



ALCO  
HAZMAT

94 FEB -2 PM 3: 57

**LRA ENVIRONMENTAL**

3235 SUNRISE BOULEVARD, SUITE 5  
RANCHO CORDOVA, CA 95742  
PHONE 916/631-4455

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**FOURTH QUARTER GROUNDWATER MONITORING REPORT**

**TACO BELL**

**1900 WEBSTER STREET**

**ALAMEDA, ALAMEDA COUNTY, CALIFORNIA**

*1/27/1994 Traffic boxes repaired and  
re-seated.*

**PREPARED BY:**

**LRA ENVIRONMENTAL  
3235 SUNRISE BOULEVARD, SUITE 5  
RANCHO CORDOVA, CALIFORNIA 95742  
(916) 631-4455**

**JANUARY 27, 1994  
JOB NUMBER E9170**

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THIRD QUARTER GROUNDWATER MONITORING REPORT

TACO BELL

1900 WEBSTER STREET

ALAMEDA, ALAMEDA COUNTY, CALIFORNIA

INTRODUCTION

Location:

The property in question, a Taco Bell restaurant, is located at 1900 Webster Street, Alameda, Alameda County, California. The property is located at approximately 122°16'31" west longitude and 37°46'27" north latitude. This corresponds to the County of Alameda Assessors Parcel Number 73-426-12.

Background/Site History:

Current and previous property owners and contact persons:

The property in question is an operational Taco Bell franchise. The property is currently owned and managed by Dolan Foster Enterprises and is supervised by Dan Mundy, the site construction manager. Contact can be made with Mr. Mundy at (510) 887-7260.

Current and previous business activities on the property:

Currently, the property supports a Taco Bell restaurant and customer parking facilities. This operational franchise has been owned and operated by Dolan Foster Enterprises since 1976. This Taco Bell franchise is a fast food take-out restaurant and has never been involved with the storage or dispensing of any hazardous materials or petroleum products.

An informal historical investigation of the property revealed that this site has in the past been used as a service station. The first service station on this site initially began dispensing gasoline in 1928 from two (2) five hundred fifty (550) gallon tanks. From that time until 1976 the property had been in continual use as a service and gasoline dispensing station. A total of eight (8) different tanks of varying sizes have been used for underground gasoline storage. These tanks have ranged in size from five hundred fifty (550) to eight thousand (8000) gallons. From 1967 to 1974, underground gasoline storage totaled fourteen thousand (14,000) gallons. Alameda City Fire Department records show that all



tanks, tank filler lines, and dispenser lines were removed on 8 February 1974, prior to the sale of the property to Dolan Foster Enterprises.

Gasoline storage tank operators and dates of tank placement for the property are summarized as follows:

<u>OPERATOR</u>	<u>DATE OF TANK PLACEMENT</u>
Humble Oil Service Station	November 29, 1967
Signal Oil Company	October 27, 1941
P.S. Ray	May 11, 1933
F. Burrington	October 11, 1928

**Spill, leak, or leachate migration history on the site:**

Prior to 15 January 1992, no spill, leak, nor leachate migration reports had been filed with the Alameda County Health Department. However, on that date, Dolan Foster Enterprises filed an Underground Storage Tank Unauthorized Release Contamination Site Report with the Health Department. This report was precipitated by the discovery of petroleum products by LRA Engineering while conducting a geotechnical investigation. Dolan Foster Enterprises was appraised of the situation and they, in turn, initiated the preliminary site contamination investigation process. The unauthorized leak report is in the custody of the Alameda County Health Department.

**Subsurface investigations on the site:**

Site remediation by over-excavation of the contaminated soils was conducted June 1, 2, and 3, 1992. Native soils registering PID measurements above 5 ppm or emitting chemical odors were removed from the location of the former tank dispensers. The highest chemical concentrations in the soils appeared to be in the upper 3 to 6 feet of strata. Soils from the bottom and the sidewalls of the excavation, registering elevated PID readings, were removed to depths varying from 4 to 6 feet below grade. The excavated area was backfilled and compacted with pit run aggregates.

Approximately 300 cubic yards of native soils were removed during the excavation of soils beneath and adjacent to the former location of the gasoline dispenser islands. Excavated soils were transported to a dedicated area on the north half of the parking lot that had been properly prepared to receive the soil for stockpiling. The soils were then aerated on site under permit from the Bay Area Air Quality Management Department (BAAQMD). Soil aeration occurred from June 5 through July 2, 1992.



The stockpile was mixed and turned for two weeks. At the end of this period the stockpile was sampled and analyzed for volatile organic compounds. The results of the chemical analyses indicated the soils were sufficiently aerated in that levels of volatile organic compounds were reduced to near or below detection limits. Further characterization was not deemed necessary by B.F.I. Water Systems (Treatment, Storage and Disposal Facility), the receiver of the remediated soil.

On 6 July 1992 Dolan Foster Enterprises demolished the former Taco Bell Restaurant. During the destruction of the building, a waste oil storage vessel was discovered. It was located approximately 60 feet east of Webster Street and 60 feet north of Eagle Avenue underneath the main entrance to the now demolished restaurant. The vessel was removed and the barrel, its contents and the surrounding soils were disposed of at B.F.I. Waste Systems on Vasco Road in Livermore, California.

*Soil  
samples  
collected?*

*ok*

Demolition of the building gave access to an area that had been predetermined as being the abandoned underground storage tank field. On 13 July 1992, LRA Environmental drilled two (2) borings to 10 feet. An additional boring was also placed at the site of the waste oil barrel and sampled from five feet (5') to six feet (6') below ground surface, i.e., two feet (2') to three feet (3') beneath the bottom of the waste oil container. A second sample was also taken from nine feet (9') to ten feet (10') below ground surface at this location.

Detectable quantities of contamination were found in the soil on the east side of the abandoned tank field. Of main concern was the amount of benzene detected in that sample. However, contamination amounts did not warrant over excavation of the soil and could be remediated by other methods such as vapor extraction, bioremediation, or extraction and treatment. Contamination was also found in the soil beneath the waste oil vessel at ten feet (10') below ground surface, but posed no major threat or hazard to human health due to the low concentrations.

On August 13 and 14, 1992, LRA Environmental constructed four (4) groundwater monitoring wells on site. All wells were constructed in accordance to the methods outlined in the Underground Fuel Tank Monitoring Workplan compiled by LRA Environmental on 26 February 1992. These wells were placed according to Regional Water Quality Board guidelines (i.e., one well upgradient, two wells down gradient and one well within ten feet of the original contamination source in the verified downgradient direction).

### OBJECTIVE OF THE PROPOSED WORK

The purpose of this groundwater monitoring report is to comply with the Alameda County Health Department's mandate for work to define the extent of contamination at the subject property. Specifically, this groundwater monitoring report is to describe the status of the investigation, giving details and results of all work performed during the fourth quarter of 1993, interpret the analytical results, and provide recommendations.



## SITE DESCRIPTION

### Vicinity Map:

The vicinity map appears as Plate 1 in the Appendix portion of this workplan.

### Site Map:

The site map appears as Plate 2 in the Appendix portion of this workplan.

### Description of topography and surface features, i.e. watercourses, lakes, and groundwater recharge facilities:

The description of the local geography is based solely upon an examination of the latest editions of the U.S.G.S. Topographic map sheets and visual reconnaissance in the field for the area in question marked on the vicinity map.

The U.S.G.S. Oakland West, California 7.5 minute quadrangle (topographic) editions of 1959 and 1980 depict the subject property as a developed site with one building present. The property is bounded on the west by Webster Street and on the south by Eagle Avenue. A single building is located to the north of the subject property and a vacant lot to the east. The elevation of the subject property is approximately 10 feet above sea level.

A site reconnaissance was conducted. The entire lot was found to be covered by either concrete, asphalt, or the Taco Bell building. No unusual odors were present on site during the reconnaissance. No water ponding was observed on the site.

### Site topography:

Alameda Island is a piece of the mainland that has been bisected by an estuary. The coastal geologic process is mainly tide dominated with wave influence which has produced an estuarine soil sequence. Land elevation on the island varies from sea level to thirty five feet (35') at it's highest elevation. The entire island has been developed and supports residential, commercial, and industrial interests.

The subject site is approximately one hundred thirty feet (130') by one hundred feet (100') (13,000 sq.ft.). It is commercially developed and supports a Taco Bell restaurant with parking facilities. The property lies on the northeast corner of a major cross-road and is bounded by commercial development on the north and east side.

The depth to regional groundwater was recorded at 8-10 feet below ground surface. This approximately coincides with mean sea level.



## GROUNDWATER SAMPLING

### Observation of free product, odor, or sheen:

The water level in each well was measured using mean sea level datum as determined by available local monuments.

After the depth to water in each monitoring well was established, and prior to purging the well, a water sample was collected in a clear acrylic bailer. The sample was visually assessed for the presence of free product and/or sheen, and detectable odor by sense of smell. There was no presence of free product, sheen, or any detectable odors in any of the samples collected from the four monitoring wells. Each monitoring well was also measured for pH, temperature, salinity, and specific conductivity. These measurements are listed in Appendix B.

### Water and product level:

A Solinst Water Level Gauge was used to determine the water level in each monitoring well. Water level measurements were made to the nearest 1/10th of a foot. A clear acrylic bailer was used to collect a water sample and visually assess the sample for the presence of free product. There was no presence of free product or sheen in any of the samples collected from the four monitoring wells. Depth to water data has been tabulated and is included in Appendix B.

### Purging procedures:

Each monitoring well was purged by using a four inch (4") submergeable pump. The pump was decontaminated before purging each monitoring well pursuant to the approved workplan. After the depth of water was established, the wetted casing volume was determined for each monitoring well. Five (5) wetted casing volumes were pumped from the each monitoring well. The water level in the monitoring well was allowed to recover to a minimum of eighty (80) percent of the wetted casing volume prior to obtaining the samples to be subjected to chemical analysis. Water quality parameters including pH, temperature, salinity, and specific conductivity were monitored for every casing volume purged. Each well was considered stable when three (3) consecutive well casing volumes were purged exhibiting the characteristics outlined below.

pH: plus or minus 0.1

Temperature: plus or minus 0.5 degrees fahrenheit

Specific conductivity: plus or minus 1.0%

Water quality parameter tables for each well are included in Appendix B.

The monitoring equipment employed on this project include a pH meter (Bantex model LCD-5), an electrical conductivity, salinity, and temperature meter (model YSI 33), and a photo-ionizing hydrocarbon detector (H-nu, model PI 101).



**Sample collection equipment and procedures:**

Water samples were obtained with a clean bailer, and placed in the appropriate sample containers prepared and provided by the analytical laboratory.

**Sample shipping procedures:**

Samples acquired from the monitoring well were delivered to the laboratory after collection. A copy of the chain of custody form utilized for this investigation appears in Appendix B.

**Equipment decontamination procedures:**

Sampling equipment such as bailers, pumps etc. were decontaminated between uses by washing in an appropriate detergent solution followed by two (2) tap and one (1) distilled water rinses. Purge pumps and other related hardware were decontaminated prior to each use. The pump interiors were decontaminated by circulating an appropriate detergent solution through the pump, followed by a fresh water rinse.

**Disposal of contaminated material:**

All water obtained from the sampling of the groundwater monitoring wells was placed in approved drums which were sealed, labeled, and stored on site prior to disposal which was conditional upon analytical results.

**Quality assurance/Quality control procedures:**

Every effort was made to follow the established sampling, transportation and chain of custody protocols to insure the integrity of the samples in the field and during transport to the laboratory.

Quality assurance and control procedures incorporate the use of "blanks" as mandated by the prevailing standards or care for investigations of this type. Laboratory quality assurance and control procedures were typical of those used to meet all state and federal mandates. At a minimum, quality assurance and control measures in the laboratory setting included duplicate, spike, and standard reference sample (when applicable) analysis.





**STATEMENT OF FINDINGS (RESULTS)**

**Lab analysis:**

All water samples were analyzed for Total Petroleum Hydrocarbons as Diesel and Kerosene (DHS Method M8015), Total Petroleum Hydrocarbons as Gasoline and BTEX (EPA Methods 8015, 5030, 602), and Total Oil and Grease (EPA Method 9070).

Analysis results for the water samples collected from the groundwater monitoring wells are summarized below.

<u>Constituent</u>	<u>MW1</u>	<u>MW2</u>	<u>MW3</u>	<u>MW4</u>	<u>Reporting Limit</u>
TPH as Diesel mg/l	ND	ND	ND	ND	0.05 <sup>1</sup>
TPH as Kerosene mg/l	ND	ND	ND	ND	0.20 <sup>2</sup>
TPH as Gasoline mg/l	ND	ND	ND	ND	0.05
Benzene ug/l	ND	ND	ND	ND	0.30
Toluene ug/l	ND	ND	ND	ND	0.30
Ethylbenzene ug/l	ND	ND	ND	ND	0.30
Total Xylenes ug/l	ND	ND	ND	ND	0.60
Total Oil & Grease mg/l	ND	5.5	ND	ND	5.00

**CONCLUSIONS**

The analytical results for monitoring wells M1, M2, M3, and M4 indicate no detectable levels of TPH as Diesel, Kerosene, or Gasoline. Monitoring wells M1, M2, M3, and M4 also had no detectable levels of Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX).

The analytical results for Monitoring Wells MW1 and MW4 have remained consistent for the last two (2) quarters. Monitoring wells MW2 and MW3 have produced consistent results for TPH (G)(D)(K) and BTEX, however they have not produced consistent results for total oil and grease. Third quarter analytical results indicated "ND" for MW2 and 30 milligrams per liter of oil and grease in MW3.

- 
- <sup>1</sup> Reporting Limits for TPH Diesel are recorded by the analytical laboratory as 0.20 mg/L for the analyses performed on the water sample acquired from MW #1.
  - <sup>2</sup> Reporting Limits for TPH Kerosene are recorded by the analytical laboratory as 0.80 mg/L for the analyses performed on the water sample acquired for MW #1.



The fourth quarter results indicated "ND" for MW and 5.5 milligrams oil and grease in the groundwater acquired from MW2. LRA has concluded that these results are anomalous and should not be looked at as indications of residual contamination. Anecdotal information gleaned by LRA Environmental indicates that the "traffic rated" well covers were either forcefully breached or tampered with, thus allowing oil laden storm water runoff from the parking lot fill to the annular space between the well casing and the sides of the cover. LRA cannot confirm that this occurred, however, given the inconsistent detection of oil and grease, this may be a plausible explanation.

### RECOMMENDATIONS

It is our recommendation, based on the analytical results reported for the fourth quarter, that quarterly groundwater monitoring continue for one more quarter. To that end, quarterly groundwater monitoring should continue in accordance with the applicable local, state, and federal regulations, as well as the approved workplan.

Close attention should be directed to maintaining the integrity of monitoring wells MW2 and MW3. It is recommended that the management of the facility conduct routine inspection of the well covers so as to detect tampering or structural failures. Visual examination of the annular space beneath the traffic covers should be undertaken by either management or maintenance personnel after any rainfall event or washing of the parking lot. Any runoff water that has collected beneath the well cover should be immediately collected from the annular space, and the space dried insofar as practicable.



SIGNATURE PAGE


LRA ENVIRONMENTAL

Prepared by:

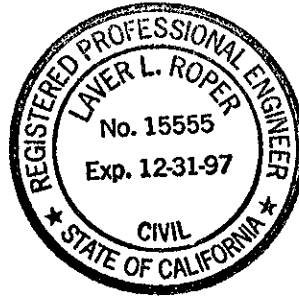


Robert A. Nicholson, R.E.A. 01326  
Vice President

Reviewed by:



Laver L. Roper  
REA# 01234, RCE# 15555  
President



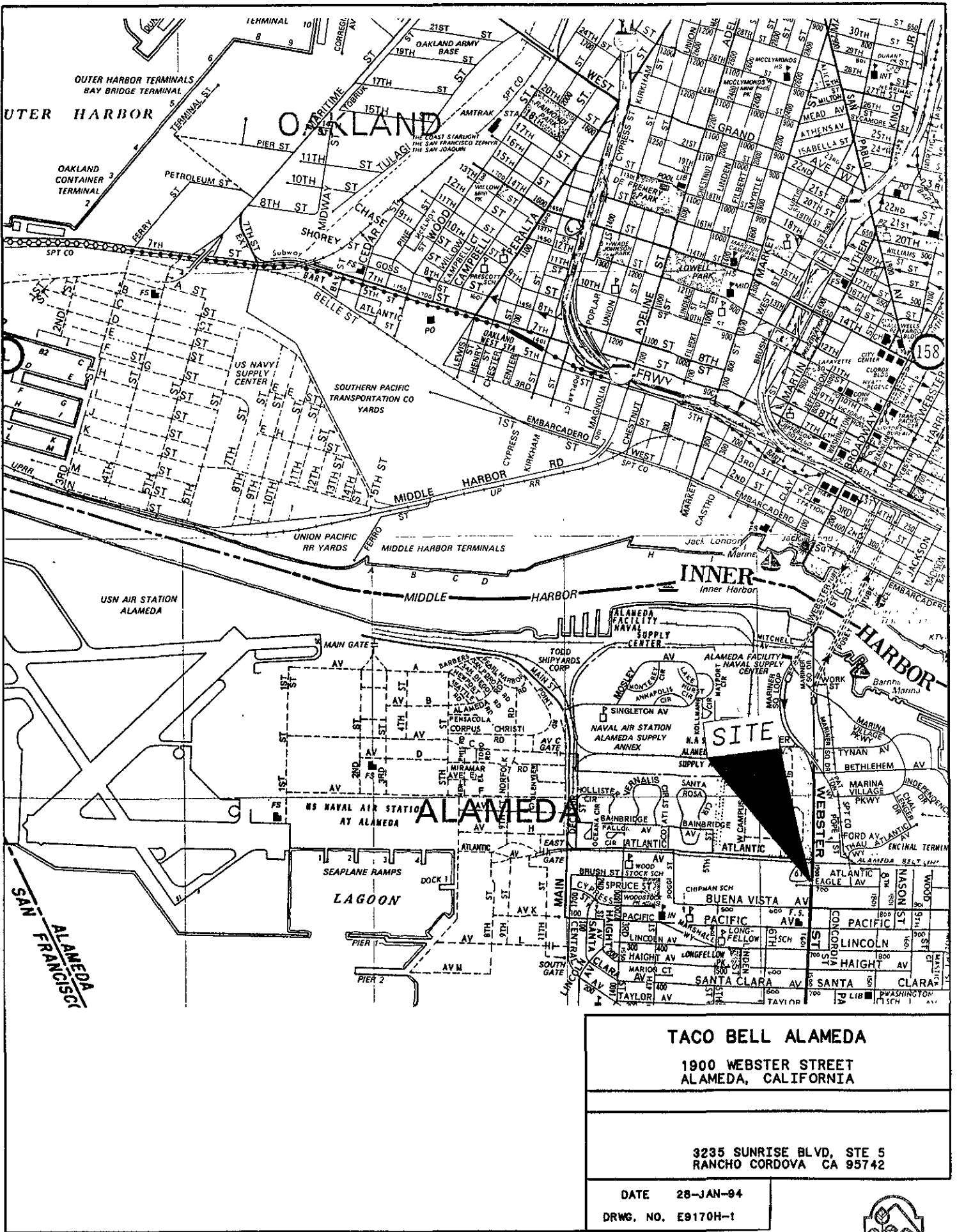
**APPENDIX A**

Vicinity Map

Location Map

Groundwater Gradient Map





**TACO BELL ALAMEDA**

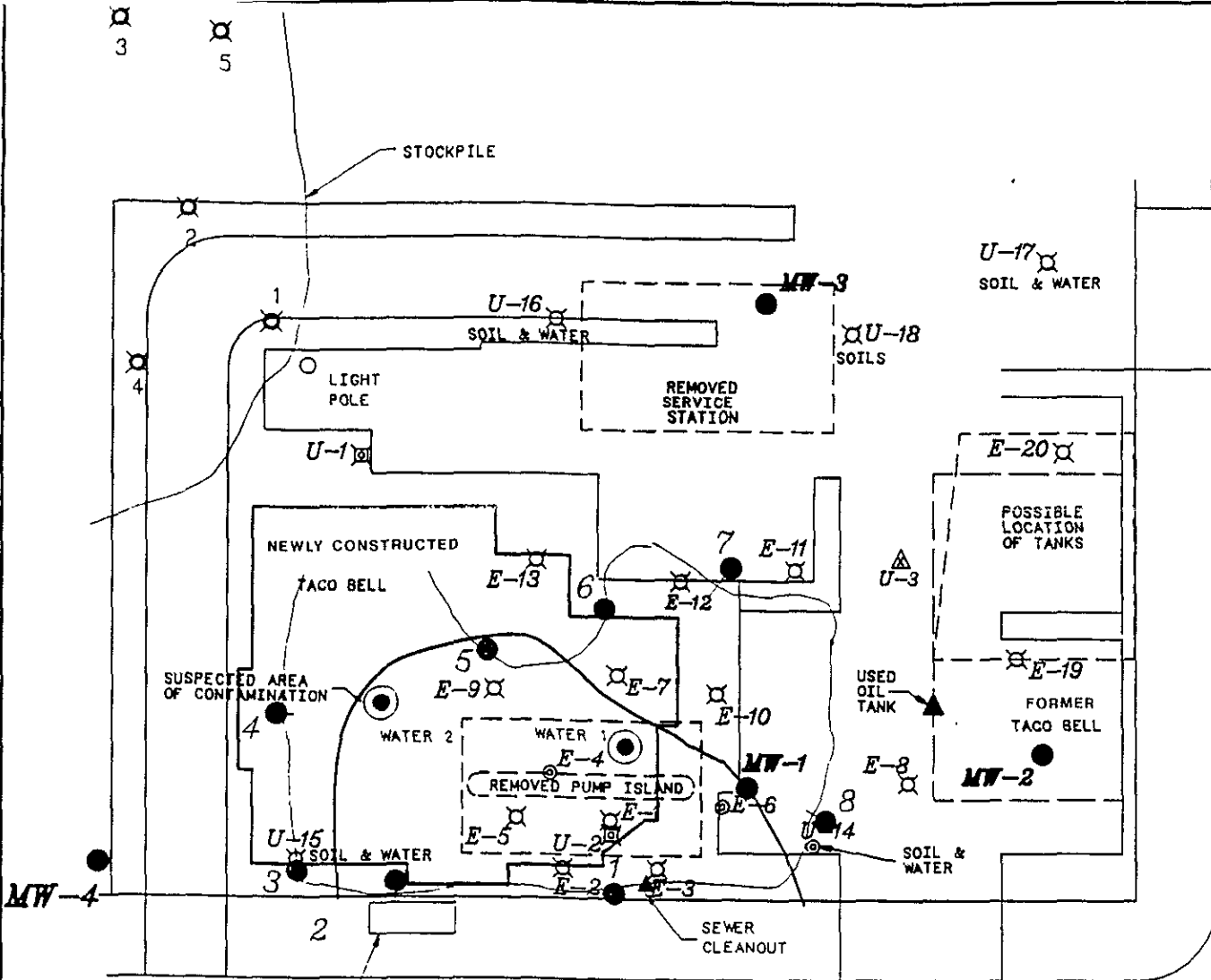
1900 WEBSTER STREET  
ALAMEDA, CALIFORNIA

3235 SUNRISE BLVD, STE 5  
RANCHO CORDOVA CA 95742

DATE 28-JAN-94

DRWG. NO. E9170H-1





IN SIDEWALK POWER BOX

SAMPLED AT 10:00 A.M. UNDER DIRECTION OF ACEH DEPT. EVA CHU. TOOK 8 SAMPLES OF SOIL AND 2 OF WATER.

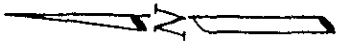
**NOTE**

LOCATION OF FORMER BUILDING AND TANK SITES TAKEN FROM SITE MAPS DRAWN IN THE YEARS 1951 AND 1966 PER THE EXXON COMPANY, U.S.A. IN CONCORD, CA.

- SOIL SAMPLING SITES IN EXCAVATION SIDEWALLS JUNE 3, 1992
- ⊗ STOCKPILE SAMPLING SITES JUNE 15, 1992
- ⊗ USED OIL STORAGE TANK. SOIL SAMPLED 7-13-92
- ▲ SOIL SAMPLED IN POSSIBLE TANK FIELD 7-13-92
- MONITORING WELL PLACEMENTS

**LEGEND**

- ⊗ EXPLORATORY BORINGS—DESIGNATED "E"
- △ GEOTECHNICAL 1 DRIVE BORINGS—DESIGNATED "U"
- ⊗ GEOTECHNICAL 3 DRIVE BORINGS—DESIGNATED "U"
- ⊗ EXPLORATORY BORINGS—CONTAMINATED—DES. "E"
- FORMER TANK LOCATIONS
- LOCATION OF FORMER STRUCTURES



NOT TO SCALE

**TACO BELL ALAMEDA**

1900 WEBSTER STREET  
ALAMEDA, CALIFORNIA

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LOCATION MAP

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**LRA ENVIRONMENTAL**

3235 SUNRISE BLVD, STE 5  
RANCHO CORDOVA CA 95742

DATE 6 OCTOBER 1993  
DRWG. NO. E917CE-1

PLATE NUMBER 2



WEBSTER STREET

MW-4  
WSE +.30

MW-1  
WSE +.66

MW-3  
WSE +.63

MW-2  
WSE +.69  
TOG = 5,500 ppb


GM GRADIENT  
0.0032 N18°W

30,000 ppb TOG in  
last quarter

EAGLE STREET



NOT TO SCALE

<b>TACO BELL ALAMEDA</b>	
1900 WEBSTER STREET ALAMEDA, CALIFORNIA	
GROUNDWATER GRADIENT MAP	
	<b>LRA ENVIRONMENTAL</b>
3235 SUNRISE BLVD, STE 5 RANCHO CORDOVA CA 95742	

DATE	27-JAN-94
DRWG. NO.	EB170G-1
PLATE NUMBER 1	



**APPENDIX B**

Water Quality Parameter Tables

Lab Analysis Report

Chain of Custody













# California Laboratory Services

LRA Environmental  
3235 Sunrise Blvd. Ste. 5  
Rancho Cordova, CA 95742

12/21/93

Attention: Bob Nicholson

Reference: Analytical Results

---

Project Name:  
Project No.: E9170  
Date Received: 12/07/93  
Chain Of Custody: 09619

CLS ID No.: M3166  
CLS Job No.: 793166

The following analyses were performed on the above referenced project:

<u>No. of Samples</u>	<u>Turnaround Time</u>	<u>Analysis Description</u>
4	10 Days	TPH Diesel by DHS Method - M8015 (water)
4	10 Days	TPH Gasoline and BTXE (water)
4	10 Days	Total Oil and Grease, EPA Method 9070

Elevated method 8015/TPH as diesel and kerosene reporting limits for sample "MW#1" are due to the presence of a heavier hydrocarbon mixture in this sample.

These samples were received by California Laboratory Services in a chilled, intact state and accompanied by a valid chain of custody document.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,

  
George Hampton  
Laboratory Director

# California Laboratory Services

*Analysis Report: Total Petroleum Hydrocarbons, EPA Method 8015  
 Separatory Funnel, EPA Method 3510*

*Client: LRA Environmental  
 3235 Sunrise Blvd. Ste. 5  
 Rancho Cordova, CA 95742*

*Project No.: E9170  
 Contact: Bob Nicholson  
 Phone: (916) 631-4455*

*Project:*

*Date Sampled: 12/06/93  
 Date Received: 12/07/93  
 Date Extracted: 12/07/93  
 Date Analyzed: 12/10/93  
 Date Reported: 12/16/93*

*CLS Contact: George Hampton  
 Job No.: 793166  
 COC Log No.: 09619  
 CLS ID No.: M3166  
 Batch No.: 12658  
 Matrix: WATER*

**ANALYTE**

	Sample I.D.	CLS	TPH as Diesel (mg/L)	TPH as Kerosene (mg/L)
MW#1		1A	ND(0.20)	ND(0.80)
MW#2		2A	ND	ND
MW#3		3A	ND	ND
MW#4		4A	ND	ND
Rep. Limit			0.05	0.20

ND = Not detected at or above indicated Reporting Limit  
 Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

# California Laboratory Services

Analysis Report: Total Petroleum Hydrocarbons, EPA Method 8015  
Separatory Funnel, EPA Method 3510

Client: LRA Environmental  
3235 Sunrise Blvd. Ste. 5  
Rancho Cordova, CA 95742

Project No.: E9170  
Contact: Bob Nicholson  
Phone: (916) 631-4455

Project:

CLS Contact: George Hampton  
Job No.: 793166  
COC Log No.: 09619  
CLS ID No.: M3166  
Batch No.: 12658  
Matrix: WATER

Date Extracted: 12/07/93  
Date Analyzed: 12/10/93  
Date Reported: 12/16/93

## METHOD BLANK

Analyte	CAS No.	Results (mg/L)	Rep. Limit (mg/L)
TPH as Diesel	N/A	ND	0.05
TPH as Kerosene	N/A	ND	0.20

ND = Not detected at or above indicated Reporting Limit  
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

# California Laboratory Services

Analysis Report: Total Petroleum Hydrocarbons, EPA Method 8015  
 Separatory Funnel, EPA Method 3510

Client: LRA Environmental  
 3235 Sunrise Blvd. Ste. 5  
 Rancho Cordova, CA 95742

Project No.: E9170  
 Contact: Bob Nicholson  
 Phone: (916) 631-4455

Project:  
 Date Extracted: 12/07/93  
 Date Analyzed: 12/10/93  
 Date Reported: 12/16/93

CLS Contact: George Hampton  
 Job No.: 793166  
 COC Log No.: 09619  
 CLS ID No.: M3166  
 Batch No.: 12658  
 Matrix: WATER

### LAB CONTROL SAMPLE

Analyte	CAS No.	LCS Conc. (mg/L)	LCS Recovery (percent)
Diesel	N/A	1.0	72

### LAB CONTROL SAMPLE DUPLICATE

Analyte	CAS No.	LCS Conc. (mg/L)	LCSD Recovery (percent)
Diesel	N/A	1.0	75

### LCS RPD

Analyte	CAS No.	LCS Relative Percent Difference (percent)
Diesel	N/A	4



# California Laboratory Services

Analysis Report: **BTEX, EPA Method 602**  
**Purge and Trap, EPA Method 5030**

Client: **LRA Environmental**  
**3235 Sunrise Blvd. Ste. 5**  
**Rancho Cordova, CA 95742**

Project No.: **E9170**  
 Contact: **Bob Nicholson**  
 Phone: **(916)631-4455**

**Project:**

Date Sampled: **12/06/93**  
 Date Received: **12/07/93**  
 Date Extracted: **12/07/93**  
 Date Analyzed: **12/07/93**  
 Date Reported: **12/09/93**

CLS Contact: **George Hampton**  
 Job No.: **793166**  
 COC Log No.: **09619**  
 CLS ID No.: **M3166**  
 Batch No.: **12653**  
 Matrix: **WATER**

### SURROGATE RECOVERY

Client	Sample I.D. CLS	o-Chlorotoluene CAS No. 95-49-8 (percent)
MW#1	1C	96
MW#2	2C	96
MW#3	3C	96
MW#4	4C	97
Surr Conc. (ug/L)		20

### ANALYTE

Client	Sample I.D. CLS	Benzene 71-43-2 (ug/L)	Toluene 108-88-3 (ug/L)	Ethylbenzene 100-41-4 (ug/L)	Xylenes, total 1330-20-7 (ug/L)
MW#1	1C	ND	ND	ND	ND
MW#2	2C	ND	ND	ND	ND
MW#3	3C	ND	ND	ND	ND
MW#4	4C	ND	ND	ND	ND
Rep. Limit		0.3	0.3	0.3	0.6

ND = Not detected at or above indicated Reporting Limit  
 Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

# California Laboratory Services

Analysis Report: BTEX, EPA Method 602  
Purge and Trap, EPA Method 5030

Client: LRA Environmental  
3235 Sunrise Blvd. Ste. 5  
Rancho Cordova, CA 95742

Project No.: E9170  
Contact: Bob Nicholson  
Phone: (916) 631-4455

Project:  
Date Extracted: 12/07/93  
Date Analyzed: 12/07/93  
Date Reported: 12/09/93

CLS Contact: George Hampton  
Job No.: 793166  
COC Log No.: 09619  
CLS ID No.: M3166  
Batch No.: 12653  
Matrix: WATER

### MB SURROGATE

Analyte	CAS No.	Surr Conc. (ug/L)	MB Surrogate Recovery (percent)
o-Chlorotoluene	95-49-8	20	97

### METHOD BLANK

Analyte	CAS No.	Results (ug/L)	Rep. Limit (ug/L)
Benzene	71-43-2	ND	0.3
Toluene	108-88-3	ND	0.3
Ethylbenzene	100-41-4	ND	0.3
Xylenes, total	1330-20-7	ND	0.6

ND = Not detected at or above indicated Reporting Limit  
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

# California Laboratory Services

Analysis Report: Total Petroleum Hydrocarbons, EPA Method 8015  
Purge and Trap, EPA Method 5030

Client: LRA Environmental  
3235 Sunrise Blvd. Ste. 5  
Rancho Cordova, CA 95742

Project No.: E9170  
Contact: Bob Nicholson  
Phone: (916) 631-4455

Project:

Date Sampled: 12/06/93  
Date Received: 12/07/93  
Date Extracted: 12/07/93  
Date Analyzed: 12/07/93  
Date Reported: 12/09/93

CLS Contact: George Hampton  
Job No.: 793166  
COC Log No.: 09619  
CLS ID No.: M3166  
Batch No.: 12653  
Matrix: WATER

## ANALYTE

Client	Sample I.D. CLS	TPH as Gasoline (mg/L)
MW#1	1C	ND
MW#2	2C	ND
MW#3	3C	ND
MW#4	4C	ND
Rep. Limit		0.05

ND = Not detected at or above indicated Reporting Limit  
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

# California Laboratory Services

Analysis Report: Total Petroleum Hydrocarbons, EPA Method 8015  
Purge and Trap, EPA Method 5030

Client: LRA Environmental  
3235 Sunrise Blvd. Ste. 5  
Rancho Cordova, CA 95742

Project No.: E9170  
Contact: Bob Nicholson  
Phone: (916) 631-4455

Project:

CLS Contact: George Hampton  
Job No.: 793166  
COC Log No.: 09619  
CLS ID No.: M3166  
Batch No.: 12653  
Matrix: WATER

Date Extracted: 12/07/93  
Date Analyzed: 12/07/93  
Date Reported: 12/09/93

## METHOD BLANK

Analyte	CAS No.	Results (mg/L)	Rep. Limit (mg/L)
TPH as Gasoline	N/A	ND	0.05

ND = Not detected at or above indicated Reporting Limit  
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

# California Laboratory Services

Analysis Report: Total Petroleum Hydrocarbons, EPA Method 8015  
Purge and Trap, EPA Method 5030

Client: LRA Environmental  
3235 Sunrise Blvd. Ste. 5  
Rancho Cordova, CA 95742

Project No.: E9170  
Contact: Bob Nicholson  
Phone: (916) 631-4455

Project:

Date Extracted: 12/07/93  
Date Analyzed: 12/07/93  
Date Reported: 12/09/93

CLS Contact: George Hampton  
Job No.: 793166  
COC Log No.: 09619  
CLS ID No.: M3166  
Batch No.: 12653  
Matrix: WATER

## MATRIX SPIKE

Analyte	CAS No.	MS Conc. (mg/L)	MS Recovery (percent)
Gasoline	N/A	0.5	88

## MATRIX SPIKE DUPLICATE

Analyte	CAS No.	MSD Conc. (mg/L)	MSD Recovery (percent)
Gasoline	N/A	0.5	87

## RELATIVE % DIFFERENCE

Analyte	CAS No.	Relative Percent Difference (percent)
Gasoline	N/A	1

# California Laboratory Services

Analysis Report: Total Petroleum Hydrocarbons, EPA Method 8015  
Purge and Trap, EPA Method 5030

Client: LRA Environmental  
3235 Sunrise Blvd. Ste. 5  
Rancho Cordova, CA 95742

Project No.: E9170  
Contact: Bob Nicholson  
Phone: (916) 631-4455

Project:

CLS Contact: George Hampton  
Job No.: 793166  
COC Log No.: 09619  
CLS ID No.: M3166  
Batch No.: 12653  
Matrix: WATER

Date Extracted: 12/07/93  
Date Analyzed: 12/07/93  
Date Reported: 12/09/93

## LAB CONTROL SAMPLE

Analyte	CAS No.	LCS Conc. (mg/L)	LCS Recovery (percent)
Gasoline	N/A	0.5	85

# California Laboratory Services

Analysis Report: Total Oil and Grease, EPA Method 9070  
Separatory Funnel, EPA Method 3510

Client: LRA Environmental  
3235 Sunrise Blvd. Ste. 5  
Rancho Cordova, CA 95742

Project No.: E9170  
Contact: Bob Nicholson  
Phone: (916) 631-4455

Project:

Date Sampled: 12/06/93  
Date Received: 12/07/93  
Date Extracted: 12/15/93  
Date Analyzed: 12/17/93  
Date Reported: 12/20/93

CLS Contact: George Hampton  
Job No.: 793166  
COC Log No.: 09619  
CLS ID No.: M3166  
Batch No.: 12717  
Matrix: WATER

## ANALYTE

Client	Sample I.D. CLS	Total Oil & Grease (mg/L)
MW#1	1B	ND
MW#2	2B	5.5
MW#3	3B	ND
MW#4	4B	ND
Rep. Limit		5

ND = Not detected at or above indicated Reporting Limit  
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.

# California Laboratory Services

Analysis Report: Total Oil and Grease, EPA Method 9070  
Separatory Funnel, EPA Method 3510

Client: LRA Environmental  
3235 Sunrise Blvd. Ste. 5  
Rancho Cordova, CA 95742

Project No.: E9170  
Contact: Bob Nicholson  
Phone: (916) 631-4455

Project:

Date Extracted: 12/15/93  
Date Analyzed: 12/17/93  
Date Reported: 12/20/93

CLS Contact: George Hampton  
Job No.: 793166  
COC Log No.: 09619  
CLS ID No.: M3166  
Batch No.: 12717  
Matrix: WATER

## METHOD BLANK

Analyte	CAS No.	Results (mg/L)	Rep. Limit (mg/L)
Total Oil & Grease	N/A	ND	5

ND = Not detected at or above indicated Reporting Limit  
Rep. Limit = Reporting Limit unless otherwise indicated in parentheses.



# California Laboratory Services

Analysis Report: Total Oil and Grease, EPA Method 9070  
Separatory Funnel, EPA Method 3510

Client: LRA Environmental  
3235 Sunrise Blvd. Ste. 5  
Rancho Cordova, CA 95742

Project No.: E9170  
Contact: Bob Nicholson  
Phone: (916) 631-4455

Project:

Date Extracted: 12/15/93  
Date Analyzed: 12/17/93  
Date Reported: 12/20/93

CLS Contact: George Hampton  
Job No.: 793166  
COC Log No.: 09619  
CLS ID No.: M3166  
Batch No.: 12717  
Matrix: WATER

### LAB CONTROL SAMPLE

Analyte	CAS No.	LCS Conc. (mg/L)	LCS Recovery (percent)
Total Oil & Grease	N/A	50	96

### LAB CONTROL SAMPLE DUPLICATE

Analyte	CAS No.	LCS Conc. (mg/L)	LCSD Recovery (percent)
Total Oil & Grease	N/A	50	98

### LCS RPD

Analyte	CAS No.	LCS Relative Percent Difference (percent)
Total Oil & Grease	N/A	2



*MW 4*

CLIENT NAME **LRA ENVIRONMENTAL**  
 ADDRESS **3235 Sunrise Blvd**  
**Rancho Cordova CA 95742**  
 PROJECT NAME  
 PROJECT MANAGER **Bob Nicholson** PHONE # **631-4455**  
 SAMPLED BY **C Johnson**  
 JOB DESCRIPTION  
 SITE LOCATION **Alameda CA.**

CLIENT JOB NUMBER **E 9170**  
 DESTINATION LABORATORY  
 **DCLS**  
 3249 FITZGERALD RD.  
 RANCHO CORDOVA, CA 95742  
 **OTHER**

ANALYSIS REQUESTED  
 PRESERVATIVES  
**TPH G/D/K**  
**total oil & grease**  
**BTEX**

FIELD CONDITIONS  
 COMPOSITE:  
 SPECIAL INSTRUCTIONS:  
 TURN AROUND TIME NOTE / FIELD READINGS

DATE	TIME	SAMPLE IDENTIFICATION	METHOD	MATRIX	CONTAINER		TPH	total oil & grease	BTEX	24 HOURS	48 HOURS	1 WEEK	2 WEEKS	NOTE / FIELD READINGS
					NO.	TYPE								
12/6/93	5:30 <sup>AM</sup>	MW#1		WATER	2	Amber 1 liter	X	X					X	
		" " "		" "	6	40 ml Clear vial			X				X	
12/6/93	7:00 <sup>AM</sup>	MW#2		WATER	2	1 liter Amber	X	X					X	
"	"	"		"	6	40ML Clear Vial			X				X	
12/6/93	9:00 <sup>AM</sup>	MW#3		WATER	2	1 liter Amber	X	X					X	
"	"	"		"	6	40 ML Clear Vial			X				X	
12/6/93	10:30 <sup>AM</sup>	MW#4		WATER	2	1 liter Amber	X	X					X	
"	"	"		"	6	40 ML Clear Vial			X				X	

SUSPECTED CONSTITUENTS SAMPLE RETENTION TIME PRESERVATIVES: (1) HCL (2) HNO3 (3) = COLD (4)

RELINQUISHED BY (SIGN)	PRINT NAME / COMPANY	DATE / TIME	REC'D BY (SIGN)	PRINT NAME / COMPANY
<i>Charles C Johnson</i>	Charles C Johnson	12/7/93	<i>Jeff Brown</i>	JEFF BROWN
<i>Jeff Brown</i>	JEFF BROWN	12/7/93 0815		

REC'D BY LAB BY **Lee A. Heathcote** DATE / TIME **12/7/93 0815** CONDITIONS / COMMENTS  
 SHIPPED VIA  FED X  UPS  OTHER AIR BILL #