



**Chevron**

June 9, 1999

Ms. Eva Chu  
Alameda County Health Care Services  
Department of Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

**Chevron Products Company**  
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Building L, Room 1080  
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**Philip R. Briggs**  
Project Manager  
Site Assessment & Remediation  
Phone 925 842-9136  
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**Re: Chevron Service Station #9-4800  
1700 Castro Street  
Oakland, California**

Dear Ms. Chu:

Our consultant Gettler-Ryan, Inc. sent the Well Installation Report for the above noted facility, dated May 25, 1999, to you under separate cover. The report details the work performed to further delineate the soil and groundwater conditions beneath this site.

Three groundwater-monitoring wells were installed on-site and at the locations approved in the Work Plan dated 3/9/99. The wells were drilled to a depth of 30 feet below ground surface. Three soil samples were collected and analyzed for TPH-g, BTEX and MtBE constituents in well MW-4 and two samples were collected and analyzed for the same constituents in wells MW-5 and MW-6. In addition, two samples from well MW-6 were analyzed for total porosity, dry & natural bulk density and matrix density.

No constituents were detected in the soil samples from wells MW-5 and MW-6. The only constituents detected in the three soil samples from well MW-4 were benzene at 0.0051 ppm and MtBE at 0.22 ppm and 0.45 ppm.

Groundwater samples were collected from each well and analyzed for TPH-g, BTEX and MtBE constituents in all wells and analyzed for TPH-d in well MW-5. TPH-g and BTEX constituents were only detected in well MW-4 in concentrations of 130 ppb and 3.1 ppb respectively. The MtBE constituent was only detected in wells MW-4 and MW-6 in concentrations of 5,400 ppb and 5.6 ppb respectively (by EPA Method 8260). No other oxygenates were detected in the wells. No TPH-d was detected in well MW-5.

Depth to groundwater varied from 24.31 feet to 25.97 feet below grade with a direction of flow westerly, which compares with previous sampling events that have been conducted at this site.

June 9, 1999  
Ms. Eva Chu  
Chevron Service Station # 9-4800  
Page 2

Based on the above noted analyzes, it appears that the downgradient extent of petroleum hydrocarbons in ground water is close to being defined. The concentration of benzene detected in well MW-4 is significantly lower than the upgradient well MW-2.

As noted in my previous correspondence, overspill protection is provided at the tanks and dispensers and the fueling system is in compliance with EPA 1998 requirements. Chevron therefore proposes to add Oxygen Releasing Compounds (ORC's) to wells MW-1, MW-2, MW-3, MW-4 and MW-6 to accelerate the natural attenuation process. Request your concurrence to this request.

If you have any questions or comments, call me at (925) 842-9136.

Sincerely,  
**CHEVRON PRODUCTS COMPANY**



Philip R. Briggs  
Site Assessment and Remediation Project Manager

Enclosure

cc: Mr. Bill Scudder, Chevron

Mr. Chuck Headlee  
RWQCB- San Francisco Bay Region  
2101 Webster Street, Suite 500  
Oakland, CA 94612



# GETTLER-RYAN INC.

## TRANSMITTAL

TO: Mr. Phil Briggs  
 Chevron Products Company  
 P. O. Box 6004  
 San Ramon, California 94583

DATE: May 25, 1999  
 PROJ. #: 346383.03  
 SUBJECT: Well Installation Report  
 Chevron Station #9-4800  
 1700 Castro Street  
 Oakland, California

FROM:  
 Rick L. Fears  
 Senior Geologist  
 Gettler-Ryan Inc.  
 3164 Gold Camp Drive, Suite 240  
 Rancho Cordova, California 95670

### WE ARE SENDING YOU:

COPIES	DATED	DESCRIPTION
1	May 25, 1999	Well Installation Report

### THESE ARE TRANSMITTED as checked below:

- For review and comment   
  Approved as submitted   
  Resubmit \_\_ copies for approval  
 As requested   
  Approved as noted   
  Submit \_\_ copies for distribution  
 For approval   
  Return for corrections   
  Return \_\_ corrected prints  
 For Your Files

### COMMENTS:

At Chevron's request, Gettler-Ryan is sending you one copy of the above referenced Report for your records. If you have any questions, please call me in our Sacramento office at (916) 631-1300.

CC: Ms. Eva Chu, Alameda County Health Care Services Agency, Department of Environmental Health, 1131 Harbor Bay Parkway, Room 250, Alameda, California 94502-6577

ENVIRONMENTAL PROTECTION  
 JUN 3 1999



# GETTLER-RYAN INC.

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## MONITORING WELL INSTALLATION REPORT

at  
Chevron Service Station #9-4800  
1700 Castro Street  
Oakland, California

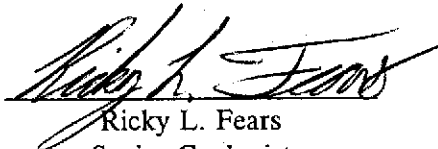
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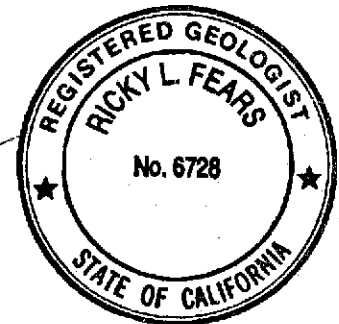
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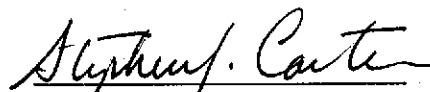
Mr. Phil Briggs  
Chevron Products Company  
P.O. Box 6004  
San Ramon, California 94583

**Prepared by:**

Gettler-Ryan Inc.  
3164 Gold Camp Drive, Suite 240  
Rancho Cordova, California 95670

  
Ricky L. Fears  
Senior Geologist  
R.G. 6728



  
Stephen J. Carter  
Senior Geologist  
R.G. 5577

May 25, 1999

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- Appendix A. Alameda County Approval Letter
- Appendix B. GR Field Methods and Procedures
- Appendix C. Permits, Logs of Borings, Well Construction Details and California Department of Water Resources Well Logs
- Appendix D. Field Development and Monitoring Logs
- Appendix E. Surveyor's Report
- Appendix F. Laboratory Reports and Chain-of-Custody Forms

# MONITORING WELL INSTALLATION REPORT

at  
Chevron Service Station #9-4800  
1700 Castro Street  
Oakland, California

Report No. 346383.03-4

## INTRODUCTION

At the request of Chevron Products Company (Chevron), Gettler-Ryan Inc. (GR) has installed three groundwater monitoring wells at the subject site. This work was performed to further delineate horizontal and vertical migration of hydrocarbons in the soil and groundwater at the subject site. The work performed included: drilling three soil borings and completing them as groundwater monitoring wells; collecting soil samples for description and possible chemical and physical analysis; developing and sampling the newly installed wells; surveying the wellhead locations and elevations; submitting selected soil and groundwater samples for chemical and physical analysis; and preparing a report discussing findings. This work was proposed in the GR Work Plan No. 346383.03-3, *Work Plan for Monitoring Well Installation*, dated October 19, 1998, and approved by the Alameda County Environmental Health Services (ACEHS) in a letter dated December 24, 1998 (Appendix A).

## SITE DESCRIPTION

The site is an active service station located on the southeast corner of Castro Street and 18th Street in Oakland, California (Figure 1). The current facilities consist of a kiosk, five dispenser islands and four gasoline UST's that share a common excavation in the northern portion of the site. Locations of pertinent site features are shown on Figure 2.

## PREVIOUS ENVIRONMENTAL WORK

Five dispenser islands were upgraded in February 1997. On February 18, 1997, one soil sample was collected from beneath each of the five dispenser islands at a depth of 4.0 feet below ground surface (bgs). Total Petroleum Hydrocarbons as gasoline (TPHg) were detected in four samples ranging from 1.9 to 890 parts per million (ppm). Benzene was detected in four samples at concentrations ranging from 0.016 to 15 ppm. Total Petroleum Hydrocarbons as diesel (TPHd) were detected in four samples at concentrations ranging from 1.9 to 220 ppm. The highest concentrations of hydrocarbons at the site were detected in samples collected beneath the central and southern dispenser islands.

On February 21 and 22, 1997, GR hand augered 12 soil borings, to a maximum depth of 10.0 feet, to evaluate the extent of the hydrocarbon impact to the soil beneath the site. Groundwater was not encountered during installation of the soil borings. TPHg were detected in five soil boring samples

and ranged from 1.9 to 890 ppm. TPHd were detected in six boring samples and ranged from 1.0 to 640 ppm. Benzene was detected in 12 soil boring samples and ranged in concentrations from 0.011 to 3.0 ppm.

On May 29, 1997 GR supervised the installation of three groundwater monitoring wells at the site. TPHg were not detected in soil samples from these well borings. TPHd were detected in the monitoring well borings MW-2 at 21.0 feet bgs (1.9 ppm) and MW-3 at 16.0 feet bgs (1.1 ppm). Benzene was detected in soil from the monitoring well borings MW-1 and MW-3 at concentrations of 0.0069 to 0.12 ppm respectively. No benzene was detected in soil from monitoring well boring MW-2. Methyl tertiary-butyl ether (MtBE) was detected in the soil from monitoring well soil borings MW-2 and MW-3 at concentrations ranging from 0.041 to 0.58 ppm. MtBE was not detected in the soil from monitoring well soil boring MW-1.

The most recent (March 11, 1999) quarterly groundwater monitoring analytical results indicated TPHg concentrations in the groundwater from monitoring wells MW-1 of 353 parts per billion (ppb), MW-2 (12,500 ppb) and MW-3 (653 ppb). Benzene concentrations in the groundwater were reported in monitoring wells MW-1 (53.9 ppb), MW-2 (1,520 ppb) and MW-3 (136 ppb). TPHd concentrations in the groundwater were reported in monitoring wells MW-1 (98 ppb), MW-2 (2,700 ppb) and MW-3 (<50 ppb). MtBE concentrations were reported in monitoring wells MW-1 (14.1 ppb), MW-2 (5,050 ppb) and MW-3 (144 ppb). Historical quarterly monitoring groundwater analytical results indicate stable or slightly decreasing hydrocarbon concentrations between June of 1997 and March of 1999. During the most recent quarterly groundwater monitoring event the depth to water was measured between 24.21 feet below the top of casing (TOC) to 25.47 feet below the TOC.

## FIELD ACTIVITIES

Fieldwork was performed in accordance with the site specific GR Site Safety Plan, dated March 9, 1999. GR Field Methods and Procedures are included in Appendix B. Underground Service Alert (USA) was notified prior to beginning drilling activities, and a private line locator was contracted to clear subsurface utilities at the site. Drilling and well installation was performed under Alameda County Public Works Agency permit number 99WR010, dated January 8, 1999. A copy of the well installation permit is presented in Appendix C.

Three groundwater monitoring wells (MW-4, MW-5 and MW-6) were installed on March 23, 1999. The monitoring well soil borings were drilled using a truck-mounted drill rig equipped with 8-inch-diameter hollow-stem augers to a depth of 30 feet below ground surface (bgs). Drilling was performed by Bay Area Exploration (C57 #522125). A GR geologist observed the drilling of the borings, described the encountered soil, collected soil samples for possible chemical analyses, and prepared a log of the borings. Boring logs are presented in Appendix C. Locations of the newly installed monitoring wells are shown on the Site Plan (Figure 2). Copies of the completed California Department of Water Resources (DWR) Completion Report are included in Appendix C. Soil cuttings generated during drilling activities were placed on and covered with plastic sheeting at the site pending disposal. Four soil samples were collected from the stockpiled soil and were submitted to Sequoia Analytical Laboratory (ELAP #1271) for compositing and analysis as one sample.



### Well Installation

Groundwater monitoring wells MW-4, MW-5 and MW-6 were constructed using 2-inch diameter Schedule 40 polyvinyl chloride (PVC) casing with 18.5 feet (10.5 to 29.0 feet bgs) of 0.02-inch machine-slotted screen. The annular space around the well casing was packed with Lonestar #3 sand. The sandpack was followed by a bentonite transition seal and then neat cement was tremied into the annular space to approximately 1-foot bgs. The tops of wells are protected by a traffic rated vault box, locking cap, and lock. Well construction details are presented in the soil boring logs in Appendix C.

### Well Development, Monitoring, and Sampling

Groundwater monitoring wells MW-4, MW-5 and MW-6 were developed, monitored, and sampled by GR on April 8, 1999. The depth to groundwater was measured in monitoring wells MW-4, MW-5 and MW-6 at the site, and these wells were checked for the presence of free product prior to purging and sampling. Floating product was not observed in monitoring wells MW-4, MW-5 and MW-6. Field development and monitoring logs are included in Appendix D

### Wellhead Survey

Following installation of the wells, the casing elevations were surveyed by Virgil Chavez Land Surveying (P.L.S #6323). Top of casing and vault box elevations were measured relative to MSL. Horizontal coordinates were obtained and are included with the surveyor's report. The survey report for the subject site is attached in Appendix E.

## **RESULTS OF SUBSURFACE INVESTIGATION**

### Soil Conditions

Soils observed at the site consisted of unconsolidated yellowish brown, gray, brown, light brown and light olive silt, clay and sand mixtures (SM, SC, SP and CL). Detailed descriptions of the subsurface materials encountered during drilling are presented in the logs of boring (Appendix C).

### Groundwater Conditions

During this investigation, groundwater in monitoring well soil borings MW-4, MW-5 and MW-6 was first encountered at approximately 25 feet bgs. On April 8, 1999, static groundwater levels in the newly installed groundwater monitoring wells at the site were measured between at 24.31 feet (MW-6) and 25.97 feet (MW-5) below the top of the well casings. The April 8, 1999, groundwater elevation data is summarized in Table 2.

A groundwater potentiometric map using the newly acquired data from MW-4, MW-5 and MW-6 is included as Figure 3. Groundwater is flowing toward the west at a gradient of 0.01 ft/ft. Groundwater elevation data for the site are summarized in Table 2.

## **CHEMICAL ANALYTICAL RESULTS**

Six soil samples were collected from both monitoring well soil borings MW-4 and MW-5. Seven soil samples were collected from monitoring well boring MW-6. One composite soil sample was collected from the stockpiled drill cuttings. Groundwater samples were collected from monitoring wells MW-4, MW-5 and MW-6. Soil and groundwater chemical analyses were performed by Sequoia Analytical of Walnut Creek, California (ELAP #1271). Soil chemical analytical data has been summarized in Table 1, and groundwater chemical analytical data has been summarized in Table 2. Copies of the laboratory reports and chain-of-custody forms are presented in Appendix D.

### Chemical Analytical Procedures

Soil samples were analyzed for TPHg by Environmental Protection Agency (EPA) Method Modified 8015 and for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and methyl tert-butyl ether (MtBE) by EPA Method 8020. Stockpile sample SP1 A through D was analyzed for TPHg and BTEX by EPA Method Modified 8015/8020. Soil samples MW-6-11 and MW-6-24 were analyzed for Fraction Organic Carbon (Whatly-Black Method), Porosity, Bulk Density and Moisture Content. The groundwater samples from monitoring wells MW-4, MW-5 and MW-6 were analyzed for TPHg, BTEX and MtBE by EPA Method Modified 8015/8020. MtBE and other oxygenate compounds including Ethanol, t-Butanol, Di-Isopropyl Ether (DIPE), Ethyl t-Butyl Ether (EtBE) and t-Amyl Methol Ether (TAME) from monitoring wells MW-4, MW-5 and MW-6 were confirmed by EPA Method 8260.

### Soil Chemical Analytical Results

Concentrations of TPHg, BTEX and MtBE were not detected in any of the soil samples analyzed from soil borings MW-5 or MW-6. Concentrations of benzene (0.0051 ppm) and MtBE (0.045) ppm were detected in monitoring well MW-4 at 23.0 feet bgs. MtBE was detected in soil sample MW-4-6 at a concentration of 0.22 ppm at a depth of 6.0 feet bgs. No other petroleum hydrocarbons were detected in soil samples from the monitoring well MW-4 soil boring. TPHg and BTEX were not detected in stockpile sample SP1 A-D.

### Soil Physical Testing Results

Two soil samples (MW-6-11 and MW-6-24) were analyzed for Fraction Organic Carbon, Porosity, Bulk Density and Moisture Content. The soils tested contained 0.032% organic carbon in MW-6-11 and 0.022% organic carbon in soil sample MW-6-24. The porosity of the soil was determined for soil sample MW-6-11 (28.0%) and MW-6-24 (37.0%). The Dry Bulk Density of soil sample MW-6-11 was 1.96 g/cc and the Dry Bulk Density of soil sample MW-6-24 was 1.70 grams per cubic centimeter (g/cc). The Natural Bulk Density of soil sample MW-6-11 was 2.20 g/cc and the natural Bulk Density of soil sample MW-6-24 was 2.02 g/cc. The Matrix Density was 2.72 g/cc in MW-6-11 and 2.69 g/cc in MW-6-24. The moisture content of soil sample MW-6-11 was 11%. The moisture content of soil sample MW-6-24 was not determined because it was collected from beneath the water table. Soil physical testing results are presented in Table 3.

### Groundwater Chemical Analytical Results

TPHg and BTEX were not detected in the groundwater samples collected from monitoring wells MW-5 and MW-6. TPHg were detected in monitoring well MW-4 at a concentration of 130 parts per billion (ppb). Benzene was detected in monitoring well MW-4 at a concentration of 3.1 ppb. Xylenes were detected in monitoring well MW-4 at a concentration of 7.7 ppb. MtBE concentrations (by EPA Method 8020/8260) were detected at 4,700/5,400 ppb in monitoring well MW-4 and 4.5/5.6 ppb in monitoring well MW-6. No other MtBE or oxygenate compounds including Ethanol, t-Butanol, DIPE, EtBE or TAME were detected in the site monitoring wells. Petroleum hydrocarbons were not detected in the trip blank.

### **WASTE DISPOSAL**

Drill cuttings generated during this investigation were placed on and covered with plastic at the site pending disposal. On April 29, 1999, IWM, Inc. of Milpitas, California removed and transported approximately 2 cubic yards of drill cuttings to the BFI Vasco Road Landfill, in Livermore, California, for disposal. Decontamination and purge water, generated during this investigation, was transported by IWM to the McKittrick Waste Facility in McKittrick, California, for disposal.

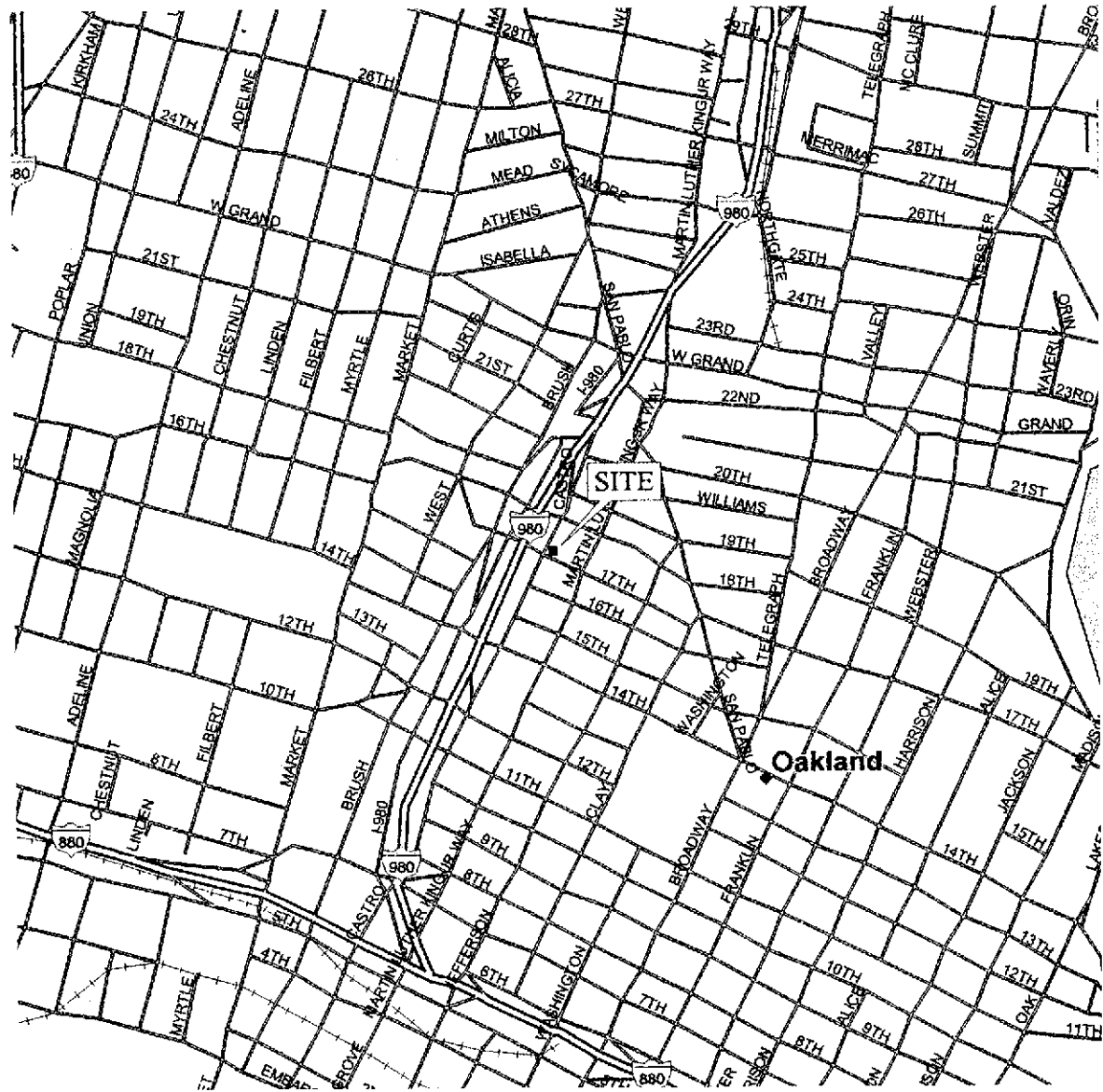
### **RESULTS**

- Analytical results from this investigation show that soil in the vicinity of newly installed soil borings (MW-5 and MW-6) has not been impacted by TPHg, BTEX or MtBE compounds.
- Soil in the vicinity of MW-4 has been impacted by MtBE (0.22 ppm at 6 feet bgs and 0.45 ppm at 23 feet bgs) and benzene (0.0051 ppm at 23 feet bgs).
- Groundwater in the vicinity of monitoring well MW-4 has been impacted by TPHg (130 ppb), benzene (3.1 ppb) and MtBE (5,400 ppb). TPHd were not detected in the groundwater from monitoring well MW-4.
- TPHg or BTEX were not detected in groundwater samples from monitoring wells MW-5 or MW-6.

### **CONCLUSIONS**

Concentrations of TPHg, benzene and MtBE were detected in the groundwater from monitoring well MW-4. Monitoring well MW-4 is located down gradient of the dispenser islands and underground storage tanks at the subject site (Figure 2).

Concentrations of petroleum hydrocarbons in the groundwater are not defined in the down gradient direction at the subject site.



Oakland



Source: Street Atlas USA, Delorme (1995).



**Gettler - Ryan Inc.**

6747 Sierra Ct., Suite J (925) 551-7555  
Dublin, CA 94568

VICINITY MAP  
Chevron Service Station No. 9-4800  
1700 Castro Street  
Oakland, California

FIGURE

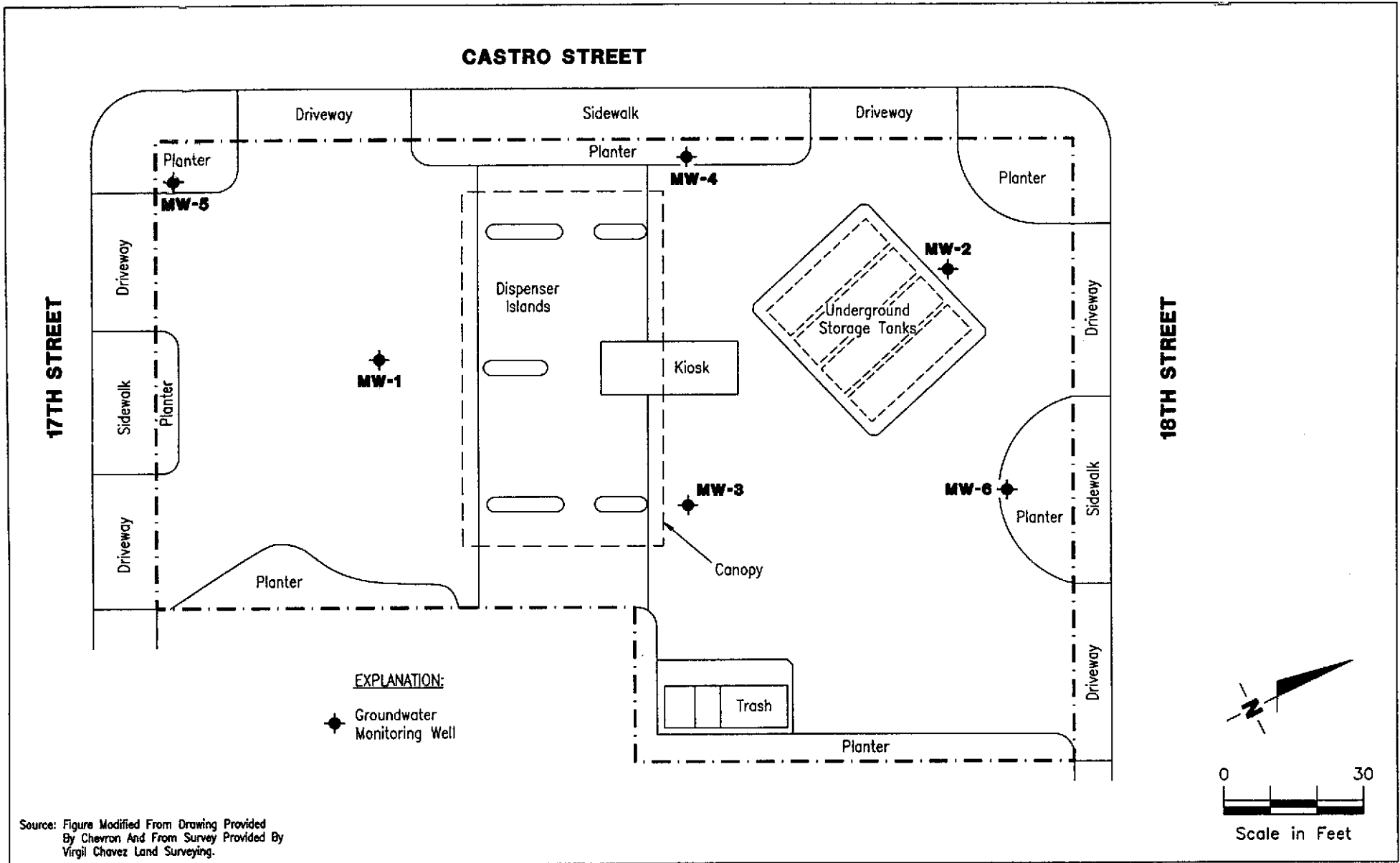
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REVIEWED BY

DATE  
08/98

REVISED DATE



Source: Figure Modified From Drawing Provided  
By Chevron And From Survey Provided By  
Virgil Chavez Land Surveying.



**Gettler - Ryan Inc.**

6747 Sierra Ct., Suite J (510) 551-7555  
Dublin, CA 94568

**SITE PLAN**  
Chevron Service Station No. 9-4800  
1700 Castro Street  
Oakland, California

FIGURE  
**2**

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REVIEWED BY

DATE  
08/98

REVISED DATE  
04/99



**Table 1****Soil Chemistry Data**

Chevron Products Company Station No. 9-4800  
1700 Castro Street  
Oakland, California

Sample No.	Sample Date	Sample Depth (feet)	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	MtBE (ppm)
MW-4-6	3/23/99	6.0	<1.00	<0.0050	<0.0050	<0.0050	<0.0050	0.22
MW-4-16	3/23/99	16.0	<1.00	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
MW-4-23	3/23/99	23.0	<1.00	0.0051	<0.0050	<0.0050	<0.0050	0.45
MW-5-16	3/23/99	16.0	<1.00	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
MW-5-24	3/23/99	24.0	<1.00	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
MW-6-16	3/23/99	16.0	<1.00	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
MW-6-21	3/23/99	21.0	<1.00	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
<b><u>Stockpile</u></b>								
SP-A,B,C,D	1/5/99	----	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	NA

**Explanation:**

TPHg = Total Petroleum Hydrocarbons as gasoline  
BETX = Benzene, toluene, ethylbenzene and xylenes  
MtBE = Methyl tert-Butyl Ether  
ppm = Parts per million  
NA = Compound not analyzed for

**Analytical Methods**

TPHg = EPA Modified 8015  
BTEX/MtBE = EPA Method 8020

**Analytical Laboratory**

Sequoia Analytical (ELAP #1271)

**Table 2**

**Groundwater Elevation and Chemistry Data**

Chevron Products Company Station No. 9-4800  
1700 Castro Street  
Oakland, California

Well I.D./ TOC Elevation	Sample Date	Depth to Water	Groundwater Elevation <sup>1</sup>	TPHd (ppb)	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MtBE <sup>2</sup> (ppb)
MW-4/ 30.13	4/8/99	24.82	5.31	-----	130	3.1	<0.50	<0.50	7.7	4,700/5,400 <sup>3</sup>
MW-5/ 31.21	4/8/99	25.97	5.24	<50	<50	<0.50	<0.50	<0.50	<0.50	<2.5/<2.0 <sup>4</sup>
MW-6/ 30.78	4/8/99	24.31	6.47	-----	<50	<0.50	<0.50	<0.50	<0.50	4.5/5.6 <sup>4</sup>
TB/LB	4/8/99	-----	-----	-----	<50	<0.50	<0.50	<0.50	<0.50	<2.5/-----

**Explanation:**

TPHd = Total Petroleum Hydrocarbons as Diesel  
TPHg = Total Petroleum Hydrocarbons as gasoline  
BTEX = Benzene, toluene, ethylbenzene and xylenes  
ppb = Parts per billion

<sup>1</sup>Groundwater elevation with reference to mean sea level.

<sup>2</sup>MtBE (EPA Method 8020/EPA Method 8260)

<sup>3</sup> Also analyzed for ethanol (<25,000 ppb), t-butanol (<5,000 ppb), di-isopropyl ether (<100 ppb), ethyl t-butyl ether (<100 ppb), t-amyl methyl ether (<100ppb).

<sup>4</sup> Also analyzed for ethanol (<500 ppb), t-butanol (<200 ppb), di-isopropyl ether (<2.0 ppb), ethyl t-butyl ether (<2.0 ppb), t-amyl methyl ether (<2.0 ppb).

**Analytical Methods**

TPHd = EPA Modified Method 8015  
TPHg = EPA Modified Method 8015  
BTEX/MtBE= EPA Method 8020  
Oxygenates=EPA Method 8260

**Analytical Laboratory**

Sequoia Analytical (ELAP #1271)



**Table 3**

**Soil Physical Testing Data**  
Chevron Products Company Station No. 9-4800  
1700 Castro Street  
Oakland, California

Sample No.	Sample Date	Sample Depth (feet)	Fraction Organic Carbon <sup>1</sup> (%)	Moisture Content <sup>1</sup> (%)	Total Porosity <sup>2</sup> (%)	Dry Bulk Density <sup>2</sup> (g/cc)	Natural Bulk Density <sup>2</sup> (g/cc)	Matrix Density <sup>2</sup> (g/cc)
MW-6-11	3/23/99	11.0	0.032	11.00	28.0	1.70	2.02	2.72
MW-6-24	3/23/99	24.0	0.022	--	37.0	2.20	2.72	2.69

**Explanation:**

-- Indicates Sample not analyzed  
g/cc=Grams per Cubic Centimeter

**Analytical Methods**

Fraction Organic Carbon = Walkley Black Method  
Moisture Content = EPA Method 160.3  
Sample Density = API RP-40  
Total Porosity = API RP-40

**Analytical Laboratory**

<sup>1</sup>Sequoia Analytical (ELAP #1271)  
<sup>2</sup>Core Laboratories Inc.

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

StID 3644

March 3, 1999

Mr. Phil Briggs  
Chevron Products Company  
P.O. Box 6004  
San Ramon, CA 94583-0904

RE: Work Plan Approval for 1700 Castro Street, Oakland, CA

Dear Mr. Briggs:

I have completed review of Gettler-Ryan Inc's August 1998 *Work Plan for Monitoring Well Installation* and their January 1999 *Work Plan Addendum* prepared for the above referenced site. Three groundwater monitoring wells are proposed. Soil and groundwater samples will be analyzed for TPHg BTEX, and MTBE. In addition, groundwater will also be analyzed for fuel oxygenates using EPA Method 8260. This proposal is acceptable with the following additions:

- Groundwater sample from the proposed monitoring well that is downgradient of the existing tank complex should also be analyzed for TPHd; and,
- Soil parameters, such as total organic carbon content, bulk density, porosity, water content, etc., should be measured in a soil sample collected from the vadose zone of the proposed upgradient well.

Field work should commence within 60 days of the date of this letter, or by **May 7, 1999**. Please provide 72 hours notice prior to the start of field activities. If you have any questions, I can be reached at (510) 567-6762.

eva chu  
Hazardous Materials Specialist

c: ↓ Rick Fears  
Gettler-Ryan  
3164 Gold Camp Drive, Suite 240  
Rancho Cordova, CA 95670

chevron4800-1

# GETTLER-RYAN INC.

## FIELD METHODS AND PROCEDURES

### Site Safety Plan

Field work performed by Gettler-Ryan Inc. (GR) is conducted in accordance with GR's Health and Safety Plan and the Site Safety Plan. GR personnel and subcontractors who perform work at the site are briefed on the contents of these plans prior to initiating site work. The GR geologist or engineer at the site when the work is performed acts as the Site Safety Officer. GR utilizes a photoionization detector (PID) to monitor ambient conditions as part of the Health and Safety Plan.

### Collection of Soil Samples

Soil borings are drilled by a California-licensed well driller. A GR geologist is present to observe the drilling, collect soil samples for description, physical testing, and chemical analysis, and prepare a log of the exploratory soil boring. Soil samples are collected from the soil boring with a split-barrel sampling device fitted with 2-inch-diameter, clean brass tube or stainless steel liners. The sampling device is driven approximately 18 inches with a 140-pound hammer falling 30 inches. The number of blows required to advance the sampler each successive 6 inches is recorded on the boring log. The encountered soils are described using the Unified Soil Classification System (ASTM 2488-84) and the Munsell Soil Color Chart.

After removal from the sampling device, soil samples for chemical analysis are covered on both ends with teflon sheeting or aluminum foil, capped, labeled, and placed in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Samples are selected for chemical analysis based in part on:

- a. depth relative to underground storage tanks and existing ground surface
- b. depth relative to known or suspected groundwater
- c. depth relative to areas of known hydrocarbon impact at the site
- d. presence or absence of contaminant migration pathways
- e. presence or absence of discoloration or staining
- f. presence or absence of obvious gasoline hydrocarbon odors
- g. presence or absence of organic vapors detected by headspace analysis

### **Field Screening of Soil Samples**

A PID is used to perform head-space analysis in the field for the presence of organic vapors from the soil sample. This test procedure involves removing some soil from one of the sample tubes not retained for chemical analysis and immediately covering the end of the tube with a plastic cap. The PID probe is inserted into the headspace inside the tube through a hole in the plastic cap. Head-space screening results are recorded on the boring log. Head-space screening procedures are performed and results recorded as reconnaissance data. GR does not consider field screening techniques to be verification of the presence or absence of hydrocarbons.

### **Construction of Monitoring Wells**

Monitoring wells are constructed in the exploratory soil borings with Schedule 40 polyvinyl chloride (PVC) casing. All joints are thread-joined; no glues, cements, or solvents are used in well construction. The screened interval is constructed of machine-slotted PVC well screen which generally extends from the total well depth to a point above the groundwater. An appropriately-sized sorted sand is placed in the annular space adjacent to the entire screened interval. A bentonite transition seal is placed in the annular space above the sand, and the remaining annular space is sealed with neat cement or cement grout.

Wellheads are protected with water-resistant traffic-rated vault boxes placed flush with the ground surface. The top of the well casing is sealed with a locking waterproof cap. A lock is placed on the well cap to prevent vandalism and unintentional introduction of materials into the well.

### **Measurement of Water Levels**

The top of the newly-installed well casing is surveyed by a California-licensed Land Surveyor to mean sea level (MSL). Depth-to-groundwater in the well is measured from the top of the well casing with an electronic water-level indicator. Depth-to-groundwater is measured to the nearest 0.01-foot, and referenced to MSL.

### **Well Development and Sampling**

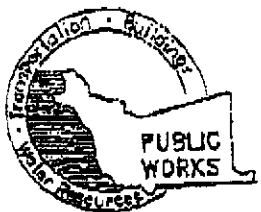
The purpose of well development is to improve hydraulic communication between the well and the surrounding aquifer. Prior to development, each well is monitored for the presence of floating product and the depth-to-water is recorded. Wells are then developed by alternately surging the well with a vented surge block, then purging the well with a pump or bailer to

remove accumulated sediments and draw groundwater into the well. Development continues until the groundwater parameters (temperature, pH, and conductivity) have stabilized.

### **Storing and Sampling of Drill Cuttings**

Drill cuttings are stockpiled on and covered with plastic sheeting and samples are collected and analyzed for disposal classification on the basis of one composite sample per 100 cubic yards of soil. Stockpile samples are composed of four discrete soil samples, each collected from an arbitrary location on the stockpile. The four discrete samples are then composited in the laboratory prior to analysis.

Each discrete stockpile sample is collected by removing the upper 3 to 6 inches of soil, and then driving the stainless steel or brass sample tube into the stockpiled material with a hand, mallet, or drive sampler. The sample tubes are then covered on both ends with teflon sheeting or aluminum foil, capped, labeled, and placed in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Stockpiled soils are covered with plastic sheeting after completion of sampling.



# ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION  
251 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651  
PHONE (510) 670-5575 ANDREAS GODFREY FAX (510) 670-5202  
(510) 670-5148 ALVIN KAN

## DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT Chevron # 9-4800  
1700 Castro Street  
OAKLAND

PERMIT NUMBER 99WR010  
WELL NUMBER \_\_\_\_\_  
APN \_\_\_\_\_

California Coordinates Source \_\_\_\_\_ ft. Accuracy = \_\_\_\_\_ ft.  
CCN \_\_\_\_\_ n. CCE \_\_\_\_\_ ft.  
APN \_\_\_\_\_

### PERMIT CONDITIONS

Circled Permit Requirements Apply

CLIENT  
Name Chevron Products Company  
Address P.O. Box 6224 Phone (925) 942-9186  
City San Ramon, CA Zip 94583

- (A) GENERAL
  1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
  2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
  3. Permit is void if project not begun within 90 days of approval date.

APPLICANT  
Name Gettler-Ryan Inc. Fax 916-631-1317  
Address 3164 Old Camp Dr. #240 Phone 916-631-1300  
City Rancho Cordova, CA Zip 95670

- B. WATER SUPPLY WELLS
  1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
  2. Minimum seal depth is 30 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

TYPE OF PROJECT

Well Construction	<input type="checkbox"/>	Geotechnical Investigation	<input type="checkbox"/>
Cathodic Protection	<input type="checkbox"/>	General	<input type="checkbox"/>
Water Supply	<input type="checkbox"/>	Contamination	<input type="checkbox"/>
Monitoring	<input checked="" type="checkbox"/>	Well Destruction	<input type="checkbox"/>

- (C) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
  1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
  2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

PROPOSED WATER SUPPLY WELL USE

New Domestic	<input type="checkbox"/>	Replacement Domestic	<input type="checkbox"/>
Municipal	<input type="checkbox"/>	Irrigation	<input type="checkbox"/>
Industrial	<input type="checkbox"/>	Other	<input type="checkbox"/>

- D. GEOTECHNICAL
 

Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

DRILLING METHOD:

Mud Rotary	<input type="checkbox"/>	Air Rotary	<input type="checkbox"/>	Auger	<input checked="" type="checkbox"/>
Cable	<input type="checkbox"/>	Other	<input type="checkbox"/>		

- E. CATHODIC
 

Fill hole above anode zone with concrete placed by tremie.

DRILLER'S LICENSE NO. CS7-522125

- F. WELL DESTRUCTION
 

See attached.

WELL PROJECTS

Drill Hole Diameter	<u>8</u> in.	Maximum Depth	<u>30</u> ft.
Casing Diameter	<u>2</u> in.	Number	<u>2</u>
Surface Seal Depth	<u>9</u> ft.		

- G. SPECIAL CONDITIONS

GEOTECHNICAL PROJECTS

Number of Borings	_____	Maximum Depth	_____ ft.
Hole Diameter	_____ in.		

APPROVED [Signature] DATE 1/8/99

ESTIMATED STARTING DATE 1/15/99  
ESTIMATED COMPLETION DATE 2/15/99

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Stephen Carter, RG DATE 1/8/99

Gettler-Ryan Inc.

Log of Boring MW-4

PROJECT: Chevron Service Station No. 9-4800

LOCATION: 1700 Castro Street, Oakland, CA

PROJECT NO.: 346383.03

CASING ELEVATION:

DATE STARTED: 03/23/99

WL (ft. bgs): 24.8 DATE: 03/23/99 TIME: 11:10 am

DATE FINISHED: 03/23/99

WL (ft. bgs): 24.8 DATE: 03/23/99 TIME: 12:15 pm

DRILLING METHOD: 8-inch hollow-stem auger

TOTAL DEPTH: 30 Feet

DRILLING COMPANY: Bay Area Exploration, Inc.

GEOLOGIST: B. Sieminski

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
							Planting soil.	
5	1.8	20	MW-4-8			SM	SILTY SAND (SM) - yellowish brown (10YR 5/4) mottled with gray (10YR 5/1), moist, medium dense, 60% fine sand, 40% silt.	
						CL SC	SANDY CLAY (CL) - yellowish brown (10YR 5/4), moist, low plasticity, stiff, 70% clay, 30% fine sand. CLAYEY SAND (SC) - yellowish brown (10YR 5/6), moist, medium dense, 70% fine sand, 30% clay.	
10	0	15	MW-4-10				Color change to dark yellowish brown (10YR 4/4) at 10 feet.	
15	7.0	40	MW-4-16			SP	SAND (SP) - light olive brown (2.5Y 5/6), moist, dense, 85% fine sand, 15% silt.  Color change to olive (5Y 5/4) at 16 feet.	
20	1.2	48	MW-4-21				Becomes very dense, 80% fine sand, 20% silt.	
	1.0	55	MW-4-23					
25							∇∇ Becomes saturated at 24.8 feet.	
	0	15	MW-4-29			CL	CLAY (CL) - grayish brown (2.5Y 5/2), moist, stiff, medium plasticity, 100% clay.	
30							* Converted to standard penetration blows/foot.	

Gettler-Ryan Inc.

Log of Boring MW-5

PROJECT: *Chevron Service Station No. 9-4800*

LOCATION: *1700 Castro Street, Oakland, CA*

PROJECT NO.: *346383.03*

CASING ELEVATION:

DATE STARTED: *03/23/99*

WL (ft. bgs): *26.0* DATE: *03/23/99* TIME: *2:00 pm*

DATE FINISHED: *03/23/99*

WL (ft. bgs): *26.0* DATE: *03/23/99* TIME: *3:15 pm*

DRILLING METHOD: *8-inch hollow-stem auger*

TOTAL DEPTH: *30 Feet*

DRILLING COMPANY: *Bay Area Exploration, Inc.*

GEOLOGIST: *B. Sieminski*

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
							Planting soil.	
						SM	SILTY SAND (SM) - yellowish brown (10YR 5/4), moist, medium dense, 70% fine sand, 30% silt.	
						SC	CLAYEY SAND (SC) - yellowish brown (10YR 5/6), moist, medium dense, 80% fine sand, 40% clay.	
5	0	27	MW-5-6			SM	SILTY SAND (SM) - dark yellowish brown (10YR 4/6), moist, 85% fine sand, 30% silt, 5% clay.	
						SC	CLAYEY SAND (SC) - brown (10YR 5/3) mottled with dark yellowish brown (10YR 4/6), moist, medium dense, 70% fine sand, 30% clay.	
10	0	12	MW-5-11			SM	SILTY SAND (SM) - yellowish brown (10YR 5/4), moist, medium dense, 80% fine sand, 15% silt, 5% clay.	
						SP	SAND (SP) - yellowish brown (10YR 5/4), moist, dense, 100% fine sand.	
15	0	30	MW-5-18					
20	0	45	MW-5-21					
25	0	50	MW-5-24					
							Color change to grayish brown (2.5Y 5/2) at 24.5 feet.	
30	0	15	MW-5-29.5			CL	CLAY (CL) - light olive brown (2.5Y 5/4), moist, low plasticity, stiff, 95% clay, 5% fine sand.	
							* Converted to standard penetration blows/foot.	



Gettler-Ryan Inc.

Log of Boring MW-6

PROJECT: Chevron Service Station No. 9-4800

LOCATION: 1700 Castro Street, Oakland, CA

PROJECT NO.: 346383.03

CASING ELEVATION:

DATE STARTED: 03/23/99

WL (ft. bgs): 24.0 DATE: 03/23/99 TIME: 4:00 pm

DATE FINISHED: 03/23/99

WL (ft. bgs): 24.0 DATE: 03/23/99 TIME: 5:00 pm

DRILLING METHOD: 8-inch hollow-stem auger

TOTAL DEPTH: 30 Feet

DRILLING COMPANY: Bay Area Exploration, Inc.

GEOLOGIST: B. Sieminski

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
							Planting soil.	
5	0	18	MW-6-6			SM	SILTY SAND (SM) - yellowish brown (10YR 5/4), moist, medium dense, 70% fine sand, 30% silt.	
						SC	CLAYEY SAND (SC) - yellowish brown (10YR 5/6), moist, medium dense, 70% fine sand, 30% clay.	
10	0	23	MW-6-11			SM	SILTY SAND (SM) - yellowish brown (10YR 5/4) mottled with light yellowish brown (2.5Y 6/4), moist, medium dense, 80% fine sand, 20% silt.	
15	0	36	MW-6-18			SP	SAND (SP) - yellowish brown (10YR 5/4), moist, dense, 100% fine sand.	
20	0	47	MW-6-21				Color change to olive gray (5Y 5/2) at 21.5 feet.	
25	0	52	MW-6-25				Saturated at 24 feet. Color change to brown (10YR 5/3) at 25.5 feet.	
30	0	14	MW-6-29.5			CL	CLAY (CL) - grayish brown (2.5Y 5/2), moist, medium plasticity, stiff, 100% clay.	
							* Converted to standard penetration blows/foot.	

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**



**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/  
Facility CHEVRON #9-4800  
Address: 1700 CASTRO ST.  
City: OAKLAND

Job#: 34-6383.03  
Date: 4/8/99  
Sampler: HAIG KEVORK

Well ID MW-4

Well Condition: OK

Well Diameter 2 in.

Hydrocarbon Thickness:  (feet) Amount Bailed  (Gallons)  
(product/water):

Total Depth 28.60 ft.

Depth to Water 24.82 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

3.78 x VF 0.17 = 0.64 x 10 (case volume) = Estimated Purge Volume: 6.5 (gal.)

Purge Equipment:  Disposable Bailer  
 Bailer  
 Stack  
 Suction  
 Grundfos  
 Other: \_\_\_\_\_

Sampling Equipment:  Disposable Bailer  
 Bailer  
 Pressure Bailer  
 Grab Sample  
 Other: \_\_\_\_\_

Starting Time: 14:30

Weather Conditions: CLOUDY

Sampling Time: 15:05

Water Color: \_\_\_\_\_ Odor: \_\_\_\_\_

Purging Flow Rate: 0.5 gpm.

Sediment Description: \_\_\_\_\_

Did well de-water? NO

If yes; Time: \_\_\_\_\_ Volume: \_\_\_\_\_ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu$ mhos/cm	Temperature $^{\circ}$ C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>14:31</u>	<u>0.5</u>	<u>7.10</u>	<u>1260</u>	<u>18.2</u>	_____	_____	_____
<u>14:34</u>	<u>1.5</u>	<u>6.98</u>	<u>1139</u>	<u>17.4</u>	_____	_____	_____
<u>14:37</u>	<u>2.5</u>	<u>7.03</u>	<u>1045</u>	<u>16.9</u>	_____	_____	_____
<u>14:40</u>	<u>4</u>	<u>6.96</u>	<u>1031</u>	<u>17.3</u>	_____	_____	_____
<u>14:44</u>	<u>5.5</u>	<u>6.94</u>	<u>1020</u>	<u>17.8</u>	_____	_____	_____
<u>14:47</u>	<u>6.5</u>	<u>6.90</u>	<u>968</u>	<u>17.5</u>	_____	_____	_____

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-4</u>	<u>4 VOALS</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>C/BTEX/MTBE</u> <u>OXY'S 8260</u>

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/  
Facility CHEVRON #9-4800  
Address: 1700 CASTRO STR.  
City: OAKLAND

Job#: 346383.03  
Date: 4/8/99  
Sampler: HAIG KEVORK

Well ID MW-5

Well Condition: OK

Well Diameter 2 in.

Hydrocarbon Thickness: ∅ (feet) Amount Bailed ∅ (Gallons)

Total Depth 28.35 ft.

Depth to Water 25.97 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

2.38 x VF 0.17 = 0.40 x 10 (case volume) = Estimated Purge Volume: 4 (gal.)

Purge Equipment:  Disposable Bailer Bailer  
 Stack  
 Suction  
 Grundfos  
 Other: \_\_\_\_\_

Sampling Equipment:  Disposable Bailer Bailer  
 Pressure Bailer  
 Grab Sample  
 Other: \_\_\_\_\_

Starting Time: 15:22

Weather Conditions: CLOUDY

Sampling Time: 16:00

Water Color: \_\_\_\_\_ Odor: \_\_\_\_\_

Purging Flow Rate: 0.5 gpm.

Sediment Description: \_\_\_\_\_

Did well de-water? NO

If yes; Time: \_\_\_\_\_ Volume: \_\_\_\_\_ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu$ mhos/cm	Temperature $^{\circ}$ F/ $^{\circ}$ C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
15:23	0.5	7.38	1380	17.6			
15:25	1	7.26	1290	18.1			
15:27	1.5	7.17	1265	17.9			
15:29	2	7.12	1240	18.5			
15:32	3	7.08	1210	18.4			
15:36	4	7.04	1190	18.7			

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-5	4 VOALS	Y	HCL	SEQUOIA	G/BTEX/MTBE
	LAMBER				TPH-D/CXY8260

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/Facility: CHEVRON #9-4800 Job#: 346383.03  
 Address: 1700 CASTRO STREET Date: 4/8/99  
 City: OAKLAND Sampler: HAIG KEVORK

Well ID: MW-6 Well Condition: OK  
 Well Diameter: 2 in. Hydrocarbon Thickness: Ø (feet) Amount Bailed: Ø (Gallons)  
 Total Depth: 28.70 ft. Volume Factor (VF):  
 Depth to Water: 24.31 ft. 

2" = 0.17	3" = 0.38	4" = 0.66
6" = 1.50	12" = 5.80	

4.39 x VF 0.17 = 0.75 x 3 (case volume) = Estimated Purge Volume: 7.5 (gal.)

Purge Equipment:  Disposable Bailer  
 Bailer  
 Stack  
 Suction  
 Grundfos  
 Other: \_\_\_\_\_

Sampling Equipment:  Disposable Bailer  
 Bailer  
 Pressure Bailer  
 Grab Sample  
 Other: \_\_\_\_\_

Starting Time: 13:35 Weather Conditions: CLOUDY  
 Sampling Time: 14:10 Water Color: \_\_\_\_\_ Odor: \_\_\_\_\_  
 Purging Flow Rate: 0.5 gpm. Sediment Description: \_\_\_\_\_  
 Did well de-water? NO If yes; Time: \_\_\_\_\_ Volume: \_\_\_\_\_ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu$ mhos/cm	Temperature $^{\circ}$ C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
13:37	0.75	6.74	1340	17.4			
13:39	1.5	6.90	829	17.9			
13:42	3	6.98	864	18.3			
13:45	4.5	6.95	845	17.7			
13:48	6	7.03	812	18.0			
13:52	7.5	6.97	804	18.2			

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-6	4 VOA's	Y	HCL	SEQUOIA	G/BTEX/MTBE OXY'S 8260

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**Virgil Chavez Land Surveying**

312 Georgia Street, Suite 200  
Vallejo, California 94590-5907  
(707) 553-2476 • Fax (707) 553-8698

April 9, 1999  
Project No. 1104-67A

Rick Fears  
Gettler-Ryan, Inc.  
3164 Gold Camp Dr., Suite 240  
Rancho Cordova, Ca. 95670

Subject: Monitoring Well Survey  
Chevron SS # 9-4800  
1700 Castro Street  
Oakland, Ca.

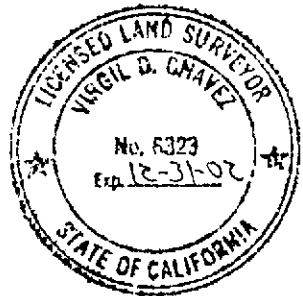
Dear Rick:

This is to confirm that we have proceeded at your request to survey the new monitoring wells at the above referenced location. Our findings are shown in the tables below. The survey was performed on April 7, 1999. The benchmark for the survey was the top of curb at the south end of the return at the south-east corner of Castro Street and 18th Street. Measurement locations were marked at the approximate north side of top of box. The second table is for top of casing locations, using the back of sidewalk on 18th Street as reference line.  
Benchmark Elevation 29.65 feet, MSL.

<u>Well No.</u>	<u>Rim Elevation</u>	<u>TOC Elevation</u>
MW - 4	30.49'	30.13'
MW - 5	31.21'	30.93'
MW - 6	30.78'	30.58'

<u>Well No.</u>	<u>Station</u>	<u>Offset</u>
MW - 4	0+03.92	83.29(Rt.)
MW - 5	0+08.93	193.99(Rt.)
MW - 6	0+76.60	14.20(Rt.)
BSW Intx.	0+00.00	0.00
BSW-18th Street	---	0.00



Sincerely,

*Virgil D. Chavez*  
Virgil D. Chavez, PLS 6323



# Sequoia Analytical

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

Redwood City, CA 94063  
Walnut Creek, CA 94598  
Sacramento, CA 95834  
Petaluma, CA 94954

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

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

Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Ricky Fears

Client Project ID: Chevron #9-4800, Oakland  
Sample Matrix: Soil  
Analysis Method: EPA 5030/8015 Mod./8020  
First Sample #: 903-2585

Sampled: Mar 23, 1999  
Received: Mar 25, 1999  
Reported: Apr 8, 1999

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX / MTBE

Analyte	Reporting Limit mg/Kg	Sample I.D. 903-2585 MW4-6	Sample I.D. 903-2586 MW4-16	Sample I.D. 903-2587 MW4-23	Sample I.D. 903-2588 MW5-16	Sample I.D. 903-2589 MW5-24
Purgeable Hydrocarbons	1.0	N.D.	N.D.	N.D.	N.D.	N.D.
Benzene	0.0050	N.D.	N.D.	0.0051	N.D.	N.D.
Toluene	0.0050	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.0050	N.D.	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.0050	N.D.	N.D.	N.D.	N.D.	N.D.
MTBE	0.050	0.22	N.D.	0.45	N.D.	N.D.
Chromatogram Pattern:		--	--	--	--	--

### Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	4/2/99	4/1/99	4/1/99	4/1/99	4/1/99
Instrument Identification:	HP-4	HP-4	HP-4	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 40-140%)	81	87	80	91	77

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

*Julianne Fegley*  
Julianne Fegley  
Project Manager





# Sequoia Analytical

680 Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite B  
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FAX (916) 921-0100  
FAX (707) 792-0342

Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Ricky Fears

Client Project ID: Chevron #9-4800, Oakland  
Sample Matrix: Soil  
Analysis Method: EPA 5030/8015 Mod./8020  
First Sample #: 903-2591

Sampled: Mar 23, 1999  
Received: Mar 25, 1999  
Reported: Apr 8, 1999

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX / MTBE

Analyte	Reporting Limit mg/Kg	Sample I.D. 903-2591 MW6-16	Sample I.D. 903-2592 MW6-21
Purgeable Hydrocarbons	1.0	N.D.	N.D.
Benzene	0.0050	N.D.	N.D.
Toluene	0.0050	N.D.	N.D.
Ethyl Benzene	0.0050	N.D.	N.D.
Total Xylenes	0.0050	N.D.	N.D.
MTBE	0.050	N.D.	N.D.

Chromatogram Pattern: -- --

### Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	4/1/99	4/2/99
Instrument Identification:	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 40-140%)	87	81

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

*Julianne Fegley*  
Julianne Fegley  
Project Manager





# Sequoia Analytical

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Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Ricky Fears

Client Project ID: Chevron #9-4800, Oakland  
Sample Descript: Soil, MW6-11  
Lab Number: 903-2590

Sampled: Mar 23, 1999  
Received: Mar 25, 1999  
Analyzed: Apr 2, 1999  
Reported: Apr 8, 1999

## LABORATORY ANALYSIS

Analyte	Detection Limit %	Sample Results %
Fraction Organic Carbon.....	0.020	0.032
Percent Moisture.....	1.0	11

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

SEQUOIA ANALYTICAL, #1210

*Juianne Fegley*  
Juianne Fegley  
Project Manager





# Sequoia Analytical

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Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Ricky Fears

Client Project ID: Chevron #9-4800, Oakland  
Sample Descript: Soil, MW6-24  
Lab Number: 903-2593

Sampled: Mar 23, 1999  
Received: Mar 25, 1999  
Analyzed: Apr 2, 1999  
Reported: Apr 8, 1999

## LABORATORY ANALYSIS

Analyte	Detection Limit %	Sample Results %
Fraction Organic Carbon.....	0.020	0.022

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

SEQUOIA ANALYTICAL, #1210

*Johanne Fegley*  
Johanne Fegley  
Project Manager





# Sequoia Analytical

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FAX (707) 792-0342

Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Ricky Fears

Client Project ID: Chevron #9-4800, Oakland  
Matrix: Solid

QC Sample Group: 9032585-592

Reported: Apr 8, 1999

## QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	C. Westwater	C. Westwater	C. Westwater	C. Westwater

### MS/MSD

Batch#:	9032844	9032844	9032844	9032844
Date Prepared:	4/1/99	4/1/99	4/1/99	4/1/99
Date Analyzed:	4/1/99	4/1/99	4/1/99	4/1/99
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
Conc. Spiked:	0.80 mg/kg	0.80 mg/kg	0.80 mg/kg	2.4 mg/kg
Matrix Spike % Recovery:	94	81	85	92
Matrix Spike Duplicate % Recovery:	91	79	84	92
Relative % Difference:	2.7	3.1	1.5	0.0

LCS Batch#:	4LCS040199	4LCS040199	4LCS040199	4LCS040199
Date Prepared:	4/1/99	4/1/99	4/1/99	4/1/99
Date Analyzed:	4/1/99	4/1/99	4/1/99	4/1/99
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
LCS % Recovery:	99	86	91	104

% Recovery Control Limits:	50-150	50-150	50-150	50-150
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### Please Note:

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

SEQUOIA ANALYTICAL, #1271

*Julianne Fegley*  
Julianne Fegley  
Project Manager





# Sequoia Analytical

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Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Ricky Fears

Client Project ID: Chevron #9-4800, Oakland  
Matrix: Solid

QC Sample Group: 9032585-592

Reported: Apr 8, 1999

## QUALITY CONTROL DATA REPORT

ANALYTE	Fraction Organic Carbon	% Moisture
Method:	WALKLEY-BLACK	EPA 160.3
Analyst:	K. Cesar	K. Cesar

Date Analyzed:	4/2/99	4/2/99
Instrument I.D.#:	Manual	Manual
Sample #:	9903D0401	9903D0401
Sample Concentration:	0.032 %	11 %
Sample Duplicate Concentration:	0.032 %	11 %
RPD:	0.0	0.0
RPD Control Limits:	0-20	0-20

SEQUOIA ANALYTICAL, #1210

*Julianne Fegley*  
Julianne Fegley  
Project Manager





## CORE LABORATORIES

April 5, 1999

Ms Julianne Fegley  
Sequoia Analytical  
404 N. Wiget Lane  
Walnut Creek, CA 94598

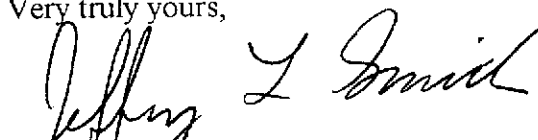
Subject : Transmittal of Geotechnical Analysis Data  
SA Work order # 9903632  
Core Lab File No. 57111-99066

Dear Ms Fegley:

Soil samples were submitted to our Bakersfield laboratory for geotechnical analysis. Determinations of bulk density and total porosity were requested. Grain and pore volumes were determined by Boyles Law double-cell methods utilizing an extended range helium porosimeter. The bulk densities and total porosity measurements and calculations were performed as described in API RP-40, API Recommended Practice for Core-Analysis Procedure, 1960. Accompanying this letter please find the results of this study.

We appreciate this opportunity to be of service to you and to Sequoia Analytical. Should you have any questions, or if we may be of further help in the future, please do not hesitate to contact us.

Very truly yours,

  
Jeffrey L. Smith  
Laboratory Supervisor - Rock Properties

JLS:nw

1 original report, 1 cc report: Addressee





**Sequoia Analytical**  
**(Walnut Creek)**  
Gettler-Ryan, Inc.  
Chevron #9-4800

C.L. File: 57111-99066

Work Order : 9903632

Sample No.	SA Client ID	Sample Date	Sample Density			Total Porosity %	Description	Method
			Dry Bulk g/cc	Natural Bulk g/cc	Matrix g/cc			
9032590	MW6-11	23-Mar-99	1.96	2.20	2.72	28.0	Gray sl silty vf-fgr sd	API RP-40
9032593	MW6-24	23-Mar-99	1.70	2.02	2.69	37.0	Gray sl silty vf-fgr sd	API RP-40

**Sequoia Analytical**  
**(Walnut Creek)**  
**Gettler-Ryan, Inc.**  
**Chevron #9-4800**

C.L. File: 57111-99066

Work Order : 9903632

Sample No.	SA Client ID	Sample Date	Sample Density			Total Porosity %	Description	Method
			Dry Bulk g/cc	Natural Bulk g/cc	Matrix g/cc			
9032590	MW6-11	23-Mar-99	1.96	2.20	2.72	28.0	Gray sl silty vf-fgr sd	API RP-40
9032593	MW6-24	23-Mar-99	1.70	2.02	2.69	37.0	Gray sl silty vf-fgr sd	API RP-40

Chevron U.S.A. Inc. P.O. BOX 5004 San Ramon, CA 94583 FAX (415)842-9591	Chevron Facility Number <u>9-4800</u> Facility Address <u>1700 Castro St, Oakland</u> Consultant Project Number <u>346383.03</u> Consultant Name <u>Gettler-Ryan, Inc.</u> Address <u>6747 Sierra Ct, Ste G, Dublin, CA 94568</u> Project Contact (Name) <u>Ricky Fears</u> (Phone) <u>(916)631 1314</u> (Fax Number) <u>(916)631 1317</u>	Chevron Contact (Name) <u>Phil Briggs</u> (Phone) <u>(925)842-9136</u> Laboratory Name <u>Sequsia</u> Laboratory Release Number <u>9144488 99113032</u> Samples Collected by (Name) <u>Barbara Siemiński</u> Collection Date <u>03/23/99</u> Signature <u>Barbara Siemiński</u>
----------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Sample Number	Lab Sample Number	Number of Containers	Matrix			Time	Sample Preservation	Lead (Yes or No)	Analysis To Be Performed									Remarks				
			S = Soil	W = Water	A = Air				C = Charcoal	Type	G = Grab	C = Composite	D = Discrete	BTEX + TPH GAS/MRE (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)		Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Mn (ICAP or AA)
MW4-6		1	S			10:15		Yes	X											9032585		
MW4-10		1				10:20																hold
MW4-16		1				10:30			X													hold
MW4-21		1				10:40																hold
MW4-23		1				10:50			X													hold
MW4-29.5		1				11:00																} hold
MW5-6		1				13:05																
MW5-11		1				13:15																
MW5-16		1				13:25			X													hold
MW5-21		1				13:35																hold
MW5-24		1				13:45			X													hold
MW5-29.5		1	↓			14:00																hold

Relinquished By (Signature) <u>Barbara Siemiński</u>	Organization <u>G-R</u>	Date/Time <u>03/25/99</u>	Received By (Signature) <u>Paul Wilhoit</u>	Organization <u>W.C. Seg</u>	Date/Time <u>3/25/99 1510</u>	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days 10 Days <u>As Contracted</u>
Relinquished By (Signature) <u>Paul Wilhoit</u>	Organization <u>W.C. Seg</u>	Date/Time <u>3/25/99 1630</u>	Received By (Signature) _____	Organization _____	Date/Time _____	
Relinquished By (Signature) _____	Organization _____	Date/Time _____	Received For Laboratory By (Signature) <u>Barbara C. Siemiński</u>	Date/Time <u>3/25/99 16:30</u>	_____	

COC-3.DWG/03 91/HCH

Chevron U.S.A. Inc.  
P.O. BOX 5004  
San Ramon, CA 94583  
FAX (415)842-9591

Chevron Facility Number 9-4800  
Facility Address 1700 Castro St, Oakland  
Consultant Project Number 346383.03  
Consultant Name Gettler-Ryan Inc  
Address 6747 Sierra Ct, Ste G, Dublin, CA 94568  
Project Contact (Name) Ricky Fears  
(Phone) (916)631 1314 (Fax Number) (916)631 1317

Chevron Contact (Name) Phil Briggs  
(Phone) (925)842-9136  
Laboratory Name Sequon  
Laboratory Release Number 9144488  
Samples Collected by (Name) Barbara Sieminski  
Collection Date 03/23/99  
Signature [Signature]

Sample Number	Lab Sample Number	Number of Containers	Matrix			Time	Sample Preservation	Lead (Yes or No)	Analysis To Be Performed												Remarks				
			S = Soil	A = Air	W = Water				C = Charcoal	Type	G = Grab	C = Composite	D = Discrete	BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Greases (8520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)		Metals Cd, Cr, Pb, Zn, Ni (ICAP or AA)	Fraction Organic (carbonyl) (Wholly-Black Method)	Porosity	Bulk Density
MW6-6		1	S		D	15:30		Yes																hold	
MW6-11		1				15:35																			
MW6-16		1				15:40			X																
MW6-20.5		1				15:50																			hold
MW6-21		1				15:50			X																
MW6-24		1				16:00																			
MW6-29.5		1				16:10																			hold

Relinquished By (Signature) <u>Barbara Sieminski</u>	Organization <u>G-R</u>	Date/Time <u>03/25/99</u>	Received By (Signature) <u>[Signature]</u>	Organization <u>WCSeg</u>	Date/Time <u>3/25/99 15:10</u>	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days 10 Days <u>As Contracted</u>
Relinquished By (Signature) <u>[Signature]</u>	Organization <u>W.C. Seg</u>	Date/Time <u>3/25/99</u>	Received By (Signature) <u>[Signature]</u>	Organization	Date/Time	
Relinquished By (Signature) <u>[Signature]</u>	Organization	Date/Time	Received For Laboratory By (Signature) <u>[Signature]</u>		Date/Time <u>3/25/99 16:30</u>	

COC-3.DWG/03 91/HCH



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Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Ricky Fears

Client Project ID: Chevron #9-4800, Oakland  
Sample Matrix: Soil  
Analysis Method: EPA 5030/8015 Mod./8020  
First Sample #: 903-2451

Sampled: Mar 23, 1999  
Received: Mar 25, 1999  
Reported: Mar 29, 1999

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 903-2451 SP(A-D)
Purgeable Hydrocarbons	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Total Xylenes	0.0050	N.D.
Chromatogram Pattern:		--

### Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Analyzed:	3/29/99
Instrument Identification:	HP-4
Surrogate Recovery, %: (QC Limits = 40-140%)	89

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

*Julianne Fegley*  
Julianne Fegley  
Project Manager





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Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Ricky Fears

Client Project ID: Chevron #9-4800, Oakland  
Matrix: Solid

QC Sample Group: 903-2451

Reported: Mar 30, 1999

## QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	C. Westwater	C. Westwater	C. Westwater	C. Westwater

### MS/MSD

Batch#:	9032451	9032451	9032451	9032451
Date Prepared:	3/29/99	3/29/99	3/29/99	3/29/99
Date Analyzed:	3/29/99	3/29/99	3/29/99	3/29/99
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
Conc. Spiked:	0.80 mg/kg	0.80 mg/kg	0.80 mg/kg	2.4 mg/kg
Matrix Spike % Recovery:	114	98	100	113
Matrix Spike Duplicate % Recovery:	106	93	95	104
Relative % Difference:	6.8	5.3	5.1	7.7

LCS Batch#:	4LCS032999	4LCS032999	4LCS032999	4LCS032999
Date Prepared:	3/29/99	3/29/99	3/29/99	3/29/99
Date Analyzed:	3/29/99	3/29/99	3/29/99	3/29/99
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
LCS % Recovery:	103	88	91	100

% Recovery Control Limits:	50-150	50-150	50-150	50-150
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### Please Note:

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

SEQUOIA ANALYTICAL, #1271

*Julianne Fegley*  
Julianne Fegley  
Project Manager

9032451.GET <2>



Chevron U.S.A. Inc. P.O. BOX 5004 San Ramon, CA 94583 FAX (415)842-9591	Chevron Facility Number <u>9-4800</u>	Chevron Contact (Name) <u>Phil Briggs</u>
	Facility Address <u>1700 Castro St, Oakland</u>	(Phone) <u>(925) 842-9136</u>
	Consultant Project Number <u>346383.03</u>	Laboratory Name <u>Seqoria</u>
	Consultant Name <u>Gettler - Ryan Inc</u>	Laboratory Release Number <u>9144488</u>
	Address <u>6747 Sierra Ct, Ste G, Dublin, CA 94568</u>	Samples Collected by (Name) <u>Barbara Siewninski</u>
	Project Contact (Name) <u>Ricky Fears</u>	Collection Date <u>03/23/99</u>
	(Phone) <u>(916) 631 1314</u> (Fax Number) <u>(916) 631 1317</u>	Signature <u>Barbara Siewninski</u>

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Lead (Yes or No)	Analysis To Be Performed										Remarks					
								BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,NI (ICAP or AA)								
<u>SPA</u>		<u>1</u>	<u>S</u>	<u>G</u>	<u>17:00</u>		<u>Yes</u>	<u>X</u>				<u>9032451</u>											
<u>SP-B</u>		<u>1</u>	<u>S</u>	<u>G</u>	<u>17:02</u>			<u>X</u>				<u>A-D</u>											
<u>SP-C</u>		<u>1</u>	<u>S</u>	<u>G</u>	<u>17:04</u>			<u>X</u>															
<u>SP-D</u>		<u>1</u>	<u>W</u>	<u>D</u>	<u>17:06</u>			<u>X</u>															

Relinquished By (Signature) <u>Barbara Siewninski</u>	Organization <u>G-R</u>	Date/Time <u>03/25/99</u>	Received By (Signature) <u>Kevin Valtorta</u>	Organization <u>W.C. Seq</u>	Date/Time <u>3/25/99</u>	Turn Around Time (Circle Choice) 24 Hrs. <u>48 Hrs.</u> 5 Days 10 Days As Contracted
Relinquished By (Signature) <u>Kevin Valtorta</u>	Organization <u>W.C. Seq</u>	Date/Time <u>3/25/99 16:30</u>	Received By (Signature)	Organization	Date/Time	
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature) <u>Kevin Valtorta</u>		Date/Time <u>3/25/99 16:30</u>	

COC-3.DWG/03 81/HCH



# Sequoia Analytical

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Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Rick Fears

Client Project ID: Chevron #9-4800, Oakland  
Sample Matrix: Water  
Analysis Method: EPA 5030/8015 Mod./8020  
First Sample #: 904-0732

Sampled: Apr 8, 1999  
Received: Apr 9, 1999  
Reported: Apr 27, 1999

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX / MTBE

Analyte	Reporting Limit µg/L	Sample I.D. 904-0732 MW-4	Sample I.D. 904-0733 MW-5	Sample I.D. 904-0734 MW-6	Sample I.D. 904-0735 TB-LB
Purgeable Hydrocarbons	50	130	N.D.	N.D.	N.D.
Benzene	0.50	3.1	N.D.	N.D.	N.D.
Toluene	0.50	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.50	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.50	7.7	N.D.	N.D.	N.D.
MTBE	2.5	4,700	N.D.	4.5	N.D.
Chromatogram Pattern:		Gasoline	--	--	--

### Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0
Date Analyzed:	4/14/99	4/14/99	4/14/99	4/14/99
Instrument Identification:	HP-5	HP-5	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	95	100	87	85

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

*Julianne Fegley*  
Julianne Fegley  
Project Manager







# Sequoia Analytical

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Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Rick Fears

Client Project ID: Chevron #9-4800, Oakland  
Sample Matrix: Water  
Analysis Method: EPA 3510/8015 Mod.  
First Sample #: 904-0733

Sampled: Apr 8, 1999  
Received: Apr 9, 1999  
Reported: Apr 27, 1999

## TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 904-0733 MW-5
Extractable Hydrocarbons	50	N.D.

Chromatogram Pattern: --

### Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Extracted:	4/14/99
Date Analyzed:	4/15/99
Instrument Identification:	HP-3A

Extractable Hydrocarbons are quantitated against a fresh diesel standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Julianne Fegley  
Project Manager





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Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Rick Fears

Client Project ID: Chevron #9-4800, Oakland  
Sample Descript: Water, MW-4  
Analysis Method: EPA 8260  
Lab Number: 904-0732

Sampled: Apr 8, 1999  
Received: Apr 9, 1999  
Analyzed: Apr 22, 1999  
Reported: Apr 27, 1999

QC Batch Number: MS0421998260S2B

Instrument ID: GS/MS-2

## OXYGENATED COMPOUNDS (EPA 8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Ethanol.....	25,000	N.D.
t-Butanol.....	5,000	N.D.
Methyl t-Butyl Ether (MTBE).....	100	5400
Di-Isopropyl Ether (DIPE).....	100	N.D.
Ethyl t-Butyl Ether (ETBE).....	100	N.D.
t-Amyl Methyl Ether (TAME).....	100	N.D.

Surrogates	Control Limit %	% Recovery
Dibromofluoromethane.....	50	150
1,2-Dichloroethane-d4.....	50	150

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL, #1271

*Julianne Fegley*  
Julianne Fegley  
Project Manager





# Sequoia Analytical

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Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Rick Fears

Client Project ID: Chevron #9-4800, Oakland  
Sample Descript: Water, MW-5  
Analysis Method: EPA 8260  
Lab Number: 904-0733

Sampled: Apr 8, 1999  
Received: Apr 9, 1999  
Analyzed: Apr 22, 1999  
Reported: Apr 27, 1999

QC Batch Number: MS0421998260S2B

Instrument ID: GS/MS-2

## OXYGENATED COMPOUNDS (EPA 8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Ethanol.....	500	N.D.
t-Butanol.....	100	N.D.
Methyl t-Butyl Ether (MTBE).....	2.0	N.D.
Di-Isopropyl Ether (DIPE).....	2.0	N.D.
Ethyl t-Butyl Ether (ETBE).....	2.0	N.D.
t-Amyl Methyl Ether (TAME).....	2.0	N.D.

Surrogates	Control Limit %	% Recovery
Dibromofluoromethane.....	50 150.....	87
1,2-Dichloroethane-d4.....	50 150.....	102

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley  
Project Manager





# Sequoia Analytical

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Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Rick Fears

Client Project ID: Chevron #9-4800, Oakland  
Sample Descript: Water, MW-6  
Analysis Method: EPA 8260  
Lab Number: 904-0734

Sampled: Apr 8, 1999  
Received: Apr 9, 1999  
Analyzed: Apr 22, 1999  
Reported: Apr 27, 1999

QC Batch Number: MS0421998260S2B

Instrument ID: GS/MS-2

## OXYGENATED COMPOUNDS (EPA 8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Ethanol.....	500	N.D.
t-Butanol.....	100	N.D.
Methyl t-Butyl Ether (MTBE).....	2.0	5.6
Di-Isopropyl Ether (DIPE).....	2.0	N.D.
Ethyl t-Butyl Ether (ETBE).....	2.0	N.D.
t-Amyl Methyl Ether (TAME).....	2.0	N.D.

Surrogates	Control Limit %	% Recovery
Dibromofluoromethane.....	50 150.....	80
1,2-Dichloroethane-d4.....	50 150.....	104

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley  
Project Manager





# Sequoia Analytical

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Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Rick Fears

Client Project ID: Chevron #9-4800, Oakland  
Matrix: Liquid

QC Sample Group: 9040732-735

Reported: Apr 27, 1999

## QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes	Diesel	MTBE
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015 M.	EPA 8015 M.
Analyst:	C. Westwater	C. Westwater	C. Westwater	C. Westwater	K. Grubb	N. Nelson

MS/MSD Batch#:	9040734	9040734	9040734	9040734	BLK041499B	9041730
Date Prepared:	4/14/99	4/14/99	4/14/99	4/14/99	4/14/99	4/22/99
Date Analyzed:	4/14/99	4/14/99	4/14/99	4/14/99	4/15/99	4/22/99
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	HP-3A	GC/MS-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	500 µg/L	50 µg/L
Matrix Spike % Recovery:	90	90	90	92	102	102
Matrix Spike Duplicate % Recovery:	85	90	90	93	84	106
Relative % Difference:	5.7	0.0	0.0	1.8	19	3.8

LCS Batch#:	5LCS041499	5LCS041499	5LCS041499	5LCS041499	LCS041499B	LCS042299
Date Prepared:	4/14/99	4/14/99	4/14/99	4/14/99	4/14/99	4/22/99
Date Analyzed:	4/14/99	4/14/99	4/14/99	4/14/99	4/15/99	4/22/99
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	HP-3A	GC/MS-2
LCS % Recovery:	90	95	95	98	88	126

% Recovery Control Limits:	70-130	70-130	70-130	70-130	60-140	70-130
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**Please Note:**

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley  
Project Manager



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San Ramon, CA 94583  
FAX (415)842-9591

Chevron Facility Number 9-4800 - OAKLAND  
Facility Address 1700 CASTRO STREET  
Consultant Project Number 346383.03  
Consultant Name GETTLER-RYAN INC. (GR)  
Address 6747 Sierra Ct, Ste J, DUBLIN  
Project Contact (Name) RICK FEARS  
(Phone) (916)631-1300 (Fax Number) 631-1317

Chevron Contact (Name) \_\_\_\_\_  
(Phone) 9504222  
Laboratory Name SEQUOIA ANALYTICAL  
Laboratory Release Number \_\_\_\_\_  
Samples Collected by (Name) HAIG KEVORK  
Collection Date 4/8/1999  
Signature [Signature]

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water C = Chemical	Type G = Gas C = Composite O = Other	Time	Sample Preservation	Lead (Y or N)	Analytes To Be Performed										Remarks	
								STOX + TPH GAS (8020 + 8015)	TPH Classes (8015)	Oil and Grease (5650)	Purgeable Hydrocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd, Cr, Pb, Zn, Ni (1030 or 10)	MTBE 8020	OXYGENATES 8260		
MW-4		4	W	G	15:05	HCL	YES	✓											9040732 <sup>AD</sup>
MW-5		5	W	G	16:00	HCL (VOP)		✓	✓										9040733 <sup>AD</sup>
MW-6		4	W	G	14:10	HCL		✓											9040734 <sup>AD</sup>
TB-LB		1	W	G		HCL		✓											9040735

Requested By (Signature) <u>[Signature]</u>	Organization <u>GR</u>	Date/Time	Received By (Signature)	Organization	Date/Time	Turn Around Time (Circle Check) 24 hrs. 48 hrs. 6 Days 10 Days <b>As Contracted</b>
Requested By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	
Requested By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature) <u>[Signature]</u>	Date/Time <u>4/19/99</u>		