


ENVIRONMENTAL
PROTECTION
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**REPORT
2000 THIRD QUARTER
GROUNDWATER MONITORING
FORMER SEARS RETAIL CENTER #1058
2633 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA
CASE I.D. # STID 1082
FOR SEARS, ROEBUCK & CO.**

**D&M/URS Job No. 00188-248-128
January 30, 2001**

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1.0 INTRODUCTION

This report has been prepared by URS Corporation (URS; formerly as Dames & Moore) on behalf of Sears, Roebuck & Co. (Sears). It presents results of the 2000 Third Quarter Groundwater Monitoring conducted at the above-referenced site (Figure 1). The former Sears retail center (Site) is located at 2633 Telegraph Avenue. The groundwater monitoring event consisted of "post purge" groundwater sample collection from two monitoring wells (FOMW-2, FOMW-3) installed on the Site during May 2000. A third monitoring well installed in May 2000 (FOMW-3) was not sampled this quarter due to the presence of separate phase product in the well. The purpose of the groundwater monitoring was to assess groundwater conditions in the vicinity of a slurry filled 10,000-gallon fuel oil underground storage tank (UST, Figure 2). The work is being performed under the regulatory oversight of the Alameda County Environmental Health Service (ACEHS).

2.0 SITE DESCRIPTION

The Site is bounded by 27th Street to the north, Telegraph Avenue to the east, Sycamore Street to the south, and Northgate Avenue to the west (Figure 2). The property is currently occupied by a vacant Sears retail store that was constructed in 1930 and an above-grade parking garage that was constructed in the 1960's. Prior to the construction of the store, single- and multi-family residences dating to the turn of the century occupied the site. The former Sears retail center is three stories tall (approximately 120,000 square feet) with a basement. Sears no longer owns the site but maintains responsibility for environmental issues related to the slurry filled 10,000 fuel oil UST. The Site elevation is approximately 30 feet above mean sea level (MSL), which slopes gently to the south towards San Francisco Bay.

A slurry filled 10,000-gallon fuel oil UST is located at the northern end of the retail center along 27th Street. It is constructed of single-walled steel with product piping that extends into a nearby

basement (former boiler room) of the retail center. The top of the UST is located beneath the loading dock of the store approximately 25 to 30 feet below ground surface (bgs). It is accessible through an opening in the loading dock where a 5 feet by 5 feet shaft extends down to the UST. The UST is contained in a concrete vault estimated to be about 10 feet high and 30 feet long. The product piping was sealed and capped when the UST was taken out of commission sometime during the 1960's.

2.1 REGIONAL GEOLOGY AND HYDROGEOLOGY

The Site is approximately 1.5 miles east of the San Francisco Bay and three miles west of the Diablo Range in Oakland, California. The Site is located on the eastern flank of The San Francisco Basin, a broad Franciscan depression. The basement rock is respectively overlain by the Santa Clara Formation, the Alameda Formation, and the Temescal Formation. These formations consist of unconsolidated sediments ranging in total thickness to approximately 1000 feet. The Pleistocene Santa Clara Formation consists primarily of alluvial fan deposits that are interspersed with lake, swamp, river channel, and flood plain deposits. The overlying Alameda Formation was deposited in an estuary environment and consists for organic clays and alluvial fan deposits of sands, gravels and silts. The uppermost Holocene Temescal Formation is an alluvial deposit ranging in thickness from one to 50 feet and consists primarily of silts and clays with a basal gravel unit. (CRWQCB, San Francisco Bay Region, June 1999).

The site is located within the Oakland sub-area East Bay Plain groundwater basin. The East Bay Plain groundwater basin encompasses approximately 115 square miles and is bounded by San Pablo Bay to the north, Alameda County to the south, the Hayward Fault to the east, and San Francisco Bay to the west. Groundwater flow direction in the basin typically follows surface topography. Historical high production wells in the Oakland sub-area were screened at depths greater than 200 feet bgs beneath the Yerba Buena Mud Member of the Alameda Formation. The Yerba Buena Mud is a black organic clay with an average thickness of 25 to 50 feet that forms an aquitard between upper and lower groundwater bearing units. From the 1860's until water importation programs were initiated in the 1930's, groundwater in the East Bay Plain was utilized as the primary municipal water source. Current beneficial uses of groundwater in the basin are minimal (CRWQCB, San Francisco Bay Region, June 1999).

3.0 BACKGROUND

Lowney Associates (Lowney) performed a "Phase I Environmental Site Assessment (ESA) and Soil and Groundwater Quality Evaluation" in April, 1998 and a "Phase II Soil and Groundwater Evaluation," in July, 1998. The first assessment included advancing five exploratory borings in three

areas of recognized environmental concerns for collection of soil samples and groundwater grab samples (Figure 2). Borings EB-1, EB-2, and EB-3 were driven in an area between the boiler room and a suspect pipe in the 27th Street sidewalk. Two borings were drilled within 10-feet of an adjacent dry cleaners (EB-4) and in the vicinity of a possible former tire and oil shop at the southwest corner of the retail store (EB-5). Detectable concentrations of total petroleum hydrocarbons (TPH) ranging from 79 milligrams per kilogram (mg/kg) to 9,500 mg/kg were present in soil samples collected from borings EB-1, EB-2, EB-3 and EB-5. Benzene was not detected in any of the soil samples submitted for chemical analysis.

During the second assessment conducted by Lowney, seven additional borings were advanced down gradient of the anticipated groundwater flow direction to collect selected soil and groundwater grab samples (Figure 2). The investigation also confirmed the location and existence of the 10,000-gallon UST beneath the loading dock of the retail center and identified the piping beneath the sidewalk of 27th Street as the UST fill line. Soil samples collected from borings EB-6 through EB-12 contained non-detectable (ND) concentrations of TPH and benzene, toluene, ethylbenzene, total xylenes (BTEX).

Groundwater grab samples were collected by Lowney during the two assessments from borings EB-1 through EB-6, EB-10, EB-11, and EB-12. Groundwater grab samples collected from borings EB-1, EB-2, EB-3, and EB-5 contained detectable concentrations of TPH ranging from 38,000 micrograms per liter ($\mu\text{g/L}$) to 480,000 $\mu\text{g/L}$. Groundwater grab samples collected from borings EB-2 and EB-4 contained detectable concentrations of benzene at 4.8 $\mu\text{g/L}$ and 4.3 $\mu\text{g/L}$, respectively. The remaining groundwater grab samples contained ND concentrations of TPH and BTEX.

SECOR International Incorporated (SECOR) subsequently performed an additional soil and groundwater investigation during November 1998 to further assess subsurface soils and groundwater near the southeastern corner of the property. The scope of work was approved by the ACEHS and included the advancement of nine soil borings (EB-13 through EB-21) for the collection of soil and groundwater grab samples (Figure 2). Soil samples collected from borings EB-19, EB-20, and EB-21 contained detectable concentrations of TPH ranging from 4 mg/kg to 160 mg/kg. All soil samples, excluding EB-20-7, analyzed during the investigation contained ND concentrations of BTEX. Soil sample EB-20-7 contained 0.044 mg/kg of ethylbenzene and ND concentrations of benzene, toluene and total xylenes.

Groundwater grab samples collected by SECOR from borings EB-13, EB-14, EB-15 and EB-18 contained TPH concentrations ranging from ND to 2,300 $\mu\text{g/L}$. The groundwater grab samples collected from borings EB-13, EB-15 and EB-18 contained ND concentrations of BTEX.

Groundwater grab sample EB-14 contained ND concentrations of benzene and toluene, 3.2 µg/L ethylbenzene, and 6.1 µg/L total xylenes.

URS installed three groundwater monitoring wells (FOMW-1, FOMW-2, FOMW-3) on the Site in May 2000 (Figure 2). The monitoring wells were located adjacent to, and south of the slurry filled UST. Soil samples collected from the borings contained concentrations of total extractable petroleum hydrocarbons (TEPH) as diesel fuel or bunker oil ranging from ND to 3,200 mg/kg. BTEX and methyl tertiary butyl ether (MTBE) were not detected in any of the soil samples analyzed. Groundwater samples were collected from the wells in June 2000. The groundwater samples collected from wells FOMW-1 and FOMW-3 contained 1200 µg/L of TEPH as bunker oil. The groundwater sample collected from well FOMW-2 contained ND concentrations of TEPH. All groundwater samples collected in June 2000 from wells FOMW-1, FOMW-2, and FOMW-3 contained ND concentrations of BTEX and MTBE.

4.0 HEALTH AND SAFETY PLAN

Prior to initiating the field activities, URS prepared a site-specific Health & Safety plan to:

- Identify and describe potentially hazardous substances which may be encountered during field operations;
- Specify protective equipment and clothing for on-site activities;
- Outline measures to be implemented in the event of an emergency.

URS field personnel reviewed the Health & Safety plan prior to commencing the field procedures. Field monitoring activities were recorded and the Health and Safety Plan and maintained in the project files at URS's San Francisco office. A copy of the Health and Safety Plan remained onsite during field operations.

5.0 QUARTERLY GROUNDWATER MONITORING

The 2000 Third Quarter Groundwater Monitoring was performed on October 10, 2000. The monitoring was performed on the three groundwater wells (FOMW-1, FOMW-2, and FOMW-3).

The monitoring consisted of groundwater gauging, purging, sampling and analysis. Groundwater monitoring well FOMW-1 was not purged or sampled this quarter due to the presence of separate phase petroleum product in the well. A description of the monitoring procedures is presented below.

5.1 GROUNDWATER GAUGING AND CONTOURING

Prior to sampling, each groundwater monitoring well was observed for the presence of free product using a disposable polyethylene bailer. Free product was observed in well FOMW-1 with a measured thickness of 0.01 foot. Water levels were gauged using a Solinst water level indicator relative to the surveyed top of casing. Based on results of the water level measurements, an interpretive groundwater contour map was generated by standard three-point convention. Groundwater depths and elevations are listed in Table 1. A Site map showing groundwater flow direction is provided as Figure 3.

5.2 PURGING AND SAMPLING METHODS

Prior to sample collection, wells FOMW-2 and FOMW-3 were purged of approximately three to five well casing volumes using a two-stage submersible pump. Water purged from each well was monitored for field parameters, including temperature, pH, electrical conductivity, dissolved oxygen, ferrous iron (Fe^{++}), and oxygen reduction potential (redox). The measured field parameters are listed on Table 1.

The purging was terminated when temperature, pH, and conductivity measurements stabilized. Following the purging and well recovery to at least 80% of original static water levels (or after one hour of recovery), groundwater samples were collected for laboratory analysis by lowering a disposable polyethylene bailer approximately one to two feet below the air-water interface. Water samples were collected from the monitoring wells using pre-cleaned, disposable polyethylene bailers.

Prior to sampling, each bailer was fitted with a low-flow velocity sampling port to minimize sample turbulence and volatilization.

Sample containers and handling procedures conformed to the established protocols for each specific parameter as described in EPA SW-846. The sample bottles, once filled and preserved as required, were properly labeled and logged on a chain of custody form. The label included well identification number, sample number, date and time sampled, job number, site/client name and location, and sampling personnel's initials. The sealed and labeled samples were placed in ice chests maintained

and temperature of 4 to 7 degrees centigrade and transported to a CDHS-Certified testing laboratory. Chain-of-custody records were maintained throughout the sampling program.

5.3 LABORATORY ANALYSIS PROGRAM

Groundwater samples submitted to the CDHS-Certified laboratory were analyzed for TEPH as diesel-fuel and bunker-oil by modified EPA 8015, and for volatile organic compounds (VOCs) by EPA 8260. As part of the attenuation monitoring program, the groundwater samples were also analyzed for dissolved methane by headspace analysis, total alkalinity by EPA 310.1, total dissolved solids (TDS) by EPA 160.1, hydrocarbon degraders by ASTM G-22, and heterotrophic plate count by SM 9215A.

5.4 WASTE MANAGEMENT

Liquid wastes (well purge water) were collected and stored in 55-gallon DOT-approved drums. Containers were numbered to identify the source of the wastes. The containers were stored onsite and properly disposed following review of the chemical analysis data.

6.0 MONITORING RESULTS

6.1 SHALLOW GROUNDWATER CONDITIONS

The groundwater potentiometric surface beneath the site occurs at depths ranging from approximately 10 to 12 feet bgs or an elevation of 26.65 to 27.81 feet above MSL. The water bearing zones are moderately confined, as water levels ascended within drill rods after penetration of the coarser-grained water bearing units during well installation. Water level measurements collected during the 2000 Third Quarter Groundwater Monitoring indicate groundwater flow is to the southeast with an approximate gradient of 0.024 foot per foot. Groundwater elevations beneath the site have decreased an average of 0.7 feet since the last monitoring event conducted in June 2000. Groundwater elevations and flow directions are presented in Table 1 and shown on Figure 3.

6.2 LABORATORY ANALYTICAL RESULTS

Chemical analyses results of the soil and groundwater samples collected during this investigation are presented in Table 2. The CDHS-Certified laboratory reports and chain-of-custody forms are provided as Appendix A. The groundwater samples collected from monitoring well FOMW-3 contained 230 µg/L of (TEPH) as diesel fuel. TEPH were not detected in the sample collected from well FOMW-2. None of the groundwater samples collected and submitted for chemical analysis during this quarter contained detectable concentrations VOCs including BTEX or MTBE.

URS conducted a check of data completeness for the analytical laboratory reports. Results indicate that "these data are usable, as qualified, for their intended purpose." URS's Data Validation Reports are included as Appendix B.

7.0 DISCUSSION

Results of the 2000 Third Quarter Groundwater Monitoring indicate that petroleum hydrocarbons within the diesel fuel to bunker oil range are present in shallow groundwater beneath the Site in the vicinity of the slurry filled UST. VOCs associated with petroleum fuel products such as BTEX and MTBE were not detected in any groundwater samples collected during this quarter or the initial groundwater sampling event conducted in June 2000. Results of the physical and biological testing are typical of nonaggressive oxidizing conditions. They also imply that conditions exist for biodegradation of residual petroleum hydrocarbons in the soil and groundwater.

Based on beneficial uses of groundwater in the Site vicinity, and the constituent concentrations detected during this and previous investigations, there appears to be no significant risk of petroleum hydrocarbon exposure to any sensitive receptors in the area. As introduced in the 2000 Second Quarter report, URS plans to further evaluate site conditions related to the petroleum hydrocarbon plume and establish closure conditions for the slurry filled UST in accordance with the Urban Land Redevelopment (URL) Program. In order to establish closure criteria, the following additional investigative activities have been proposed for the Site:

- Install one well downgradient of FOMW-1 to further delineate the petroleum hydrocarbon impacted plume.
- Complete the four quarters of groundwater monitoring that were implemented as part of this

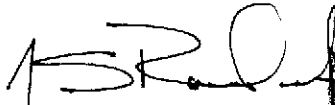
Should you have any questions or comments, please do not hesitate to contact us.

Respectfully Submitted,

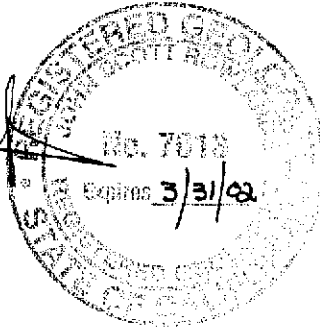
URS CORPORATION



Taras B. Kruk, R.G., C.HG.
Senior Hydrogeologist



J.S. Rowlands, R.G.
Project Manager



9.0 REFERENCES

- California Regional Water Quality Control Board—San Francisco Bay Region Groundwater Committee (RWQCB), 1999. *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report*. June 1999, 106 p.
- Dames & Moore, 2000. *Site Assessment and Groundwater Monitoring Work Plan*, Former Sears Retail Center #1058, 2633 Telegraph Avenue, Oakland, California, February 24.
- URS/Dames & Moore, 2000. *Draft Well Installation and 2000 Second Quarter Groundwater Monitoring*, Former Sears Retail Center #1058, 2633 Telegraph Avenue, Oakland, California, December 5.
- Figuers, S., 1998. *Groundwater Study and Water Supply History of the East Bay Plain, Alameda and Contra Costa Counties, California*, 12 p.
- Lowney, 1998. *Phase I Environmental Site Assessment and Soil and Groundwater Quality Evaluation*, 2633 Telegraph Avenue, Oakland, California, April 21.
- Lowney, 1998. *Soil and Groundwater Quality Evaluation*, 2633 Telegraph Avenue, Oakland, California, July 6.
- Muir, Kenneth S., 1993. *Geologic Framework of the East Bay Plain Groundwater Basin, Alameda, California. Prepared for the Alameda County Flood Control and Water Conservation District*, August 1993.
- SECOR, 1998. *Summary Report Subsurface Investigation and Site Closure Tasks*, 2633 Telegraph Avenue, Oakland, California, December 8.

**Table 1
Historical Groundwater Levels and Parameters
Sears Retail Center Store No. 1058
Oakland, California**

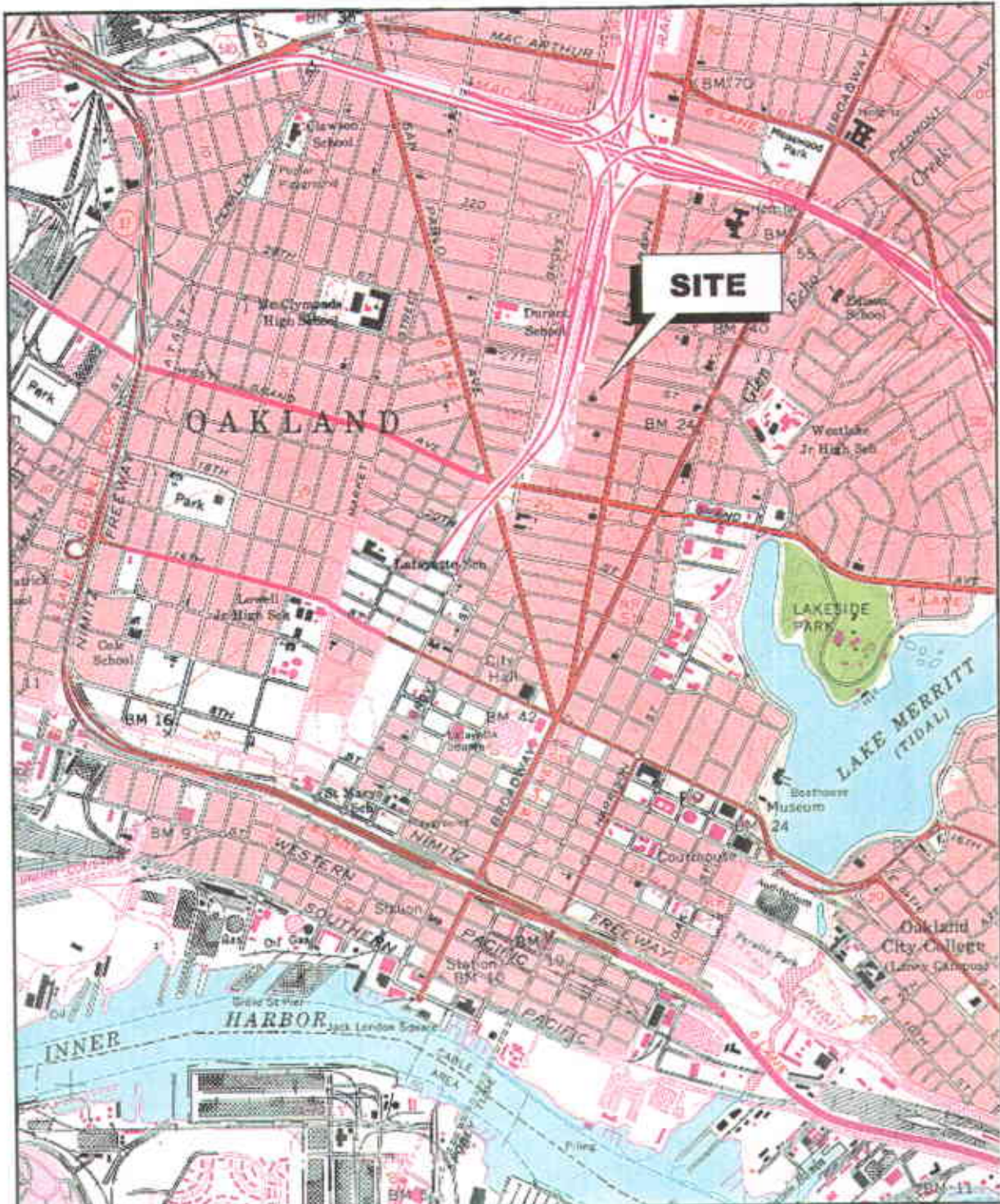
Monitoring Well No.	Date Collected	Notes	GROUNDWATER LEVELS				GROUNDWATER SAMPLING FIELD PARAMETERS					
			Product Thickness (ft)	Depth to Groundwater (feet bgs)	Casing Elevation (MSL)	Groundwater Elevation (MSL)	Temp. (Celcius)	pH	Cond (uS)	Redox (mV)	Dissolved Oxygen (mg/l)	Ferrous Iron (%)
FOMW-1	6/8/00	1,2	0.00	9.59	27.81	18.22	18.3	6.72	659	13	0.28	NA
	10/10/00	SP	0.01	9.91	27.81	17.90	NA	NA	NA	NA	NA	NA
FOMW-2	6/8/00	--	0.00	11.14	26.65	15.51	14.7	7	673	10	2.92	NA
	10/10/00	--	0.00	12.34	26.65	14.31	15.8	7.58	420	0	NA	NA
FOMW-3	6/8/00	2	0.00	10.48	26.8	16.32	15.0	6.87	689	23	0.22	NA
	10/10/00	--	0.00	11.15	26.8	15.65	15.6	7.66	430	39	NA	NA

Notes: MSL - Mean Sea Level
Groundwater Elevation reference to MSL
Groundwater Elevation = Top of casing elevation - Depth to Water.
1 Sheen observed on water surface.
2 Petroleum odor in groundwater
SP = Separate phase product in well
NA: Not analyzed/Not available.

TABLE 2
HISTORICAL SUMMARY OF GROUNDWATER MONITORING RESULTS
SEARS RETAIL STORE NO. 1058
OAKLAND, CALIFORNIA

Monitoring Well No.	Sample Date	Notes	LABORATORY ANALYTICAL RESULTS							Total Dissolved Solids (mg/L)	Total Alkalinity (mg/L)	Dissolved Methane (ug/ML)	Hydrocarbon Degraders (CFU/ML)	Heterotrophic Plate Count (CFU/ML)
			Volatile Organics by GC/MS 8260A					TEPH						
			B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	Diesel (ug/L)	Bunker Oil (ug/L)					
FOMW-1	6/8/00	--	< 0.5	< 0.5	< 0.5	< 1	< 5	< 50	J 1200	360	230	< 0.01	390	4000
	10/10/00	SP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FOMW-2	6/8/00	--	< 0.5	< 0.5	< 0.5	< 1	< 5	< 50	< 50	250	150	< 0.01	1	110
	10/10/00	--	< 0.5	< 0.5	< 0.5	< 1	< 5	< 50	< 50	260	140	< 0.01	170	1600
FOMW-3	6/8/00	--	< 0.5	< 0.5	< 0.5	< 1	< 5	< 50	J 1200	330	190	< 0.01	440	110000
	6/8/00	1	< 0.5	< 0.5	< 0.5	< 1	< 5	< 50	J 1100	330	180	< 0.01	50	8000
	10/10/00	--	< 0.5	< 0.5	< 0.5	< 1	< 5	230	< 50	300	170	< 0.01	800	4000

Notes:
 TPH - Total extractable petroleum hydrocarbons
 B T E X - Benzene, Toluene, Ethylbenzene, Total Xylenes
 MTBE - Methyl tertiary-butyl ether
 1: Duplicate sample
 J - Bunker-C detections were quatitated against the diesel standard and flagged as estimated concentrations
 < - Analyte not detected above indicated method detection limit
 NA: Not analyzed/Not available.
 SP: Separate Phase Product



Source: USGS, Oakland West Quadrangle, California, 7.5 Minute Series Topographic, 1959 (photorevised, 1980)



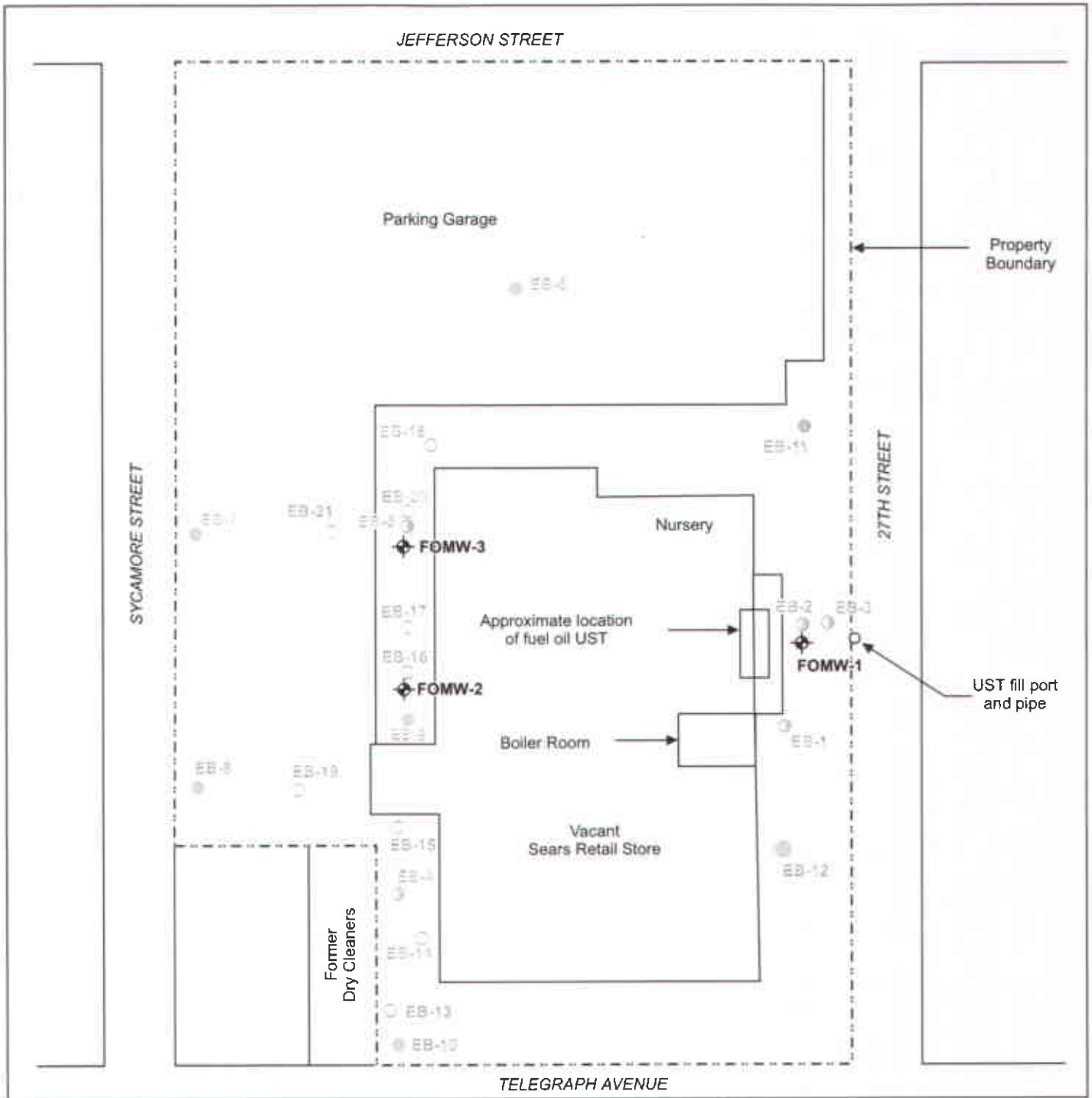
SITE LOCATION MAP

February 2000
00188-248-170

Sears Roebuck & Company
Soil & Groundwater Evaluation
Oakland, California



FIGURE 1

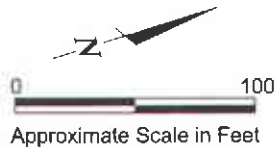


LEGEND

- Approximate location of exploratory boring (Lowney, May 1998)
- Approximate location of exploratory boring (Lowney, April 1998)
- Approximate location of exploratory boring (SECOR, November 1998)
- ◆ Fuel oil monitoring well locations (URS/Dames & Moore)

NOTES

Reference: Lowney Associates (1998)
SECOR (1998)



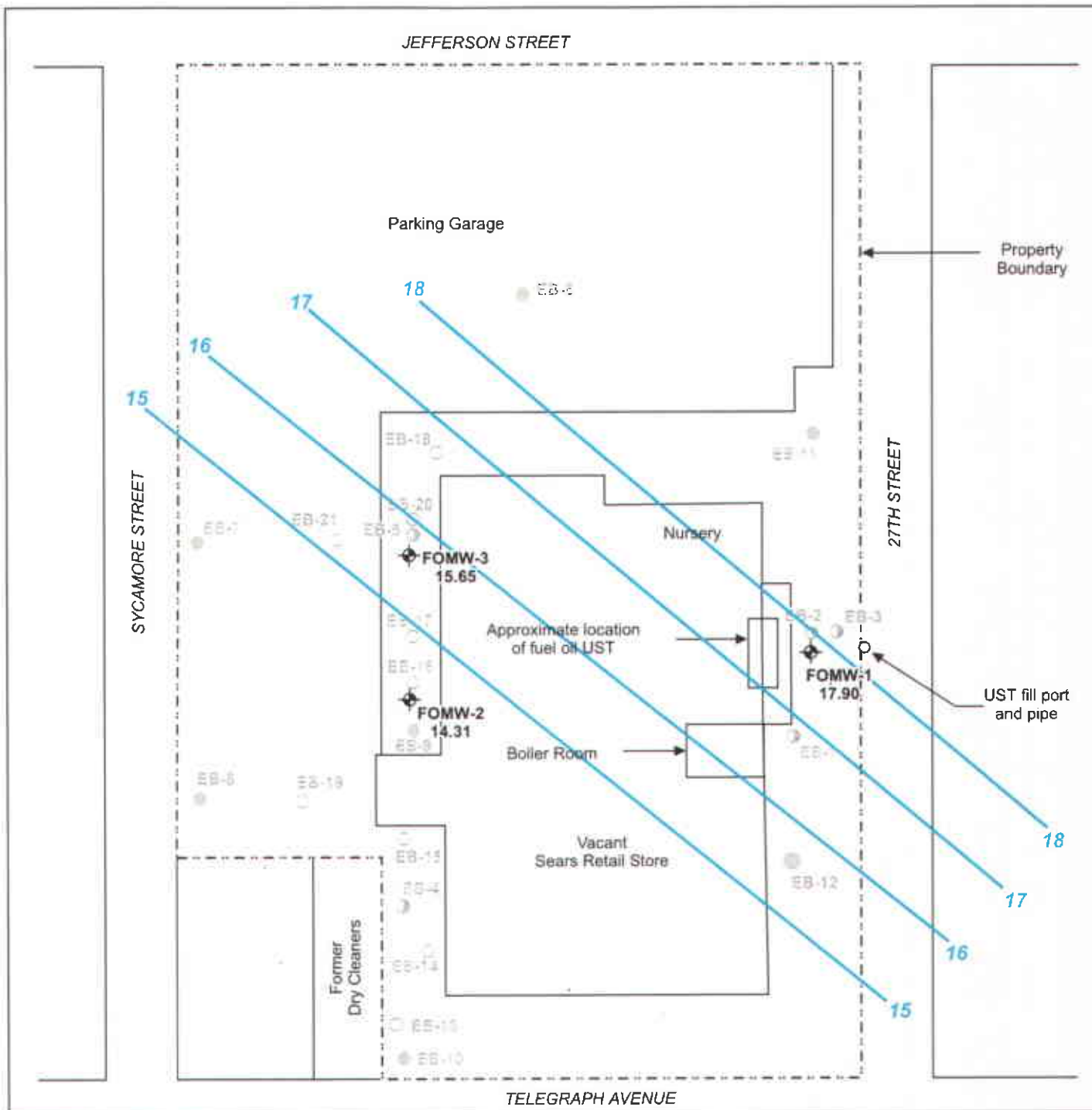
**SITE PLAN SHOWING
BORING AND MONITORING WELL LOCATIONS**

January 2001
00188-248-170

Sears Roebuck & Company
Site Assessment
Oakland, California



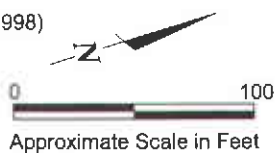
FIGURE 2



LEGEND

- Approximate location of exploratory boring (Lowney, May 1998)
- Approximate location of exploratory boring (Lowney, April 1998)
- Approximate location of exploratory boring (SECOR, November 1998)
- ◆ Fuel oil monitoring well locations (URS/Dames & Moore)
- ◆ Water level measurements in feet above Mean Sea Level Datum (MSLD)
- 15.51
- 16 Groundwater contours for Oct. 2000 in feet above Mean Sea Level Datum (MSLD)

Reference: Lowney Associates (1998)
SECOR (1998)



NOTES

- (1) Groundwater analytical results presented in tables 1 and 2.

**2000 THIRD QUARTER
GROUNDWATER LEVELS AND CONTOURS**

January 2001
00188-248-170

Sears Roebuck & Company
Site Assessment
Oakland, California



FIGURE 3

APPENDIX A

LABORATORY REPORTS AND CHAIN OF CUSTODY DOCUMENTS

URS Greiner Dames and Moore

221 Main Street #600
San Francisco, CA 94105

Attn.: Ryan Seelbach

Project: 00188-248-170
Sears Oakland

Attached is our report for your samples received on Wednesday October 11, 2000
This report has been reviewed and approved for release. Reproduction of this report
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after November 25, 2000
unless you have requested otherwise. We appreciate the opportunity to be of service to you.
If you have any questions, please call me at (925) 484-1919. You can also contact me via email.
My email address is: asalimpour@chromalab.com

Sincerely,



Afsaneh Salimpour

Volatile Organic Compounds by 8260A

URS -San Francisco	☒ 221 Main Street #600 San Francisco, CA 94105
Attn: Ryan Seelbach	Phone: (415) 243-3837 Fax: (415) 882-9261
Project #: 00188-248-170	Project: Sears Oakland

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
FOMW-2	Water	10/10/2000 13:00	1
FOMW-3	Water	10/10/2000 14:00	2

To: **URS -San Francisco**

Test Method: 8260A

Attn.: Ryan Seelbach

Prep Method: 5030

Volatile Organic Compounds by 8260A

Sample ID: FOMW-2	Lab Sample ID: 2000-10-0220-001
Project: 00188-248-170 Sears Oakland	Received: 10/11/2000 16:25
Sampled: 10/10/2000 13:00	Extracted: 10/23/2000 21:04
Matrix: Water	QC-Batch: 2000/10/23-01.09

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Acetone	ND	50	ug/L	1.00	10/23/2000 21:04	
Benzene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Bromodichloromethane	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Bromoform	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Bromomethane	ND	1.0	ug/L	1.00	10/23/2000 21:04	
Carbon tetrachloride	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Chlorobenzene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Chloroethane	ND	1.0	ug/L	1.00	10/23/2000 21:04	
2-Butanone(MEK)	ND	50	ug/L	1.00	10/23/2000 21:04	
2-Chloroethylvinyl ether	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Chloroform	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Chloromethane	ND	1.0	ug/L	1.00	10/23/2000 21:04	
Dibromochloromethane	ND	0.50	ug/L	1.00	10/23/2000 21:04	
1,2-Dichlorobenzene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
1,3-Dichlorobenzene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
1,4-Dichlorobenzene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1.00	10/23/2000 21:04	
1,2-Dibromoethane	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Dibromomethane	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Dichlorodifluoromethane	ND	0.50	ug/L	1.00	10/23/2000 21:04	
1,1-Dichloroethane	ND	0.50	ug/L	1.00	10/23/2000 21:04	
1,2-Dichloroethane	ND	0.50	ug/L	1.00	10/23/2000 21:04	
1,1-Dichloroethene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
cis-1,2-Dichloroethene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
trans-1,2-Dichloroethene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
1,2-Dichloropropane	ND	0.50	ug/L	1.00	10/23/2000 21:04	
cis-1,3-Dichloropropene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
trans-1,3-Dichloropropene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Ethylbenzene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
2-Hexanone	ND	50	ug/L	1.00	10/23/2000 21:04	
Methylene chloride	ND	5.0	ug/L	1.00	10/23/2000 21:04	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	1.00	10/23/2000 21:04	
Naphthalene	ND	5.0	ug/L	1.00	10/23/2000 21:04	
Styrene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Tetrachloroethene	ND	0.50	ug/L	1.00	10/23/2000 21:04	

1220 Quarry Lane * Pleasanton, CA 94566-4756

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

To: **URS -San Francisco**

Test Method: 8260A

Attn.: Ryan Seelbach

Prep Method: 5030

Volatile Organic Compounds by 8260A

Sample ID: FOMW-2	Lab Sample ID: 2000-10-0220-001
Project: 00188-248-170 Sears Oakland	Received: 10/11/2000 16:25
Sampled: 10/10/2000 13:00	Extracted: 10/23/2000 21:04
Matrix: Water	QC-Batch: 2000/10/23-01.09

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Toluene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
1,1,1-Trichloroethane	ND	0.50	ug/L	1.00	10/23/2000 21:04	
1,1,2-Trichloroethane	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Trichloroethene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Vinyl acetate	ND	5.0	ug/L	1.00	10/23/2000 21:04	
Vinyl chloride	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Total xylenes	ND	1.0	ug/L	1.00	10/23/2000 21:04	
Trichlorotrifluoroethane	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Carbon disulfide	ND	1.0	ug/L	1.00	10/23/2000 21:04	
Isopropylbenzene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Bromobenzene	ND	0.50	ug/L	1.00	10/23/2000 21:04	
Bromochloromethane	ND	1.0	ug/L	1.00	10/23/2000 21:04	
Trichlorofluoromethane	ND	2.0	ug/L	1.00	10/23/2000 21:04	
MTBE	ND	5.0	ug/L	1.00	10/23/2000 21:04	
Surrogate(s)						
4-Bromofluorobenzene	113.2	86-115	%	1.00	10/23/2000 21:04	
1,2-Dichloroethane-d4	100.8	76-114	%	1.00	10/23/2000 21:04	
Toluene-d8	100.2	88-110	%	1.00	10/23/2000 21:04	

To: **URS -San Francisco**

Test Method: 8260A

Attn.: Ryan Seelbach

Prep Method: 5030

Volatile Organic Compounds by 8260A

Sample ID: FOMW-3	Lab Sample ID: 2000-10-0220-002
Project: 00188-248-170 Sears Oakland	Received: 10/11/2000 16:25
Sampled: 10/10/2000 14:00	Extracted: 10/23/2000 22:59
Matrix: Water	QC-Batch: 2000/10/23-01.09

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Acetone	ND	50	ug/L	1.00	10/23/2000 22:59	
Benzene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Bromodichloromethane	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Bromoform	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Bromomethane	ND	1.0	ug/L	1.00	10/23/2000 22:59	
Carbon tetrachloride	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Chlorobenzene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Chloroethane	ND	1.0	ug/L	1.00	10/23/2000 22:59	
2-Butanone(MEK)	ND	50	ug/L	1.00	10/23/2000 22:59	
2-Chloroethylvinyl ether	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Chloroform	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Chloromethane	ND	1.0	ug/L	1.00	10/23/2000 22:59	
Dibromochloromethane	ND	0.50	ug/L	1.00	10/23/2000 22:59	
1,2-Dichlorobenzene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
1,3-Dichlorobenzene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
1,4-Dichlorobenzene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	1.00	10/23/2000 22:59	
1,2-Dibromoethane	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Dibromomethane	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Dichlorodifluoromethane	ND	0.50	ug/L	1.00	10/23/2000 22:59	
1,1-Dichloroethane	ND	0.50	ug/L	1.00	10/23/2000 22:59	
1,2-Dichloroethane	ND	0.50	ug/L	1.00	10/23/2000 22:59	
1,1-Dichloroethene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
cis-1,2-Dichloroethene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
trans-1,2-Dichloroethene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
1,2-Dichloropropane	ND	0.50	ug/L	1.00	10/23/2000 22:59	
cis-1,3-Dichloropropene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
trans-1,3-Dichloropropene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Ethylbenzene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
2-Hexanone	ND	50	ug/L	1.00	10/23/2000 22:59	
Methylene chloride	ND	5.0	ug/L	1.00	10/23/2000 22:59	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	1.00	10/23/2000 22:59	
Naphthalene	ND	5.0	ug/L	1.00	10/23/2000 22:59	
Styrene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Tetrachloroethene	ND	0.50	ug/L	1.00	10/23/2000 22:59	

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To: **URS -San Francisco**

Test Method: 8260A

Attn.: Ryan Seelbach

Prep Method: 5030

Volatile Organic Compounds by 8260A

Sample ID: FOMW-3	Lab Sample ID: 2000-10-0220-002
Project: 00188-248-170 Sears Oakland	Received: 10/11/2000 16:25
Sampled: 10/10/2000 14:00	Extracted: 10/23/2000 22:59
Matrix: Water	QC-Batch: 2000/10/23-01.09

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Toluene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
1,1,1-Trichloroethane	ND	0.50	ug/L	1.00	10/23/2000 22:59	
1,1,2-Trichloroethane	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Trichloroethene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
1,1,1,2-Tetrachloroethane	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Vinyl acetate	ND	5.0	ug/L	1.00	10/23/2000 22:59	
Vinyl chloride	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Total xylenes	ND	1.0	ug/L	1.00	10/23/2000 22:59	
Trichlorotrifluoroethane	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Carbon disulfide	ND	1.0	ug/L	1.00	10/23/2000 22:59	
Isopropylbenzene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Bromobenzene	ND	0.50	ug/L	1.00	10/23/2000 22:59	
Bromochloromethane	ND	1.0	ug/L	1.00	10/23/2000 22:59	
Trichlorofluoromethane	ND	2.0	ug/L	1.00	10/23/2000 22:59	
MTBE	ND	5.0	ug/L	1.00	10/23/2000 22:59	
Surrogate(s)						
4-Bromofluorobenzene	111.1	86-115	%	1.00	10/23/2000 22:59	
1,2-Dichloroethane-d4	100.8	76-114	%	1.00	10/23/2000 22:59	
Toluene-d8	100.0	88-110	%	1.00	10/23/2000 22:59	

To: URS -San Francisco

Test Method: 8260A

Attn.: Ryan Seelbach

Prep Method: 5030

Batch QC Report

Volatile Organic Compounds by 8260A

Method Blank	Water	QC Batch # 2000/10/23-01.09
MB: 2000/10/23-01.09-001		Date Extracted: 10/23/2000 15:56

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Acetone	ND	50	ug/L	10/23/2000 15:56	
Benzene	ND	0.5	ug/L	10/23/2000 15:56	
Bromodichloromethane	ND	0.5	ug/L	10/23/2000 15:56	
Bromoform	ND	0.5	ug/L	10/23/2000 15:56	
Bromomethane	ND	1.0	ug/L	10/23/2000 15:56	
Carbon tetrachloride	ND	0.5	ug/L	10/23/2000 15:56	
Chlorobenzene	ND	0.5	ug/L	10/23/2000 15:56	
Chloroethane	ND	1.0	ug/L	10/23/2000 15:56	
2-Butanone(MEK)	ND	50	ug/L	10/23/2000 15:56	
2-Chloroethylvinyl ether	ND	0.5	ug/L	10/23/2000 15:56	
Chloroform	ND	0.5	ug/L	10/23/2000 15:56	
Chloromethane	ND	1.0	ug/L	10/23/2000 15:56	
Dibromochloromethane	ND	0.5	ug/L	10/23/2000 15:56	
1,2-Dichlorobenzene	ND	0.5	ug/L	10/23/2000 15:56	
1,3-Dichlorobenzene	ND	0.5	ug/L	10/23/2000 15:56	
1,4-Dichlorobenzene	ND	0.5	ug/L	10/23/2000 15:56	
1,2-Dibromo-3-chloropropane	ND	5.0	ug/L	10/23/2000 15:56	
1,2-Dibromoethane	ND	0.5	ug/L	10/23/2000 15:56	
Dibromomethane	ND	0.5	ug/L	10/23/2000 15:56	
Dichlorodifluoromethane	ND	0.5	ug/L	10/23/2000 15:56	
1,1-Dichloroethane	ND	0.5	ug/L	10/23/2000 15:56	
1,2-Dichloroethane	ND	0.5	ug/L	10/23/2000 15:56	
1,1-Dichloroethene	ND	0.5	ug/L	10/23/2000 15:56	
cis-1,2-Dichloroethene	ND	0.5	ug/L	10/23/2000 15:56	
trans-1,2-Dichloroethene	ND	0.5	ug/L	10/23/2000 15:56	
1,2-Dichloropropane	ND	0.5	ug/L	10/23/2000 15:56	
cis-1,3-Dichloropropene	ND	0.5	ug/L	10/23/2000 15:56	
trans-1,3-Dichloropropene	ND	0.5	ug/L	10/23/2000 15:56	
Ethylbenzene	ND	0.5	ug/L	10/23/2000 15:56	
2-Hexanone	ND	50	ug/L	10/23/2000 15:56	
Methylene chloride	ND	5.0	ug/L	10/23/2000 15:56	
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L	10/23/2000 15:56	
Naphthalene	ND	5	ug/L	10/23/2000 15:56	
Styrene	ND	0.5	ug/L	10/23/2000 15:56	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	10/23/2000 15:56	
Tetrachloroethene	ND	0.5	ug/L	10/23/2000 15:56	
Toluene	ND	0.5	ug/L	10/23/2000 15:56	
1,1,1-Trichloroethane	ND	0.5	ug/L	10/23/2000 15:56	
1,1,2-Trichloroethane	ND	0.5	ug/L	10/23/2000 15:56	
Trichloroethene	ND	0.5	ug/L	10/23/2000 15:56	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	10/23/2000 15:56	
Vinyl acetate	ND	5.0	ug/L	10/23/2000 15:56	
Vinyl chloride	ND	0.5	ug/L	10/23/2000 15:56	

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To: **URS -San Francisco**

Test Method: 8260A

Attn.: Ryan Seelbach

Prep Method: 5030

Batch QC Report

Volatile Organic Compounds by 8260A

Method Blank	Water	QC Batch # 2000/10/23-01.09
MB: 2000/10/23-01.09-001		Date Extracted: 10/23/2000 15:56

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Total xylenes	ND	1.0	ug/L	10/23/2000 15:56	
Trichlorotrifluoroethane	ND	0.5	ug/L	10/23/2000 15:56	
Carbon disulfide	ND	1.0	ug/L	10/23/2000 15:56	
Isopropylbenzene	ND	0.5	ug/L	10/23/2000 15:56	
Bromobenzene	ND	0.5	ug/L	10/23/2000 15:56	
Bromochloromethane	ND	1.0	ug/L	10/23/2000 15:56	
Trichlorofluoromethane	ND	2.0	ug/L	10/23/2000 15:56	
MTBE	ND	5.0	ug/L	10/23/2000 15:56	
Surrogate(s)					
4-Bromofluorobenzene	108.0	86-115	%	10/23/2000 15:56	
1,2-Dichloroethane-d4	106.2	76-114	%	10/23/2000 15:56	
Toluene-d8	102.2	88-110	%	10/23/2000 15:56	

To: URS -San Francisco

Test Method: 8260A

Attn: Ryan Seelbach

Prep Method: 5030

Batch QC Report

Volatile Organic Compounds by 8260A

Laboratory Control Spike (LCS/LCSD)	Water	QC Batch # 2000/10/23-01.09
LCS: 2000/10/23-01.09-002	Extracted: 10/23/2000 14:31	Analyzed 10/23/2000 14:31
LCSD: 2000/10/23-01.09-003	Extracted: 10/23/2000 15:18	Analyzed 10/23/2000 15:18

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Benzene	51.4	54.4	50.0	50.0	102.8	108.8	5.7	69-129	20		
Chlorobenzene	58.9	63.0	50.0	50.0	117.8	126.0	6.7	61-121	20		
1,1-Dichloroethene	54.2	56.0	50.0	50.0	108.4	112.0	3.3	65-125	20		
Toluene	51.0	55.1	50.0	50.0	102.0	110.2	7.7	70-130	20		
Trichloroethene	49.1	50.8	50.0	50.0	98.2	101.6	3.4	74-134	20		
Surrogate(s)											
4-Bromofluorobenzene	562	570	500	500	112.4	114.0		86-115			
1,2-Dichloroethane-d4	501	508	500	500	100.2	101.6		76-114			
Toluene-d8	499	519	500	500	99.8	103.8		88-110			

To: URS - San Francisco

Test Method: 8260A

Attn.: Ryan Seelbach

Prep Method: 5030

Batch QC Report

Volatile Organic Compounds by 8260A

Matrix Spike (MS / MSD)

Water

QC Batch # 2000/10/23-01.09

Sample ID: FOMW-2

Lab Sample ID: 2000-10-0220-001

MS: 2000/10/23-01.09-004 Extracted: 10/23/2000 21:42 Analyzed: 10/23/2000 21:42 Dilution: 1.0

MSD: 2000/10/23-01.09-005 Extracted: 10/23/2000 22:21 Analyzed: 10/23/2000 22:21 Dilution: 1.0

Compound	Conc. [ug/L]			Exp. Conc. [ug/L]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD		Recovery	RPD	MS	MSD
Benzene	56.9	53.9	ND	50.0	50.0	113.8	107.8	5.4	69-129	20		
Chlorobenzene	61.0	61.9	ND	50.0	50.0	122.0	123.8	1.5	61-121	20		
1,1-Dichloroethene	52.6	55.8	ND	50.0	50.0	105.2	111.6	5.9	65-125	20		
Toluene	54.5	53.7	ND	50.0	50.0	109.0	107.4	1.5	70-130	20		
Trichloroethene	51.3	49.3	ND	50.0	50.0	102.6	98.6	4.0	74-134	20		
Surrogate(s)												
4-Bromofluorobenzene	559	554		500	500	111.8	110.8		86-115			
1,2-Dichloroethane-d4	547	511		500	500	109.4	102.2		76-114			
Toluene-d8	516	513		500	500	103.2	102.6		88-110			

Gases by 3810M

URS Greiner Dames and Moore

✉ 221 Main Street #600
San Francisco, CA 94105

Attn: Ryan Seelbach

Phone: (415) 243-3837 Fax: (415) 882-9261

Project #: 00188-248-170

Project: Sears Oakland

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
FOMW-2	Water	10/10/2000 13:00	1
FOMW-3	Water	10/10/2000 14:00	2

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-10-0220

To: **URS Greiner Dames and Moore**

Test Method: 3810M

Attn.: Ryan Seelbach

Prep Method: 3810

Gases by 3810M

Sample ID: FOMW-2	Lab Sample ID: 2000-10-0220-001
Project: 00188-248-170 Sears Oakland	Received: 10/11/2000 16:25
Sampled: 10/10/2000 13:00	Extracted: 10/23/2000 13:00
Matrix: Water	QC-Batch: 2000/10/23-01.37

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Methane	ND	0.010	ug/ml	1.00	10/23/2000 15:03	

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CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-10-0220

To: URS Greiner Dames and Moore

Test Method: 3810M

Attn.: Ryan Seelbach

Prep Method: 3810

Gases by 3810M

Sample ID: FOMW-3	Lab Sample ID: 2000-10-0220-002
Project: 00188-248-170 Sears Oakland	Received: 10/11/2000 16:25
Sampled: 10/10/2000 14:00	Extracted: 10/23/2000 13:00
Matrix: Water	QC-Batch: 2000/10/23-01.37

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Methane	ND	0.010	ug/ml	1.00	10/23/2000 15:11	

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CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-10-0220

To: URS Greiner Dames and Moore
Attn.: Ryan Seelbach

Test Method: 3810M
Prep Method: 3810

Batch QC Report Gases by 3810M

Method Blank

Water

QC Batch # 2000/10/23-01.37

MB: 2000/10/23-01.37-001

Date Extracted: 10/23/2000 13:00

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Methane	ND	0.01	ug/ml	10/23/2000 14:14	

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Printed on: 10/23/2000 17:03

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CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-10-0220

To: **URS Greiner Dames and Moore**

Test Method: 160.1

Attn.: Ryan Seelbach

Prep Method: 160.1

Total Dissolved Solids (TDS)

Sample ID: FOMW-2	Lab Sample ID: 2000-10-0220-001
Project: 00188-248-170 Sears Oakland	Received: 10/11/2000 16:25
Sampled: 10/10/2000 13:00	Extracted: 10/17/2000
Matrix: Water	QC-Batch: 2000/10/17-01.28

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
TDS	260	10	mg/L	1.00	10/17/2000	

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CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-10-0220

To: **URS Greiner Dames and Moore**

Test Method: 160.1

Attn.: Ryan Seelbach

Prep Method: 160.1

Total Dissolved Solids (TDS)

Sample ID:	FOMW-3	Lab Sample ID:	2000-10-0220-002
Project:	00188-248-170 Sears Oakland	Received:	10/11/2000 16:25
Sampled:	10/10/2000 14:00	Extracted:	10/17/2000
Matrix:	Water	QC-Batch:	2000/10/17-01.28

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
TDS	300	10	mg/L	1.00	10/17/2000	

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Page 3 of 5

Total Extractable Petroleum Hydrocarbons (TEPH)

URS -San Francisco

✉ 221 Main Street #600
San Francisco, CA 94105

Attn: Ryan Seelbach

Phone: (415) 243-3837 Fax: (415) 882-9261

Project #: 00188-248-170

Project: Sears Oakland

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
FOMW-2	Water	10/10/2000 13:00	1
FOMW-3	Water	10/10/2000 14:00	2

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-10-0220

To: **URS -San Francisco**

Test Method: 8015M

Attn.: Ryan Seelbach

Prep Method: 3510/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID: FOMW-2	Lab Sample ID: 2000-10-0220-001
Project: 00188-248-170 Sears Oakland	Received: 10/11/2000 16:25
Sampled: 10/10/2000 13:00	Extracted: 10/23/2000 06:29
Matrix: Water	QC-Batch: 2000/10/23-02.10

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	10/25/2000 23:24	
Motor Oil	ND	500	ug/L	1.00	10/25/2000 23:24	
Bunker-C	ND	50	ug/L	1.00	10/25/2000 23:24	
Surrogate(s) o-Terphenyl	98.0	60-130	%	1.00	10/25/2000 23:24	

1220 Quarry Lane * Pleasanton, CA 94566-4756

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

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-10-0220

To: **URS -San Francisco**

Test Method: 8015M

Attn.: Ryan Seelbach

Prep Method: 3510/8015M

Total Extractable Petroleum Hydrocarbons (TEPH)

Sample ID: FOMW-3	Lab Sample ID: 2000-10-0220-002
Project: 00188-248-170 Sears Oakland	Received: 10/11/2000 16:25
Sampled: 10/10/2000 14:00	Extracted: 10/23/2000 06:29
Matrix: Water	QC-Batch: 2000/10/23-02.10

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	230	50	ug/L	1.00	10/26/2000 00:02	ndp
Motor Oil	ND	500	ug/L	1.00	10/26/2000 00:02	
Bunker-C	ND	50	ug/L	1.00	10/26/2000 00:02	
Surrogate(s) o-Terphenyl	103.7	60-130	%	1.00	10/26/2000 00:02	

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

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-10-0220

To: URS -San Francisco

Test Method: 8015M

Attn.: Ryan Seelbach

Prep Method: 3510/8015M

Batch QC Report

Total Extractable Petroleum Hydrocarbons (TEPH)

Method Blank	Water	QC Batch # 2000/10/23-02.10
MB: 2000/10/23-02.10-001		Date Extracted: 10/23/2000 06:29

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Diesel	ND	50	ug/L	10/25/2000 12:30	
Motor Oil	ND	500	ug/L	10/25/2000 12:30	
Bunker-C	ND	50	ug/L	10/25/2000 12:30	
Surrogate(s) o-Terphenyl	101.5	60-130	%	10/25/2000 12:30	

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

Printed on: 01/03/2001 14:18

Page 4 of 6

To: URS -San Francisco

Test Method: 8015M

Attn: Ryan Seelbach

Prep Method: 3510/8015M

Batch QC Report

Total Extractable Petroleum Hydrocarbons (TEPH)

Laboratory Control Spike (LCS/LCSD)	Water	QC Batch # 2000/10/23-02.10
LCS: 2000/10/23-02.10-002	Extracted: 10/23/2000 06:29	Analyzed 10/25/2000 13:08
LCSD: 2000/10/23-02.10-003	Extracted: 10/23/2000 06:29	Analyzed 10/25/2000 14:25

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
Diesel	1160	1180	1250	1250	92.8	94.4	1.7	60-130	25		
Surrogate(s)											
o-Terphenyl	20.4	25.5	20.0	20.0	102.0	127.5		60-130			

To: **URS -San Francisco**

Attn: Ryan Seelbach

Test Method: 8015M

Prep Method: 3510/8015M

Legend & Notes

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte Flags

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

GeoAnalytical Laboratories, Inc.

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

CERTIFICATE OF ANALYSIS

Report # L287-04

Date: 10/20/00

Chromalab
1220 Quarry Lane
Pleasanton

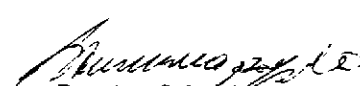
Project: 2000-10-0220

Date Rec'd: 10/13/00
Date Started: 10/14/00
Date Completed: 10/16/00

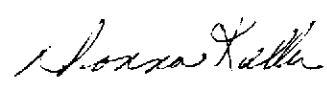
CA 94566-4756 PO#

Date Sampled: 10/10/00
Time:
Sampler:

Sample ID	Lab ID	RL	Method	Analyte	Results	Units
FOMW-2	L310186	10	310.1	Total Alkalinity	140	mg/L
FOMW-3	L310187	10	310.1	Total Alkalinity	170	mg/L


Ramiro Salgado
Chemist

Certification # 1157


Donna Keller
Laboratory Director

GeoAnalytical Laboratories, Inc.

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

Report# L287-04

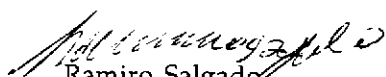
QC REPORT

Chromalab
1220 Quarry Lane
Pleasanton

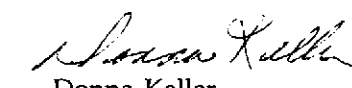
CA 94566-4756

Dates Analyzed 10/14/00-10/16/00

Analyte	Batch #	Method	MS % Recovery	MSD % Recovery	RPD	Blank
Total Alkalinity	I10254	310.1	101.0	103.3	2.2	ND


Ramiro Salgado
Chemist

Certification # 1157


Donna Keller
Laboratory Director

L287-04

From:
ChromaLab, Inc. (CL)
 1220 Quarry Lane
 Pleasanton, CA 94566-4756

To:
 GeoAnalytical Labs
 1405 Kansas Avenue
 Modesto, CA 95351

Project Manager: Afsaneh Salimpour
 Phone: (925) 484-1919 Ext: 107
 Fax: (925) 484-1096
 Email: asalimpour@chromalab.com

Phone: (209) 572-0900
 Fax: (209) 572-0916
 Contact: Ramiro Salgado
 Phone: (209) 572-0900

CL Submission #: **2000-10-0220**
 CL PO #:

Project #: 00188-248-170
 Project Name: Sears Oakland

Client Sample ID	CL#	Sampled	Matrix	Analysis	Method	Due
FOMW-2	001	10/10/2000 13:00	Water	Subcontract - Total Alkalinity	310.1	10/25/2000 17:00
FOMW-3	002	10/10/2000 14:00	Water	Subcontract - Total Alkalinity	310.1	10/25/2000 17:00

PLEASE INCLUDE QC WITH FAXED AND HARD-COPY RESULTS

RELINQUISHED BY: 1. <i>Nemise Harrington</i> Signature Time <i>D. Harrington 1705</i> Printed Name Date <i>Chromalab 10/12/00</i> Company	RELINQUISHED BY: 2. Signature Time Printed Name Date Company	RELINQUISHED BY: 3. Signature Time Printed Name Date Company
RECEIVED BY: 1. <i>Ramiro</i> 17:05 Signature Time <i>Ramiro 10/12/00</i> Printed Name Date <i>Geo Analytical</i> Company	RECEIVED BY: 2. Signature Time Printed Name Date Company	RECEIVED BY: 3. Signature Time Printed Name Date Company

CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

1220 Quarry Lane • Pleasanton, California 94566-4756

2000-10-0220

Reference #: VJCR2

Chain of Custody

DATE 10/10/00 PAGE 1 OF 1

PROJ MGR 10/10/00
 COMPANY URS
 ADDRESS 1000 23rd Ave
San Francisco, CA 94115
 SAMPLERS (SIGNATURE) [Signature] (PHONE NO.) 415-243-3834
 (FAX NO.) 415-882-9261

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH (EPA 8015, 8020)	PURGEABLE AROMATICS	TPH-Diesel (EPA 8015M)	TEPH (EPA 8015M) <u>Banker</u>	PURGEABLE HALOCARBONS	VOLATILE ORGANICS	SEMIVOLATILES	TOTAL OIL AND GREASE	PESTICIDES	PNA's	Spec. Cond.	TSS	LUFT METALS	CAM 17 METALS	TOTAL LEAD	W.E.T. (STLC)	TCPLP	Hexavalent Chromium	pH (24 hr hold time for H2O)	Total Alkalinity	TDS	NUMBER OF CONTAINERS
					<input type="checkbox"/> Gas w/ <input type="checkbox"/> BTEX <input type="checkbox"/> MTBE	BTEX (EPA 8020)	<input checked="" type="checkbox"/> Diesel <input type="checkbox"/> M.O. <input type="checkbox"/> Other <input type="checkbox"/> Oil	(BYOCs) (EPA 8010)	(VOCs) (EPA 8260)	(EPA 8270)	(SM 5520 B-F, E-F)	<input type="checkbox"/> Pesticides (EPA 8080)	<input type="checkbox"/> PCB's (EPA 8080)	<input type="checkbox"/> 8270 <input type="checkbox"/> 8310	<input type="checkbox"/> TDS	Cd, Cr, Pb, Ni, Zn	(EPA 6010/7470/7471)	<input type="checkbox"/> Hexavalent Chromium	<input type="checkbox"/> pH (24 hr hold time for H2O)	Total Alkalinity	TDS					
<u>PCMW-2</u>	<u>10/10/00</u>	<u>1300</u>	<u>420</u>				<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>														<u>310.1</u>	<u>160.1</u>	<u>10</u>
<u>PCMW-3</u>	<u>10/10/00</u>	<u>1400</u>	<u>420</u>				<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>														<u>310.1</u>	<u>160.1</u>	<u>9</u>

PROJECT INFORMATION
 PROJECT NAME: SEARS OAKLAND
 PROJECT NUMBER: 00188-010-110
 P.O. # _____
 TAT: STANDARD 5-DAY 10 DAY 24 48 72 OTHER

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

SPECIAL INSTRUCTIONS/COMMENTS:
 Report: Routine Level 2 Level 3 Level 4 Electronic Report

RELINQUISHED BY <u>[Signature]</u> (SIGNATURE) _____ (TIME) _____ <u>W. ANSELMI</u> (PRINTED NAME) _____ (DATE) _____ URS (COMPANY) _____	RELINQUISHED BY _____ (SIGNATURE) _____ (TIME) _____ _____ (PRINTED NAME) _____ (DATE) _____ _____ (COMPANY) _____	RELINQUISHED BY <u>[Signature]</u> (SIGNATURE) _____ (TIME) _____ <u>B. MORRIS</u> (PRINTED NAME) _____ (DATE) _____ _____ (COMPANY) _____
RECEIVED BY <u>[Signature]</u> (SIGNATURE) _____ (TIME) _____ <u>B. MORRIS</u> (PRINTED NAME) _____ (DATE) _____ _____ (COMPANY) _____	RECEIVED BY _____ (SIGNATURE) _____ (TIME) _____ _____ (PRINTED NAME) _____ (DATE) _____ _____ (COMPANY) _____	RECEIVED BY (LABORATORY) _____ (SIGNATURE) _____ (TIME) _____ _____ (PRINTED NAME) _____ (DATE) _____ _____ (LAB) _____

Cyto Culture

ENVIRONMENTAL
BIOTECHNOLOGY

~~CONFIDENTIAL~~

CytoCulture International Inc.

249 Tewksbury Avenue

Pt. Richmond, CA 94801 USA

Dames & Moore / URS Corporation

DM-URS Project No. 00188-248-170

Project Manager: Ryan Seelbach

221 Main St., # 600, San Francisco CA 94105

Reporting Date: October 16, 2000

CytoCulture Lab Login: 00-66

Project Description: Sears-Oakland

Tel. 415-243-3837 Fax 415-882-9261

SAMPLES: Two water samples on ice were received on 10/10/00. The samples were assayed on the following day and stored at 4°C. See the attached chain of custody form.

Aerobic Hydrocarbon-Degrading and Total Heterotrophic Bacteria Enumeration Assays

ANALYSIS REQUEST: Bacterial enumeration for aerobic petroleum hydrocarbon-degraders (broad range petroleum hydrocarbons derived from diesel and gasoline) and total heterotrophic plate counts by method 9215A (HPC) / Standard Methods 9215B modified.

CARBON SOURCE: Sterilized Chevron No. 2 diesel and gasoline were dissolved into agar plates as the sole carbon and energy sources for the growth of hydrocarbon-degrading aerobic bacteria. Heterotrophic plates were made up with standard methods total plate count agar (Difco) containing a wide range of carbon sources derived from yeast extract, tryptone, pancreatic digest of casein and glucose.

PROTOCOLS:

Hydrocarbon Degraders: Sterile agar plates (100 x 15 mm) were prepared with minimal salts medium at pH 6.8 with noble agar and hydrocarbons, without any other carbon sources or nutrients added. Triplicate plates were inoculated with 1.0 ml of each sample, or log dilutions of the sample, at 10^0 , 10^{-1} , 10^{-2} and 10^{-3} . Hydrocarbon plates were counted 12 days after incubation at 30 Deg C. The plate count data are reported as colony forming units (cfu) per milliliter (ml). Each bacteria population value represents a statistical average of the plate count data obtained with inoculations for two of the four log dilutions tested.

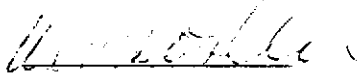
Heterotrophs: Sterile agar plates (100 x 15 mm) were prepared with minimal salts medium and 2.35% heterotrophic plate count agar at pH 6.8 without any other carbon sources or nutrients added. Plates were inoculated with 1.0 ml of water sample, or log dilutions of the sample, in triplicate at sample dilutions of 10^0 , 10^{-1} , 10^{-2} , and 10^{-3} . The heterotroph plates were counted after 3 days of incubation at 30 Deg. C. The plate count data are reported as colony forming units (cfu) per milliliter (ml) of sample. Each enumeration value represents a statistical average of two of the four log dilutions inoculated in plates.

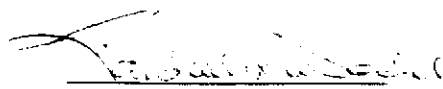
**Aerobic
Hydrocarbon-Degrading and Heterotrophic Bacteria Enumeration Results**

CLIENT SAMPLE NUMBER	SAMPLE DATE	HYDROCARBON DEGRADERS (CFU/ML)	TARGET HYDROCARBONS TESTED	TOTAL HETEROTROPHS (CFU/ML)
FOMW-2	10/10/00	1.7×10^2	Gasoline + diesel	1.6×10^3
FOMW-3	10/10/00	8×10^2	Gasoline + diesel	4×10^3
Sterile water	10/11/00	zero	Gasoline + diesel	zero
Air control	10/11/00	zero	Gasoline + diesel	zero
Positive control	10/11/00	1×10^8	Gasoline + diesel	7×10^8

A hydrocarbon-degrading bacteria positive control sample was run concurrently with these samples using a mixed flask culture of bacteria from Northern California contaminated groundwater sites.

CytoCulture is available on a consulting basis to assist in the interpretation of these data and their application to field bioremediation protocols.


Wendy Fulkerson
Laboratory Technician


Randall von Wedel, Ph.D.
Principal Biochemist

C:\cytolab\lab reports\URS 00-66

Emailed to ryan_seelbach@urscorp.com

Dames & Moore / URS
 Subcontracted Microbiology Assays
 performed by
CytoCulture Environmental Biotechnology
CHAIN OF CUSTODY FORM

Dames & Moore Project Name: <i>SEARS OAKLAND</i> Project No. <i>00188-248 170</i>	Dames & Moore Analytical Laboratories Purchase Order / LOG IN #: <i>#66</i>
Dames & Moore Analytical client:	Dames & Moore Analytical Laboratories Project Manager:
Address to Send Results: <i>221 MAIN ST. 3600 SF, CA 94105</i>	
Fax for Sending Data: <i>415 882 9261</i>	Contact / Project Manager: <i>RYAN SEEBACH</i>
Tel for Follow-up: <i>415 243 3837</i>	Sampler / Recorder:

Sample I.D.	Sampling		Matrix		Analyses Requested								
	Date	Time	Soil	Water	Aerobic Hydrocarbon Degrading Bacteria	Aerobic Heterotrophic Bacteria	pH	DO	NH ₃	PO ₄	NO ₃	SO ₄	Other Tests or Comments
<i>BUNKER OIL</i>													
<i>FOMW-2</i>	<i>10-10-00</i>	<i>1300</i>		✓	✓	✓							
<i>FOMW-3</i>	<i>10-10-00</i>	<i>1400</i>		✓	✓	✓							

Chain of Custody Record	Signature of this form constitutes	a firm Purchase Order for services.	Payment DUE on Reporting Date.
Relinquished by: <i>Ryan Seebach</i>	Date/Hr: <i>10-10-00 15:35</i>	Received by:	Date/Hr:
Received for CytoCulture Lab by: <i>Randal</i>	Date/Hr: <i>10/10/00 13:36</i>	CytoCulture Tel: 510-233-0102 Lab Services Fax: 510-233-3777	Please fax Chain of Custody form to CytoCulture prior to delivery.

10/10

Randal · 561-762-5440

APPENDIX B

URS DATA VALIDATION REPORTS

LEVEL III Data Validation Report

PROJECT: Sears Oakland, Oakland, CA
LABORATORY: Chromalab, Pleasanton, CA
Subcontracted to GeoAnalytical Laboratories, Modesto, CA
LAB NUMBER: 2000-10-0220
SAMPLES: FOMW-2, FOMW-3
MATRIX: Water

Analysis	Total Dissolved Solids (TDS) 160.1
Holding Time	✓
MS/MSD	NA
LCS (Blank Spike)	✓
Method Blanks	✓
Duplicates	NA
Field/Equipment Blanks	NA
Reporting Limits	✓

✓ – QC criteria were met.

Notes: None.

Summary:

Based on this Level III validation, these data are usable for their intended purpose. None of these data were qualified or rejected.

LEVEL III Data Validation Report

PROJECT: Sears Oakland, Oakland, CA
LABORATORY: Chromalab, Pleasanton, CA
Subcontracted to GeoAnalytical Laboratories, Modesto, CA
LAB NUMBER: 2000-10-0220
SAMPLES: FOMW-2, FOMW-3
MATRIX: Water

Analysis	Total Alkalinity 310.1
Holding Time	✓
MS/MSD	✓
LCS (Blank Spike)	NA
Method Blanks	✓
Duplicates	NA
Field/Equipment Blanks	NA
Reporting Limits	NA

✓ – QC criteria were met.

Notes: None.

Summary:

Based on this Level III validation, these data are usable for their intended purpose. None of these data were qualified or rejected.

LEVEL III Data Validation Report

PROJECT: Sears Oakland, Oakland, CA
LABORATORY: Chromalab, Pleasanton, CA
Subcontracted to GeoAnalytical Laboratories, Modesto, CA
LAB NUMBER: 2000-10-0220
SAMPLES: FOMW-2, FOMW-3
MATRIX: Water

Analysis	Motor Oil, Bunker C 8015M
Holding Time	✓
Surrogate Recovery	✓
MS/MSD	NA
LCS (Blank Spike)	✓
Method Blanks	✓
Duplicates	NA
Trip/Field/Equipment Blanks	NA
Reporting Limits	✓

✓ – QC criteria were met.

Notes: None.

Summary:

Based on this Level III validation, these data are usable for their intended purpose. None of these data were qualified or rejected.

LEVEL III Data Validation Report

PROJECT: Sears Oakland, Oakland, CA

LABORATORY: Chromalab, Pleasanton, CA

LAB NUMBER: 2000-10-0220

SAMPLES: FOMW-2, FOMW-3

MATRIX: Water

Analysis	Volatile Organics 8260A	Methane 3810M
Holding Time	✓	✓
Surrogate Recovery	✓	NA
MS/MSD	Note 1	NA
LCS (Blank Spike)	✓	✓
Method Blanks	✓	✓
Duplicates	NA	NA
Trip/Field/Equipment Blanks	NA	NA
Reporting Limits	✓	✓

✓ – QC criteria were met.

Notes: 1. Percent recoveries of 122.0% and 123.8% exceeded the upper limit of the QC acceptance range. In light of the acceptable surrogate and LCS/LCSD results no data were qualified. The MS/MSD results do not indicate a significant matrix interference.

Summary:

Based on this Level III validation, these data are usable for their intended purpose. None of these data were qualified or rejected.