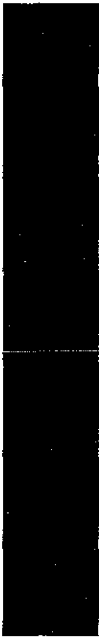


URS

Alameda County
OCT 11 2002
Environmental Health



REPORT
2002 SECOND QUARTER
GROUNDWATER MONITORING
FORMER SEARS RETAIL CENTER #1039
1901-1911 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA
CASE I.D. # STID 1630
FOR SEARS, ROEBUCK & CO.

URS Job No. 29863493
September 30, 2002



October 9, 2002

Mr. Amir Gholami
Hazardous Materials Specialist
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Number 250
Alameda, California 94502

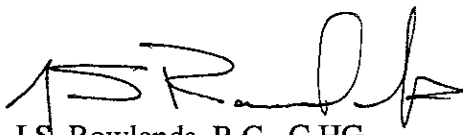
Alameda County
OCT 11 2002
Environmental Health

RE: 2002 Second Quarter Groundwater Monitoring
Former Sears Retail Center #1039
1901- 1911 Telegraph Avenue
Oakland, California
Case I.D. #STID 1630
For Sears, Roebuck & Co.

Dear Mr. Gholami

Submitted with this letter is a URS report prepared on behalf of Sears, Roebuck & Co. Presented in the report are results of groundwater monitoring conducted at the above-referenced site during the Second Quarter 2002. Quarterly groundwater monitoring will continue within the current scope of work during the third quarter of 2002. Please feel free to contact Taras Kruk or me at 714.835.6886 if you have questions or comments.

Respectfully Submitted,
URS CORPORATION



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

cc: Mr. Scott DeMuth, Sears Roebuck and Co.
Mr. Ryan Hartley, URS Corporation

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**REPORT
2002 SECOND QUARTER
GROUNDWATER MONITORING
SEARS AUTO CENTER #1039
1901-1911 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA
URS JOB NO. 29863493
FOR SEARS, ROEBUCK & CO.**

1.0 INTRODUCTION

This report has been prepared by URS Corporation on behalf of Sears, Roebuck & Co. (Sears). It presents results of the 2002 Second Quarter Groundwater Monitoring conducted at the above-referenced Site (Figure 1). The Sears Auto Center (Site) is located at 1901-1911 Telegraph Avenue in Oakland, California. The groundwater monitoring event consisted of "post purge" groundwater sample collection from seven of nine monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, and MW-9). The purpose of the groundwater monitoring was to assess current groundwater conditions in the vicinity of a former gasoline concession area (Figure 2). The work is being performed under regulatory oversight of the Alameda County Environmental Health Service (ACEHS).

2.0 SITE DESCRIPTION

The Site is located at 1901-1911 Telegraph Avenue, Oakland California (Figure 1). The Site is bordered on the north by Williams Street, Telegraph Avenue to the east, 19th Street to the south, and San Pablo Avenue to the west (Figure 2). The property is occupied by a Sears Auto Center, a former Chevron Service Station, and a three-story above-grade parking garage.

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 area is located on the eastern flank of The San Francisco Basin, a broad Franciscan depression. Basement rock of the basin is respectively overlain by the Santa Clara Formation, the Alameda Formation, and the Temescal Formation. These formations consist of unconsolidated sediments varying in total thickness from approximately 300 to 1,000 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 of organic clays and alluvial fan deposits of sands, gravels and silts. The uppermost Holocene Temescal Formation is an alluvial deposit ranging in thickness from 1 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 of the 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 below ground surface (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

The Site consists of a Sears Auto Center, a multiple level parking structure, and a former Chevron Service Station. The Sears Auto Center is currently in operation; it is a converted former Goodyear Tire Center. The former Chevron Service Station contained three gasoline USTs and used oil UST. The USTs were removed in January 1988, prior to Sears' ownership of the site.

A total of 9 groundwater monitoring wells (MW-1 to MW-9) have been installed, before and after the property's purchase by Sears, to evaluate the extent of gasoline impacted groundwater emanating from the former Chevron Station's UST area. The prior owners, Broadway/Federated Department Stores, began initial investigation work and groundwater monitoring. Subsequent to the property's purchase by Sears during a bankruptcy proceeding, Sears has continued quarterly groundwater monitoring (since June 1996), and has installed additional wells to define the down-gradient extent of the gasoline groundwater plume.

Groundwater has been monitored since January 1988. Well MW-1 has been monitored on a periodic basis since January 1988 while wells MW-2, MW-3 and MW-4 have been monitored on a periodic bases since June 1993. Wells MW-5, MW-6 and MW-7 have been monitored on a periodic basis since June 1994. Historical monitoring data shows that dissolved phase total petroleum hydrocarbons as gasoline-range organics (TPHg) and dissolved phase benzene has been detected in 5 of 9 wells. Dissolved phase benzene was detected in 3 of the 9 wells sampled during 2002 second

quarter. Available historical groundwater data (since October 1995); including depth to water, groundwater elevation, and hydrocarbon and Volatile Organic Compounds (VOC's) concentrations; are summarized in Appendix A.

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 in the Health and Safety Plan and were maintained in the project files at URS's Santa Ana office. A copy of the Health and Safety Plan remained onsite during field operations.

5.0 QUARTERLY GROUNDWATER MONITORING

The 2002 Second Quarter Groundwater Monitoring was performed on June 5, 2002. The monitoring consisted of groundwater gauging of all nine wells, and purging and sampling the following seven wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, and MW-9. A description of the monitoring procedures is presented in the following section.

5.1 GROUNDWATER GAUGING

Prior to gauging, the groundwater monitoring wells were checked for the presence of separate phase product using a product interface probe. Separate phase product was not observed in any well. Water levels in each well were measured using a Solinst™ water level indicator relative to a defined measuring point on the surveyed top of casing. Water level data was recorded to the nearest 0.01 foot. Groundwater depths and elevations for the 2002 second quarter are listed in Table 1 and Appendix A.

5.2 PURGING AND SAMPLING METHODS

Prior to sample collection, wells were purged of approximately three well casing volumes using a Grundfos™ RediFlo 2 submersible well pump. Water purged from each well was monitored for various field parameters including temperature, pH, turbidity, electrical conductivity, dissolved oxygen (DO), and oxygen reduction potential (ORP) using a YSI™ multi-parameter meter equipped with a flow through cell. Purging continued until temperature, pH and conductivity had stabilized. The measured field parameters are listed in Table 1.

Groundwater samples were collected from seven selected monitoring wells for laboratory analysis during the 2002 Second Quarter Groundwater Monitoring event. Groundwater samples were collected from the discharge tubing of the well pump following well purging. The Grundfos RediFlo 2™ submersible well pump was cleaned prior to use (and between wells) by washing in a solution of Alconox, rinsing with tap water, final rinsing with deionized water, and air drying. Pre-cleaned, disposable, polyethylene discharge tubing was attached to the pump following each decontamination and was changed between each well purging event. A blind duplicate was collected from well MW-5 and labeled Dup-1. One equipment blank labeled EB1 was collected by pouring deionized water over the pump housing into sample containers following decontamination procedures.

Sample containers and handling procedures for groundwater samples 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 at a temperature of 4 to 7 degrees centigrade and transported to a California Department of Health Services (CDHS) accredited laboratory for analysis. Chain-of-custody records were maintained throughout the sampling program.

5.3 LABORATORY ANALYSIS PROGRAM

All groundwater samples and duplicates were analyzed for total petroleum hydrocarbons as gasoline range organics (TPHg), diesel fuel range organics (TPHd), and oil range organics (TPHo) by modified EPA Method 8015M; and for benzene, toluene, ethylbenzene, xylenes (BTEX), and fuel oxygenates Methyl tert-Butyl Ether (MTBE), Di-isopropyl Ether (DIPE), Ethyl tert-butyl Ether (ETBE), tert-Amyl Methyl Ether (TAME), tert-Butanol (TBA), and other VOC's by EPA Method 8260B. Analyses results for the groundwater samples are summarized in Table 1. Copies of the laboratory reports are included in Appendix B.

5.4 WELL HEAD MAINTANANCE

As part of the quarterly monitoring program each well head is inspected to ensure that wells are properly sealed and secured. The routine well maintenance associated with the quarterly groundwater sampling consists of: inspection of water-tight well caps and locks on all monitoring wells and replacement as necessary; replacement of missing or damaged bolts on well box covers; and removal and replacement of damaged well boxes and associated concrete aprons. During this quarter, but prior to sampling, five well heads (MW-5, MW-6, MW-7, MW-8, and MW-9) were repaired.

5.5 SITE SURVEY

In May 2002, the well field was re-surveyed by Mariscal and Associates, Inc., licensed land surveyors. Based on the new survey data, the historic casing and groundwater elevations for monitoring wells at the site were not recorded in respect to MSL datum. The elevation difference between the historic top of well casing data and the current survey data is approximately 70 feet (Appendix A).

5.6 WASTE MANAGEMENT

Well purge water was collected and stored in three 55-gallon DOT-approved drums. Containers were numbered to identify the source of the wastes. The containers were stored onsite and properly disposed of by Sears, Roebuck & Co. following review of the chemical analysis data.

6.0 FINDINGS

6.1 SHALLOW GROUNDWATER CONDITIONS

The measured depth to water ranged from 12.68 feet to 16.81 feet bgs or approximately 3.49 feet to 6.27 feet above MSL during the 2002 second quarter. Groundwater elevation has decreased an average of 0.1 since the 2002 first quarter monitoring event. Groundwater depths and elevations are listed in Table 1 and Appendix A. An interpretive groundwater elevation contour map, based on the 2002 second quarter water level measurements, is provided on Figure 3.

Groundwater elevation contours for the site were generated by Kriging (a geostatistical gridding method) using SURFER™, a graphical, contouring software program. The resultant groundwater contours indicate an easterly groundwater flow direction with a gradient of about 0.012 (Figure 3).

6.2 LABORATORY ANALYTICAL RESULTS

TPHg was detected in groundwater samples collected from wells MW-2, MW-5, and MW-7 with concentrations ranging from 50 micrograms per liter ($\mu\text{g/L}$), to 12,100 $\mu\text{g/L}$. TPHd and TPHo was not detected in any wells sampled this quarter. Benzene was detected in groundwater samples collected from wells MW-4, MW-5, and MW-7 with concentrations ranging from 2.0 $\mu\text{g/L}$ to 8,700 $\mu\text{g/L}$. MTBE was detected in the groundwater sample collected from MW-9 at a concentration of 2.3 $\mu\text{g/L}$. TBA was detected in the groundwater sample collected from MW-2 at a concentration of 16.7 $\mu\text{g/L}$. Various chlorinated VOC's including tetrachloroethene (PCE), trichloroethene (TCE), 1,2-dichloroethane (1,2-DCA), cis-1,2-dichloroethene (cis-1,2-DCE), were detected in the groundwater samples collected from wells MW-1, MW-2, MW-3, and MW-9. Detected concentrations of chlorinated VOC's ranged from 4.5 $\mu\text{g/L}$ to 33.2 $\mu\text{g/L}$.

Chemical analysis results of the 2002 Second Quarter Groundwater Monitoring are presented in Table 2. A copy of the laboratory reports and chain-of-custody records are included in Appendix B. Groundwater isoconcentration maps for TPHg and Benzene for the 2002 second quarter are shown on Figures 4 and 5, respectively. 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". A copy of URS's Data Validation Memos are included in Appendix C.

7.0 DISCUSSION

The 2002 second quarter groundwater monitoring event represents the 26th groundwater sampling event conducted at the Site. Groundwater elevations have decreased approximately 0.1 feet since the last sampling event conducted in March 2002. Groundwater flow direction is towards the east with a gradient of 0.012. TPHg and benzene was detected in three of the six wells sampled with concentrations up to 12,100 $\mu\text{g/L}$ and 8,700 $\mu\text{g/L}$, respectively. Detectable concentrations of MTBE and TBA were present in two groundwater samples collected this quarter. TPHg and benzene concentrations in well MW-7 have steadily increased during the last several years suggesting that the affected groundwater plume is migrating to the east. The suspected source is the former gasoline USTs and fuel dispensing area of the former Chevron station on the Site.

Chlorinated VOC's have been detected in both the upgradient well MW-1 and the downgradient well MW-9 during this, and previous, groundwater sampling events. Potential onsite sources of the chlorinated compounds have not been identified; however, a widespread groundwater plume containing chlorinated compounds has been identified in the site vicinity by Harding ESE and is

referenced in the Fourth Quarter 2001 Groundwater Monitoring Report for the site (IT Corp., May 2002).

Based on the data collected during this and previous monitoring events, the lateral limits of TPHg and BTEX affected groundwater can be described by an oval shaped plume with a diameter of approximately 200 feet. URS recommends that two additional groundwater monitoring wells be installed east of the former Chevron service station to provide additional plume definition immediately down-gradient of the suspected source area. The proposed monitoring well locations are shown on Figure 2.

8.0 SCHEDULE

Future activities at the Site will include continued quarterly groundwater monitoring and installation of two additional monitoring wells. The 2002 third quarter groundwater monitoring event will be conducted during September 2002 and will include sampling of eight groundwater monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, MW-8 and MW-9). A work plan for the installation of two additional groundwater monitoring wells at the site will be included in 2002 Third Quarter Groundwater Monitoring Report.

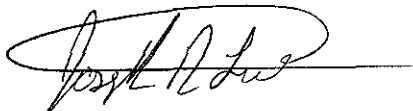
ACEHD will be notified of upcoming field activities.

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

Respectfully Submitted,

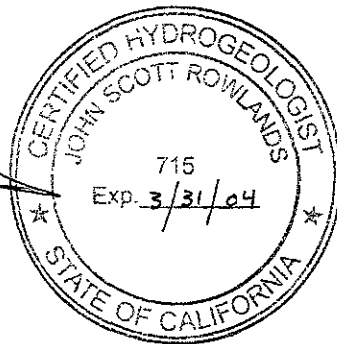
URS CORPORATION



Joseph R. Liles
Senior Staff Geologist



J.S. Rowlands, R.G., C.H.G.
Senior Project Geologist



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- 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.
- 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.
- The IT Group, 2000. *Soil and Groundwater Assessment Report*, Sears Auto Center #1039, 1901- 1911 Telegraph Avenue, Oakland, California, February 9.
- The IT Group, 2001. *First Quarter 2001 Groundwater Monitoring*, Sears Auto Center #1039, 1901- 1911 Telegraph Avenue, Oakland, California, July 8.
- The IT Group, 2001. *Second Quarter 2001 Groundwater Monitoring*, Sears Auto Center #1039, 1901- 1911 Telegraph Avenue, Oakland, California, January 8.
- The IT Group, 2002. *Fourth Quarter 2001 Groundwater Monitoring*, Sears Auto Center #1039, 1901- 1911 Telegraph Avenue, Oakland, California, May 29.
- URS Corporation, 2002. *2002 First Quarter Groundwater Monitoring*, Former Sears Retail Center #1039, 1901- 1911 Telegraph Avenue, Oakland, California, August 5.

Table 2
2002 2nd Quarter Groundwater Analytical Results
Sears Retail Center Store No. 1039
Oakland, California

| Monitoring Well No. | Sample Date | Notes | LABORATORY ANALYTICAL RESULTS | | | | | | | | | | | | | | | | |
|---------------------|-------------|-------|-------------------------------|-------------|-------------|----------------------------------|----------|----------|----------|-------------|-------------|-------------|-------------|------------|------------|------------|----------------|--------------------|----------------|
| | | | 8015M | | | Volatile Organics by GC/MS 8260B | | | | | | | | | | | | | |
| | | | TPHg (µg/L) | TPHd (µg/L) | TPHo (µg/L) | B (µg/L) | T (µg/L) | E (µg/L) | X (µg/L) | MTBE (µg/L) | ETBE (µg/L) | DIPE (µg/L) | TAME (µg/L) | TBA (µg/L) | PCE (µg/L) | TCE (µg/L) | 1,2-DCA (µg/L) | cis-1,2-DCE (µg/L) | 1,1-DCE (µg/L) |
| MW-1 | 6/5/2002 | -- | < 50 | < 500 | < 2000 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | 27.1 | < 2.5 | < 5.0 | < 5.0 | < 5.0 |
| MW-2 | 6/5/2002 | -- | 406 | < 500 | < 2000 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | 16.7 | < 2.5 | 4.6 | 8.5 | < 5.0 | < 5.0 |
| MW-3 | 6/5/2002 | -- | < 50 | < 500 | < 2000 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | 20.9 | 4.5 | < 5.0 | < 5.0 | < 5.0 |
| MW-4 | 6/5/2002 | -- | < 50 | < 500 | < 2000 | 2.1 | < 1.0 | < 1.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.5 | < 2.5 | < 5.0 | < 5.0 | < 5.0 |
| MW-5 | 6/5/2002 | -- | 50 | < 500 | < 2000 | 2.0 | < 1.0 | < 1.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.5 | < 2.5 | < 5.0 | < 5.0 | < 5.0 |
| MW-5 | 6/5/2002 | 1 | 59 | < 500 | < 2000 | 2.5 | < 1.0 | < 1.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.5 | < 2.5 | < 5.0 | < 5.0 | < 5.0 |
| MW-6 | 6/5/2002 | 4 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MW-7 | 6/5/2002 | -- | 12,100 | < 500 | < 2000 | 8,700 | 25 | 173 | 510 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.5 | < 2.5 | < 5.0 | < 5.0 | < 5.0 |
| MW-8 | 6/5/2002 | 4 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MW-9 | 6/5/2002 | -- | < 50 | < 500 | < 2000 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | 2.3 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | 33.2 | 12.0 | < 5.0 | < 5.0 | < 5.0 |

Notes:

- 1: Duplicate sample
- 2: Petroleum odor in groundwater
- 3: Well casing is damaged
- 4: Well not Sampled
- J - Bunker-C detections were quantitated against the diesel standard and flagged as estimated concentration
- < - Analyte not detected above indicated method detection limit
- NA: Not analyzed/Not available

BTEX = Volatile aromatic constituents Benzene, Toluene, Ethylbenzene, and Xylenes by EPA Method 8020/8021B or 8260B

TPHg = Total Petroleum Hydrocarbons as gasoline range hydrocarbons by EPA Method 8015 (modified)

TPHd = Total Petroleum Hydrocarbons as diesel range hydrocarbons by EPA Method 8015 (modified)

TRPo = Total Petroleum Hydrocarbons as oil range by EPA Method 8015 (modified)

MTBE - Methyl tertiary-butyl ether

DIPE - Di-isopropyl Ether

TAME - Tertiary Amyl Methyl Ether

TBA - Tertiary Butyl Alcohol

ETBE - Ethyl Tertiary Butyl Ether

PCE - Tetrachloroethane

TCE - Trichloroethene

1,2-DCA - 1,2-Dichloroethane

cis-1,2-DCE - CIS-1,2-Dichloroethene

1,1-DCE - 1,1 Dichloroethene

TABLES

Table 1
2002 2nd Quarter Groundwater Levels and Parameters
Sears Retail Center Store No. 1039
Oakland, California

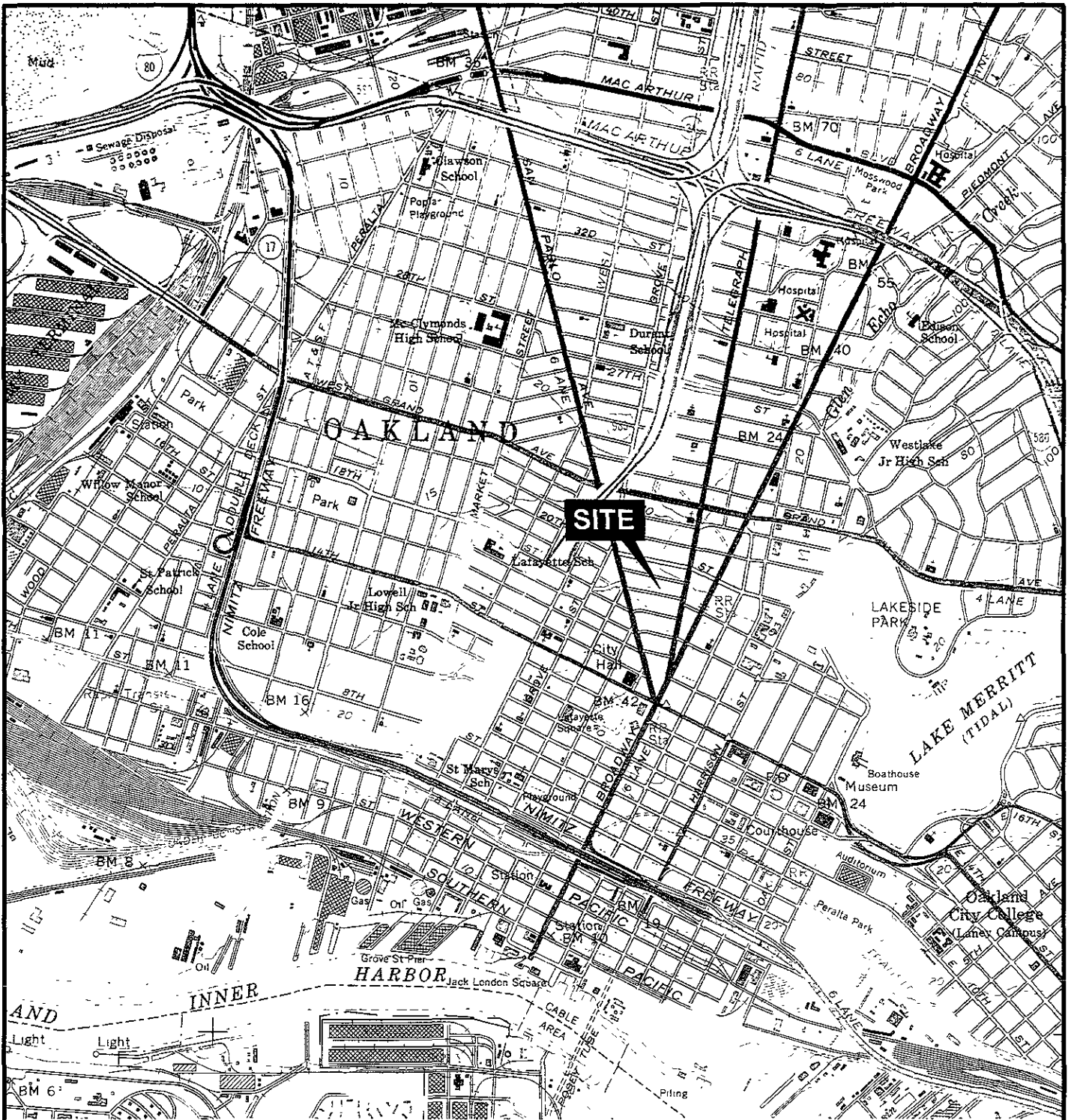
| Monitoring Well No. | Date Collected | Notes | Sample Date | GROUNDWATER LEVELS | | | GROUNDWATER SAMPLING FIELD PARAMETERS | | | | | | |
|---------------------|----------------|-------|-------------|------------------------|---------------------------------|------------------------|---------------------------------------|-----------------|------|--------------|-------------|-----------------|-------------------------|
| | | | | Product Thickness (ft) | Depth to Groundwater (feet bgs) | Casing Elevation (MSL) | Groundwater Elevation (MSL) | Temp. (Celsius) | pH | Cond (µS/cm) | O.R.P. (mV) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
| MW-1 | 6/5/2002 | -- | 6/5/2002 | NA | 14.72 | 20.99 | 6.27 | 20.77 | 6.05 | 676.00 | 45.8 | 16.3 | 0.55 |
| MW-2 | 6/5/2002 | -- | 6/5/2002 | NA | 14.41 | 20.50 | 6.09 | 21.25 | 5.35 | 1115.00 | -76.8 | 7.8 | 0.75 |
| MW-3 | 6/5/2002 | -- | 6/5/2002 | NA | 16.53 | 22.29 | 5.76 | 21.20 | 6.05 | 453.00 | -65.3 | 0.0 | 0.10 |
| MW-4 | 6/5/2002 | -- | 6/5/2002 | NA | 13.00 | 18.61 | 5.61 | 21.64 | 6.42 | 1236.00 | -185.6 | 0.0 | 0.01 |
| MW-5 | 6/5/2002 | -- | 6/5/2002 | NA | 12.68 | 18.76 | 6.08 | 21.26 | 6.47 | 1259.00 | -171.4 | 141.9 | 6.12 |
| MW-6 | 6/5/2002 | 4 | 6/5/2002 | NA | 14.26 | 18.91 | 4.65 | NA | NA | NA | NA | NA | NA |
| MW-7 | 6/5/2002 | -- | 6/5/2002 | NA | 15.71 | 20.39 | 4.68 | 21.61 | 4.76 | 868.00 | -54.1 | 0.0 | 0.01 |
| MW-8 | 6/5/2002 | 4 | 6/5/2002 | NA | 16.81 | 21.12 | 4.31 | NA | NA | NA | NA | NA | NA |
| MW-9 | 6/5/2002 | -- | 6/5/2002 | NA | 15.71 | 19.20 | 3.49 | 21.75 | 6.14 | 908.00 | 23.1 | 26.2 | 0.10 |

Notes

- MSL - Mean Sea Level
- BGS - Below ground surface
- 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
- 3 Well casing damaged
- 4 Well not sampled
- SP - Separate phase product in well
- NA - Not analyzed/Not available

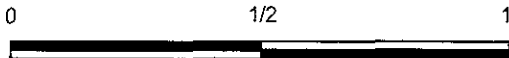
- µS/cm - microSiemens per centimeter
- mV - millivolt
- mg/L - milligrams per liter
- NTU - nephelometric turbidity units

FIGURES



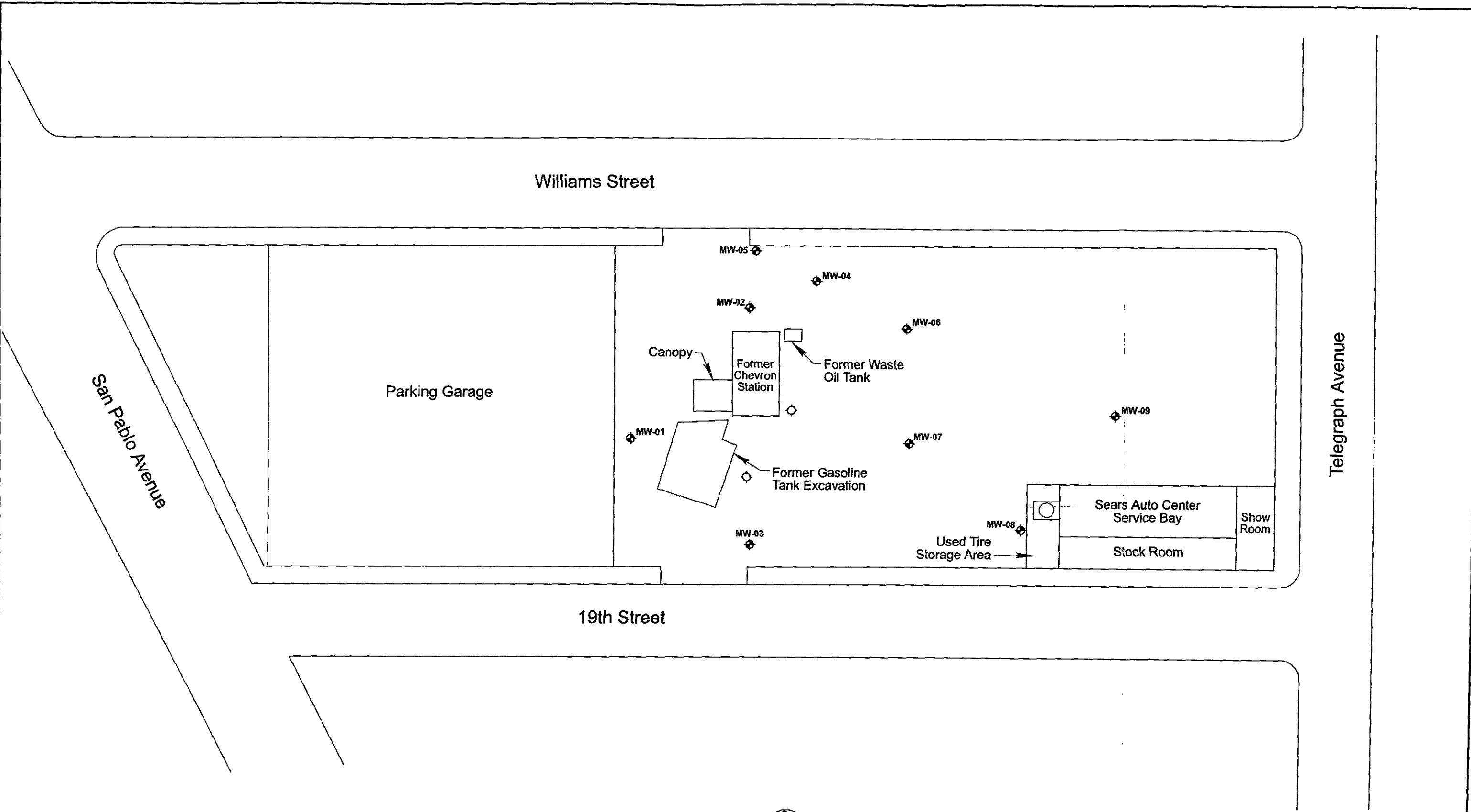
REFERENCE: USGS 7.5 Minute Series Oakland West, CA Quad, 1959, Photorevised 1980

FIGURE 1
VICINITY MAP
 SEARS AUTO CENTER #1039
 1901-1911 TELEGRAPH AVENUE
 OAKLAND, CALIFORNIA
 For Sears, Roebuck & Co.



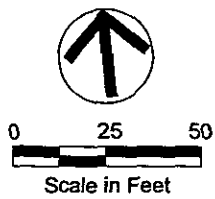
Scale in Miles

URS



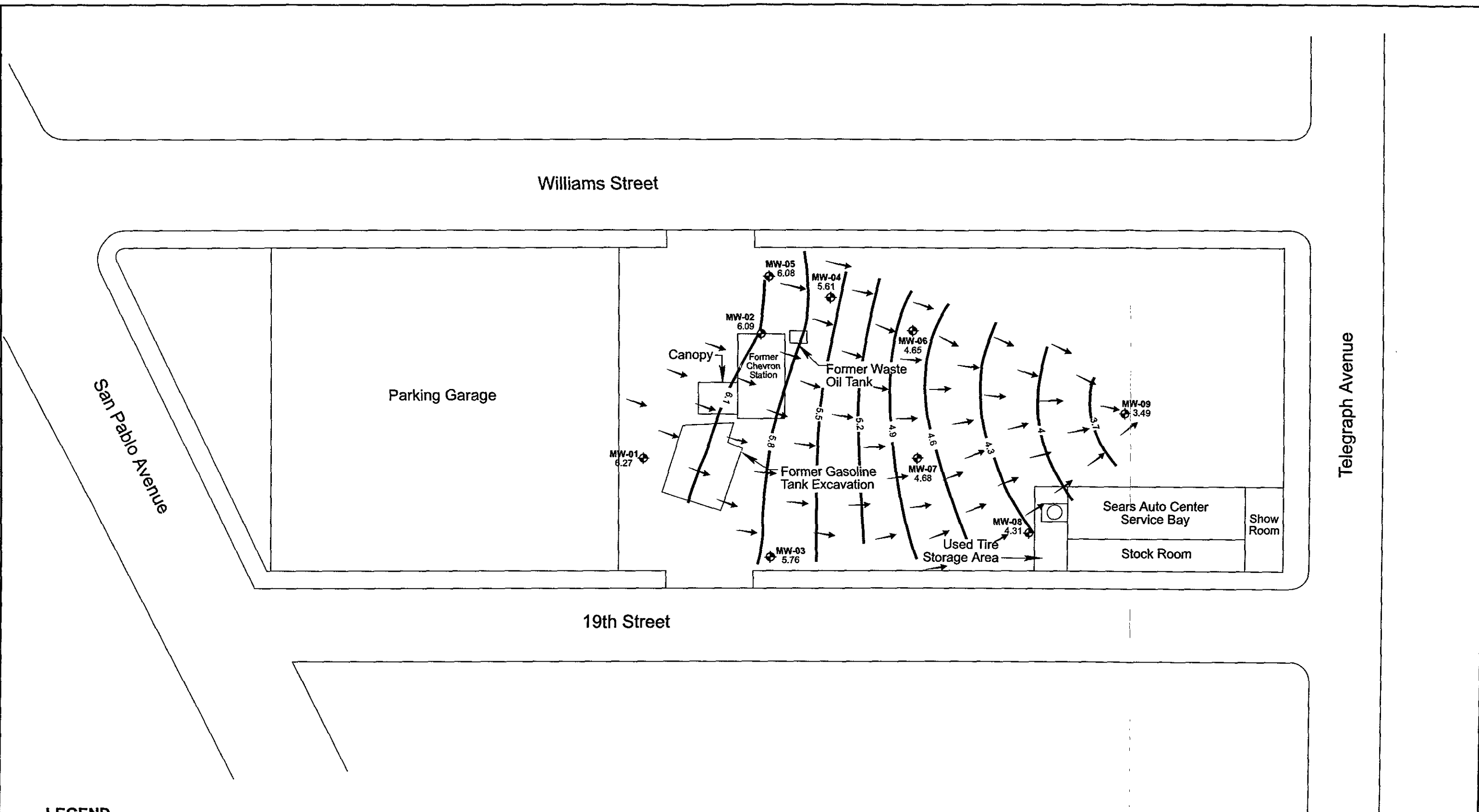
LEGEND

- MW-15  MONITORING WELL LOCATION
-  PROPOSED MONITORING WELL LOCATION



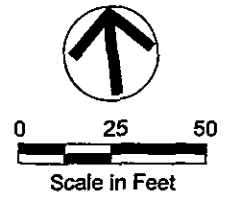
| PLOT PLAN | |
|-------------------------------------------------------|----------|
| Project: Sears Auto Center #1039, Oakland, California | |
| Project No.: 29863493 | |
| Date: September 2002 | Figure 2 |

L:\Sears oakland\fig 2 plot plan.th.10



LEGEND

- MW-15 MONITORING WELL LOCATION
- GROUNDWATER CONTOUR
- GROUNDWATER FLOW DIRECTION
- 5.61 GROUNDWATER ELEVATION



| | |
|-------------------------------------------------------|----------|
| GROUNDWATER GRADIENT MAP (JUNE 2002) | |
| Project: Sears Auto Center #1039, Oakland, California | |
| Project No.: 29863493 | |
| Date: September 2002 | Figure 3 |

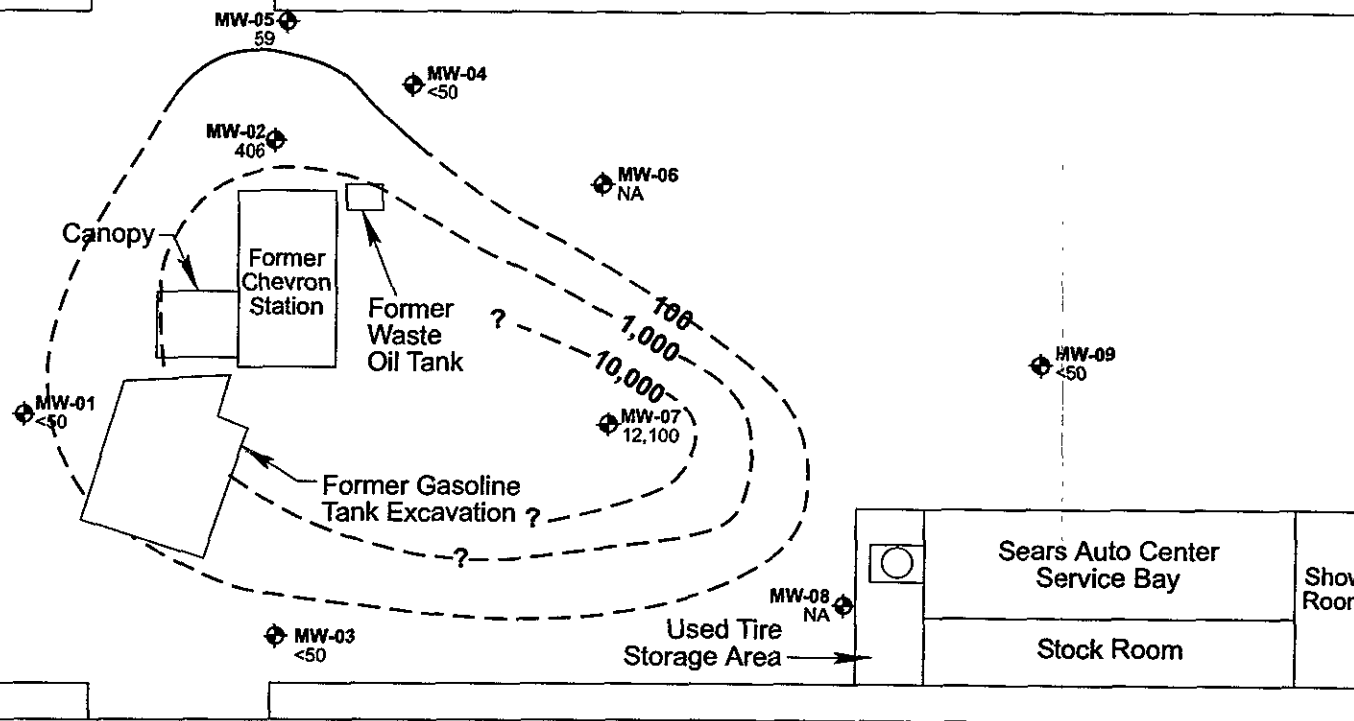
L:\Sears Oakland\fig 3 #1039 August 02.th10

Williams Street

Telegraph Avenue

San Pablo Avenue

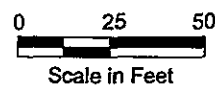
Parking Garage



19th Street

LEGEND

- MW-02
406
MONITORING WELL LOCATION WITH TPHg CONCENTRATION IN $\mu\text{g/L}$
- -100- - TPHg CONCENTRATION



**TPHg ISOCONCENTRATION
CONTOUR PLOT PLAN MAP
(JUNE 2002)**

| | |
|-------------------------------------------------------|----------|
| Project: Sears Auto Center #1039, Oakland, California | |
| Project No.: 29863493 | |
| Date: September 2002 | Figure 4 |

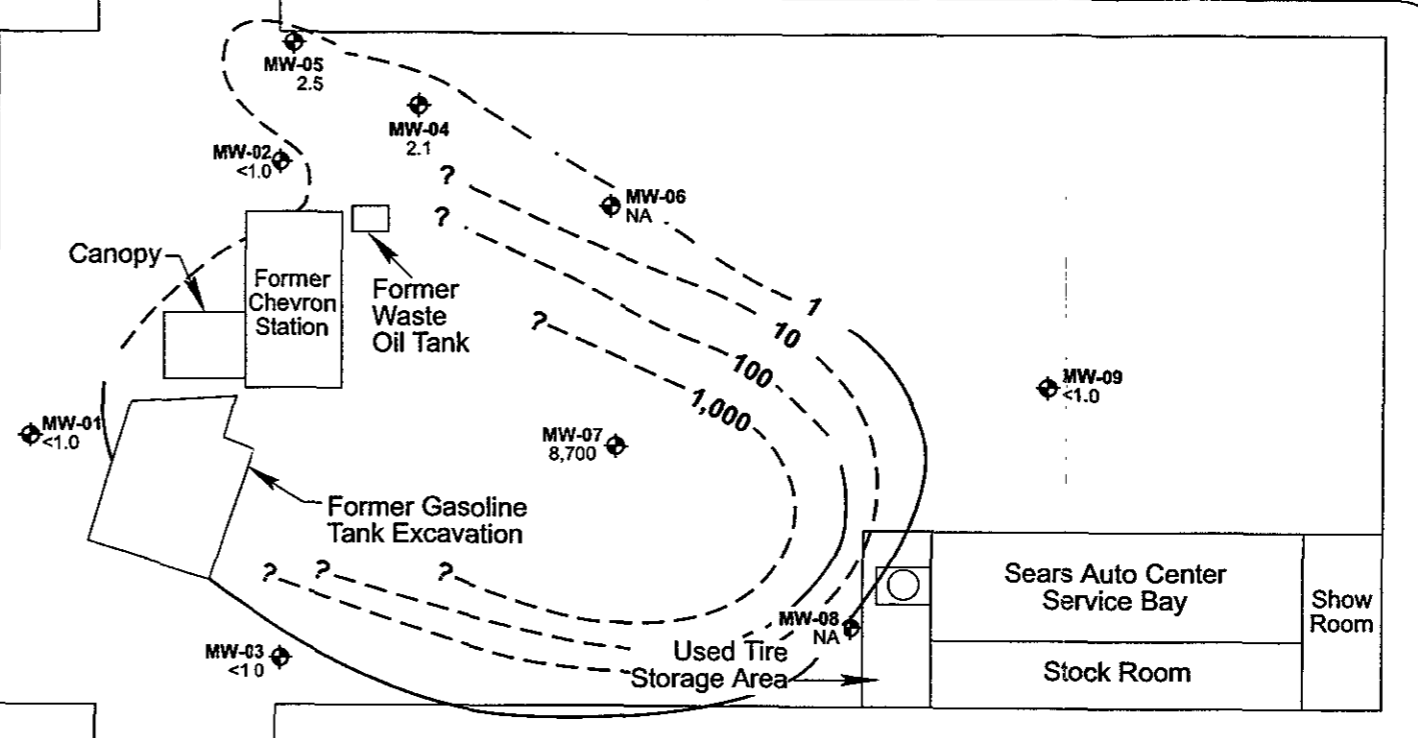
L:\Sears Oakland\fig 4 #1039 August 02.fh10

Williams Street

Telegraph Avenue

San Pablo Avenue

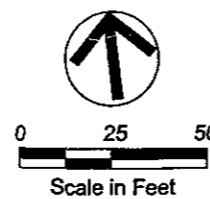
Parking Garage



19th Street

LEGEND

- MW-05
2.5
MONITORING WELL LOCATION WITH BENZENE CONCENTRATION IN µg/L
- - 10 - - BENZENE CONCENTRATION



**BENZENE ISOCONCENTRATION
CONTOUR MAP
(JUNE 2002)**

| | |
|-------------------------------------------------------|----------|
| Project: Sears Auto Center #1039, Oakland, California | |
| Project No.: 29863493 | Figure 5 |
| Date: September 2002 | |

L:\Sears Oakland\fig 5 Iso #1039 August

APPENDIX A

HISTORICAL GROUNDWATER MONITORING RESULTS

APPENDIX B

LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTS



Southland Technical Services, Inc.
Environmental Laboratories

7801 Telegraph Road, Suite L
Montebello, CA 90640

Phone (323) 888-0728
Fax (323) 888-1509

06-17-2002

Mr. Scott Rowlands
URS Corporation
2020 E. First Street, Suit 400
Santa Ana, CA 92705

Project: 22-00000302.02
Project Site: Sears Oakland 1039
Sample Date: 06-05-2002
Lab Job No.: UR206030

Dear Mr. Rowlands:

Enclosed please find the analytical report for the sample(s) received by STS Environmental Laboratories on 06-06-2002 and analyzed by the following EPA methods:

EPA 8015M (Gasoline)
EPA 8015M (Diesel & Oil)
EPA 8260B (VOCs by GC/MS)

All analyses have met the QA/QC criteria of this laboratory.

The sample(s) arrived in good conditions (i.e., chilled at 4°C, intact) and with a chain of custody record attached.

STS Environmental Laboratory is certified by CA DHS (Certificate Number 1986). Thank you for giving us the opportunity to serve you. Please feel free to call me at (323) 888-0728 if our laboratory can be of further service to you.

Sincerely,

A handwritten signature in black ink, appearing to read "Roger Wang", is written over the "Sincerely," text.

Roger Wang, Ph. D.
Laboratory Director

Enclosures

This cover letter is an integral part of this analytical report.



Southland Technical Services, Inc.
Environmental Laboratories

7801 Telegraph Road, Suite L
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Phone (323) 888-0728
Fax (323) 888-1509

06-17-2002

Client: URS Corporation
Project: 22-00000302.02
Project Site: Sears Oakland 1039
Matrix: Water
Batch No.: AF10-GW1/for Gasoline
Batch No.: EF06-DW1/for Diesel & Oil

Lab Job No.: UR206030
Date Sampled: 06-05-2002
Date Received: 06-06-2002
Date Analyzed: 06-10-2002
Date Analyzed: 06-06-2002

EPA 8015M (Gasoline & Diesel)
Reporting Unit: µg/L (ppb)

| Date of Analysis for TPH (Gasoline) | 06-10-02 | 06-10-02 | 06-10-02 | 06-10-02 | 06-10-02 | | |
|---------------------------------------|-----------|------------|------------|------------|------------|-----|-----|
| Preparation Method for TPH (Gasoline) | 5030 | 5030 | 5030 | 5030 | 5030 | | |
| Date of Analysis for TPH (D & O) | 06-06-02 | 06-06-02 | 06-06-02 | 06-06-02 | 06-06-02 | | |
| Date of Extraction for TPH (D & O) | 06-06-02 | 06-06-02 | 06-06-02 | 06-06-02 | 06-06-02 | | |
| Preparation Method for TPH (D & O) | 3510C | 3510C | 3510C | 3510C | 3510C | | |
| LAB SAMPLE I.D. | | UR206030-1 | UR206030-2 | UR206030-3 | UR206030-4 | | |
| CLIENT SAMPLE I.D. | | MW-1 | MW-2 | MW-3 | MW-4 | | |
| Analyte | MDL | MB | | | | | |
| TPH-Gasoline (C4 - C12) | 50 | ND | ND | 406 | ND | ND | |
| TPH-Diesel (C13 - C23) | 500 | ND | ND | ND | ND | ND | |
| TPH-Oil (C24 - C40) | 2000 | ND | ND | ND | ND | ND | |
| Surrogate | Spk Conc. | ACP% | MB %RC | %RC | %RC | %RC | |
| BFB (for TPH-Gasoline) | 20 ppb | 70-130 | 98 | 102 | 97 | 110 | 98 |
| Diethyl Phthalate (for TPH-D & O) | 5 ppm | 70-130 | 100 | 119 | 97 | 119 | 106 |

SPK Conc.=Spiking Concentration; ACP%=Acceptable Range of Percent; %RC=% Recovery
MDL=Method Detection Limit; MB=Method Blank; ND=Not Detected(Below MDL); NA=Not Analyzed

Checked & approved by:

Roger Wang, Ph.D.
Laboratory Director.



Southland Technical Services, Inc.
Environmental Laboratories

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06-17-2002

| | | | |
|---------------|---------------------------|----------------|------------|
| Client: | URS Corporation | Lab Job No.: | UR206030 |
| Project: | 22-00000302.02 | Date Sampled: | 06-05-2002 |
| Project Site: | Sears Oakland 1039 | Date Received: | 06-06-2002 |
| Matrix: | Water | Date Analyzed: | 06-10-2002 |
| Batch No.: | AF10-GW1/for Gasoline | Date Analyzed: | 06-06-2002 |
| Batch No.: | EF06-DW1/for Diesel & Oil | | |

EPA 8015M (Gasoline & Diesel)
Reporting Unit: µg/L (ppb)

| | | | | | | |
|-----------------------------------------------|------------------|-------------|---------------|------------|------------|------------|
| Date of Analysis for TPH (Gasoline) | | 06-10-02 | 06-10-02 | 06-10-02 | 06-10-02 | |
| Preparation Method for TPH (Gasoline) | | 5030 | 5030 | 5030 | 5030 | |
| Date of Analysis for TPH (D & O) | | 06-06-02 | 06-06-02 | 06-06-02 | 06-06-02 | |
| Date of Extraction for TPH (D & O) | | 06-06-02 | 06-06-02 | 06-06-02 | 06-06-02 | |
| Preparation Method for TPH (D & O) | | 3510C | 3510C | 3510C | 3510C | |
| LAB SAMPLE I.D. | | | UR206030-5 | UR206030-6 | UR206030-7 | |
| CLIENT SAMPLE I.D. | | | MW-5 | DUP-1 | TB | |
| Analyte | MDL | MB | | | | |
| TPH-Gasoline (C4 - C12) | 50 | ND | 50 | 59 | ND | |
| TPH-Diesel (C13 - C23) | 500 | ND | ND | ND | NA | |
| TPH-Oil (C24 - C40) | 2000 | ND | ND | ND | NA | |
| Surrogate | Spk Conc. | ACP% | MB %RC | %RC | %RC | %RC |
| BFB (for TPH-Gasoline) | 20 ppb | 70-130 | 98 | 101 | 99 | 113 |
| Diocthyl Phthalate (for TPH-D & O) | 5 ppm | 70-130 | 100 | 90 | 106 | NA |

SPK Conc.=Spiking Concentration; ACP%=Acceptable Range of Percent; %RC=% Recovery
MDL=Method Detection Limit; MB=Method Blank; ND=Not Detected(Below MDL); NA=Not Analyzed.

Checked & approved by:

Roger Wang, Ph.D.
Laboratory Director.



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06-17-2002

Client: URS Corporation
Project: 22-00000302.02
Project Site: Sears Oakland 1039
Matrix: Water
Batch No.: AF10-GW1/for Gasoline
Batch No.: EF06-DW1/for Diesel & Oil

Lab Job No.: UR206030
Date Sampled: 06-05-2002
Date Received: 06-06-2002
Date Analyzed: 06-10-2002
Date Analyzed: 06-06-2002

EPA 8015M (Gasoline & Diesel)
Reporting Unit: µg/L (ppb)

| | | | | | | |
|-----------------------------------------------|------------------|-------------|---------------|------------|-------------|------------|
| Date of Analysis for TPH (Gasoline) | | 06-10-02 | 06-10-02 | 06-10-02 | 06-10-02 | |
| Preparation Method for TPH (Gasoline) | | 5030 | 5030 | 5030 | 5030 | |
| Date of Analysis for TPH (D & O) | | 06-06-02 | 06-06-02 | 06-06-02 | 06-06-02 | |
| Date of Extraction for TPH (D & O) | | 06-06-02 | 06-06-02 | 06-06-02 | 06-06-02 | |
| Preparation Method for TPH (D & O) | | 3510C | 3510C | 3510C | 3510C | |
| LAB SAMPLE I.D. | | | UR206030-8 | UR206030-9 | UR206030-10 | |
| CLIENT SAMPLE I.D. | | | MW-7 | MW-9 | EB-1 | |
| Analyte | MDL | MB | | | | |
| TPH-Gasoline (C4 - C12) | 50 | ND | 12,100 | ND | ND | |
| TPH-Diesel (C13 - C23) | 500 | ND | ND | ND | NA | |
| TPH-Oil (C24 - C40) | 2000 | ND | ND | ND | NA | |
| Surrogate | Spk Conc. | ACP% | MB %RC | %RC | %RC | %RC |
| BFB (for TPH-Gasoline) | 20 ppb | 70-130 | 98 | 107 | 112 | 107 |
| Diethyl Phthalate (for TPH-D & O) | 5 ppm | 70-130 | 100 | 106 | 94 | NA |

SPK Conc.=Spiking Concentration; ACP%=Acceptable Range of Percent; %RC=% Recovery
MDL=Method Detection Limit; MB=Method Blank; ND=Not Detected(Below MDL); NA=Not Analyzed.

Checked & approved by:

Roger Wang, Ph.D.
Laboratory Director.



Southland Technical Services, Inc.

Environmental Laboratories

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Montebello, CA 90640

Phone (323) 888-0728
Fax (323) 888-1509

Client: URS Corporation

Lab Job No.: UR206030

Date Reported: 06-17-2002

Project: 22-00000302.02/Sears Oakland 1039 Matrix: Water

Date Sampled: 06-05-2002

EPA 8260B (VOCs by GC/MS, Page 1 of 2) Reporting Unit: µg/L(ppb)

| Date ANALYZED | | 06-11-02 | 06-11-02 | 06-11-02 | 06-11-02 | 06-11-02 | 06-11-02 |
|---------------------------|-----|----------|------------|------------|------------|------------|------------|
| PREPARATION METHOD | | 5030 | 5030 | 5030 | 5030 | 5030 | 5030 |
| DILUTION FACTOR | | 1 | 1 | 1 | 1 | 1 | 1 |
| LAB SAMPLE I.D. | | | UR206030-1 | UR206030-2 | UR206030-3 | UR206030-4 | UR206030-5 |
| CLIENT SAMPLE I.D. | | | MW-1 | MW-2 | MW-3 | MW-4 | MW-5 |
| COMPOUND | MDL | MB | | | | | |
| Dichlorodifluoromethane | 5 | ND | ND | ND | ND | ND | ND |
| Chloromethane | 5 | ND | ND | ND | ND | ND | ND |
| Vinyl Chloride | 2 | ND | ND | ND | ND | ND | ND |
| Bromomethane | 5 | ND | ND | ND | ND | ND | ND |
| Chloroethane | 5 | ND | ND | ND | ND | ND | ND |
| Trichlorofluoromethane | 5 | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethene | 5 | ND | ND | ND | ND | ND | ND |
| Iodomethane | 5 | ND | ND | ND | ND | ND | ND |
| Methylene Chloride | 5 | ND | ND | ND | ND | ND | ND |
| trans-1,2-Dichloroethene | 5 | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethane | 5 | ND | ND | ND | ND | ND | ND |
| 2,2-Dichloropropane | 5 | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 5 | ND | ND | ND | ND | ND | ND |
| Bromochloromethane | 5 | ND | ND | ND | ND | ND | ND |
| Chloroform | 5 | ND | ND | ND | ND | ND | ND |
| 1,2-Dichloroethane | 5 | ND | ND | 8.5 | ND | ND | ND |
| 1,1,1-Trichloroethane | 5 | ND | ND | ND | ND | ND | ND |
| Carbon tetrachloride | 5 | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloropropene | 5 | ND | ND | ND | ND | ND | ND |
| Benzene | 1 | ND | ND | ND | ND | 2.1 | 2.0 |
| Trichloroethene | 2.5 | ND | ND | 4.6 | 4.5 | ND | ND |
| 1,2-Dichloropropane | 5 | ND | ND | ND | ND | ND | ND |
| Bromodichloromethane | 5 | ND | ND | ND | ND | ND | ND |
| Dibromomethane | 5 | ND | ND | ND | ND | ND | ND |
| Trans-1,3-Dichloropropene | 5 | ND | ND | ND | ND | ND | ND |
| cis-1,3-Dichloropropene | 5 | ND | ND | ND | ND | ND | ND |
| 1,1,2-Trichloroethane | 5 | ND | ND | ND | ND | ND | ND |
| 1,3-Dichloropropane | 5 | ND | ND | ND | ND | ND | ND |
| Dibromochloromethane | 5 | ND | ND | ND | ND | ND | ND |
| 2-Chloroethylvinyl ether | 5 | ND | ND | ND | ND | ND | ND |
| Bromoform | 5 | ND | ND | ND | ND | ND | ND |
| Isopropylbenzene | 5 | ND | ND | ND | ND | ND | ND |
| Bromobenzene | 5 | ND | ND | ND | ND | ND | ND |
| Toluene | 1 | ND | ND | ND | ND | ND | ND |
| Tetrachloroethene | 2.5 | ND | 27.1 | ND | 20.9 | ND | ND |
| 1,2-Dibromoethane(EDB) | 5 | ND | ND | ND | ND | ND | ND |



Southland Technical Services, Inc.
Environmental Laboratories

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Fax (323) 888-1509

Client: URS Corporation

Lab Job No.: UR206030

Date Reported: 06-17-2002

Project: 22-00000302.02/Sears Oakland 1039

Matrix: Water

Date Sampled: 06-05-2002

EPA 8260B (VOCs by GC/MS, Page 2 of 2) Reporting Unit: ppb

| COMPOUND | MDL | MB | MW-1 | MW-2 | MW-3 | MW-4 | MW-5 | |
|-----------------------------|-----------|-----|------|------|------|------|------|---------------|
| Chlorobenzene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,1,1,2-Tetrachloroethan | 5 | ND | ND | ND | ND | ND | ND | |
| Ethylbenzene | 1 | ND | ND | ND | ND | ND | ND | |
| Total Xylenes | 2 | ND | ND | ND | ND | ND | ND | |
| Styrene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,1,2,2-Tetrachloroethan | 5 | ND | ND | ND | ND | ND | ND | |
| 1,2,3-Trichloropropane | 5 | ND | ND | ND | ND | ND | ND | |
| n-Propylbenzene | 5 | ND | ND | ND | ND | ND | ND | |
| 2-Chlorotoluene | 5 | ND | ND | ND | ND | ND | ND | |
| 4-Chlorotoluene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,3,5-Trimethylbenzene | 5 | ND | ND | ND | ND | ND | ND | |
| tert-Butylbenzene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,2,4-Trimethylbenzene | 5 | ND | ND | ND | ND | ND | ND | |
| Sec-Butylbenzene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,3-Dichlorobenzene | 5 | ND | ND | ND | ND | ND | ND | |
| p-Isopropyltoluene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,4-Dichlorobenzene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,2-Dichlorobenzene | 5 | ND | ND | ND | ND | ND | ND | |
| n-Butylbenzene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,2,4-Trichlorobenzene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,2-Dibromo-3-Chloropropane | 5 | ND | ND | ND | ND | ND | ND | |
| Hexachlorobutadiene | 5 | ND | ND | ND | ND | ND | ND | |
| Naphthalene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,2,3-Trichlorobenzene | 5 | ND | ND | ND | ND | ND | ND | |
| Acetone | 25 | ND | ND | ND | ND | ND | ND | |
| 2-Butanone (MEK) | 25 | ND | ND | ND | ND | ND | ND | |
| Carbon disulfide | 25 | ND | ND | ND | ND | ND | ND | |
| 4-Methyl-2-pentanone | 25 | ND | ND | ND | ND | ND | ND | |
| 2-Hexanone | 25 | ND | ND | ND | ND | ND | ND | |
| Vinyl Acetate | 25 | ND | ND | ND | ND | ND | ND | |
| MTBE | 2 | ND | ND | ND | ND | ND | ND | |
| ETBE | 2 | ND | ND | ND | ND | ND | ND | |
| DIPE | 2 | ND | ND | ND | ND | ND | ND | |
| TAME | 2 | ND | ND | ND | ND | ND | ND | |
| t-Butyl Alcohol | 10 | ND | ND | 16.7 | ND | ND | ND | |
| SURROGATE | SPK Conc. | %RC | %RC | %RC | %RC | %RC | %RC | Accept Limit% |
| Dibromofluoro-methane | 25 | 99 | 90 | 93 | 92 | 91 | 92 | 79-126 |
| Toluene-d8 | 25 | 94 | 101 | 92 | 99 | 105 | 101 | 79-121 |
| Bromofluoro-benzene | 25 | 102 | 101 | 105 | 100 | 98 | 101 | 71-131 |

MB=Method Blank; MDL=Method Detection Limit; ND=Not Detected (below DF x MDL). * Result from a higher dilution analysis.



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Environmental Laboratories

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Client: URS Corporation

Lab Job No.: UR206030

Date Reported: 06-17-2002

Project: 22-00000302.02/Sears Oakland 1039 Matrix: Water

Date Sampled: 06-05-2002

EPA 8260B (VOCs by GC/MS, Page 1 of 2) Reporting Unit: µg/L(ppb)

| Date ANALYZED | | 06-11-02 | 06-11-02 | 06-11-02 | 06-11-02 | 06-11-02 | 06-11-02 |
|---------------------------|-----|----------|------------|------------|------------|------------|-------------|
| PREPARATION METHOD | | 5030 | 5030 | 5030 | 5030 | 5030 | 5030 |
| DILUTION FACTOR | | 1 | 1 | 1 | 25 | 1 | 1 |
| LAB SAMPLE I.D. | | | UR206030-6 | UR206030-7 | UR206030-8 | UR206030-9 | UR206030-10 |
| CLIENT SAMPLE I.D. | | | DUP-1 | TB | MW-7 | MW-9 | EB-1 |
| COMPOUND | MDL | MB | | | | | |
| Dichlorodifluoromethane | 5 | ND | ND | ND | ND | ND | ND |
| Chloromethane | 5 | ND | ND | ND | ND | ND | ND |
| Vinyl Chloride | 2 | ND | ND | ND | ND | ND | ND |
| Bromomethane | 5 | ND | ND | ND | ND | ND | ND |
| Chloroethane | 5 | ND | ND | ND | ND | ND | ND |
| Trichlorofluoromethane | 5 | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethene | 5 | ND | ND | ND | ND | ND | ND |
| Iodomethane | 5 | ND | ND | ND | ND | ND | ND |
| Methylene Chloride | 5 | ND | ND | ND | ND | ND | ND |
| trans-1,2-Dichloroethene | 5 | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethane | 5 | ND | ND | ND | ND | ND | ND |
| 2,2-Dichloropropane | 5 | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethene | 5 | ND | ND | ND | ND | ND | ND |
| Bromochloromethane | 5 | ND | ND | ND | ND | ND | ND |
| Chloroform | 5 | ND | ND | ND | ND | ND | ND |
| 1,2-Dichloroethane | 5 | ND | ND | ND | ND | ND | ND |
| 1,1,1-Trichloroethane | 5 | ND | ND | ND | ND | ND | ND |
| Carbon tetrachloride | 5 | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloropropene | 5 | ND | ND | ND | ND | ND | ND |
| Benzene | 1 | ND | 2.5 | ND | 8,700 | ND | ND |
| Trichloroethene | 2.5 | ND | ND | ND | ND | 12.0 | ND |
| 1,2-Dichloropropane | 5 | ND | ND | ND | ND | ND | ND |
| Bromodichloromethane | 5 | ND | ND | ND | ND | ND | ND |
| Dibromomethane | 5 | ND | ND | ND | ND | ND | ND |
| Trans-1,3-Dichloropropene | 5 | ND | ND | ND | ND | ND | ND |
| cis-1,3-Dichloropropene | 5 | ND | ND | ND | ND | ND | ND |
| 1,1,2-Trichloroethane | 5 | ND | ND | ND | ND | ND | ND |
| 1,3-Dichloropropane | 5 | ND | ND | ND | ND | ND | ND |
| Dibromochloromethane | 5 | ND | ND | ND | ND | ND | ND |
| 2-Chloroethylvinyl ether | 5 | ND | ND | ND | ND | ND | ND |
| Bromoform | 5 | ND | ND | ND | ND | ND | ND |
| Isopropylbenzene | 5 | ND | ND | ND | ND | ND | ND |
| Bromobenzene | 5 | ND | ND | ND | ND | ND | ND |
| Toluene | 1 | ND | ND | ND | 25 | ND | ND |
| Tetrachloroethene | 2.5 | ND | ND | ND | ND | 33.2 | ND |
| 1,2-Dibromoethane(EDB) | 5 | ND | ND | ND | ND | ND | ND |



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Client: URS Corporation

Lab Job No.: UR206030

Date Reported: 06-17-2002

Project: 22-00000302.02/Sears Oakland 1039

Matrix: Water

Date Sampled: 06-05-2002

EPA 8260B (VOCs by GC/MS, Page 2 of 2) Reporting Unit: ppb

| COMPOUND | MDL | MB | DUP-1 | TB | MW-7 | MW-9 | EB-1 | |
|-----------------------------|-----------|-----|-------|-----|------|------|------|---------------|
| Chlorobenzene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,1,1,2-Tetrachloroethan | 5 | ND | ND | ND | ND | ND | ND | |
| Ethylbenzene | 1 | ND | ND | ND | 173 | ND | ND | |
| Total Xylenes | 2 | ND | ND | ND | 510 | ND | ND | |
| Styrene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,1,2,2-Tetrachloroethan | 5 | ND | ND | ND | ND | ND | ND | |
| 1,2,3-Trichloropropane | 5 | ND | ND | ND | ND | ND | ND | |
| n-Propylbenzene | 5 | ND | ND | ND | ND | ND | ND | |
| 2-Chlorotoluene | 5 | ND | ND | ND | ND | ND | ND | |
| 4-Chlorotoluene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,3,5-Trimethylbenzene | 5 | ND | ND | ND | ND | ND | ND | |
| tert-Butylbenzene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,2,4-Trimethylbenzene | 5 | ND | ND | ND | 147 | ND | ND | |
| Sec-Butylbenzene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,3-Dichlorobenzene | 5 | ND | ND | ND | ND | ND | ND | |
| p-Isopropyltoluene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,4-Dichlorobenzene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,2-Dichlorobenzene | 5 | ND | ND | ND | ND | ND | ND | |
| n-Butylbenzene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,2,4-Trichlorobenzene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,2-Dibromo-3-Chloropropane | 5 | ND | ND | ND | ND | ND | ND | |
| Hexachlorobutadiene | 5 | ND | ND | ND | ND | ND | ND | |
| Naphthalene | 5 | ND | ND | ND | ND | ND | ND | |
| 1,2,3-Trichlorobenzene | 5 | ND | ND | ND | ND | ND | ND | |
| Acetone | 25 | ND | ND | ND | ND | ND | ND | |
| 2-Butanone (MEK) | 25 | ND | ND | ND | ND | ND | ND | |
| Carbon disulfide | 25 | ND | ND | ND | ND | ND | ND | |
| 4-Methyl-2-pentanone | 25 | ND | ND | ND | ND | ND | ND | |
| 2-Hexanone | 25 | ND | ND | ND | ND | ND | ND | |
| Vinyl Acetate | 25 | ND | ND | ND | ND | ND | ND | |
| MTBE | 2 | ND | ND | ND | ND | 2.3 | ND | |
| ETBE | 2 | ND | ND | ND | ND | ND | ND | |
| DIPE | 2 | ND | ND | ND | ND | ND | ND | |
| TAME | 2 | ND | ND | ND | ND | ND | ND | |
| t-Butyl Alcohol | 10 | ND | ND | ND | ND | ND | ND | |
| SURROGATE | SPK Conc. | %RC | %RC | %RC | %RC | %RC | %RC | Accept Limit% |
| Dibromofluoro-methane | 25 | 99 | 96 | 98 | 97 | 103 | 99 | 79-126 |
| Toluene-d8 | 25 | 94 | 99 | 98 | 95 | 99 | 98 | 79-121 |
| Bromofluoro-benzene | 25 | 102 | 100 | 104 | 103 | 103 | 106 | 71-131 |

MB=Method Blank; MDL=Method Detection Limit; ND=Not Detected (below DF x MDL) * Result from a higher dilution analysis.



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06-17-2002

**EPA 8015M (TPH)
Batch QA/QC Report**

Client: URS Corporation
Project: Sears Oakland
Matrix: Water
Batch No.: EF06-DW1

Lab Job No.: UR206030
Lab Sample ID: UR206030-2
Date Analyzed: 06-06-2002

**I. MS/MSD Report
Unit: ppm**

| Analyte | Sample Conc. | Spike Conc. | MS | MSD | MS %Rec. | MSD %Rec. | % RPD | %RPD Accept. Limit | %Rec Accept. Limit |
|---------|--------------|-------------|------|------|----------|-----------|-------|--------------------|--------------------|
| TPH-d | ND | 20 | 19.7 | 20.5 | 98.5 | 102.5 | 4.0 | 30 | 70-130 |

**II. LCS Result
Unit: ppm**

| Analyte | LCS Report Value | True Value | Rec.% | %Rec Accept. Limit |
|---------|------------------|------------|-------|--------------------|
| TPH-d | 20.8 | 20 | 104.0 | 80-120 |

ND: Not Detected (at the specified limit).



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06-17-2002

**EPA 8015M (TPH)
Batch QA/QC Report**

Client: URS Corporation
Project: Sears Oakland
Matrix: Water
Batch No.: AF10-GW1

Lab Job No.: UR206030
Lab Sample ID: UR206030-1
Date Analyzed: 06-10-2002

**I. MS/MSD Report
Unit: ppb**

| Analyte | Sample Conc. | Spike Conc. | MS | MSD | MS %Rec. | MSD %Rec. | % RPD | %RPD Accept. Limit | %Rec Accept. Limit |
|---------|--------------|-------------|-----|-----|----------|-----------|-------|--------------------|--------------------|
| TPH-G | ND | 1000 | 753 | 943 | 75.3 | 94.3 | 22.4 | 30 | 70-130 |

**II. LCS Result
Unit: ppb**

| Analyte | LCS Report Value | True Value | Rec.% | %Rec Accept. Limit |
|---------|------------------|------------|-------|--------------------|
| TPH-G | 916 | 1000 | 91.6 | 80-120 |

ND: Not Detected (at the specified limit).



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06-17-2002

**EPA 8260B
Batch QA/QC Report**

Client: URS Corporation
Project: Sears Oakland
Matrix: Water
Batch No: 0611-VOAW

Lab Job No.: UR206030
Sample ID: UR206042-3
Date Analyzed: 06-11-2002

**I. MS/MSD Report
Unit: ppb**

| Compound | Sample Conc. | Spike Conc. | MS | MSD | MS %Rec. | MSD %Rec. | % RPD | %RPD Accept. Limit | %Rec Accept. Limit |
|--------------------|--------------|-------------|------|------|----------|-----------|-------|--------------------|--------------------|
| 1,1-Dichloroethene | ND | 20 | 24.8 | 24.7 | 124.0 | 123.5 | 0.4 | 30 | 70-130 |
| Benzene | ND | 20 | 22.5 | 21.5 | 112.5 | 107.5 | 4.5 | 30 | 70-130 |
| Trichloro-ethene | ND | 20 | 18.2 | 17.1 | 91.0 | 85.5 | 6.2 | 30 | 70-130 |
| Toluene | ND | 20 | 20.8 | 19.9 | 104.0 | 99.5 | 4.4 | 30 | 70-130 |
| Chlorobenzene | ND | 20 | 21.0 | 20.3 | 105.0 | 101.5 | 3.4 | 30 | 70-130 |

**II. LCS Result
Unit: ppb**

| Analyte | LCS Value | True Value | Rec.% | Accept. Limit |
|--------------------|-----------|------------|-------|---------------|
| 1,1-Dichloroethene | 20.5 | 20.0 | 102.5 | 80-120 |
| Benzene | 20.7 | 20.0 | 103.5 | 80-120 |
| Trichloro-ethene | 17.8 | 20.0 | 89.0 | 80-120 |
| Toluene | 19.4 | 20.0 | 97.0 | 80-120 |
| Chlorobenzene | 19.4 | 20.0 | 97.0 | 80-120 |

ND: Not Detected.

URS CORPORATION

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Date: 6/5/02

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CHAIN OF CUSTODY RECORD

UR20630

Data Requested in GISKey Format

| Lab Name | | URS Project/PO Number | | Requested Analyses | | | | | | | | | | Special Instructions | | | | | |
|-----------------------------------|-------------|-----------------------------|-----------|--------------------|-------------------------------------------------------------|-----------|--------------------------|------------|------------------------------------------|--|--|--|--|----------------------|--|--|--|--|--|
| STS | | 22-00000302.02 | | | | | | | | | | | | Lab id | | | | | |
| Client Name/Project Name/Location | | GeoTracker Information | | | | | | | | | | | | | | | | | |
| VEARS/OAKLAND 1039 | | | | | | | | | | | | | | | | | | | |
| URS Project Manager | | EDF Reporting Y N Global ID | | | | | | | | | | | | | | | | | |
| SCOTT ROWLANDS | | | | | | | | | | | | | | | | | | | |
| Sampler Name and Signature | | COELT Log Number | | | | | | | | | | | | | | | | | |
| Robert Kowals | | | | | | | | | | | | | | | | | | | |
| Sample Name | Sample Date | Sample Time | Preserved | Matrix | Container Type | # of Cont | TPH ₂ (80ISM) | VOC (2260) | TPH ₄ TPH ₀ (905H) | | | | | | | | | | |
| MW-1 | 6-5 | 815 | Y N | S G | Acetate SS. Brass Jar Encore 40 ml Amb. Plas Glass VOA | 6 | X | X | | | | | | | | | | | |
| MW-1 | 6-5 | 815 | Y N | S G | Acetate SS. Brass Jar Encore 1000 ml Amb. Plas Glass VOA | 1 | | X | | | | | | | | | | | |
| MW-3 | 6-5 | 925 | Y N | S G | Acetate SS. Brass Jar Encore 40 ml Amb. Plas Glass VOA | 6 | X | X | | | | | | | | | | | |
| MW-3 | 6-5 | 925 | Y N | S G | Acetate SS. Brass Jar Encore 1000 ml Amb. Plas Glass VOA | 1 | | X | | | | | | | | | | | |
| MW-4 | 6-5 | 1040 | Y N | S G | Acetate SS. Brass Jar Encore 40 ml Amb. Plas Glass VOA | 6 | X | X | | | | | | | | | | | |
| MW-4 | 6-5 | 1040 | Y N | S G | Acetate SS. Brass Jar Encore 1000 ml Amb. Plas Glass VOA | 1 | | X | | | | | | | | | | | |
| MW-5 | 6-5 | 1130 | Y N | S L G | Acetate SS. Brass Jar Encore 40 ml Amb. Plas Glass VOA | 6 | X | X | | | | | | | | | | | |
| MW-5 | 6-5 | 1130 | Y N | S L G | Acetate SS. Brass Jar Encore 1000 ml Amb. Plas Glass VOA | 1 | | X | | | | | | | | | | | |
| DUP-1 | 6-5 | 1135 | Y N | S L G | Acetate SS. Brass Jar Encore 40 ml Amb. Plas Glass VOA | 6 | X | X | | | | | | | | | | | |
| TB | N/A | N/A | Y N | S L G | Acetate SS. Brass Jar Encore 40 ml Amb. Plas Glass VOA | 2 | X | X | | | | | | | | | | | |

| | | | | | | | |
|-----------------|--------|-------------|-----------|-------------------------|----------|--------------------------------|--|
| Relinquished by | Date | Received By | Date/Time | Turnaround Time (Check) | | Lab Use Only | |
| Robert Kowals | 6/5/02 | W. W. W. | 6/6/02 | Same Day | 72 Hour | Cooler Temperature: <u>4°C</u> | |
| Relinquished by | Date | Received By | Date/Time | 24 Hour | 5 Day | *Record upon arrival | |
| Relinquished by | Date | Received By | Date/Time | 48 Hour | Standard | URS | |

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Date: 6/5/02
 Page 2 of 2

CHAIN OF CUSTODY RECORD

UR 206030

Data Requested in GISKey Format

| Lab Name | | URS Project/PO Number | | Requested Analyses | | | | | | | | | | Special Instructions | | | | | | | |
|-----------------------------------|-------------|-----------------------------|-----------|--------------------|----------------------------------------------------------|------------|--------------------------|------------|------------------------------------------|--------------------|--|--|--|----------------------|--|--|--|--|--|------|----------------------|
| STS | | 22-00000 302.02 | | | | | | | | | | | | Lab Ed. | | | | | | | |
| Client Name/Project Name/Location | | GeoTracker Information | | | | | | | | | | | | | | | | | | | |
| SEARS/OAKLAND 1039 | | | | | | | | | | | | | | | | | | | | | |
| URS Project Manager | | EDF Reporting Y N Global ID | | | | | | | | | | | | | | | | | | | |
| SCOTT ROWLANDS | | | | | | | | | | | | | | | | | | | | | |
| Sampler Name and Signature | | COELT Log Number | | | | | | | | | | | | | | | | | | | |
| Robert Kovacs | | | | | | | | | | | | | | | | | | | | | |
| Sample Name | Sample Date | Sample Time | Preserved | Matrix | Container Type | # of Cont. | TPH ₂ (8015M) | VOC (8260) | TPH ₁ TPH ₂ (905M) | Requested Analyses | | | | | | | | | | HOLD | Special Instructions |
| DUP-1 | 6-5 | 1135 | Y | S G | Acetate SS Brass Jar Encore 1000ml Amb Plas Glass VOA | 1 | | | X | | | | | | | | | | | | UR 206030-6 |
| MW-9 | 6-5 | 1225 | N | S G | Acetate SS Brass Jar Encore 40 ml Amb Plas Glass VOA | 6 | XX | | | | | | | | | | | | | | -9 |
| MW-9 | 6-5 | 1225 | Y | S G | Acetate SS Brass Jar Encore 1000ml Amb Plas Glass VOA | 1 | | | X | | | | | | | | | | | | -9 |
| MW-2 | 6-5 | 1350 | N | S G | Acetate SS Brass Jar Encore 40 ml Amb Plas Glass VOA | 6 | XX | | | | | | | | | | | | | | -2 |
| MW-2 | 6-5 | 1350 | Y | S G | Acetate SS Brass Jar Encore 40 ml Amb Plas Glass VOA | 1 | | | X | | | | | | | | | | | | -2 |
| MW-7 | 6-5 | 1450 | N | S G | Acetate SS Brass Jar Encore 40 ml Amb Plas Glass VOA | 6 | XX | | | | | | | | | | | | | | -8 |
| MW-7 | 6-5 | 1450 | Y | S G | Acetate SS Brass Jar Encore 40 ml Amb Plas Glass VOA | 1 | | | X | | | | | | | | | | | | -8 |
| EB-1 | 6-5 | 1500 | N | S G | Acetate SS Brass Jar Encore 40 ml Amb Plas Glass VOA | 6 | XX | | | | | | | | | | | | | | -10 |
| | | | Y | S L G | Acetate SS Brass Jar Encore ml Amb Plas Glass VOA | | | | | | | | | | | | | | | | |
| | | | Y | S L G | Acetate SS Brass Jar Encore ml Amb Plas Glass VOA | | | | | | | | | | | | | | | | |

| | | | | | | | |
|-----------------------------------------|-----------------------|----------------------------|----------------------------|-------------------------|----------|--------------------------------|--|
| Relinquished by <u>Robert Kovacs</u> | Date <u>6/5/02</u> | Received By <u>MW-6</u> | Date/Time <u>6/6/02</u> | Turnaround Time (Check) | | Lab Use Only | |
| Relinquished by | Date | Received By | Date/Time | Same Day | 72 Hour | Cooler Temperature: <u>4°C</u> | |
| Relinquished by | Date | Received By | Date/Time | 24 Hour | 5 Day | *Record upon arrival | |
| Relinquished by | Date | Received By | Date/Time | 48 Hour | Standard | URS | |

APPENDIX C

URS DATA VALIDATION REPORTS

Level III Data Validation Summary

PROJECT: Sears Oakland 1039
LABORATORY: Southland Technical Services, Inc. (STS)
MATRIX: Water
LAB PROJECT #: UR206030
SAMPLES: See table below

| Field ID | QC Designations | Lab ID | TPH-Gasoline | TPH-Diesel, TPH-Oil | VOCs (including Fuel Oxygenates) |
|----------|-------------------------|-------------|--------------|------------------------|-------------------------------------|
| MW-1 | | UR206030-1 | X | X | X |
| MW-3 | | UR206030-3 | X | X | X |
| MW-4 | | UR206030-4 | X | X | X |
| MW-5 | | UR206030-5 | X | X | X |
| Dup-1 | Field duplicate of MW-5 | UR206030-6 | X | X | X |
| TB | Trip Blank | UR206030-7 | X | | X |
| MW-9 | | UR206030-9 | X | X | X |
| MW-2 | | UR206030-2 | X | X | X |
| MW-7 | | UR206030-8 | X | X | X |
| EB-1 | Equipment blank | UR206030-10 | X | | X |

Date Sampled: 6/5/02

TPH-Gasoline= Total petroleum hydrocarbon – gasoline range (C4-C12), TPH-Diesel= Total petroleum hydrocarbon – diesel range (C13-C23)

TPH-Oil= Total petroleum hydrocarbon – oil range (C24-C40) VOCs = Volatile organic compounds

Fuel Oxygenates = t-butyl alcohol (TBA), t-amyl methyl ether (TAME), di - isopropyl ether (DIPE), ethyl-t-butyl ether (ETBE), Methyl tertiary butyl ether (MTBE).

STS is certified by California Department of Health Services (Certificate Number 1986).

DATA REVIEW MATRIX

| QC Parameter | TPH-Gasoline EPA5030/8015M | TPH-Diesel, and TPH-Oil EPA3510C/8015M | VOCs EPA5030/8260B |
|------------------------------|-------------------------------|-------------------------------------------|-----------------------|
| Chain-of-custody (COC) | ✓ | ✓ | ✓ |
| Sample Receipt | ✓ | ✓ | ✓ |
| Holding Times | ✓ | ✓ | ✓ |
| Method Blank | ✓ | ✓ | ✓ |
| Surrogate Recovery | ✓ | ✓ | ✓ |
| Laboratory Control Sample | ✓ | ✓ | ✓ |
| Matrix Spike | ✓(1) | ✓(2) | (3) |
| Duplicate or Spike Duplicate | ✓(1) | ✓(2) | (3) |
| Field Duplicate | ✓ | ✓ | ✓ |
| Trip Blank/Equipment Blank | ✓/✓ | NA/NA | ✓/✓ |

✓ = Quality control evaluation criteria met.

NA = Not Applicable or Not Analyzed

Notes:

- MS/MSD was conducted on sample MW-1. The results were within acceptance criterion.
- MS/MSD was conducted on sample MW-2. The results were within acceptance criterion.
- MS/MSD was conducted on a non-site related sample; therefore, the MS/MSD results obtained may not be fully representative of the accuracy and precision of the analysis on the site-specific sample matrix.

Summary: Based on this Level III validation covering the QC parameters listed in the table above, these data are considered to be useable for meeting project objectives. However, the data user must evaluate the ultimate usability of the data based on the reporting limits obtained. The table below lists the detection limits obtained for undiluted samples.

| Analyte | Detection Limits Obtained |
|------------------|---------------------------|
| TPH-Diesel | 500 |
| TPH-Oil | 2000 |
| TPH-Gasoline | 50 |
| VOCs | 1 to 25 |
| MTBE | 2 |
| TBA | 10 |
| Other Oxygenates | 2 |

Aqueous units are microgram per Liter ($\mu\text{g/L}$).