0	--	--	--	--	--
TR-22-2.0'	1/20/05	2.0	--	--	--	--	--
TR-22-6.0'	1/20/05	6.0	--	--	--	--	--
TR-25-2.0'	1/20/05	2.0	--	--	14	--	--
TR-25-6.0'	1/20/05	6.0	--	--	--	--	--
TR-28-2.0'	1/20/05	2.0	--	--	5.6	--	--
TR-28-6.0'	1/20/05	6.0	--	--	--	--	--
TR-29-2.0'	1/20/05	2.0	--	--	9.2	--	--
TR-29-6.0'	1/20/05	6.0	--	--	--	--	--
TR-30-2.0'	1/20/05	2.0	--	--	11	--	--
TR-30-6.0'	1/20/05	6.0	--	--	--	--	--
TR-31-2.5'	1/20/05	2.5	--	--	--	--	--
TR-31-6.0'	1/20/05	6.0	--	--	--	--	--
Maximum			ND	97	150	110	110
Background			5.6	58	7	46	64
Representative concentration			ND	97	150	110	110
TTLC			100	2500	1000	2,000	5,000
STLC (TCLP) (mg/l)			1	5	5	20	250.0
ESL (Table K-1) Residential			1.7	2300.0	255	150	4,700
ESL (Table K-2) Commercial			7.4	290000.0	750	1,000	58,000
Representative Concentration vs. Residential ESL			ND	Less than ESL	Less than ESL	Less than ESL	Less than ESL
Representative Concentration vs. Commercial ESL			ND	Less than ESL	Less than ESL	Less than ESL	Less than ESL

Notes:
mg/kg = milligrams per kilogram (parts per million)
ND = Not Detected Above Laboratory Reporting Limits
-- = Not Analyzed or Not Applicable

ESL for Chromium is based on Chromium III
ESL for Lead is based on no ingestion of homegrown produce
ESL = Environmental Screening Levels established by the SFBRWQCB
SFBRWQCB = San Francisco Bay Regional Water Quality Control Board
Table K-1: ESL for Direct Exposure, Residential, 2005.
Table K-2: ESL for Direct Exposure, Commercial/Industrial, 2005.
TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
TCLP = Toxic Characteristic Leaching Procedure
BKG = Maximum detected concentration is less than background and not evaluated further

Background = Average Concentrations from LBNL, 2002. If no average concentration available, then value was selected from the following 95th percentile, 99th percentile, and median of detected concentrations (in order, depending upon available values).

LBNL = Lawrence Berkeley National Laboratory, 2002, Analysis of Background Distributions of Metals in the Soil at Lawrence Berkeley National Laboratory. Environmental Restoration Program. June

TABLE 3
SUMMARY OF GROUNDWATER SAMPLE DATA - ORGANICS
5885 Hollis Street
Emeryville, California

Sample ID	Sample Date	TPHd ug/l	TPHmo ug/l	TPHg ug/l	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	m,p-Xylene ug/l	o-Xylene ug/l	Isopropylbenzene ug/l	Propylbenzene ug/l	1,3,5-Trimethylbenzene ug/l	1,2,4-Trimethylbenzene ug/l	sec-Butylbenzene ug/l	Naphthalene ug/l	Acetone ug/l	Other VOCs ug/l
TR-1	4/6/2000	130	ND	98	--	--	--	--	--	--	--	--	--	--	--	--	ND (8010)
TR-6	4/5/2000	ND	1,400	ND	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 100	ND (8260)
TR-9	4/6/2000	ND	420	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-12	4/6/2000	700	ND	3,300	--	--	--	--	--	--	--	--	--	--	--	--	ND (8010)
TR-23 (GW)	6/20/2005	8,400 L Y	--	28,000	4,300	< 25	990	300	< 25	120	240	45	160	< 25	380	< 500	ND (8260)
TR-24 (GW)	6/15/2005	6800 L	--	91000 Y	2500	31	950	380	380	210	110	290	43	70	710	35	**
TR-25 (GW)	1/20/05	NA	NA	150,000 Y	2,500	< 10	3,600	1,100	620	--	--	--	--	--	--	--	--
TR-29 (GW)	1/20/05	280 H Y	340 L	< 50	< 0.5	0.61 C	< 0.5	0.60 C	< 0.5	--	--	--	--	--	--	--	--
TR-30 (GW)	1/20/05	640 H Y	960	< 50	< 0.5	0.85 C	< 0.5	0.85 C	< 0.5	--	--	--	--	--	--	--	--
TR-31 (GW)	1/20/05	270 H Y	1,500	< 50	< 0.5	0.56 C	< 0.5	0.57 C	< 0.5	--	--	--	--	--	--	--	ND
Maximum		8400	1500	150000	4300	31	3600	1100	620	210	240	290	160	70	710	35	ND
ESL (Table E-1a) Residential - high permeability*		500	640	500	540	380,000	170,000	160,000	160,000	NA	NA	NA	NA	NA	3,200	53,000,000	NA
ESL (Table E-1a) Commercial - high permeability*		640	640	500	1,800	380,000	170,000	160,000	160,000	NA	NA	NA	NA	NA	11,000	150,000,000	NA
Maximum vs. Residential ESL		Exceeds ESL	Exceeds ESL	Exceeds ESL	Exceeds ESL	Less than ESL	Less than ESL	Less than ESL	Less than ESL	NA	NA	NA	NA	NA	Less than ESL	Less than ESL	ND
Maximum vs. Commercial ESL		Exceeds ESL	Exceeds ESL	Exceeds ESL	Exceeds ESL	Less than ESL	Less than ESL	Less than ESL	Less than ESL	NA	NA	NA	NA	NA	Less than ESL	Less than ESL	ND

Notes:
Results presented in units indicated at top of table.
ug/l = micrograms per liter (parts per billion)
TPHg = Total Petroleum Hydrocarbons quantified as gasoline
TPHd = Total Petroleum Hydrcarbons quantified as diesel fuel
TPHmo = Total Petroleum Hydrocarbons quantified as motor oil
VOCs = Volatile Organic Compounds (see laboratory data sheets for complete list of VOCs analyzed)
< 1 = indicates not detected at the indicated laboratory detection limit
ND = Not detected at or greater than the laboratory detection limit which varies, see laboratory report
C = Presence confirmed, but RPD (Relative Percent Difference) between columns exceeds 40%
Y = Laboratory flag indicating sample exhibits chromatographic pattern which does not resemble standard
H = Laboratory flag indicating heavier hydrocarbons contributed to quantitation
L = Laboratory flag indicating lighter hydrocarbons contributed to quantitation
NA = not analyzed

Treadwell&Rollo

APPENDIX B

JUNE 2005 LABORATORY DATA

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

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

Prepared for:

Treadwell & Rollo
501 14th Street
Third Floor
Oakland, CA 94612

Date: 29-JUN-05
Lab Job Number: 180104
Project ID: 4069.01
Location: 5885 Hollis Street

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

Reviewed by: _____
Project Manager

Reviewed by: _____
Operations Manager

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	180104
Client:	Treadwell & Rollo
Project:	4069.01
Location:	5885 Hollis Street
Request Date:	06/20/05
Samples Received:	06/20/05

This hardcopy data package contains sample and QC results for two soil samples and one water sample, requested for the above referenced project on 06/20/05. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B) Water:
No analytical problems were encountered.

TPH-Purgeables and/or BTXE by GC (EPA 8015B) Soil:
High surrogate recovery was observed for bromofluorobenzene (FID) in TR-23-9.0' (lab # 180104-002), due to interference from coeluting hydrocarbon peaks; the corresponding trifluorotoluene (FID) surrogate recovery was within limits. No other analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B) Water:
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B) Soil:
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B) Water:
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B) Soil:
High recovery was observed for 1,1-dichloroethene in the LCS for batch 103099; this analyte was not detected at or above the RL in the associated samples. Low recoveries were observed for benzene and toluene in the MS/MSD for batch 103099; the parent sample was not a project sample, and the LCS was within limits. High RPD was observed for toluene; this analyte was not detected at or above the RL in the associated samples. High surrogate recoveries were observed for bromofluorobenzene and 1,2-dichloroethane-d4 in TR-23-9.0' (lab # 180104-002), due to matrix interference. No other analytical problems were encountered.

180109

Treadwell&Rollo
Environmental and Geotechnical Consultant

CHAIN OF CUSTODY RECORD

Page 1 of 1

555 Montgomery Street, Suite 1300, San Francisco, CA 94111 Ph: 415-955-9040 / Fax: 415-955-9041
2 Theatre Square, Suite 216, Orinda CA 94563 Ph: 925-253-4980 / Fax: 925-253-4985
☑ 1501 14th Street, 3rd Floor, Oakland, CA 94612 Ph: 510-874-4500 / Fax: 510-874-4507

Site Name: 5885 Hollis Street
Job Number: 4069.01
Project Manager\Contact: David Kleesattel
Samplers: EID
Recorder (Signature Required):

Turnaround Time: 24 hour!!!

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix: Soil	Water	Other	No. Containers & Preservative: HCl	H_2SO_4	HNO_3	Ice	Other	None	Analysis Requested: TPH - Diesel	TPH - Gas	VOCs	Silica gel clean-up	Hold	Remarks
-1 TR-23-9.0	6/20/05	1025		X									X	X	X			
-2 TR-23-9.0'	"	1050		X									X	XX				
-3 TR-23(GW)	↓	1105			X		4					1	X	X	X			

	Date	Time		Date	Time
Relinquished by: (Signature)	6/20/05	1203	Received by: (Signature) Lavanna Duthi	6/20/25	12:05 p.m.
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by Lab: (Signature)	Date	Time

Sent to Laboratory (Name):
Laboratory Comments/Notes:

Method of Shipment: ☐ Lab courier ☐ Fed Ex ☐ Airborne ☐ UPS ☐ Hand Carried ☐ Private Courier (Co. Name)

White Copy - Original Yellow Copy - Laboratory Pink Copy - Field

COC Number: 003611

Received ☐ On Ice ☐ Cold ☐ Ambient ☐ Intact

SOP Volume: Client Services
Section: 1.1.2
Page: 1 of 1
Effective Date: 10-May-99
Revision: 1 - Number 1 of 3
Filename: F:\QC\Forms\QC\Cooler.wpd

Curtis & Tompkins, Ltd.

COOLER RECEIPT CHECKLIST

Login#: 180104 Date Received: 6-20-05 Number of Coolers: 1
Client: Treadwell & Rollo Project: 4069.01

A. Preliminary Examination Phase
Date Opened: 6-20-05 By (print): Troy Windsor (sign) Troy Windsor

1. Did cooler come with a shipping slip (airbill, etc.)? ..... YES (NO)
   If YES, enter carrier name and airbill number: _____
2. Were custody seals on outside of cooler? ..... YES (NO)
   How many and where? _____ Seal date: _____ Seal name: _____ N/A
3. Were custody seals unbroken and intact at the date and time of arrival? ..... YES NO
4. Were custody papers dry and intact when received? ..... (YES) NO
5. Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO
6. Did you sign the custody papers in the appropriate place? ..... (YES) NO
7. Was project identifiable from custody papers? ..... (YES) NO
   If YES, enter project name at the top of this form.
8. If required, was sufficient ice used? Samples should be 2-6 degrees C. ..... (YES) NO
   Type of ice: Wet Temperature: Cold - no temp blank

B. Login Phase
Date Logged In: 6-20-05 By (print): Troy Windsor (sign) Troy Windsor

1. Describe type of packing in cooler: In ziploc type bags/vials in paper towels / 1L in bubble wrap
2. Did all bottles arrive unbroken? ..... (YES) NO
3. Were labels in good condition and complete (ID, date, time, signature, etc.)? ..... (YES) NO
4. Did bottle labels agree with custody papers? ..... (YES) NO
5. Were appropriate containers used for the tests indicated? ..... (YES) NO
6. Were correct preservatives added to samples? ..... (YES) NO
7. Was sufficient amount of sample sent for tests indicated? ..... (YES) NO
8. Were bubbles absent in VOA samples? If NO, list sample Ids below ..... (YES) NO
9. Was the client contacted concerning this sample delivery? ..... YES NO
   If YES, give details below.
   Who was called? _____ By whom? _____ Date: _____

Additional Comments:

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8015B
Field ID:	TR-23(GW)	Sampled:	06/20/05
Matrix:	Water	Received:	06/20/05
Units:	ug/L	Analyzed:	06/20/05
Batch#:	103095		

Type: SAMPLE
Lab ID: 180104-003
Diln Fac: 20.00

Analyte	Result	RL
Gasoline C7-C12	28,000	1,000

Surrogate	%REC	Limits
Trifluorotoluene (FID)	130	63-141
Bromofluorobenzene (FID)	119	79-139

Type: BLANK
Lab ID: QC298045
Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	92	63-141
Bromofluorobenzene (FID)	94	79-139

ND= Not Detected
RL= Reporting Limit

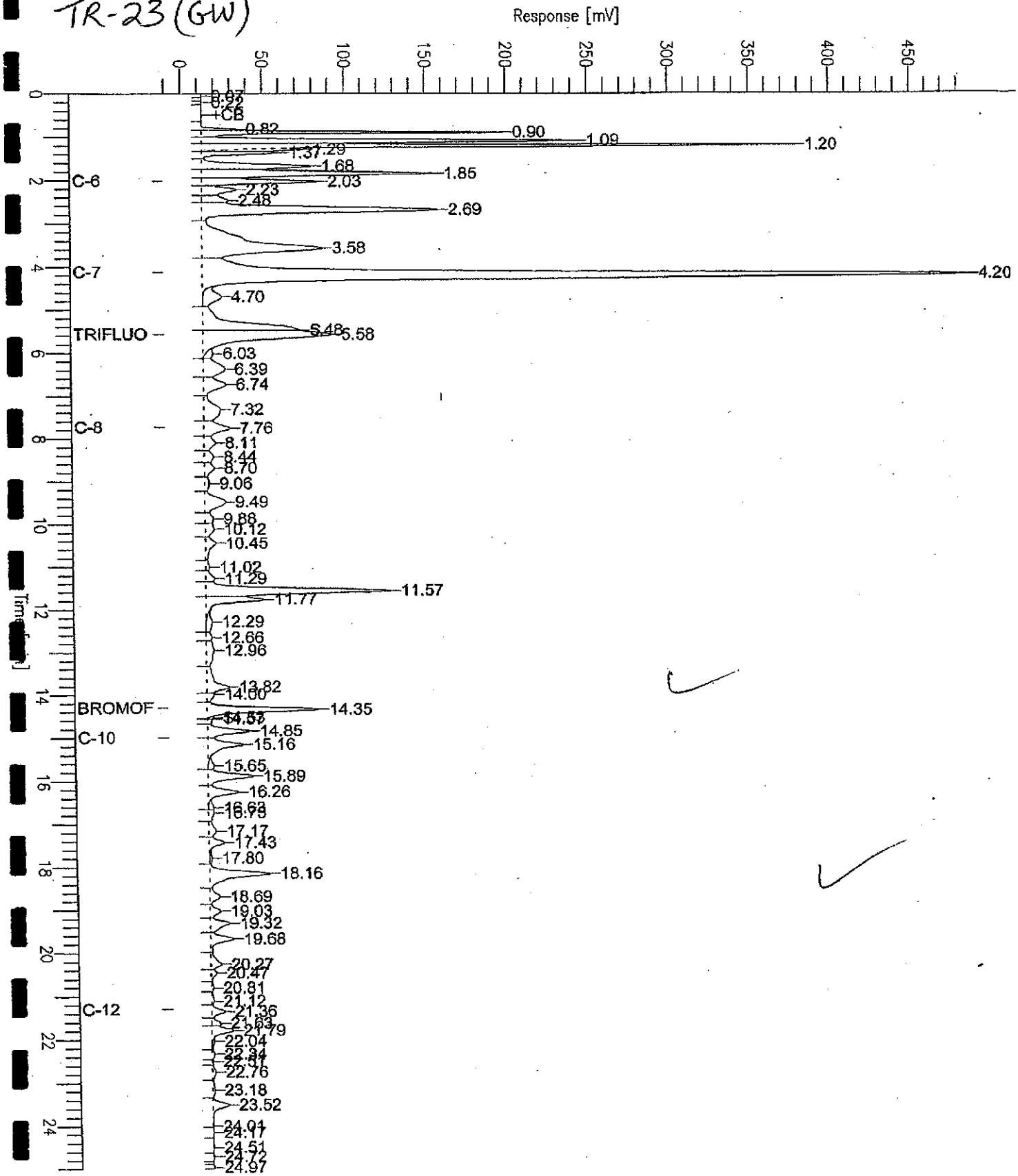
11.0

Chromatogram

Sample Name : 180104-003,103095,tvh only
FileName : G:\GC05\DATA\171G005.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 25.00 min
Scale Factor: 1.0 Plot Offset: -11 mV

Sample #: a1.0 Page 1 of 1
Date : 6/21/05 08:57 AM
Time of Injection: 6/20/05 12:50 PM
Low Point : -10.58 mV High Point : 487.65 mV
Plot Scale: 498.2 mV

TR-23 (GW)

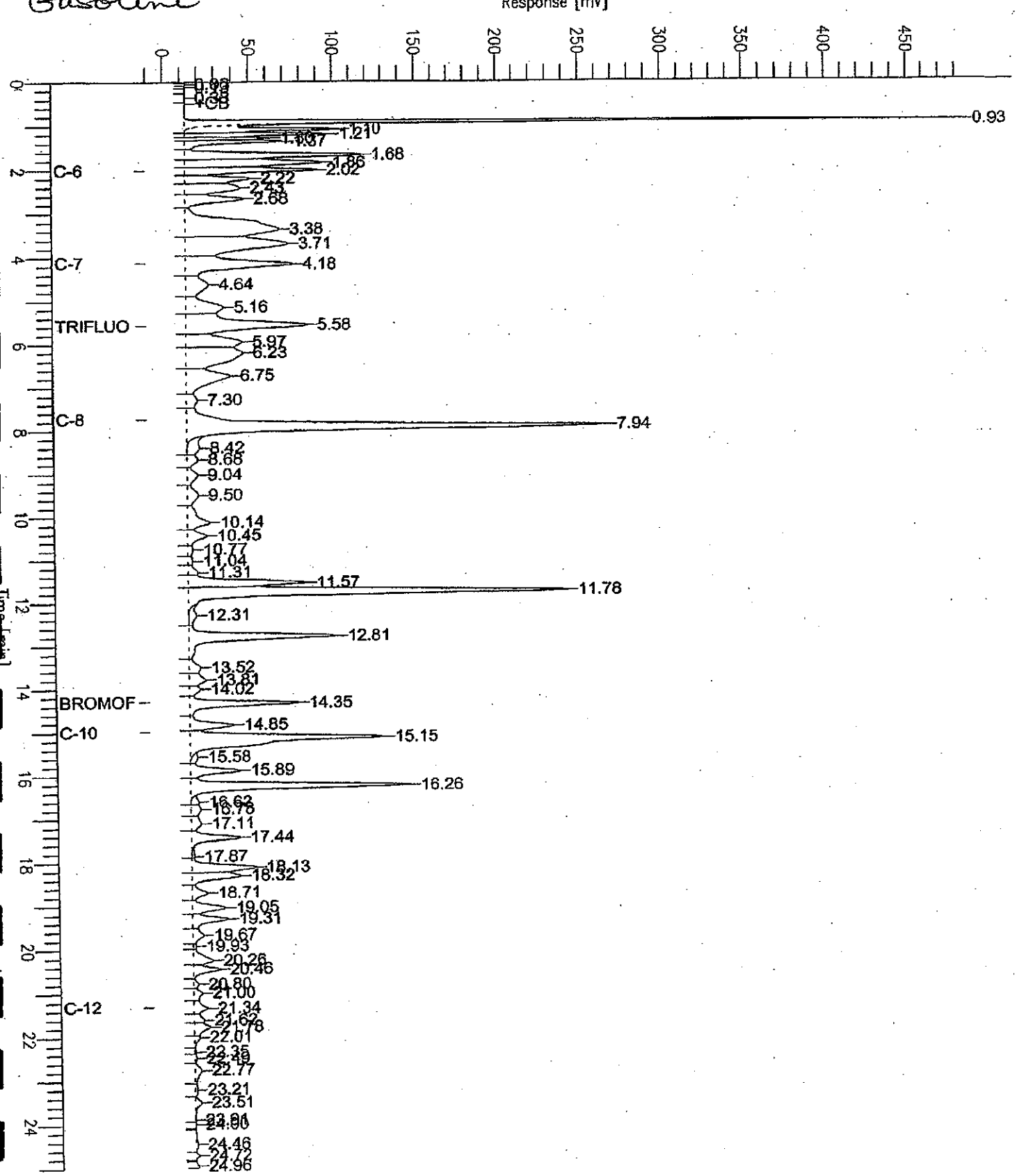


Chromatogram

Sample Name : ccv/lcs,qc298047,103095,S601,5/5000
FileName : G:\GC05\DATA\171G003.raw
Method : TVHBTXB
Start Time : 0.00 min End Time : 25.00 min
Scale Factor: 1.0 Plot Offset: -10 mV

Sample #: Page 1 of 1
Date : 6/20/05 11:19 AM
Time of Injection: 6/20/05 10:54 AM
Low Point : -10.47 mV High Point : 485.38 mV
Plot Scale: 495.9 mV

Gasoline



Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC298047	Batch#:	103095
Matrix:	Water	Analyzed:	06/20/05
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,884	94	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	132	63-141
Bromofluorobenzene (FID)	115	79-139

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	103095
MSS Lab ID:	180108-001	Sampled:	06/17/05
Matrix:	Water	Received:	06/20/05
Units:	ug/L	Analyzed:	06/21/05
Diln Fac:	1.000		

Type: MS Lab ID: QC298106

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	169.3	2,000	1,827	83	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	133	63-141
Bromofluorobenzene (FID)	118	79-139

Type: MSD Lab ID: QC298107

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,844	84	80-120	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	131	63-141
Bromofluorobenzene (FID)	114	79-139

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	06/20/05
Units:	mg/Kg	Received:	06/20/05
Basis:	as received	Analyzed:	06/20/05
Batch#:	103091		

Field ID:	TR-23-4.0'	Lab ID:	180104-001
Type:	SAMPLE	Diln Fac:	1.000

Analyte	Result	RL
Gasoline C7-C12	2.3 Y	1.1

Surrogate	%REC	Limits
Trifluorotoluene (FID)	124	60-138
Bromofluorobenzene (FID)	124	66-148

Field ID:	TR-23-9.0'	Lab ID:	180104-002
Type:	SAMPLE	Diln Fac:	20.00

Analyte	Result	RL
Gasoline C7-C12	390 Y	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	120	60-138
Bromofluorobenzene (FID)	162 *	66-148

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC298031		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	95	60-138
Bromofluorobenzene (FID)	97	66-148

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

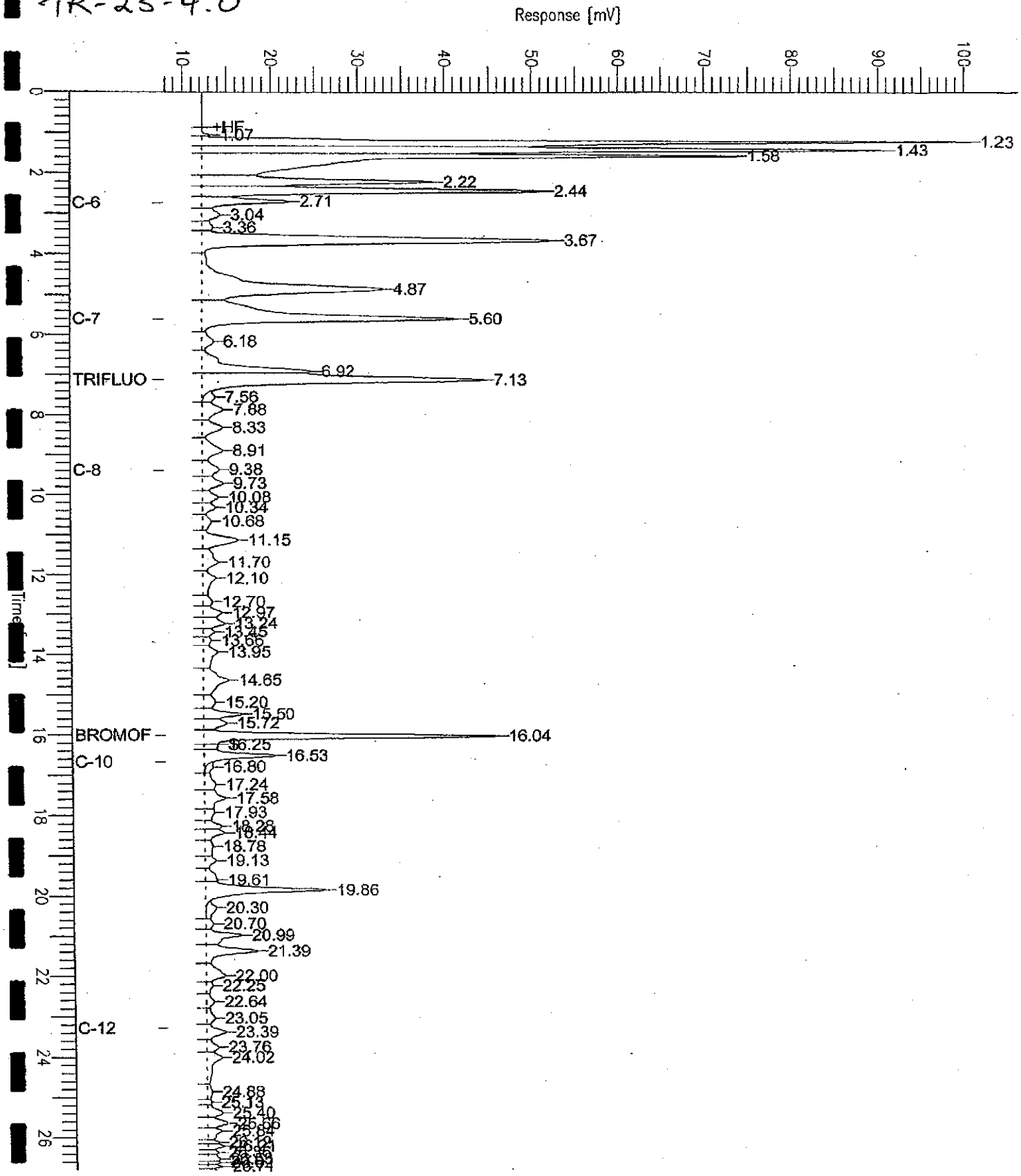
8.0

GC19 TVH 'X' Data File (FID)

Sample Name : 180104-001,103091,tvh only
FileName : G:\GC19\DATA\171X005.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 8 mV

Sample #: a Page 1 of 1
Date : 6/21/05 10:34 AM
Time of Injection: 6/20/05 12:50 PM
Low Point : 7.78 mV High Point : 100.85 mV
Plot Scale: 93.1 mV

TR-23-4.0'

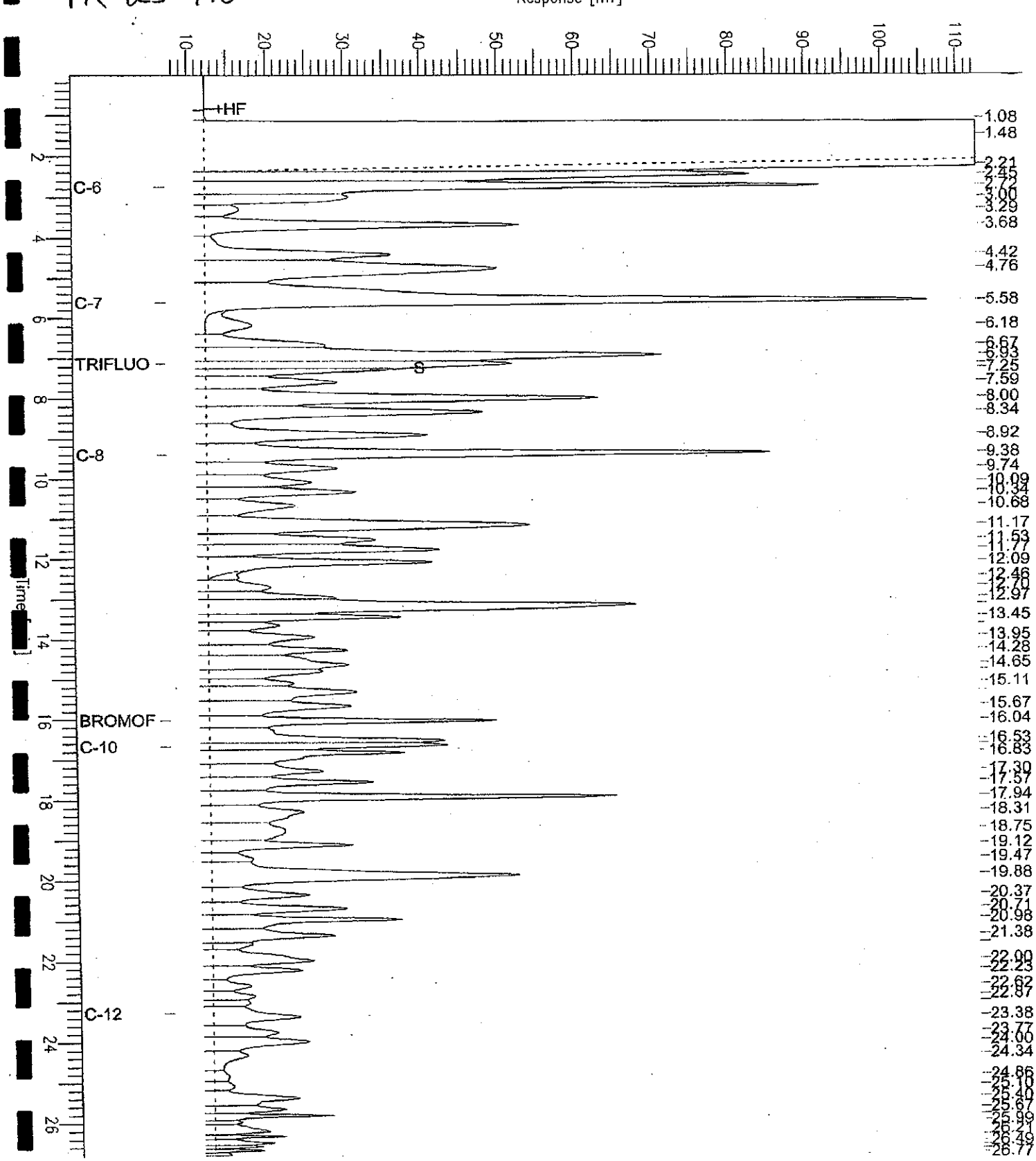


GC19 TVH 'X' Data File (FID)

Sample Name : 180104-002,103091,tvh only
FileName : G:\GC19\DATA\171X009.RAW
Method :
Start Time : 0.02 min End Time : 26.80 min
Scale Factor: 0.0 Plot Offset: 7 mV

Sample #: a Page 1 of 1
Date : 6/21/05 10:17 AM
Time of Injection: 6/20/05 03:11 PM
Low Point : 7.09 mV High Point : 112.54 mV
Plot Scale: 105.4 mV

TR-23-9.0'



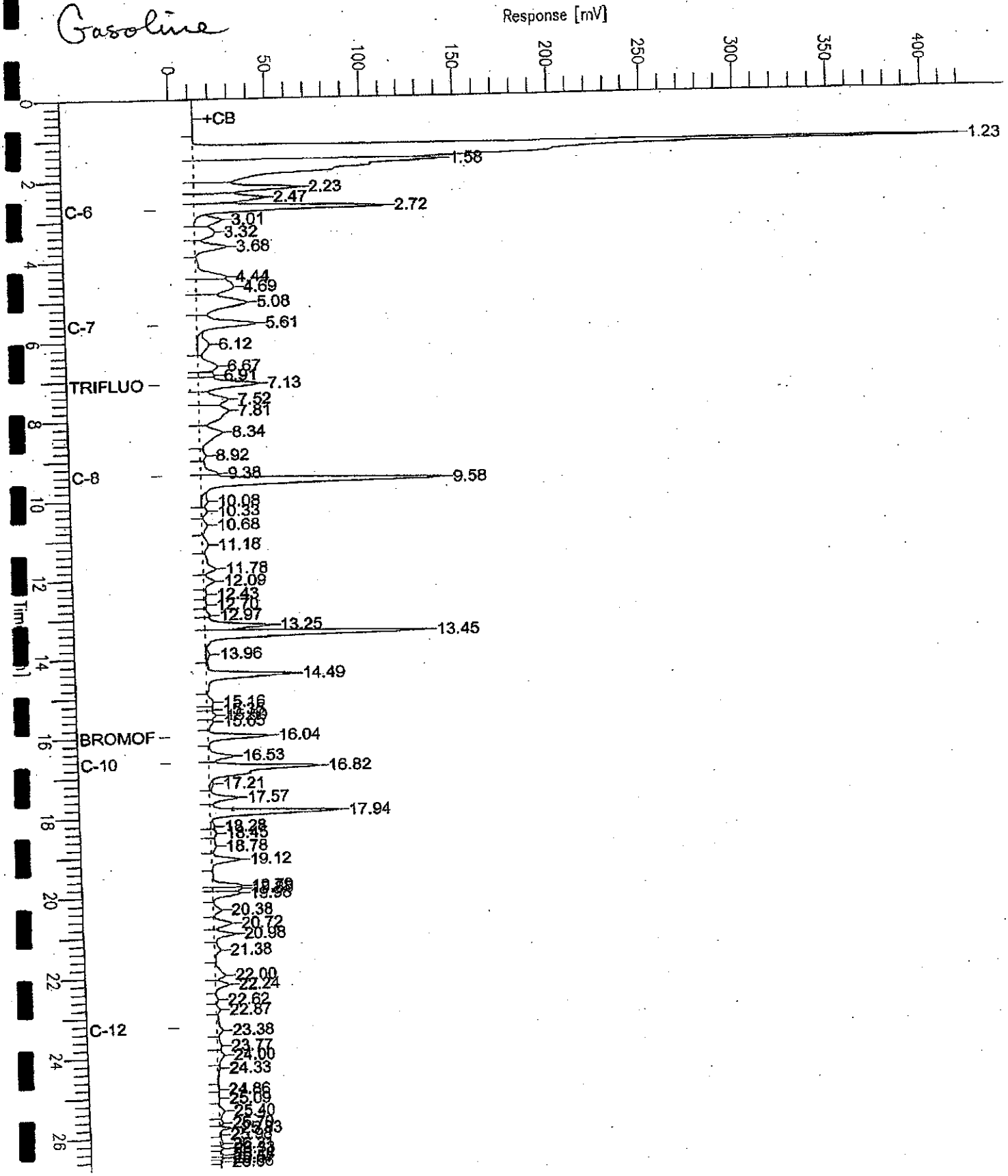
GC19 TVH 'X' Data File (FID)

ample Name : ccv/lcs,qc298033,~~1030191,~~S601,5,5000
eName : G:\GC19\DATA\171X003.raw
hod : TVHBTXE
tart Time : 0.00 min
cale Factor: 1.0

End Time : 26.80 min
Plot Offset: -8 mV

Sample #:
Date : 6/20/05 09:16 AM
Time of Injection: 6/20/05 08:49 AM
Low Point : -8.19 mV
Plot Scale: 428.8 mV

Gasoline



Curtis & Tompkins, Ltd.

atch QC Report

Total Volatile Hydrocarbons

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8015B
Type:	LCS	Basis:	as received
Lab ID:	QC298033	Diln Fac:	1.000
Matrix:	Soil	Batch#:	103091
Units:	mg/Kg	Analyzed:	06/20/05

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	9.989	100	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	117	60-138
Bromofluorobenzene (FID)	115	66-148

Curtis & Tompkins, Ltd.

atch QC Report

Total Volatile Hydrocarbons

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	180102-022	Batch#:	103091
Matrix:	Soil	Sampled:	06/14/05
Units:	mg/Kg	Received:	06/17/05
Basis:	as received	Analyzed:	06/21/05

Type: MS Lab ID: QC298130

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.5296	9.901	9.483	90	43-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	120	60-138
Bromofluorobenzene (FID)	114	66-148

Type: MSD Lab ID: QC298131

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	9.901	9.393	90	43-120	1	27

Surrogate	%REC	Limits
Trifluorotoluene (FID)	115	60-138
Bromofluorobenzene (FID)	110	66-148

RPD= Relative Percent Difference

10.0

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 3520C
Project#:	4069.01	Analysis:	EPA 8015B
Field ID:	TR-23(GW)	Sampled:	06/20/05
Matrix:	Water	Received:	06/20/05
Units:	ug/L	Prepared:	06/20/05
Diln Fac:	1.000	Analyzed:	06/21/05
Batch#:	103109		

Type: SAMPLE Lab ID: 180104-003

Analyte	Result	RL
Diesel C10-C24	8,400 L Y	50

Surrogate	%REC	Limits
Hexacosane	103	55-143

Type: BLANK Lab ID: QC298097

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	108	55-143

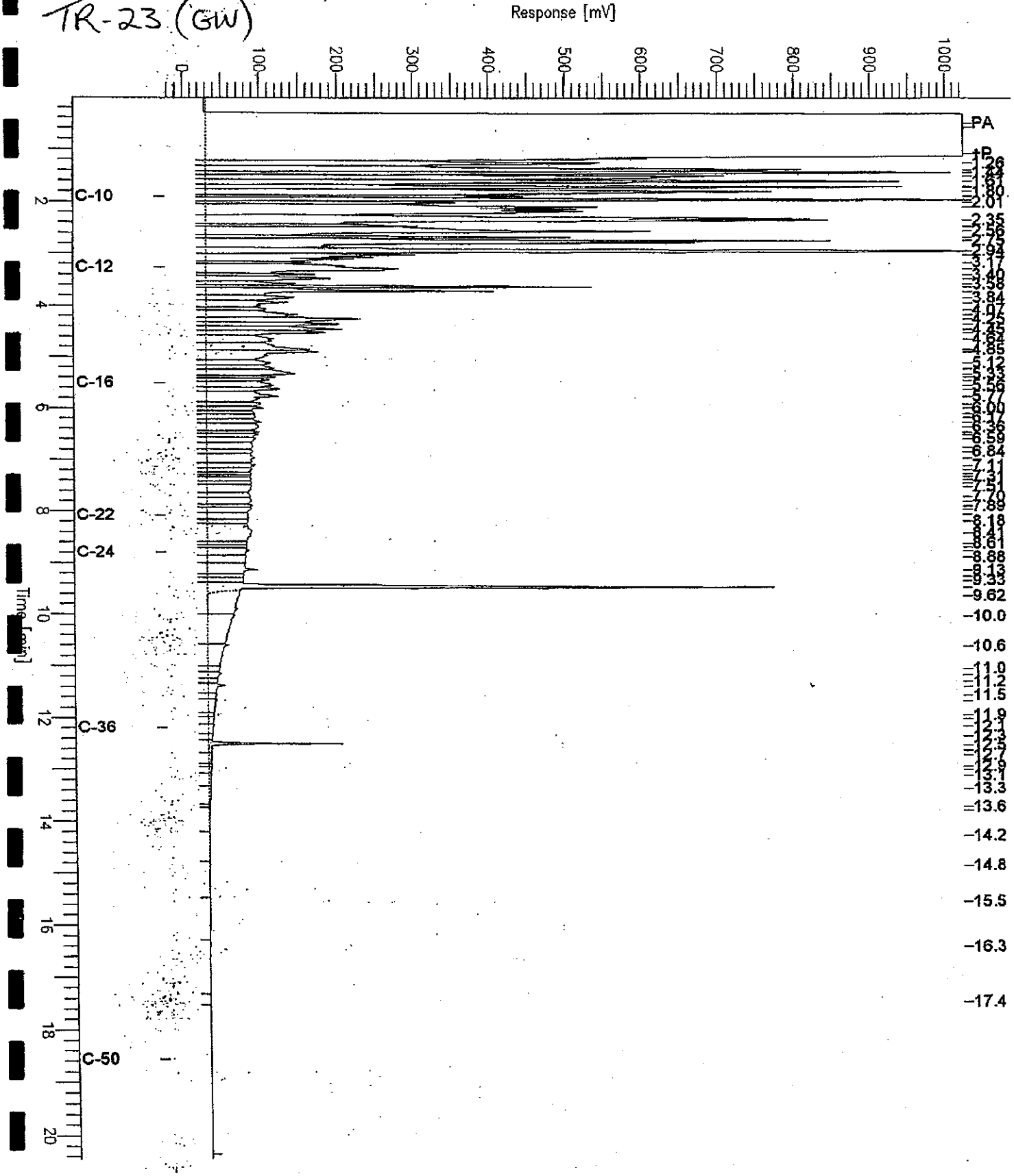
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 180104-003,103109
FileName : G:\GC1\ACHA\172A005.RAW
Method : ATEH156S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: -24 mV

Sample #: 103109 Page 1 of 1
Date : 6/21/05 01:03 PM
Time of Injection: 6/21/05 12:24 PM
Low Point : -23.83 mV High Point : 1024.00 mV
Plot Scale: 1047.8 mV

TR-23 (GW)

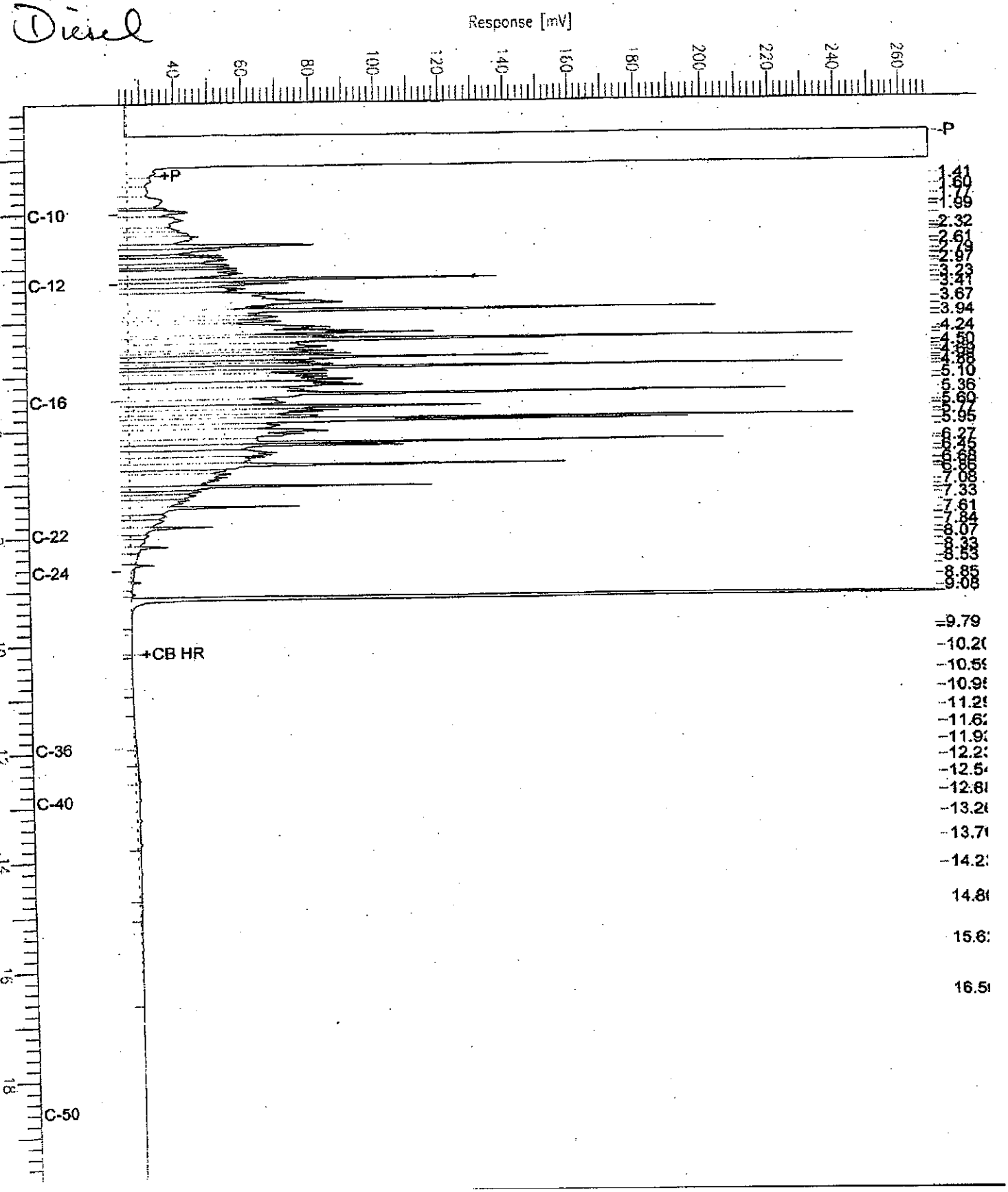


Chromatogram

mple Name : ccv,S778,dsl
leName : G:\GC17\CHA\172A003.RAW
Method : ATEH161.MTH
Start Time : 0.01 min End Time : 19.93 min
Scale Factor: 0.0 Plot Offset: 23 mV

Sample #: 500mg/L Page 1 of 1
Date : 6/21/05 12:17 PM
Time of Injection: 6/21/05 11:31 AM
Low Point : 23.20 mV High Point : 269.23 mV
Plot Scale: 246.0 mV

Diesel



Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 3520C
Project#:	4069.01	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	103109
Units:	ug/L	Prepared:	06/20/05
Diln Fac:	1.000	Analyzed:	06/21/05

Type: BS Lab ID: QC298098

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,393	96	50-133

Surrogate	%REC	Limits
Hexacosane	106	55-143

Type: BSD Lab ID: QC298099

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,532	101	50-133	6	40

Surrogate	%REC	Limits
Hexacosane	111	55-143

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	SHAKER TABLE
Project#:	4069.01	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	06/20/05
Units:	mg/Kg	Received:	06/20/05
Basis:	as received	Prepared:	06/20/05
Batch#:	103110		

Field ID:	TR-23-4.0'	Diln Fac:	5.000
Type:	SAMPLE	Analyzed:	06/21/05
Lab ID:	180104-001		

Analyte	Result	RL
Diesel C10-C24	250 H Y	5.0

Surrogate	%REC	Limits
Hexacosane	102	51-136

Field ID:	TR-23-9.0'	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	06/21/05
Lab ID:	180104-002		

Analyte	Result	RL
Diesel C10-C24	61 L Y	0.99

Surrogate	%REC	Limits
Hexacosane	106	51-136

Type:	BLANK	Analyzed:	06/20/05
Lab ID:	QC298100	Cleanup Method:	EPA 3630C
Diln Fac:	1.000		

Analyte	Result	RL
Diesel C10-C24	ND	1.0

Surrogate	%REC	Limits
Hexacosane	116	51-136

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

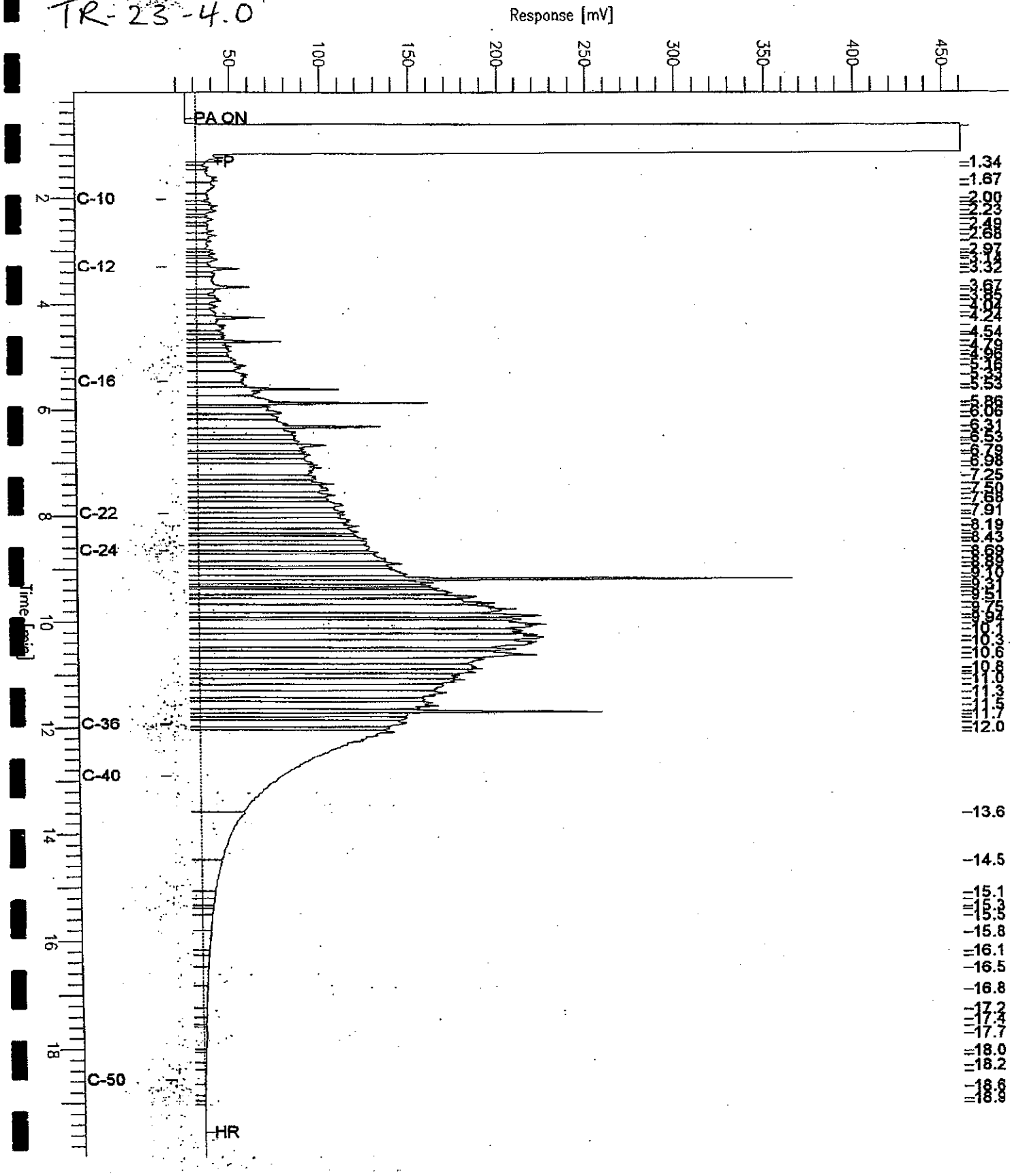
5.0

Chromatogram

Sample Name : 180104-001,103110
FileName : G:\GC17\CHA\171A030.RAW
Method : ATEH161.MTH
Start Time : 0.01 min End Time : 19.99 min
Scale Factor: 0.0 Plot Offset: 15 mV

Sample #: 103110 Page 1 of 1
Date : 6/21/05 08:36 AM
Time of Injection: 6/21/05 03:50 AM
Low Point : 14.52 mV High Point : 460.57 mV
Plot Scale: 446.0 mV

TR-23-4.0'

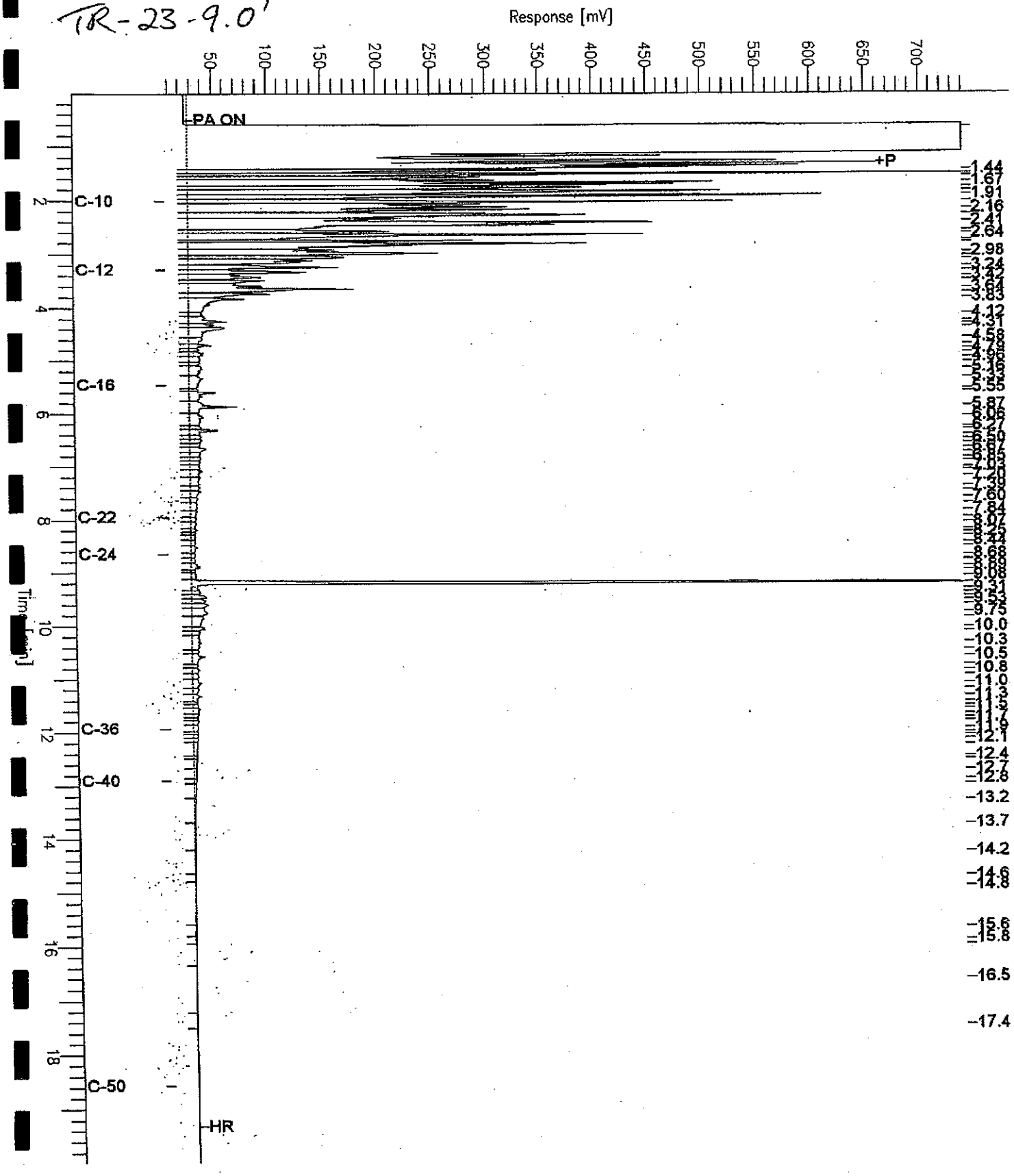


Chromatogram

Sample Name : 180104-002,103110
FileName : G:\GC17\CHA\171A027.RAW
Method : ATEH161.MTH
Start Time : 0.01 min End Time : 19.99 min
Scale Factor: 0.0 Plot Offset: 7 mV

Sample #: 103110 Page 1 of 1
Date : 6/21/05 08:13 AM
Time of Injection: 6/21/05 02:24 AM
Low Point : 6.88 mV High Point : 740.42 mV
Plot Scale: 733.5 mV

TR-23-9.0'



Chromatogram

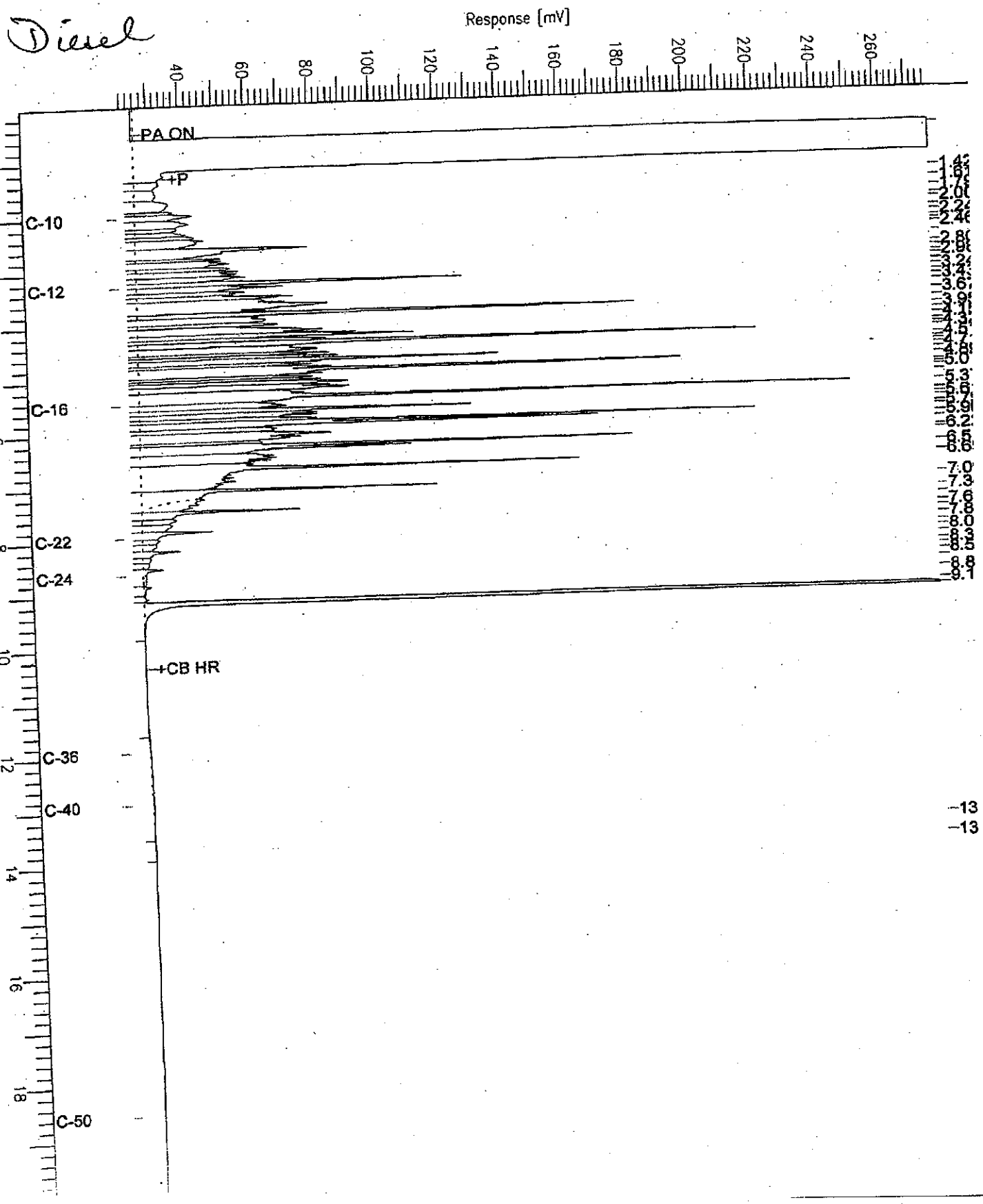
Sample Name : ccv,s778,dsl
FileName : G:\GC17\CHA\171A007.RAW
Method : ATEH161.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 19.97 min
Plot Offset: 20 mV

Sample #: 500mg/L
Date : 6/20/05 03:50 PM
Time of Injection: 6/20/05 03:18 PM
Low Point : 20.40 mV
Plot Scale: 257.1 mV

High Point : 277.54 mV

Diesel



Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	SHAKER TABLE
Project#:	4069.01	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC298101	Batch#:	103110
Matrix:	Soil	Prepared:	06/20/05
Units:	mg/Kg	Analyzed:	06/20/05
Basis:	as received		

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	50.14	46.70	93	52-137

Surrogate	%REC	Limits
Hexacosane	108	51-136

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	SHAKER TABLE
Project#:	4069.01	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	103110
MSS Lab ID:	180071-001	Sampled:	06/16/05
Matrix:	Soil	Received:	06/16/05
Units:	mg/Kg	Prepared:	06/20/05
Basis:	as received	Analyzed:	06/21/05
Diln Fac:	1.000		

Type: MS Lab ID: QC298102

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	4.317	49.96	67.39	126	11-169

Surrogate	%REC	Limits
Hexacosane	120	51-136

Type: MSD Lab ID: QC298103

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.85	60.43	113	11-169	11	49

Surrogate	%REC	Limits
Hexacosane	109	51-136

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	TR-23(GW)	Batch#:	103093
Lab ID:	180104-003	Sampled:	06/20/05
Matrix:	Water	Received:	06/20/05
Units:	ug/L	Analyzed:	06/20/05
Diln Fac:	50.00		

Analyte	Result	RL
Freon 12	ND	50
Chloromethane	ND	50
Vinyl Chloride	ND	25
Bromomethane	ND	50
Chloroethane	ND	50
Trichlorofluoromethane	ND	50
Acetone	ND	500
Freon 113	ND	250
1,1-Dichloroethene	ND	25
Methylene Chloride	ND	500
Carbon Disulfide	ND	25
MTBE	ND	25
trans-1,2-Dichloroethene	ND	25
Vinyl Acetate	ND	500
1,1-Dichloroethane	ND	25
2-Butanone	ND	500
cis-1,2-Dichloroethene	ND	25
2,2-Dichloropropane	ND	25
Chloroform	ND	25
Bromochloromethane	ND	25
1,1,1-Trichloroethane	ND	25
1,1-Dichloropropene	ND	25
Carbon Tetrachloride	ND	25
1,2-Dichloroethane	ND	25
Benzene	4,300	25
Trichloroethene	ND	25
1,2-Dichloropropane	ND	25
Bromodichloromethane	ND	25
Dibromomethane	ND	25
4-Methyl-2-Pentanone	ND	500
cis-1,3-Dichloropropene	ND	25
Toluene	ND	25
trans-1,3-Dichloropropene	ND	25
1,1,2-Trichloroethane	ND	25
2-Hexanone	ND	500
1,3-Dichloropropane	ND	25
Tetrachloroethene	ND	25

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	TR-23(GW)	Batch#:	103093
Lab ID:	180104-003	Sampled:	06/20/05
Matrix:	Water	Received:	06/20/05
Units:	ug/L	Analyzed:	06/20/05
Diln Fac:	50.00		

Analyte	Result	RL
Dibromochloromethane	ND	25
1,2-Dibromoethane	ND	25
Chlorobenzene	ND	25
1,1,1,2-Tetrachloroethane	ND	25
Ethylbenzene	990	25
m,p-Xylenes	300	25
o-Xylene	ND	25
Styrene	ND	25
Bromoform	ND	50
Isopropylbenzene	120	25
1,1,2,2-Tetrachloroethane	ND	25
1,2,3-Trichloropropane	ND	25
Propylbenzene	240	25
Bromobenzene	ND	25
1,3,5-Trimethylbenzene	45	25
2-Chlorotoluene	ND	25
4-Chlorotoluene	ND	25
tert-Butylbenzene	ND	25
1,2,4-Trimethylbenzene	160	25
sec-Butylbenzene	ND	25
para-Isopropyl Toluene	ND	25
1,3-Dichlorobenzene	ND	25
1,4-Dichlorobenzene	ND	25
n-Butylbenzene	ND	25
1,2-Dichlorobenzene	ND	25
1,2-Dibromo-3-Chloropropane	ND	25
1,2,4-Trichlorobenzene	ND	25
Hexachlorobutadiene	ND	25
Naphthalene	380	100
1,2,3-Trichlorobenzene	ND	25

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-120
1,2-Dichloroethane-d4	102	80-122
Toluene-d8	100	80-120
Bromofluorobenzene	102	80-124

ND= Not Detected
RL= Reporting Limit

2.0

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC298039	Batch#:	103093
Matrix:	Water	Analyzed:	06/20/05
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

atch QC Report

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC298039	Batch#:	103093
Matrix:	Water	Analyzed:	06/20/05
Units:	ug/L		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	0.5
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-120
1,2-Dichloroethane-d4	101	80-122
Toluene-d8	99	80-120
Bromofluorobenzene	103	80-124

D= Not Detected
RL= Reporting Limit

3.0

Curtis & Tompkins, Ltd.

atch QC Report

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	103093
Units:	ug/L	Analyzed:	06/20/05
Diln Fac:	1.000		

Type: BS Lab ID: QC298037

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	26.35	105	75-121
Benzene	25.00	26.04	104	80-120
Trichloroethene	25.00	27.32	109	78-120
Toluene	25.00	27.10	108	80-120
Chlorobenzene	25.00	27.01	108	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-120
1,2-Dichloroethane-d4	99	80-122
Toluene-d8	101	80-120
Bromofluorobenzene	100	80-124

Type: BSD Lab ID: QC298038

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	25.69	103	75-121	3	20
Benzene	25.00	26.16	105	80-120	0	20
Trichloroethene	25.00	26.62	106	78-120	3	20
Toluene	25.00	27.12	108	80-120	0	20
Chlorobenzene	25.00	26.56	106	80-120	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-120
1,2-Dichloroethane-d4	99	80-122
Toluene-d8	100	80-120
Bromofluorobenzene	101	80-124

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	TR-23-4.0'	Diln Fac:	1.000
Lab ID:	180104-001	Batch#:	103099
Matrix:	Soil	Sampled:	06/20/05
Units:	ug/Kg	Received:	06/20/05
Basis:	as received	Analyzed:	06/20/05

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	42	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	14	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	97	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	TR-23-4.0'	Diln Fac:	1.000
Lab ID:	180104-001	Batch#:	103099
Matrix:	Soil	Sampled:	06/20/05
Units:	ug/Kg	Received:	06/20/05
Basis:	as received	Analyzed:	06/20/05

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	8.3	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	13	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	102	78-120
1,2-Dichloroethane-d4	107	80-120
Toluene-d8	101	80-120
Bromofluorobenzene	105	80-120

ND= Not Detected
RL= Reporting Limit

14.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	TR-23-9.0'	Basis:	as received
Lab ID:	180104-002	Sampled:	06/20/05
Matrix:	Soil	Received:	06/20/05
Units:	ug/Kg		

Analyte	Result	RL	Dil Fac	Batch#	Analyzed
Freon 12	ND	9.4	0.9434	103099	06/20/05
Chloromethane	ND	9.4	0.9434	103099	06/20/05
Vinyl Chloride	ND	9.4	0.9434	103099	06/20/05
Bromomethane	ND	9.4	0.9434	103099	06/20/05
Chloroethane	ND	9.4	0.9434	103099	06/20/05
Trichlorofluoromethane	ND	4.7	0.9434	103099	06/20/05
Acetone	36	19	0.9434	103099	06/20/05
Freon 113	ND	4.7	0.9434	103099	06/20/05
1,1-Dichloroethene	ND	4.7	0.9434	103099	06/20/05
Methylene Chloride	ND	19	0.9434	103099	06/20/05
Carbon Disulfide	ND	4.7	0.9434	103099	06/20/05
MTBE	ND	4.7	0.9434	103099	06/20/05
trans-1,2-Dichloroethene	ND	4.7	0.9434	103099	06/20/05
Vinyl Acetate	ND	47	0.9434	103099	06/20/05
1,1-Dichloroethane	ND	4.7	0.9434	103099	06/20/05
2-Butanone	23	9.4	0.9434	103099	06/20/05
cis-1,2-Dichloroethene	ND	4.7	0.9434	103099	06/20/05
2,2-Dichloropropane	ND	4.7	0.9434	103099	06/20/05
Chloroform	ND	4.7	0.9434	103099	06/20/05
Bromochloromethane	ND	4.7	0.9434	103099	06/20/05
1,1,1-Trichloroethane	ND	4.7	0.9434	103099	06/20/05
1,1-Dichloropropene	ND	4.7	0.9434	103099	06/20/05
Carbon Tetrachloride	ND	4.7	0.9434	103099	06/20/05
1,2-Dichloroethane	ND	4.7	0.9434	103099	06/20/05
Benzene	200	130	25.00	103173	06/22/05
Trichloroethene	ND	4.7	0.9434	103099	06/20/05
1,2-Dichloropropane	ND	4.7	0.9434	103099	06/20/05
Bromodichloromethane	ND	4.7	0.9434	103099	06/20/05
Dibromomethane	ND	4.7	0.9434	103099	06/20/05
4-Methyl-2-Pentanone	ND	9.4	0.9434	103099	06/20/05
cis-1,3-Dichloropropene	ND	4.7	0.9434	103099	06/20/05
Toluene	ND	4.7	0.9434	103099	06/20/05
trans-1,3-Dichloropropene	ND	4.7	0.9434	103099	06/20/05
1,1,2-Trichloroethane	ND	4.7	0.9434	103099	06/20/05
2-Hexanone	ND	9.4	0.9434	103099	06/20/05
1,3-Dichloropropane	ND	4.7	0.9434	103099	06/20/05
Tetrachloroethene	ND	4.7	0.9434	103099	06/20/05

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	TR-23-9.0'	Basis:	as received
Lab ID:	180104-002	Sampled:	06/20/05
Matrix:	Soil	Received:	06/20/05
Units:	ug/Kg		

Analyte	Result	RL	Dilm Fac	Batch#	Analyzed
Dibromochloromethane	ND	4.7	0.9434	103099	06/20/05
1,2-Dibromoethane	ND	4.7	0.9434	103099	06/20/05
Chlorobenzene	ND	4.7	0.9434	103099	06/20/05
1,1,1,2-Tetrachloroethane	ND	4.7	0.9434	103099	06/20/05
Ethylbenzene	600	130	25.00	103173	06/22/05
m,p-Xylenes	190	130	25.00	103173	06/22/05
o-Xylene	22	4.7	0.9434	103099	06/20/05
Styrene	ND	4.7	0.9434	103099	06/20/05
Bromoform	ND	4.7	0.9434	103099	06/20/05
Isopropylbenzene	180	130	25.00	103173	06/22/05
1,1,2,2-Tetrachloroethane	ND	4.7	0.9434	103099	06/20/05
1,2,3-Trichloropropane	ND	4.7	0.9434	103099	06/20/05
Propylbenzene	480	130	25.00	103173	06/22/05
Bromobenzene	ND	4.7	0.9434	103099	06/20/05
1,3,5-Trimethylbenzene	69	4.7	0.9434	103099	06/20/05
2-Chlorotoluene	ND	4.7	0.9434	103099	06/20/05
4-Chlorotoluene	ND	4.7	0.9434	103099	06/20/05
tert-Butylbenzene	ND	4.7	0.9434	103099	06/20/05
1,2,4-Trimethylbenzene	250	130	25.00	103173	06/22/05
sec-Butylbenzene	42	4.7	0.9434	103099	06/20/05
para-Isopropyl Toluene	57	4.7	0.9434	103099	06/20/05
1,3-Dichlorobenzene	ND	4.7	0.9434	103099	06/20/05
1,4-Dichlorobenzene	ND	4.7	0.9434	103099	06/20/05
n-Butylbenzene	290	130	25.00	103173	06/22/05
1,2-Dichlorobenzene	ND	4.7	0.9434	103099	06/20/05
1,2-Dibromo-3-Chloropropane	ND	4.7	0.9434	103099	06/20/05
1,2,4-Trichlorobenzene	ND	4.7	0.9434	103099	06/20/05
Hexachlorobutadiene	ND	4.7	0.9434	103099	06/20/05
Naphthalene	310	130	25.00	103173	06/22/05
1,2,3-Trichlorobenzene	ND	4.7	0.9434	103099	06/20/05

Surrogate	%REC	Limits	Dilm Fac	Batch#	Analyzed
Dibromofluoromethane	89	78-120	0.9434	103099	06/20/05
1,2-Dichloroethane-d4	132 *	80-120	0.9434	103099	06/20/05
Toluene-d8	102	80-120	0.9434	103099	06/20/05
Bromofluorobenzene	159 *	80-120	0.9434	103099	06/20/05
Trifluorotoluene (MeOH)	89	52-135	25.00	103173	06/22/05

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

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC298064	Diln Fac:	1.000
Matrix:	Soil	Batch#:	103099
Units:	ug/Kg	Analyzed:	06/20/05

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

ND= Not Detected
RL= Reporting Limit

16.0

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC298064	Diln Fac:	1.000
Matrix:	Soil	Batch#:	103099
Units:	ug/Kg	Analyzed:	06/20/05

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

Surrogate	%REC	Limits
Dibromofluoromethane	97	78-120
1,2-Dichloroethane-d4	103	80-120
Toluene-d8	101	80-120
Bromofluorobenzene	101	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

atch QC Report

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC298351	Batch#:	103173
Matrix:	Water	Analyzed:	06/22/05
Units:	ug/L		

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

D= Not Detected
RL= Reporting Limit

21.0

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC298351	Batch#:	103173
Matrix:	Water	Analyzed:	06/22/05
Units:	ug/L		

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

Surrogate	%REC	Limits
Dibromofluoromethane	100	78-120
1,2-Dichloroethane-d4	105	80-120
Toluene-d8	101	80-120
Bromofluorobenzene	100	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Type:	LCS	Basis:	as received
Lab ID:	QC298063	Diln Fac:	1.000
Matrix:	Soil	Batch#:	103099
Units:	ug/Kg	Analyzed:	06/20/05

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	63.64	127 *	77-124
Benzene	50.00	56.00	112	80-120
Trichloroethene	50.00	59.34	119	80-120
Toluene	50.00	58.22	116	80-120
Chlorobenzene	50.00	56.63	113	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	94	78-120
1,2-Dichloroethane-d4	99	80-120
Toluene-d8	101	80-120
Bromofluorobenzene	96	80-120

* = Value outside of QC limits; see narrative

17.0

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	103173
Units:	ug/L	Analyzed:	06/22/05
Diln Fac:	1.000		

Type: BS Lab ID: QC298349

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	28.16	113	77-124
Benzene	25.00	26.10	104	80-120
Trichloroethene	25.00	26.62	106	80-120
Toluene	25.00	25.65	103	80-120
Chlorobenzene	25.00	26.07	104	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	102	78-120
1,2-Dichloroethane-d4	102	80-120
Toluene-d8	102	80-120
Bromofluorobenzene	102	80-120

Type: BSD Lab ID: QC298350

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	26.55	106	77-124	6	20
Benzene	25.00	25.96	104	80-120	1	20
Trichloroethene	25.00	27.29	109	80-120	3	20
Toluene	25.00	26.46	106	80-120	3	20
Chlorobenzene	25.00	25.24	101	80-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	100	78-120
1,2-Dichloroethane-d4	103	80-120
Toluene-d8	101	80-120
Bromofluorobenzene	99	80-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180104	Location:	5885 Hollis Street
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Diln Fac:	0.9804
MSS Lab ID:	180101-018	Batch#:	103099
Matrix:	Soil	Sampled:	06/13/05
Units:	ug/Kg	Received:	06/17/05
Basis:	as received	Analyzed:	06/21/05

Type: MS Lab ID: QC298104

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.6852	24.51	22.20	91	70-120
Benzene	23.46	24.51	37.64	58 *	70-120
Trichloroethene	<0.5292	24.51	22.65	92	65-126
Toluene	60.45	24.51	60.68	1 *	64-120
Chlorobenzene	<0.5680	24.51	22.29	91	59-120

Surrogate	%REC	Limits
Dibromofluoromethane	93	78-120
1,2-Dichloroethane-d4	89	80-120
Toluene-d8	95	80-120
Bromofluorobenzene	89	80-120

Type: MSD Lab ID: QC298105

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	24.51	22.07	90	70-120	1	20
Benzene	24.51	42.86	79	70-120	13	20
Trichloroethene	24.51	22.73	93	65-126	0	20
Toluene	24.51	74.76	58 *	64-120	21 *	20
Chlorobenzene	24.51	22.37	91	59-120	0	20

Surrogate	%REC	Limits
Dibromofluoromethane	90	78-120
1,2-Dichloroethane-d4	89	80-120
Toluene-d8	93	80-120
Bromofluorobenzene	88	80-120

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference

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

ANALYTICAL REPORT

Prepared for:

Treadwell & Rollo
501 14th Street
Third Floor
Oakland, CA 94612

Date: 23-JUN-05
Lab Job Number: 180038
Project ID: 4069.01
Location: 5885 Hollis St

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

Reviewed by: _____
Project Manager

Reviewed by: _____
Operations Manager

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	180038
Client:	Treadwell & Rollo
Project:	4069.01
Location:	5885 Hollis St
Request Date:	06/15/05
Samples Received:	06/15/05

This hardcopy data package contains sample and QC results for three soil samples and one water sample, requested for the above referenced project on 06/15/05. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B) Water:
High surrogate recoveries were observed for bromofluorobenzene (FID) and trifluorotoluene (FID) in TR-24-GW (lab # 180038-006), due to interference from coeluting hydrocarbon peaks. No other analytical problems were encountered.

TPH-Purgeables and/or BTXE by GC (EPA 8015B) Soil:
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B) Water:
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B) Soil:
High recovery was observed for diesel C10-C24 in the MS of TR-24-4.0 (lab # 180038-002), due to matrix interference; the LCS was within limits. High RPD was also observed for diesel C10-C24 in the MS/MSD of TR-24-4.0 (lab # 180038-002), due to matrix interference. No other analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B) Water:
Hexachlorobutadiene was detected above the RL in the method blank for batch 103009; this analyte was not detected in the sample at or above the RL. No other analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B) Soil:
High recoveries were observed for 1,1-dichloroethene and trichloroethene in the MS/MSD for batch 102980; the parent sample was not a project sample, the LCS was within limits, and these analytes were not detected at or above the RL in the associated samples. High recoveries were observed for trichloroethene in the MS/MSD for batch 103011; the parent sample was not a project sample, the LCS was within limits, and these high recoveries were not associated with any reported results. Response exceeding the instrument's linear range was observed for trichloroethene in the MS for batch 103011; affected data was qualified with "b". No other analytical problems were encountered.

180058

Treadwell&Rollo
Environmental and Geotechnical Consultant

CHAIN OF CUSTODY RECORD

Page 1 of 1

555 Montgomery Street, Suite 1300, San Francisco, CA 94111 Ph: 415-955-9040 / Fax: 415-955-9041
2 Theatre Square, Suite 216, Orinda CA 94563 Ph: 925-253-4980 / Fax: 925-253-4985
[X] 501 14th Street, 3rd Floor, Oakland, CA 94612 Ph: 510-874-4500 / Fax: 510-874-4507

Site Name: 5885 Hollis Street
Job Number: 4069.01
Project Manager\Contact: David Kleesattel
Samplers: Eric Morita
Recorder (Signature Required):

Turnaround Time: 24 hour rush

	Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix: Soil	Water	Other	No. Containers & Preservative: HCl	H_2SO_4	HNO_3	Ice	Other		Analysis Requested: TPH-gas	TPH-diesel	VOCs 8260	Silica gel clean-up	Hold	Remarks
-1	TR-24-3.0	6/15/05	10:41		X						1							X	
-2	TR-24-4.0		10:50		X						1			X	X	X			
-3	TR-24-6.0		11:00		X						1								
-4	TR-26-4.0		14:00		X						1			X	X	X			
-5	TR-27-2.0		15:00		X						1			X	X	X			
-6	TR-24-GW		12:00			X		4			1		#	X	X	X			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	6/15/05	4:20		6/15/05	4:20
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by Lab: (Signature)	Date	Time

Sent to Laboratory (Name): Curtis and Tompkins Ltd
Laboratory Comments/Notes:

Method of Shipment: [ ] Lab courier [ ] Fed Ex [ ] Airborne [ ] UPS [X] Hand Carried [ ] Private Courier (Co. Name)

White Copy - Original Yellow Copy - Laboratory Pink Copy - Field

COC Number: 003609

SOP Volume: Client Services
Section: 1.1.2
Page: 1 of 1
Effective Date: 10-May-99
Revision: 1 Number 1 of 3
Filename: F:\QC\Forms\QC\Cooler.wpd

Curtis & Tompkins, Ltd.

COOLER RECEIPT CHECKLIST

Login#: 180038 Date Received: 6-15-05 Number of Coolers: 1
Client: Treadwell & Rollo Project: 4969.01

A. Preliminary Examination Phase
Date Opened: 6-15-05 By (print): Troy Windsor (sign) Troy Windsor

1. Did cooler come with a shipping slip (airbill, etc.)? YES NO
If YES, enter carrier name and airbill number:
2. Were custody seals on outside of cooler? YES NO
How many and where: Seal date: Seal name: N/A
3. Were custody seals unbroken and intact at the date and time of arrival? YES NO
4. Were custody papers dry and intact when received? YES NO
5. Were custody papers filled out properly (ink, signed, etc.)? YES NO
6. Did you sign the custody papers in the appropriate place? YES NO
7. Was project identifiable from custody papers? YES NO
If YES, enter project name at the top of this form.
8. If required, was sufficient ice used? Samples should be 2-6 degrees C. YES NO
Type of ice: wet Temperature: cold - no temp blank

B. Login Phase
Date Logged In: 6-15-05 By (print): Troy Windsor (sign) Troy Windsor

1. Describe type of packing in cooler: In ziplock type bags, vocs wrapped in paper towels.
2. Did all bottles arrive unbroken? YES NO
3. Were labels in good condition and complete (ID, date, time, signature, etc.)? YES NO
4. Did bottle labels agree with custody papers? YES NO
5. Were appropriate containers used for the tests indicated? YES NO
6. Were correct preservatives added to samples? YES NO
7. Was sufficient amount of sample sent for tests indicated? YES NO
8. Were bubbles absent in VOA samples? If NO, list sample Ids below. YES NO
9. Was the client contacted concerning this sample delivery? YES NO
If YES, give details below.
Who was called? By whom? Date:

Additional Comments:

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	180038	Location:	Emeryville Industrial Ct
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8015B
Field ID:	TR-24-GW	Sampled:	06/15/05
Matrix:	Water	Received:	06/15/05
Units:	ug/L	Analyzed:	06/15/05
Batch#:	102966		

Type:	SAMPLE	Diln Fac:	40.00
Lab ID:	180038-006		

Analyte	Result	RL
Gasoline C7-C12	91,000 Y	2,000

Surrogate	%REC	Limits
Trifluorotoluene (FID)	148 *	63-141
Bromofluorobenzene (FID)	159 *	79-139

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC297557		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	97	63-141
Bromofluorobenzene (FID)	103	79-139

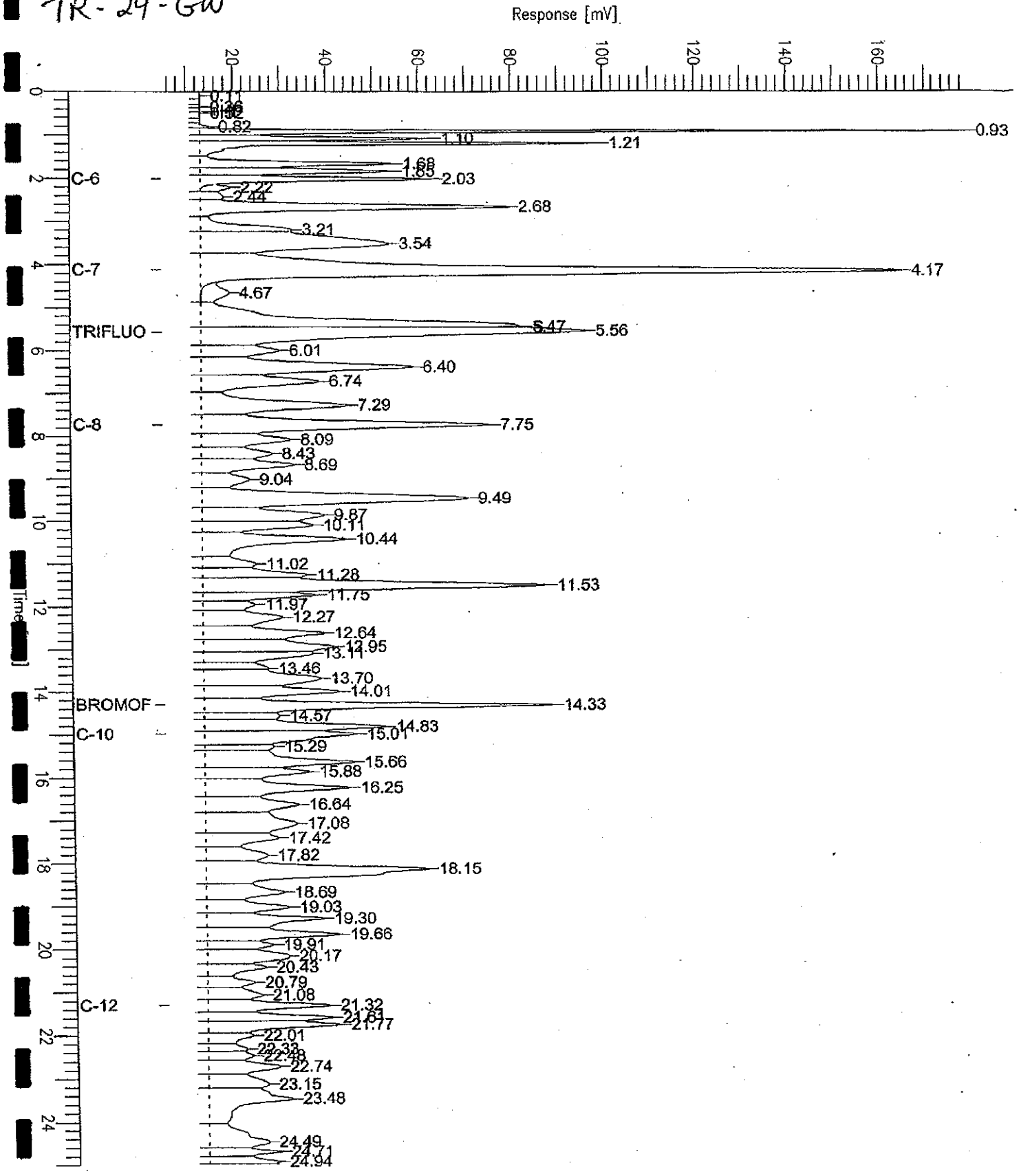
*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 180038-006,102966,tvh
FileName : G:\GC05\DATA\166G014.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 25.00 min
Scale Factor: 1.0 Plot Offset: 5 mV

Sample #: a1.0 Page 1 of 1
Date : 6/16/05 08:51 AM
Time of Injection: 6/15/05 06:46 PM
Low Point : 4.75 mV High Point : 179.60 mV
Plot Scale: 174.8 mV

TR-24-GW

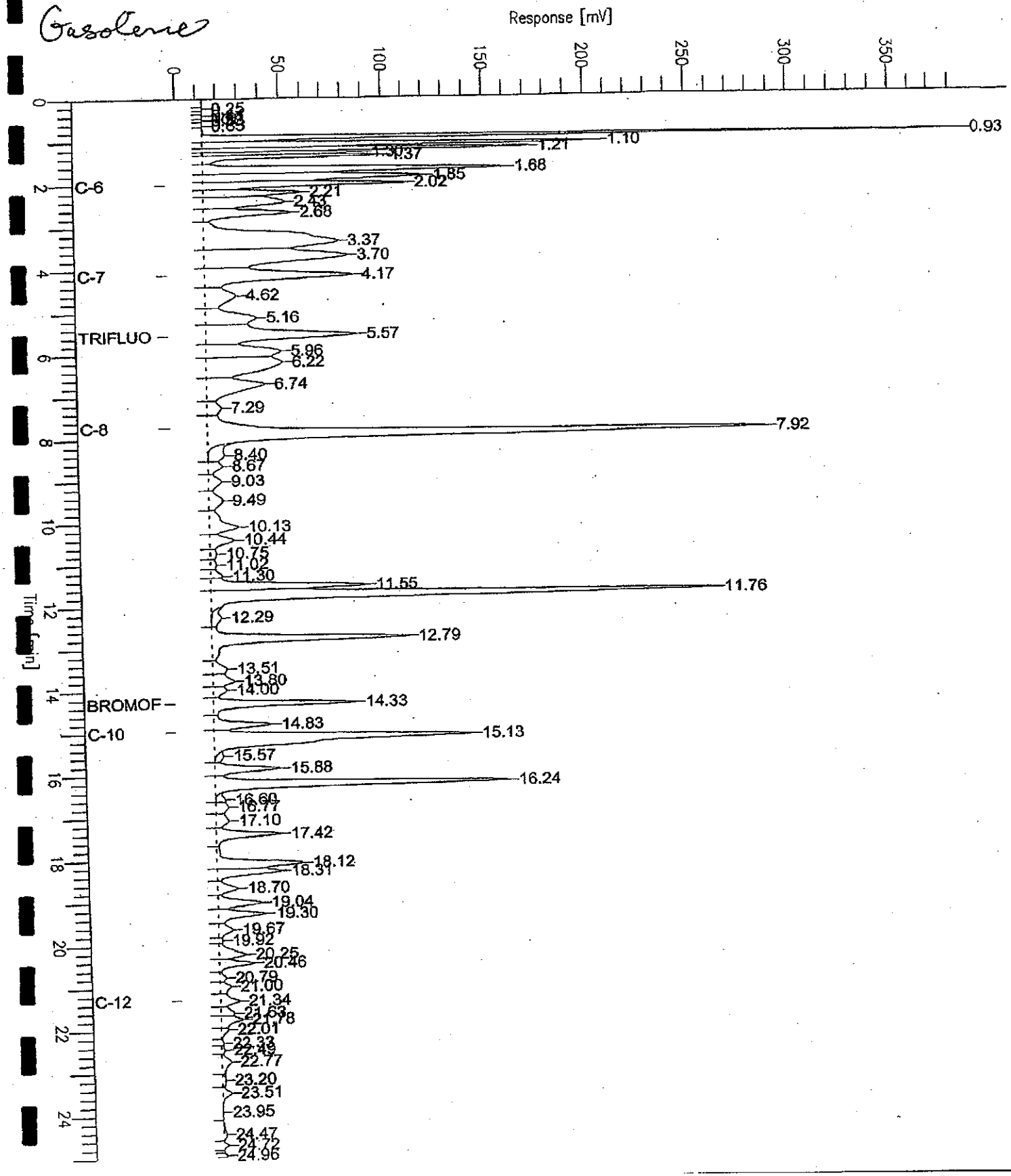


Chromatogram

mple Name : ccv/lcs,qc297559,102966,S601,5/5000
leName : G:\GC05\DATA\166G003.raw
thod : TVHBTXE
Start Time : 0.00 min End Time : 25.00 min
Scale Factor: 1.0 Plot Offset: -5 mV

Sample #:
Date : 6/15/05 10:03 AM
Time of Injection: 6/15/05 09:38 AM
Low Point : -5.37 mV High Point : 386.94 mV
Plot Scale: 392.3 mV

Gasoline



Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	180038	Location:	Emeryville Industrial Ct
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC297559	Batch#:	102966
Matrix:	Water	Analyzed:	06/15/05
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,058	103	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	138	63-141
Bromofluorobenzene (FID)	123	79-139

Curtis & Tompkins, Ltd.

atch QC Report

Total Volatile Hydrocarbons

Lab #:	180038	Location:	Emeryville Industrial Ct
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	102966
MSS Lab ID:	180030-002	Sampled:	06/15/05
Matrix:	Water	Received:	06/15/05
Units:	ug/L	Analyzed:	06/15/05
Diln Fac:	1.000		

Type: MS Lab ID: QC297702

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	12.77	2,000	1,924	96	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	138	63-141
Bromofluorobenzene (FID)	116	79-139

Type: MSD Lab ID: QC297703

Analyte	Spiked	Result	%REC	Limits	RPD	Lim.
Gasoline C7-C12	2,000	2,000	99	80-120	4	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	137	63-141
Bromofluorobenzene (FID)	117	79-139

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	180038	Location:	Emeryville Industrial Ct
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	06/15/05
Units:	mg/Kg	Received:	06/15/05
Basis:	as received	Analyzed:	06/15/05
Batch#:	102985		

Field ID: TR-24-4.0 Lab ID: 180038-002
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	1.1

Surrogate	%REC	Limits
Trifluorotoluene (FID)	97	60-138
Bromofluorobenzene (FID)	104	66-148

Field ID: TR-26-4.0 Lab ID: 180038-004
Type: SAMPLE Diln Fac: 20.00

Analyte	Result	RL
Gasoline C7-C12	140 H Y	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	94	60-138
Bromofluorobenzene (FID)	134	66-148

Field ID: TR-27-2.0 Lab ID: 180038-005
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	95	60-138
Bromofluorobenzene (FID)	100	66-148

Type: BLANK Diln Fac: 1.000
Lab ID: QC297635

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	95	60-138
Bromofluorobenzene (FID)	101	66-148

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

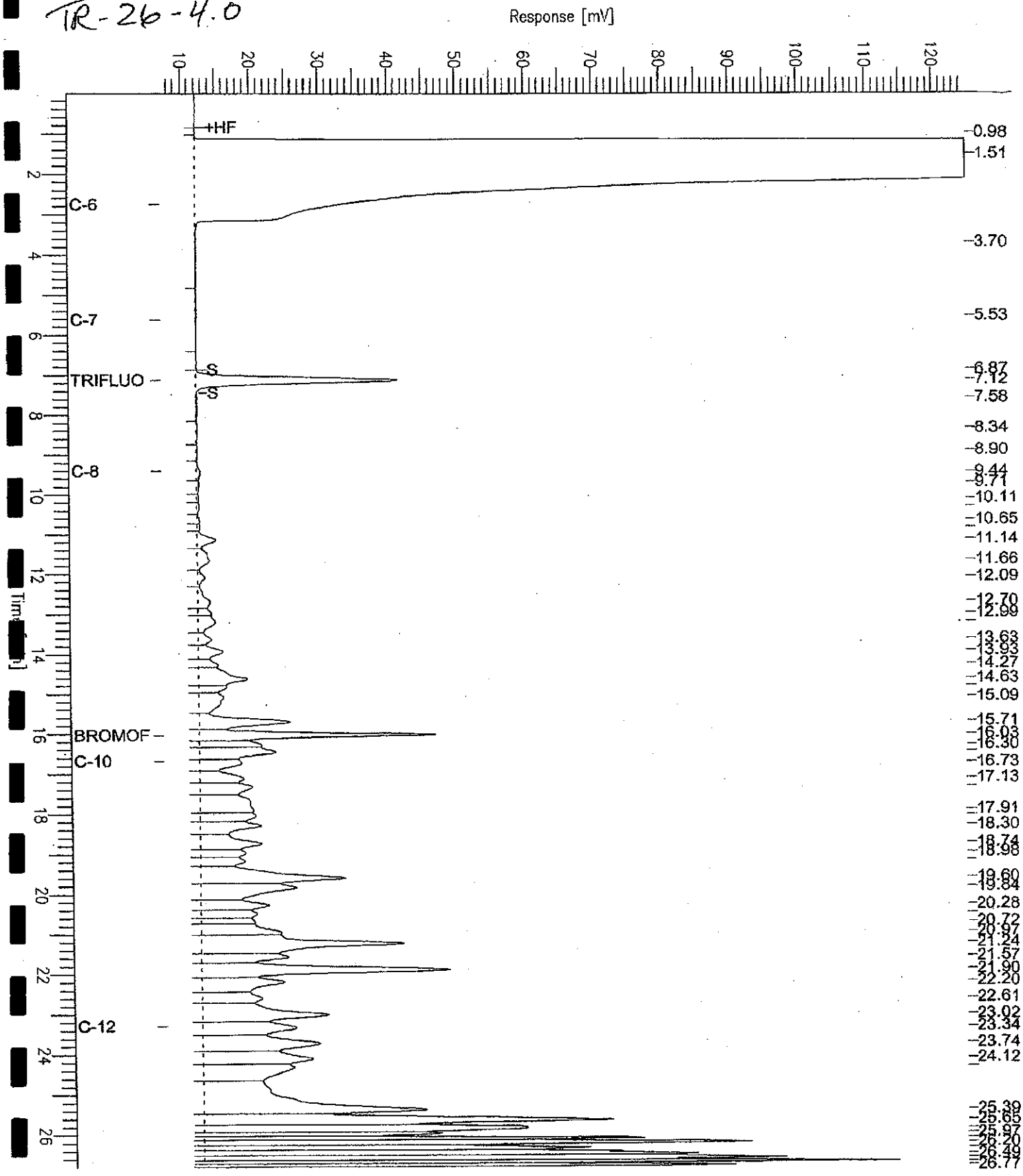
3.0

GC19 TVH 'X' Data File (FID)

Sample Name : 180038-004,102985,tvh
FileName : G:\GC19\DATA\166X005.RAW
Method :
Start Time : 0.02 min End Time : 26.80 min
Scale Factor: 0.0 Plot Offset: 7 mV

Sample #: a Page 1 of 1
Date : 6/16/05 07:59 AM
Time of Injection: 6/15/05 06:43 PM
Low Point : 7.02 mV High Point : 124.95 mV
Plot Scale: 117.9 mV

TR-26-4.0

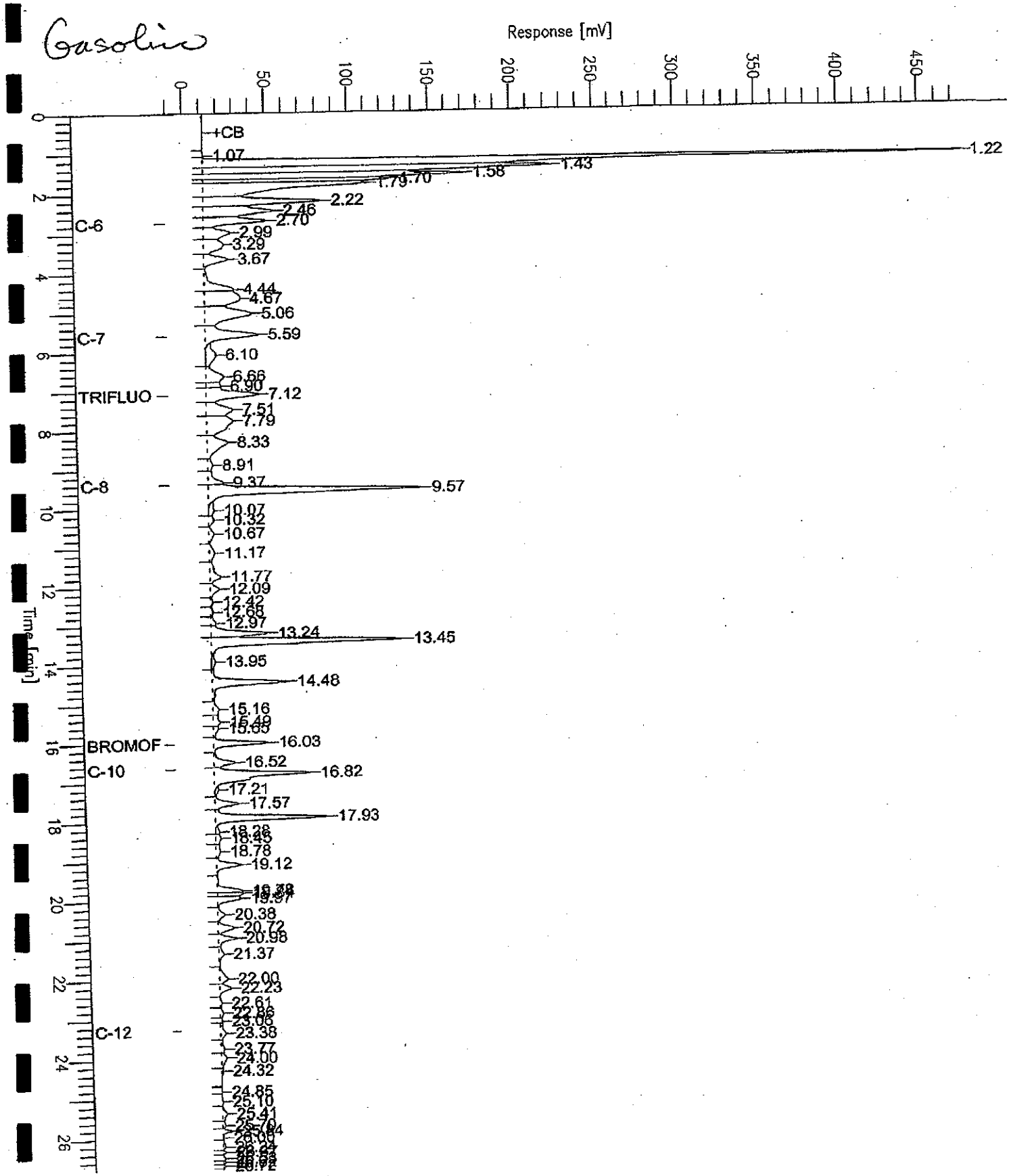


GC19 TVH 'X' Data File (FID)

Sample Name : ccv/lcs,qc297636,102985,s601,5/5000
leName : G:\GC19\DATA\166X001.raw
thod : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: -11 mV

Sample #: Page 1 of 1
Date : 6/15/05 01:10 PM
Time of Injection: 6/15/05 12:43 PM
Low Point : -11.05 mV High Point : 476.64 mV
Plot Scale: 487.7 mV

Gasoline



Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	180038	Location:	Emeryville Industrial Ct
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8015B
Type:	LCS	Basis:	as received
Lab ID:	QC297636	Diln Fac:	1.000
Matrix:	Soil	Batch#:	102985
Units:	mg/Kg	Analyzed:	06/15/05

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	10.18	102	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	118	60-138
Bromofluorobenzene (FID)	115	66-148

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	180038	Location:	Emeryville Industrial Ct
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8015B
Field ID:	TR-27-2.0	Diln Fac:	1.000
MSS Lab ID:	180038-005	Batch#:	102985
Matrix:	Soil	Sampled:	06/15/05
Units:	mg/Kg	Received:	06/15/05
Basis:	as received	Analyzed:	06/16/05

Type: MS Lab ID: QC297692

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<0.1147	10.64	7.199	68	43-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	121	60-138
Bromofluorobenzene (FID)	102	66-148

Type: MSD Lab ID: QC297693

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.20	7.255	71	43-120	5	27

Surrogate	%REC	Limits
Trifluorotoluene (FID)	129	60-138
Bromofluorobenzene (FID)	106	66-148

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 3520C
Project#:	4069.01	Analysis:	EPA 8015B
Field ID:	TR-24-GW	Sampled:	06/15/05
Matrix:	Water	Received:	06/15/05
Units:	ug/L	Prepared:	06/15/05
Batch#:	102992	Analyzed:	06/16/05

Type:	SAMPLE	Diln Fac:	20.00
Lab ID:	180038-006		

Analyte	Result	RL
Diesel C10-C24	68,000 L	1,000

Surrogate	%REC	Limits
Hexacosane	DO	55-143

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC297661	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	112	55-143

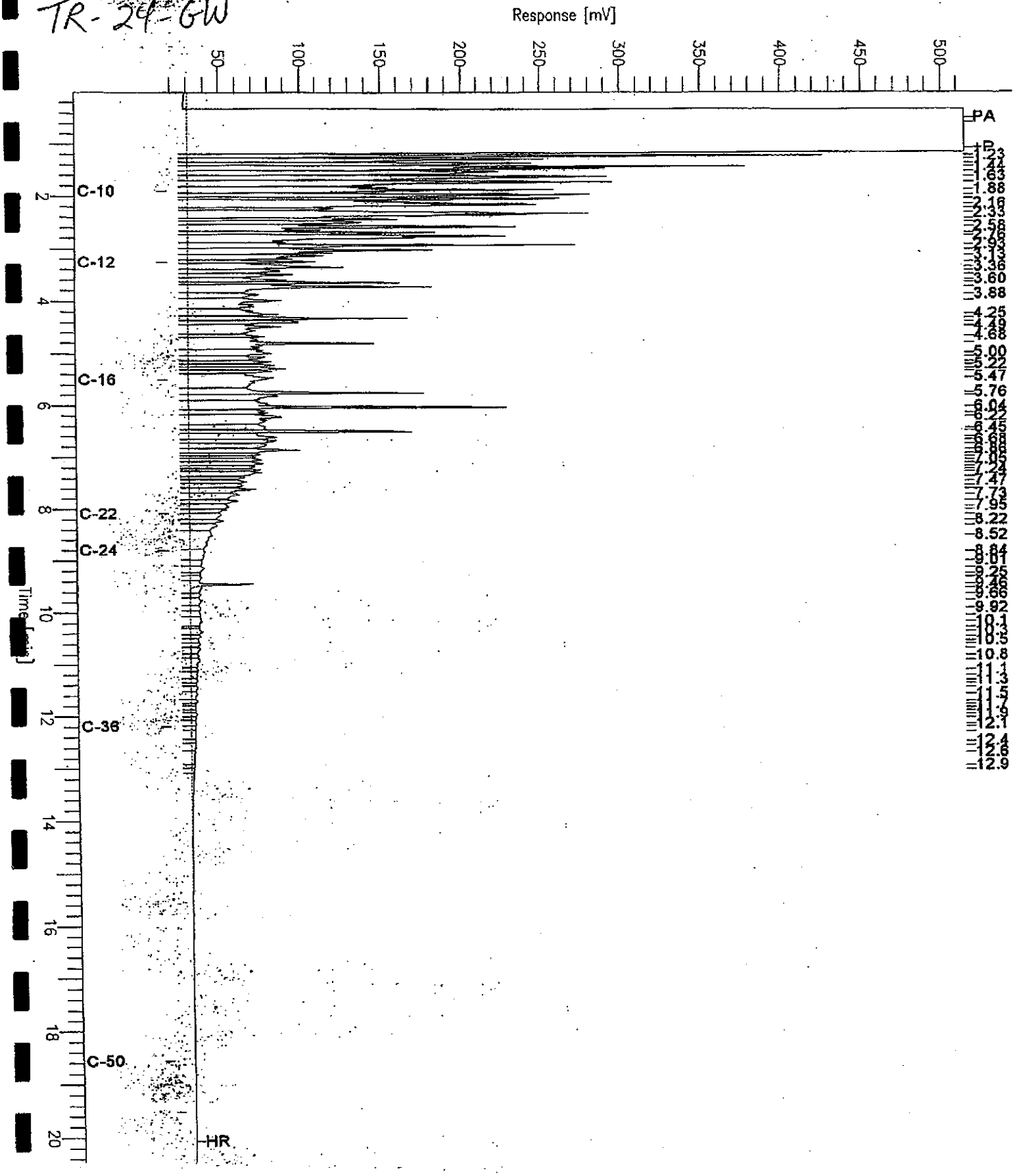
L= Lighter hydrocarbons contributed to the quantitation
DO= Diluted Out
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 180038-006,102992
FileName : G:\GC11\CHA\166A051.RAW
Method : ATEH156S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: 18 mV

Sample #: 102992 Page 1 of 1
Date : 6/16/05 01:47 PM
Time of Injection: 6/16/05 01:16 PM
Low Point : 17.51 mV High Point : 515.12 mV
Plot Scale: 497.6 mV

TR-24-GW



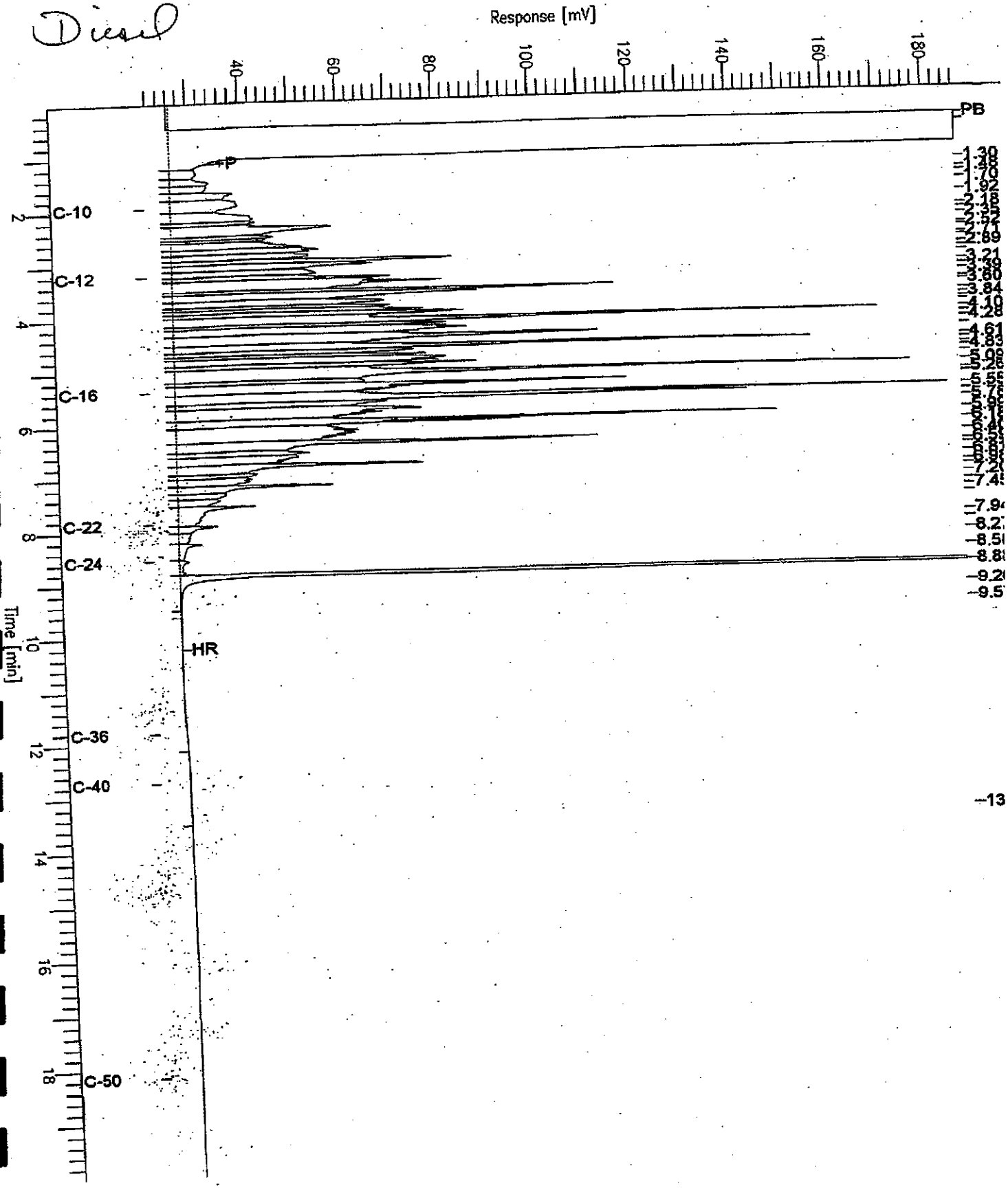
Chromatogram

mple Name : ccv,S778,dsl
leName : G:\GC1S\CHB\167B003.RAW
thod : BTEH159S.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 19.99 min
Plot Offset: 21 mV

Sample #: 500mg/L
Date : 6/16/05 12:37 PM
Time of Injection: 6/16/05 10:09 AM
Low Point : 21.36 mV
High Point : 186.40 mV
Plot Scale: 165.0 mV

Diesel



-13

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 3520C
Project#:	4069.01	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	102992
Units:	ug/L	Prepared:	06/15/05
Diln Fac:	1.000	Analyzed:	06/16/05

Type: BS
Lab ID: QC297662
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,466	99	50-133

Surrogate	%REC	Limits
Hexacosane	116	55-143

Type: BSD
Lab ID: QC297663
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,540	102	50-133	3	40

Surrogate	%REC	Limits
Hexacosane	116	55-143

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	SHAKER TABLE
Project#:	4069.01	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	06/15/05
Units:	mg/Kg	Received:	06/15/05
Basis:	as received	Prepared:	06/15/05
Batch#:	103004		

Field ID:	TR-24-4.0	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	06/16/05
Lab ID:	180038-002		

Analyte	Result	RL
Diesel C10-C24	46 H Y	1.0

Surrogate	%REC	Limits
Hexacosane	103	51-136

Field ID:	TR-26-4.0	Diln Fac:	20.00
Type:	SAMPLE	Analyzed:	06/16/05
Lab ID:	180038-004		

Analyte	Result	RL
Diesel C10-C24	2,100 H L Y	20

Surrogate	%REC	Limits
Hexacosane	DO	51-136

Field ID:	TR-27-2.0	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	06/16/05
Lab ID:	180038-005		

Analyte	Result	RL
Diesel C10-C24	61 H Y	1.0

Surrogate	%REC	Limits
Hexacosane	83	51-136

Type:	BLANK	Analyzed:	06/15/05
Lab ID:	QC297704	Cleanup Method:	EPA 3630C
Diln Fac:	1.000		

Analyte	Result	RL
Diesel C10-C24	ND	1.0

Surrogate	%REC	Limits
Hexacosane	98	51-136

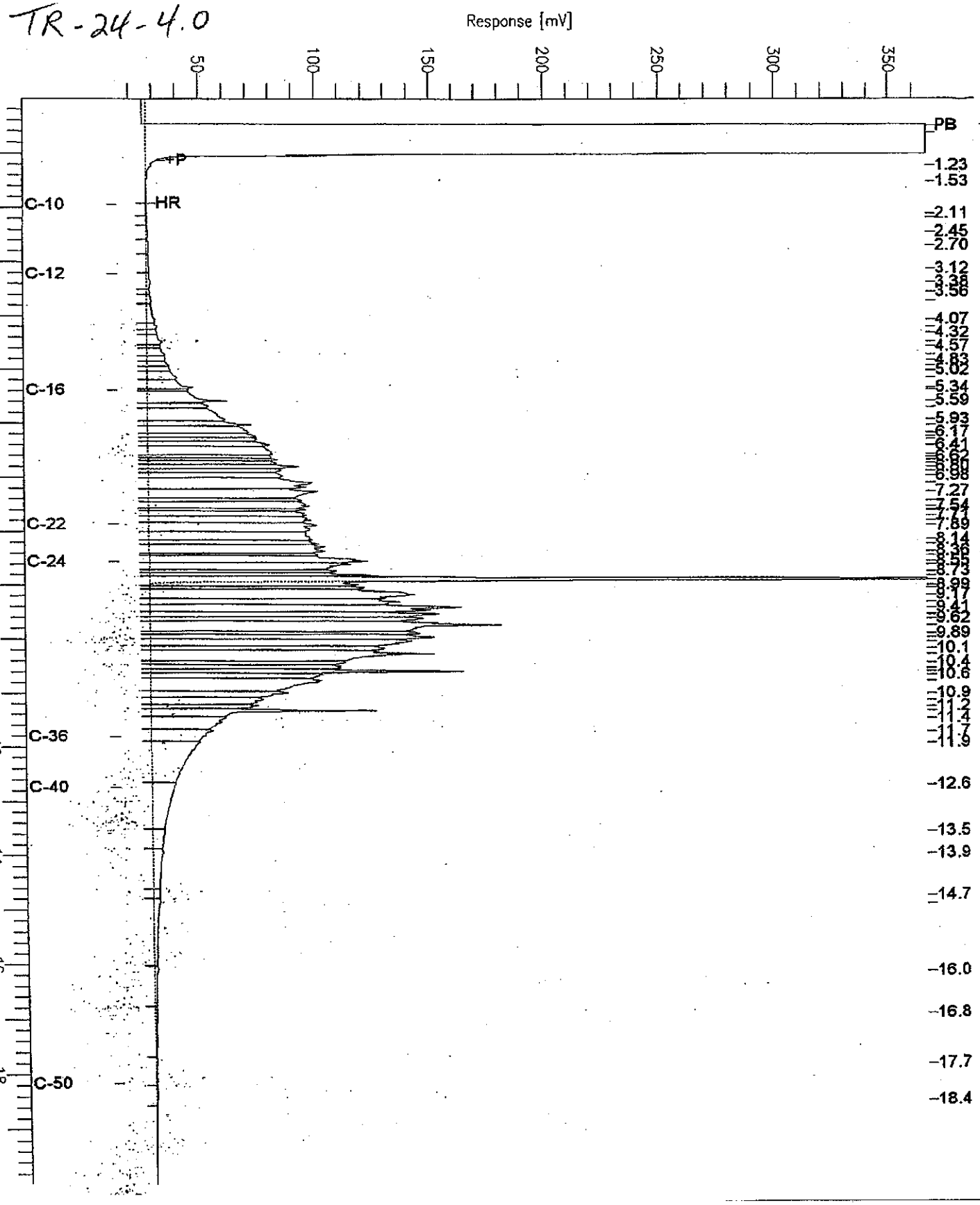
H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits chromatographic pattern which does not resemble standard
DO= Diluted Out
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 180038-002,103004
FileName : G:\GC15\CHB\165B054.RAW
Method : BTEH159S.MTH
Start Time : 0.01 min End Time : 19.99 min
Scale Factor: 0.0 Plot Offset: 15 mV

Sample #: 103004 Page 1 of 1
Date : 6/16/05 10:10 AM
Time of Injection: 6/16/05 01:19 AM
Low Point : 14.95 mV High Point : 366.43 mV
Plot Scale: 351.5 mV

TR-24-4.0

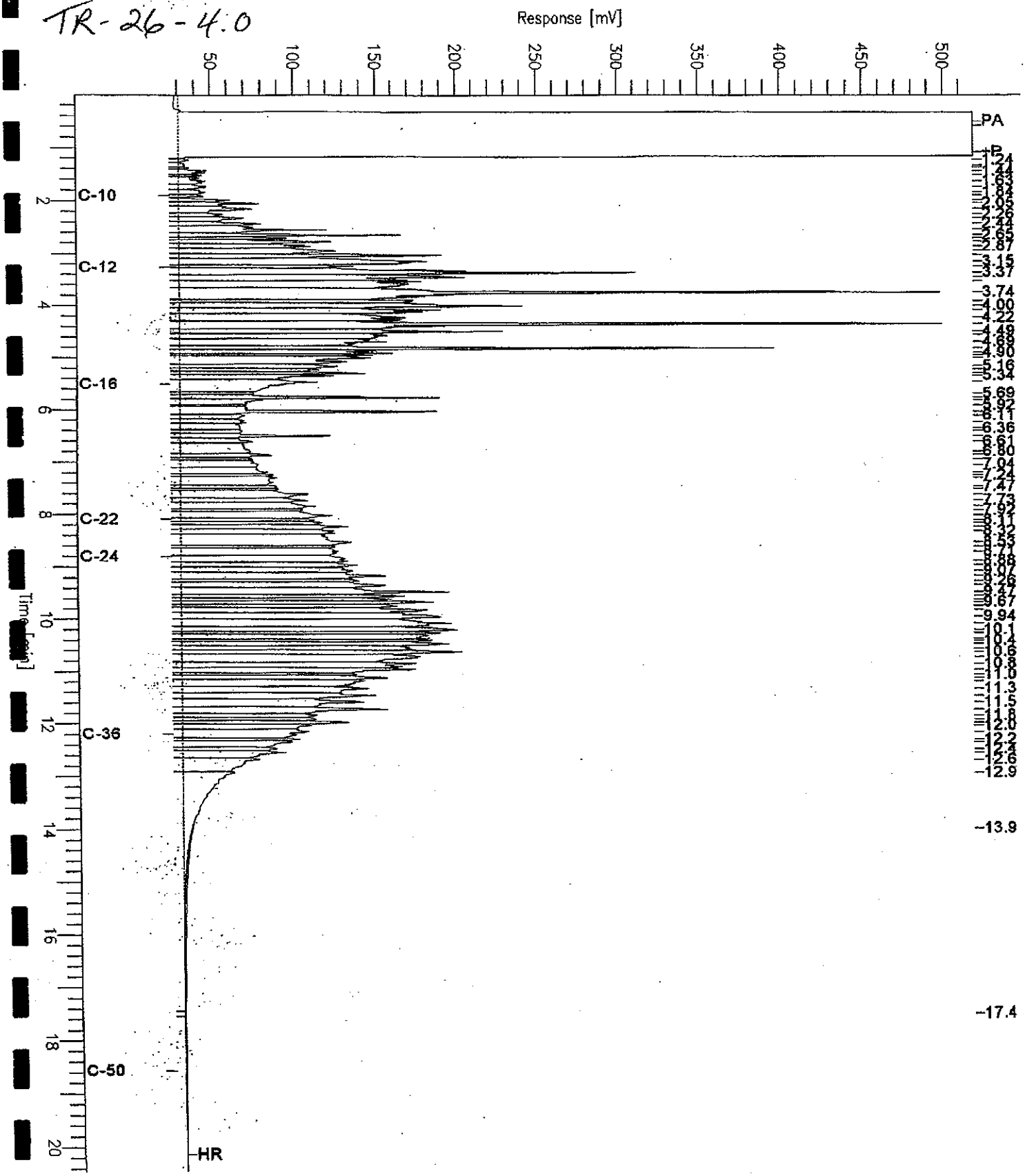


Chromatogram

Sample Name : 180038-004,103004
FileName : G:\GC11\CHA\166A050.RAW
Method : ATEH156S.MTH
Start Time : 0.01 min End Time : 20.45 min
Scale Factor: 0.0 Plot Offset: 25 mV

Sample #: 103004 Page 1 of 1
Date : 6/16/05 01:04 PM
Time of Injection: 6/16/05 12:40 PM
Low Point : 25.17 mV High Point : 518.87 mV
Plot Scale: 493.7 mV

TR-26-4.0

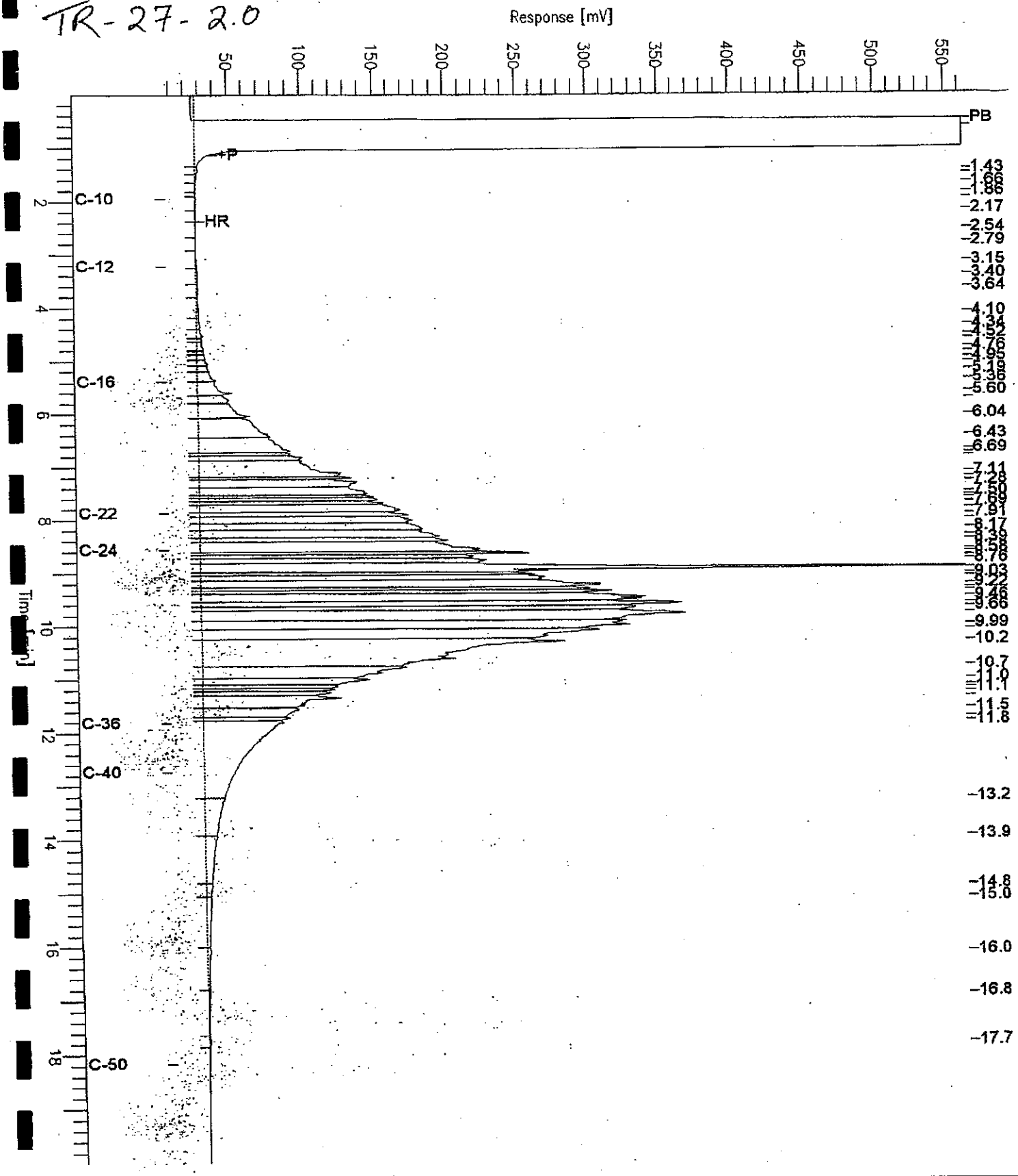


Chromatogram

Sample Name : 180038-005,103004
FileName : G:\GC15\CHB\165B060.RAW
Method : BTEH159S.MTH
Start Time : 0.01 min End Time : 19.99 min
Scale Factor: 0.0 Plot Offset: 7 mV

Sample #: 103004 Page 1 of 1
Date : 6/16/05 10:13 AM
Time of Injection: 6/16/05 04:15 AM
Low Point : 7.11 mV High Point : 562.82 mV
Plot Scale: 555.7 mV

TR-27-2.0



Chromatogram

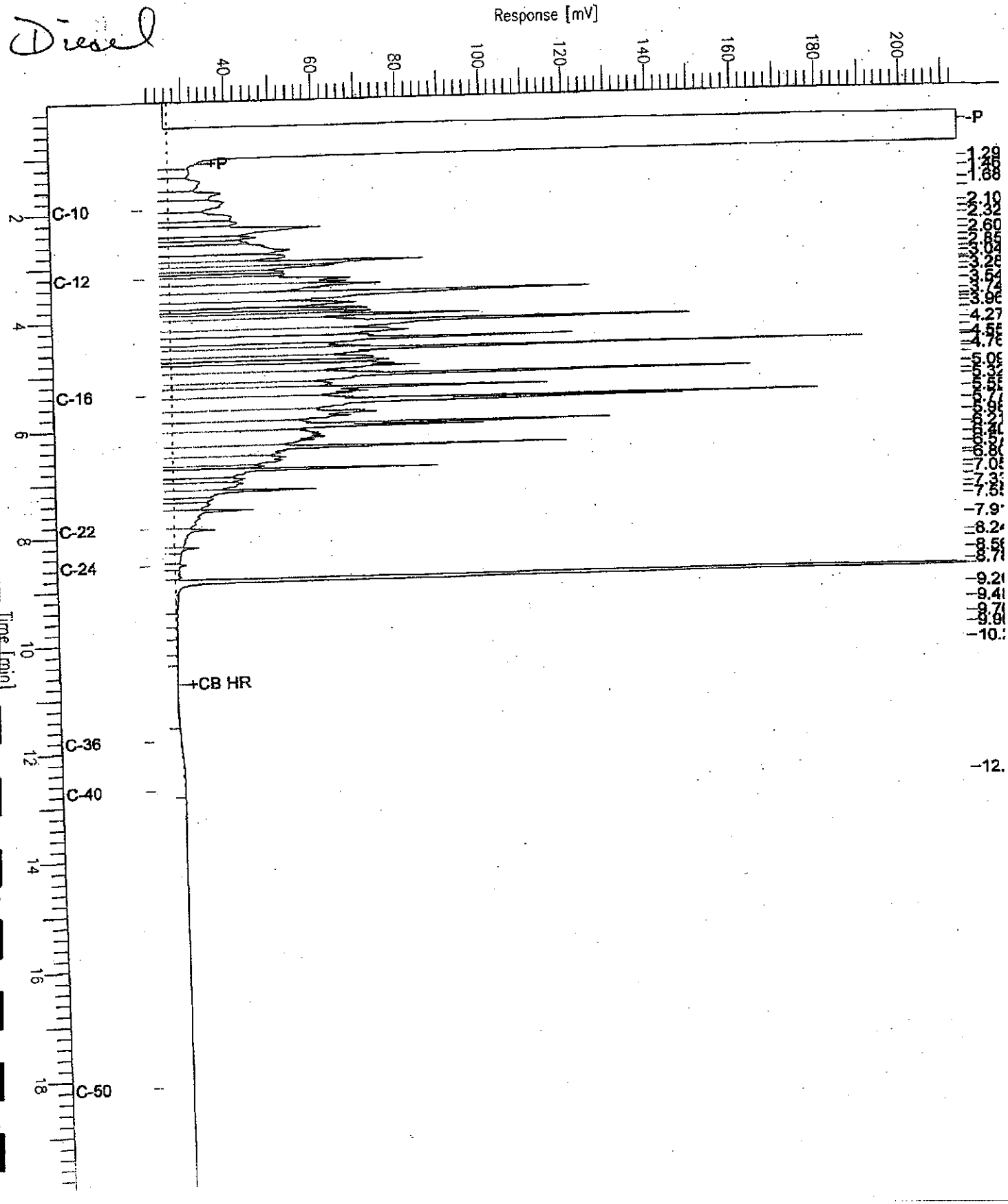
Sample Name : ccv,S778,dsl
[redacted]leName : G:\GC15\CHB\165B003.RAW
[redacted]thod : BTEH159S.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 19.99 min
Plot Offset: 21 mV

Sample #: 500mg/L
Date : 6/14/05 03:59 PM
Time of Injection: 6/14/05 03:36 PM
Low Point : 20.64 mV
Plot Scale: 192.8 mV

High Point : 213.44 mV

Diesel



Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	SHAKER TABLE
Project#:	4069.01	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC297705	Batch#:	103004
Matrix:	Soil	Prepared:	06/15/05
Units:	mg/Kg	Analyzed:	06/15/05
Basis:	as received		

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.95	55.20	111	52-137

Surrogate	%REC	Limits
Hexacosane	116	51-136

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	SHAKER TABLE
Project#:	4069.01	Analysis:	EPA 8015B
Field ID:	TR-24-4.0	Batch#:	103004
MSS Lab ID:	180038-002	Sampled:	06/15/05
Matrix:	Soil	Received:	06/15/05
Units:	mg/Kg	Prepared:	06/15/05
Basis:	as received	Analyzed:	06/16/05
Diln Fac:	1.000		

Type: MS Lab ID: QC297706

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	45.55	50.32	243.7	394 *	11-169

Surrogate	%REC	Limits
Hexacosane	92	51-136

Type: MSD Lab ID: QC297707

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.91	117.9	145	11-169	69 *	49

Surrogate	%REC	Limits
Hexacosane	106	51-136

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	TR-24-GW	Batch#:	103009
Lab ID:	180038-006	Sampled:	06/15/05
Matrix:	Water	Received:	06/15/05
Units:	ug/L	Analyzed:	06/16/05
Diln Fac:	33.33		

Analyte	Result	RL
Freon 12	ND	33
Chloromethane	ND	33
Vinyl Chloride	ND	17
Bromomethane	ND	33
Chloroethane	ND	33
Trichlorofluoromethane	ND	33
Acetone	ND	330
Freon 113	ND	170
1,1-Dichloroethene	ND	17
Methylene Chloride	ND	330
Carbon Disulfide	ND	17
MTBE	ND	17
trans-1,2-Dichloroethene	ND	17
Vinyl Acetate	ND	330
1,1-Dichloroethane	ND	17
2-Butanone	ND	330
cis-1,2-Dichloroethene	ND	17
2,2-Dichloropropane	ND	17
Chloroform	ND	17
Bromochloromethane	ND	17
1,1,1-Trichloroethane	ND	17
1,1-Dichloropropene	ND	17
Carbon Tetrachloride	ND	17
1,2-Dichloroethane	ND	17
Benzene	2,500	17
Trichloroethene	ND	17
1,2-Dichloropropane	ND	17
Bromodichloromethane	ND	17
Dibromomethane	ND	17
4-Methyl-2-Pentanone	ND	330
cis-1,3-Dichloropropene	ND	17
Toluene	31	17
trans-1,3-Dichloropropene	ND	17
1,1,2-Trichloroethane	ND	17
2-Hexanone	ND	330
1,3-Dichloropropane	ND	17
Tetrachloroethene	ND	17

ND= Not Detected
RL= Reporting Limit

8.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	TR-24-GW	Batch#:	103009
Lab ID:	180038-006	Sampled:	06/15/05
Matrix:	Water	Received:	06/15/05
Units:	ug/L	Analyzed:	06/16/05
Diln Fac:	33.33		

Analyte	Result	RL
Dibromochloromethane	ND	17
1,2-Dibromoethane	ND	17
Chlorobenzene	ND	17
1,1,1,2-Tetrachloroethane	ND	17
Ethylbenzene	950	17
m,p-Xylenes	380	17
o-Xylene	ND	17
Styrene	ND	17
Bromoform	ND	33
Isopropylbenzene	210	17
1,1,2,2-Tetrachloroethane	ND	17
1,2,3-Trichloropropane	ND	17
Propylbenzene	360	17
Bromobenzene	ND	17
1,3,5-Trimethylbenzene	110	17
2-Chlorotoluene	ND	17
4-Chlorotoluene	ND	17
tert-Butylbenzene	ND	17
1,2,4-Trimethylbenzene	290	17
sec-Butylbenzene	43	17
para-Isopropyl Toluene	70	17
1,3-Dichlorobenzene	ND	17
1,4-Dichlorobenzene	ND	17
n-Butylbenzene	ND	17
1,2-Dichlorobenzene	ND	17
1,2-Dibromo-3-Chloropropane	ND	17
1,2,4-Trichlorobenzene	ND	17
Hexachlorobutadiene	ND	17
Naphthalene	710	67
1,2,3-Trichlorobenzene	ND	17

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-120
1,2-Dichloroethane-d4	99	80-122
Toluene-d8	99	80-120
Bromofluorobenzene	97	80-124

ND= Not Detected
RL= Reporting Limit

8.0

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organice by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC297728	Batch#:	103009
Matrix:	Water	Analyzed:	06/16/05
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

9.0

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC297728	Batch#:	103009
Matrix:	Water	Analyzed:	06/16/05
Units:	ug/L		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	0.5
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	0.9	0.5
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-120
1,2-Dichloroethane-d4	97	80-122
Toluene-d8	97	80-120
Bromofluorobenzene	101	80-124

ND= Not Detected
RL= Reporting Limit

9.0

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	103009
Units:	ug/L	Analyzed:	06/16/05
Diln Fac:	1.000		

Type: BS Lab ID: QC297726

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	29.06	116	75-121
Benzene	25.00	24.55	98	80-120
Trichloroethene	25.00	25.74	103	78-120
Toluene	25.00	24.84	99	80-120
Chlorobenzene	25.00	25.81	103	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-120
1,2-Dichloroethane-d4	96	80-122
Toluene-d8	98	80-120
Bromofluorobenzene	100	80-124

Type: BSD Lab ID: QC297727

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	30.16	121	75-121	4	20
Benzene	25.00	25.31	101	80-120	3	20
Trichloroethene	25.00	26.33	105	78-120	2	20
Toluene	25.00	25.45	102	80-120	2	20
Chlorobenzene	25.00	26.44	106	80-120	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-120
1,2-Dichloroethane-d4	95	80-122
Toluene-d8	97	80-120
Bromofluorobenzene	99	80-124

*RPD= Relative Percent Difference

10.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	TR-24-4.0	Basis:	as received
Lab ID:	180038-002	Sampled:	06/15/05
Matrix:	Soil	Received:	06/15/05
Units:	ug/Kg		

Analyte	Result	RL	Dil Fac	Batch#	Analyzed
Freon 12	ND	10	1.000	102980	06/15/05
Chloromethane	ND	10	1.000	102980	06/15/05
Vinyl Chloride	ND	10	1.000	102980	06/15/05
Bromomethane	ND	10	1.000	102980	06/15/05
Chloroethane	ND	10	1.000	102980	06/15/05
Trichlorofluoromethane	ND	5.0	1.000	102980	06/15/05
Acetone	35	20	1.000	102980	06/15/05
Freon 113	ND	5.0	1.000	102980	06/15/05
1,1-Dichloroethene	ND	5.0	1.000	102980	06/15/05
Methylene Chloride	ND	20	1.000	102980	06/15/05
Carbon Disulfide	ND	4.6	0.9259	103011	06/16/05
MTBE	ND	5.0	1.000	102980	06/15/05
trans-1,2-Dichloroethene	ND	5.0	1.000	102980	06/15/05
Vinyl Acetate	ND	50	1.000	102980	06/15/05
1,1-Dichloroethane	ND	5.0	1.000	102980	06/15/05
2-Butanone	ND	10	1.000	102980	06/15/05
cis-1,2-Dichloroethene	ND	5.0	1.000	102980	06/15/05
2,2-Dichloropropane	ND	5.0	1.000	102980	06/15/05
Chloroform	ND	5.0	1.000	102980	06/15/05
Bromochloromethane	ND	5.0	1.000	102980	06/15/05
1,1,1-Trichloroethane	ND	5.0	1.000	102980	06/15/05
1,1-Dichloropropene	ND	5.0	1.000	102980	06/15/05
Carbon Tetrachloride	ND	5.0	1.000	102980	06/15/05
1,2-Dichloroethane	ND	5.0	1.000	102980	06/15/05
Benzene	ND	5.0	1.000	102980	06/15/05
Trichloroethene	ND	5.0	1.000	102980	06/15/05
1,2-Dichloropropane	ND	5.0	1.000	102980	06/15/05
Bromodichloromethane	ND	5.0	1.000	102980	06/15/05
Dibromomethane	ND	5.0	1.000	102980	06/15/05
4-Methyl-2-Pentanone	ND	10	1.000	102980	06/15/05
cis-1,3-Dichloropropene	ND	5.0	1.000	102980	06/15/05
Toluene	ND	5.0	1.000	102980	06/15/05
trans-1,3-Dichloropropene	ND	5.0	1.000	102980	06/15/05
1,1,2-Trichloroethane	ND	5.0	1.000	102980	06/15/05
2-Hexanone	ND	10	1.000	102980	06/15/05
1,3-Dichloropropane	ND	5.0	1.000	102980	06/15/05
Tetrachloroethene	ND	5.0	1.000	102980	06/15/05
Dibromochloromethane	ND	5.0	1.000	102980	06/15/05

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	TR-24-4.0	Basis:	as received
Lab ID:	180038-002	Sampled:	06/15/05
Matrix:	Soil	Received:	06/15/05
Units:	ug/Kg		

Analyte	Result	RL	Dil Fac	Batch#	Analyzed
1,2-Dibromoethane	ND	5.0	1.000	102980	06/15/05
Chlorobenzene	ND	5.0	1.000	102980	06/15/05
1,1,1,2-Tetrachloroethane	ND	5.0	1.000	102980	06/15/05
Ethylbenzene	ND	5.0	1.000	102980	06/15/05
m,p-Xylenes	ND	5.0	1.000	102980	06/15/05
o-Xylene	ND	5.0	1.000	102980	06/15/05
Styrene	ND	5.0	1.000	102980	06/15/05
Bromoform	ND	5.0	1.000	102980	06/15/05
Isopropylbenzene	ND	5.0	1.000	102980	06/15/05
1,1,2,2-Tetrachloroethane	ND	5.0	1.000	102980	06/15/05
1,2,3-Trichloropropane	ND	5.0	1.000	102980	06/15/05
Propylbenzene	ND	5.0	1.000	102980	06/15/05
Bromobenzene	ND	5.0	1.000	102980	06/15/05
1,3,5-Trimethylbenzene	ND	5.0	1.000	102980	06/15/05
2-Chlorotoluene	ND	5.0	1.000	102980	06/15/05
4-Chlorotoluene	ND	5.0	1.000	102980	06/15/05
tert-Butylbenzene	ND	5.0	1.000	102980	06/15/05
1,2,4-Trimethylbenzene	ND	5.0	1.000	102980	06/15/05
sec-Butylbenzene	ND	5.0	1.000	102980	06/15/05
para-Isopropyl Toluene	ND	5.0	1.000	102980	06/15/05
1,3-Dichlorobenzene	ND	5.0	1.000	102980	06/15/05
1,4-Dichlorobenzene	ND	5.0	1.000	102980	06/15/05
n-Butylbenzene	ND	5.0	1.000	102980	06/15/05
1,2-Dichlorobenzene	ND	5.0	1.000	102980	06/15/05
1,2-Dibromo-3-Chloropropane	ND	5.0	1.000	102980	06/15/05
1,2,4-Trichlorobenzene	ND	5.0	1.000	102980	06/15/05
Hexachlorobutadiene	ND	5.0	1.000	102980	06/15/05
Naphthalene	ND	5.0	1.000	102980	06/15/05
1,2,3-Trichlorobenzene	ND	5.0	1.000	102980	06/15/05

Surrogate	%REC	Limits	Dil Fac	Batch#	Analyzed
Dibromofluoromethane	97	78-120	1.000	102980	06/15/05
1,2-Dichloroethane-d4	102	80-120	1.000	102980	06/15/05
Toluene-d8	101	80-120	1.000	102980	06/15/05
Bromofluorobenzene	106	80-120	1.000	102980	06/15/05

ND= Not Detected
RL= Reporting Limit

11.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	TR-26-4.0	Basis:	as received
Lab ID:	180038-004	Diln Fac:	4.545
Matrix:	Soil	Sampled:	06/15/05
Units:	ug/Kg	Received:	06/15/05

Analyte	Result	RL	Batch#	Analyzed
Freon 12	ND	45	102980	06/15/05
Chloromethane	ND	45	102980	06/15/05
Vinyl Chloride	ND	45	102980	06/15/05
Bromomethane	ND	45	102980	06/15/05
Chloroethane	ND	45	102980	06/15/05
Trichlorofluoromethane	ND	23	102980	06/15/05
Acetone	ND	91	102980	06/15/05
Freon 113	ND	23	102980	06/15/05
1,1-Dichloroethene	ND	23	102980	06/15/05
Methylene Chloride	ND	91	102980	06/15/05
Carbon Disulfide	ND	23	103011	06/16/05
MTBE	ND	23	102980	06/15/05
trans-1,2-Dichloroethene	ND	23	102980	06/15/05
Vinyl Acetate	ND	230	102980	06/15/05
1,1-Dichloroethane	ND	23	102980	06/15/05
2-Butanone	ND	45	102980	06/15/05
cis-1,2-Dichloroethene	ND	23	102980	06/15/05
2,2-Dichloropropane	ND	23	102980	06/15/05
Chloroform	ND	23	102980	06/15/05
Bromochloromethane	ND	23	102980	06/15/05
1,1,1-Trichloroethane	ND	23	102980	06/15/05
1,1-Dichloropropene	ND	23	102980	06/15/05
Carbon Tetrachloride	ND	23	102980	06/15/05
1,2-Dichloroethane	ND	23	102980	06/15/05
Benzene	ND	23	102980	06/15/05
Trichloroethene	ND	23	102980	06/15/05
1,2-Dichloropropane	ND	23	102980	06/15/05
Bromodichloromethane	ND	23	102980	06/15/05
Dibromomethane	ND	23	102980	06/15/05
4-Methyl-2-Pentanone	ND	45	102980	06/15/05
cis-1,3-Dichloropropene	ND	23	102980	06/15/05
Toluene	ND	23	102980	06/15/05
trans-1,3-Dichloropropene	ND	23	102980	06/15/05
1,1,2-Trichloroethane	ND	23	102980	06/15/05
2-Hexanone	ND	45	102980	06/15/05
1,3-Dichloropropane	ND	23	102980	06/15/05
Tetrachloroethene	ND	23	102980	06/15/05
Dibromochloromethane	ND	23	102980	06/15/05

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	TR-26-4.0	Basis:	as received
Lab ID:	180038-004	Diln Fac:	4.545
Matrix:	Soil	Sampled:	06/15/05
Units:	ug/Kg	Received:	06/15/05

Analyte	Result	RL	Batch#	Analyzed
1,2-Dibromoethane	ND	23	102980	06/15/05
Chlorobenzene	ND	23	102980	06/15/05
1,1,1,2-Tetrachloroethane	ND	23	102980	06/15/05
Ethylbenzene	ND	23	102980	06/15/05
m,p-Xylenes	ND	23	102980	06/15/05
o-Xylene	ND	23	102980	06/15/05
Styrene	ND	23	102980	06/15/05
Bromoform	ND	23	102980	06/15/05
Isopropylbenzene	ND	23	102980	06/15/05
1,1,2,2-Tetrachloroethane	ND	23	102980	06/15/05
1,2,3-Trichloropropane	ND	23	102980	06/15/05
Propylbenzene	ND	23	102980	06/15/05
Bromobenzene	ND	23	102980	06/15/05
1,3,5-Trimethylbenzene	ND	23	102980	06/15/05
2-Chlorotoluene	ND	23	102980	06/15/05
4-Chlorotoluene	ND	23	102980	06/15/05
tert-Butylbenzene	ND	23	102980	06/15/05
1,2,4-Trimethylbenzene	ND	23	102980	06/15/05
sec-Butylbenzene	ND	23	102980	06/15/05
para-Isopropyl Toluene	ND	23	102980	06/15/05
1,3-Dichlorobenzene	ND	23	102980	06/15/05
1,4-Dichlorobenzene	ND	23	102980	06/15/05
n-Butylbenzene	ND	23	102980	06/15/05
1,2-Dichlorobenzene	ND	23	102980	06/15/05
1,2-Dibromo-3-Chloropropane	ND	23	102980	06/15/05
1,2,4-Trichlorobenzene	ND	23	102980	06/15/05
Hexachlorobutadiene	ND	23	102980	06/15/05
Naphthalene	ND	23	102980	06/15/05
1,2,3-Trichlorobenzene	ND	23	102980	06/15/05

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	97	78-120	102980	06/15/05
1,2-Dichloroethane-d4	100	80-120	102980	06/15/05
Toluene-d8	99	80-120	102980	06/15/05
Bromofluorobenzene	112	80-120	102980	06/15/05

ND= Not Detected
RL= Reporting Limit

12.1

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	TR-27-2.0	Basis:	as received
Lab ID:	180038-005	Sampled:	06/15/05
Matrix:	Soil	Received:	06/15/05
Units:	ug/Kg		

Analyte	Result	RL	Dil Fac	Batch#	Analyzed
Freon 12	ND	10	1.000	102980	06/15/05
Chloromethane	ND	10	1.000	102980	06/15/05
Vinyl Chloride	ND	10	1.000	102980	06/15/05
Bromomethane	ND	10	1.000	102980	06/15/05
Chloroethane	ND	10	1.000	102980	06/15/05
Trichlorofluoromethane	ND	5.0	1.000	102980	06/15/05
Acetone	21	20	1.000	102980	06/15/05
Freon 113	ND	5.0	1.000	102980	06/15/05
1,1-Dichloroethene	ND	5.0	1.000	102980	06/15/05
Methylene Chloride	ND	20	1.000	102980	06/15/05
Carbon Disulfide	ND	4.5	0.9091	103011	06/16/05
MTBE	ND	5.0	1.000	102980	06/15/05
trans-1,2-Dichloroethene	ND	5.0	1.000	102980	06/15/05
Vinyl Acetate	ND	50	1.000	102980	06/15/05
1,1-Dichloroethane	ND	5.0	1.000	102980	06/15/05
2-Butanone	ND	10	1.000	102980	06/15/05
cis-1,2-Dichloroethene	ND	5.0	1.000	102980	06/15/05
2,2-Dichloropropane	ND	5.0	1.000	102980	06/15/05
Chloroform	ND	5.0	1.000	102980	06/15/05
Bromochloromethane	ND	5.0	1.000	102980	06/15/05
1,1,1-Trichloroethane	ND	5.0	1.000	102980	06/15/05
1,1-Dichloropropene	ND	5.0	1.000	102980	06/15/05
Carbon Tetrachloride	ND	5.0	1.000	102980	06/15/05
1,2-Dichloroethane	ND	5.0	1.000	102980	06/15/05
Benzene	ND	5.0	1.000	102980	06/15/05
Trichloroethene	ND	5.0	1.000	102980	06/15/05
1,2-Dichloropropane	ND	5.0	1.000	102980	06/15/05
Bromodichloromethane	ND	5.0	1.000	102980	06/15/05
Dibromomethane	ND	5.0	1.000	102980	06/15/05
4-Methyl-2-Pentanone	ND	10	1.000	102980	06/15/05
cis-1,3-Dichloropropene	ND	5.0	1.000	102980	06/15/05
Toluene	ND	5.0	1.000	102980	06/15/05
trans-1,3-Dichloropropene	ND	5.0	1.000	102980	06/15/05
1,1,2-Trichloroethane	ND	5.0	1.000	102980	06/15/05
2-Hexanone	ND	10	1.000	102980	06/15/05
1,3-Dichloropropane	ND	5.0	1.000	102980	06/15/05
Tetrachloroethene	ND	5.0	1.000	102980	06/15/05
Dibromochloromethane	ND	5.0	1.000	102980	06/15/05

ND= Not Detected
RL= Reporting Limit

13.0

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	TR-27-2.0	Basis:	as received
Lab ID:	180038-005	Sampled:	06/15/05
Matrix:	Soil	Received:	06/15/05
Units:	ug/Kg		

Analyte	Result	RL	Diln Fac	Batch#	Analyzed
1,2-Dibromoethane	ND	5.0	1.000	102980	06/15/05
Chlorobenzene	ND	5.0	1.000	102980	06/15/05
1,1,1,2-Tetrachloroethane	ND	5.0	1.000	102980	06/15/05
Ethylbenzene	ND	5.0	1.000	102980	06/15/05
m,p-Xylenes	ND	5.0	1.000	102980	06/15/05
o-Xylene	ND	5.0	1.000	102980	06/15/05
Styrene	ND	5.0	1.000	102980	06/15/05
Bromoform	ND	5.0	1.000	102980	06/15/05
Isopropylbenzene	ND	5.0	1.000	102980	06/15/05
1,1,2,2-Tetrachloroethane	ND	5.0	1.000	102980	06/15/05
1,2,3-Trichloropropane	ND	5.0	1.000	102980	06/15/05
Propylbenzene	ND	5.0	1.000	102980	06/15/05
Bromobenzene	ND	5.0	1.000	102980	06/15/05
1,3,5-Trimethylbenzene	ND	5.0	1.000	102980	06/15/05
2-Chlorotoluene	ND	5.0	1.000	102980	06/15/05
4-Chlorotoluene	ND	5.0	1.000	102980	06/15/05
tert-Butylbenzene	ND	5.0	1.000	102980	06/15/05
1,2,4-Trimethylbenzene	ND	5.0	1.000	102980	06/15/05
sec-Butylbenzene	ND	5.0	1.000	102980	06/15/05
para-Isopropyl Toluene	ND	5.0	1.000	102980	06/15/05
1,3-Dichlorobenzene	ND	5.0	1.000	102980	06/15/05
1,4-Dichlorobenzene	ND	5.0	1.000	102980	06/15/05
n-Butylbenzene	ND	5.0	1.000	102980	06/15/05
1,2-Dichlorobenzene	ND	5.0	1.000	102980	06/15/05
1,2-Dibromo-3-Chloropropane	ND	5.0	1.000	102980	06/15/05
1,2,4-Trichlorobenzene	ND	5.0	1.000	102980	06/15/05
Hexachlorobutadiene	ND	5.0	1.000	102980	06/15/05
Naphthalene	ND	5.0	1.000	102980	06/15/05
1,2,3-Trichlorobenzene	ND	5.0	1.000	102980	06/15/05

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	96	78-120	1.000	102980	06/15/05
1,2-Dichloroethane-d4	96	80-120	1.000	102980	06/15/05
Toluene-d8	98	80-120	1.000	102980	06/15/05
Bromofluorobenzene	102	80-120	1.000	102980	06/15/05

ND= Not Detected
RL= Reporting Limit

13.0

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC297610	Diln Fac:	1.000
Matrix:	Soil	Batch#:	102980
Units:	ug/Kg	Analyzed:	06/15/05

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

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC297610	Diln Fac:	1.000
Matrix:	Soil	Batch#:	102980
Units:	ug/Kg	Analyzed:	06/15/05

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

Surrogate	%REC	Limits
Dibromofluoromethane	101	78-120
1,2-Dichloroethane-d4	103	80-120
Toluene-d8	99	80-120
Bromofluorobenzene	101	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC297735	Diln Fac:	1.000
Matrix:	Soil	Batch#:	103011
Units:	ug/Kg	Analyzed:	06/16/05

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

ND= Not Detected
RL= Reporting Limit

15.0

Curtis & Tompkins, Ltd.

atch QC Report

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC297735	Diln Fac:	1.000
Matrix:	Soil	Batch#:	103011
Units:	ug/Kg	Analyzed:	06/16/05

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

Surrogate	%REC	Limits
Dibromofluoromethane	95	78-120
1,2-Dichloroethane-d4	98	80-120
Toluene-d8	99	80-120
Bromofluorobenzene	98	80-120

D= Not Detected
RL= Reporting Limit

15.0

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Type:	LCS	Basis:	as received
Lab ID:	QC297611	Diln Fac:	1.000
Matrix:	Soil	Batch#:	102980
Units:	ug/Kg	Analyzed:	06/15/05

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	60.94	122	77-124
Benzene	50.00	51.36	103	80-120
Trichloroethene	50.00	54.53	109	80-120
Toluene	50.00	53.24	106	80-120
Chlorobenzene	50.00	52.88	106	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	96	78-120
1,2-Dichloroethane-d4	90	80-120
Toluene-d8	98	80-120
Bromofluorobenzene	98	80-120

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Type:	LCS	Basis:	as received
Lab ID:	QC297732	Diln Fac:	1.000
Matrix:	Soil	Batch#:	103011
Units:	ug/Kg	Analyzed:	06/16/05

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	59.23	118	77-124
Benzene	50.00	51.85	104	80-120
Trichloroethene	50.00	54.05	108	80-120
Toluene	50.00	53.45	107	80-120
Chlorobenzene	50.00	52.74	105	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	96	78-120
1,2-Dichloroethane-d4	97	80-120
Toluene-d8	100	80-120
Bromofluorobenzene	98	80-120

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	180005-001	Batch#:	102980
Matrix:	Soil	Sampled:	06/13/05
Units:	ug/Kg	Received:	06/14/05
Basis:	as received	Analyzed:	06/15/05

Type: MS Lab ID: QC297664

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.6852	50.00	56.77	114	70-120
Benzene	<0.5652	50.00	49.10	98	70-120
Trichloroethene	2.378	50.00	73.43	142 *	65-126
Toluene	<0.4612	50.00	49.70	99	64-120
Chlorobenzene	<0.5680	50.00	46.66	93	59-120

Surrogate	%REC	Limits
Dibromofluoromethane	97	78-120
1,2-Dichloroethane-d4	97	80-120
Toluene-d8	101	80-120
Bromofluorobenzene	99	80-120

Type: MSD Lab ID: QC297665

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	60.33	121 *	70-120	6	20
Benzene	50.00	52.50	105	70-120	7	20
Trichloroethene	50.00	89.76	175 *	65-126	20	20
Toluene	50.00	53.60	107	64-120	8	20
Chlorobenzene	50.00	51.59	103	59-120	10	20

Surrogate	%REC	Limits
Dibromofluoromethane	95	78-120
1,2-Dichloroethane-d4	96	80-120
Toluene-d8	98	80-120
Bromofluorobenzene	97	80-120

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference

17.0

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	180038	Location:	5885 Hollis St
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4069.01	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	180005-001	Batch#:	103011
Matrix:	Soil	Sampled:	06/13/05
Units:	ug/Kg	Received:	06/14/05
Basis:	as received	Analyzed:	06/16/05

Type: MS Lab ID: QC297733

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.6852	50.00	47.07	94	70-120
Benzene	<0.5652	50.00	58.99	118	70-120
Trichloroethene	1.036	50.00	101.5 >LR b	201 *	65-126
Toluene	<0.4612	50.00	59.49	119	64-120
Chlorobenzene	<0.5680	50.00	58.04	116	59-120

Surrogate	%REC	Limits
Dibromofluoromethane	97	78-120
1,2-Dichloroethane-d4	101	80-120
Toluene-d8	101	80-120
Bromofluorobenzene	98	80-120

Type: MSD Lab ID: QC297734

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	56.19	112	70-120	18	20
Benzene	50.00	51.55	103	70-120	13	20
Trichloroethene	50.00	87.52	173 *	65-126	NC	20
Toluene	50.00	52.88	106	64-120	12	20
Chlorobenzene	50.00	50.48	101	59-120	14	20

Surrogate	%REC	Limits
Dibromofluoromethane	92	78-120
1,2-Dichloroethane-d4	97	80-120
Toluene-d8	102	80-120
Bromofluorobenzene	98	80-120

*= Value outside of QC limits; see narrative
b= See narrative
NC= Not Calculated
LR= Response exceeds instrument's linear range
RPD= Relative Percent Difference

24.0