

MW0911

**September 2000 Off-site Explorations  
Marqueen Property  
Former Unocal Service Station 0255  
700 Queen Anne Avenue North  
Seattle, Washington**

**February 5, 2001**

**For  
Unocal AMG – West Division**

**RECEIVED  
FEB 06 2001  
DEPT. OF ECOLOGY**

February 5, 2001

Consulting Engineers  
and Geoscientists

Unocal AMG - West Division  
P.O. Box 2004  
Edmonds, Washington 98020

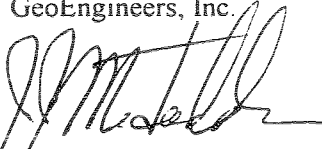
Attention: Dr. Mark Brearley, R.G.

We are submitting two copies of our report "September 2000 Off-site Explorations - Marqueen Property" documenting recent exploration activities south of former Unocal Service Station 0255 in Seattle, Washington. Our services were conducted under blanket services agreement 950000390C.

Please contact us if you require additional information. We appreciate the opportunity to be of continued service to Unocal.

Yours very truly,

GeoEngineers, Inc.

  
FOR Dana Carlisle, P.E.  
Associate

DAC:DLC:ja:pb:sg

P:\Unocal\0161153\09\Finals\016115309R-S.doc

cc: Jeff Wishko (2 copies)  
Bell & Ingram  
1602 Hewitt Avenue, Suite 700  
P.O. Box 1769  
Everett, Washington 98206

Ron Timm (1 copy)  
Washington State Dept. of Ecology  
Northwest Regional Office  
3190 - 160<sup>th</sup> Avenue NE  
Bellevue, Washington 98008-5452

Gregory Costello (1 copy)  
Marten Brown, Inc.  
1191 Second Avenue, Suite 2200  
Seattle, Washington 98101

GeoEngineers, Inc.  
Plaza 600 Building  
600 Stewart St., Suite 1420  
Seattle, WA 98101  
Telephone (206) 728-2674  
Fax (206) 728-2732  
www.geoengineers.com

# CONTENTS

	<u>Page No.</u>
INTRODUCTION.....	1
OBJECTIVES AND SCOPE.....	2
LNAPL COLLECTION FROM MW-7U.....	3
SUPPLEMENTAL EXPLORATIONS.....	3
GENERAL.....	3
SOIL AND GROUND WATER CONDITIONS.....	4
SOIL CHEMICAL ANALYTICAL RESULTS.....	5
GROUND WATER MONITORING AND CHEMICAL ANALYTICAL RESULTS.....	5
CONCLUSIONS.....	6
CONTAMINANT TYPES AND DISTRIBUTION.....	6
LNAPL.....	6
Soil.....	6
Ground Water.....	6
CONTAMINANT SOURCES.....	7
LNAPL and Gasoline-Contaminated Soil.....	7
Petroleum Contamination in the Marqueen Building Stairwell.....	8
Chlorinated VOCs in Ground Water.....	8
LIMITATIONS.....	8
<b>TABLES</b>	<u>Table No.</u>
SUMMARY OF GROUND WATER ELEVATIONS AND LNAPL THICKNESSES.....	1
SUMMARY OF SOIL CHEMICAL ANALYTICAL DATA – SEPTEMBER 2000 SAMPLING.....	2
SUMMARY OF GROUND WATER CHEMICAL ANALYTICAL DATA – PETROLEUM COMPOUNDS.....	3
SUMMARY OF GROUND WATER CHEMICAL ANALYTICAL DATA – VOLATILE ORGANIC COMPOUNDS.....	4
<b>FIGURES</b>	<u>Figure No.</u>
LAYOUT OF SITE & SURROUNDING PROPERTIES.....	1
CROSS SECTION LOCATIONS.....	2
CROSS SECTION A-A'.....	3
CROSS SECTION B-B'.....	4
SOIL CHEMICAL ANALYTICAL RESULTS.....	5
GROUND WATER ELEVATION 08/10/00 & 09/18/00.....	6
GROUND WATER CHEMICAL ANALYTICAL RESULTS.....	7
BENZENE CONCENTRATION CONTOUR MAP.....	8

## CONTENTS (CONTINUED)

### APPENDICES

APPENDIX A CITY OF SEATTLE DCLU NOTIFICATION LETTER

APPENDIX B DCLU SUPPORTING INFORMATION

APPENDIX C FIELD PROCEDURES	<u>Page No.</u>
DRILLING AND MONITORING WELL INSTALLATION PROGRAM	C-1
DRILLING AND SOIL SAMPLING	C-1
FIELD SCREENING OF SOIL SAMPLES	C-1
MONITORING WELL CONSTRUCTION	C-2
MONITORING WELL SURVEY	C-2
GROUND WATER ELEVATIONS	C-3
GROUND WATER SAMPLING	C-3
PURGE AND DECONTAMINATION WATER	C-3
SOIL CUTTINGS	C-3

APPENDIX C FIGURES	<u>Figure No.</u>
SOIL CLASSIFICATION SYSTEM	C-1
KEY TO BORING LOG SYMBOLS	C-2
LOG OF BORING	C-3, C-8...C-11
LOG OF MONITORING WELLS	C-4...C-7

APPENDIX D CHEMICAL ANALYTICAL PROGRAM	<u>Page No.</u>
ANALYTICAL METHODS	D-1
ANALYTICAL DATA REVIEW	D-1
ANALYTICAL DATA REVIEW SUMMARY	D-1

**SEPTEMBER 2000 OFF-SITE EXPLORATIONS  
MARQUEEN PROPERTY  
FORMER UNOCAL SERVICE STATION 0255  
700 QUEEN ANNE AVENUE NORTH  
SEATTLE, WASHINGTON  
FOR UNOCAL AMG – WEST DIVISION**

**INTRODUCTION**

This report presents the results of off-site explorations completed in September 2000 at the Marqueen property, 600 Queen Anne Avenue North (the southeast corner of the intersection between Queen Anne Avenue North and Roy Street) in Seattle, Washington. The Marqueen property is located south of Unocal's former Service Station 0255, 700 Queen Anne Avenue North (the northeast corner of the intersection between Queen Anne Avenue North and Roy Street). Our services consisted of completing nine soil borings in the Roy Street sidewalk immediately north of the Marqueen building and inside the north portion of the Marqueen garage. Soil and ground water samples were obtained from each boring. Additionally, ground water monitoring wells were constructed in four of the borings. The approximate boring locations relative to the former Unocal and Marqueen properties are shown in Figure 1.

GeoEngineers has conducted environmental assessment and remedial monitoring services at and in the vicinity of the Unocal site since 1986. Refer to previous reports for summaries of past site characterization and remedial actions. The current phase of study, and a GeoEngineers' study conducted in August 1999, involved explorations south of the former Unocal site to evaluate subsurface conditions between the Unocal site and the Marqueen property. The purposes of the current phase of study were to:

- Evaluate and delineate the extent of light, nonaqueous phase liquid (LNAPL) that has been encountered routinely in off-site well MW-7U, located between of the former Unocal site and the Marqueen property. LNAPL has not been encountered in monitoring wells on the former Unocal site since 1996, nor was it encountered in monitoring wells installed within Roy Street during our 1999 study.
- Explore the Marqueen property to delineate the extent of petroleum-contaminated soil that was observed by representatives of the Marqueen during construction of interior steps located near the northeast portion of the Marqueen underground parking garage.

Our September 2000 activities were conducted in general accordance with our "Revised Work Plan" dated July 28, 2000. The work plan was reviewed by Robert Lauritzen of EA Engineering, consultant for Marqueen Associates. The results of our September 2000 activities are described in this report.

## OBJECTIVES AND SCOPE

The objective of the supplemental site characterization was to evaluate the lateral and vertical extent of petroleum hydrocarbons in soil and ground water and LNAPL along the north portion of the Marqueen property. Our specific scope of services is identified below.

1. Notify the City of Seattle regarding the presence of petroleum hydrocarbons beneath Roy Street. A copy of this notification letter is attached as Appendix A.
2. Implement a program to remove LNAPL in the area surrounding MW-7U.
3. Prepare a traffic control plan and obtain a street use permit from City of Seattle.
4. Request an underground utility locate before the exploration activities.
5. Request and review construction drawings for the Marqueen Hotel building. Use the information to evaluate the depth of building foundation and footings along the north boundary of the Marqueen property. GeoEngineers visited Seattle Department of Construction and Land Use to obtain this information. This information is incorporated into site plans and cross sections included in this study. The supporting information that we obtained from DCLU is included in Appendix B.
6. Monitor the completion of nine direct-push soil borings (MQ-1 through MQ-9) at the approximate locations shown in Figure 1.
7. Obtain soil samples through continuous sampling from the direct-push borings. Field screen the soil samples at 2-foot depth intervals for evidence of petroleum using visual, water sheen and headspace vapor screening methods. Visually classify the samples in general accordance with American Society for Testing and Materials (ASTM) D 2488 and maintain a detailed log of each soil boring. Soil samples were selected for chemical analytical testing based on:
  - The soil sample with the strongest evidence of contamination based on field screening (visual, sheen, headspace vapor) was submitted from each boring.
  - For borings with field evidence of contamination, an additional soil sample from below the contaminated zone was submitted for chemical analysis.
  - If no field screening evidence of petroleum contamination was observed, then a soil sample from the zone of water table fluctuation was submitted.
8. Install permanent ground water monitoring wells in the four borings at the following locations: inside the Marqueen garage (MQ-4 and MQ-5), at the intersection of Queen Anne Avenue North and Roy Street (MQ-3) and in the sidewalk on the south side of Roy Street (MQ-2). One-inch-diameter pre-packed well screens were used at these locations.
9. Develop each new monitoring well by removing at least five well volumes using a peristaltic pump and polyethylene downhole tubing.
10. Obtain grab ground water samples from each boring that was not completed as a monitoring well using hydropunch sampling and extraction methods. Where monitoring wells were installed, obtain ground water samples using a peristaltic pump and downhole polyethylene tubing. Purge three well volumes from these wells prior to sampling.
11. Submit at least one soil and one ground water sample from each boring for chemical analysis of benzene, ethylbenzene, toluene, and xylenes (BETX) by EPA Method 8021B; chlorinated

volatile organic compounds (VOCs) using EPA Method 8260B; gasoline-range hydrocarbons by Ecology Method NWTPH-G; and diesel- and heavy oil-range hydrocarbons by Ecology Method NWTPH-D extended.

12. Abandon each soil boring using bentonite chips to within 2 inches of ground surface. Restore surface to match existing asphalt and/or concrete pavement.
13. Coordinate off site disposal of soil cuttings and decontamination water.
14. Conduct field work in general accordance with safety requirements for soil boring safety and for operations at hazardous sites. Written site safety plans were used by on-site personnel from GeoEngineers and the drilling contractor. Field activities were coordinated with the property owner to minimize disruption to the existing business on the Marqueen property.
15. Measure the concentration of combustible vapors in accessible below-grade vaults, catch basins or other confined space subsurface facilities in the Marqueen building.
16. Survey the top of each new monitoring well casing so that ground water and LNAPL elevations can be compared to existing ground water elevation data.
17. Evaluate the field and laboratory data relative to Model Toxics Control Act (MTCA) requirements and Method A cleanup levels.

### **LNAPL COLLECTION FROM MW-7U**

We installed a passive LNAPL collection container (Petrotrap™) in MW-7U during August 2000. The device was initially checked and emptied on a weekly basis. Free product thicknesses declined to less than 0.01 feet in MW-7U almost immediately after installation of the Petrotrap™. Free product volumes recovered by the container have decreased from a high of 200 milliliters during the week ending September 5, 2000 to no recovery during our site visit on September 28, 2000. Therefore, in accordance with the work plan, the frequency of checks of the product recovery device will be monthly starting in October 2000. Recovered LNAPL is transferred to another property owned by Unocal, where the recovered fluid is retained in a product holding tank prior to off-site recycling. Table 1 summarizes ground water elevations, LNAPL thicknesses and recovered free product volumes.

### **SUPPLEMENTAL EXPLORATIONS**

#### **GENERAL**

GeoEngineers monitored the drilling of nine soil borings (MQ-1 through MQ-9) on September 5, 6 and 8, 2000. One-inch-diameter prepacked well screens were installed in four of the soil borings (MQ-2 through MQ-5). Utilities permit #69438 was obtained from the City of Seattle prior to drilling activities. Drilling activities also were observed periodically by representatives of EA Engineering.

Monitoring well MQ-2 is located in a planter area immediately north of the location where petroleum-contaminated soil was observed during construction of the interior steps within the Marqueen garage. MQ-2 was drilled very close to MQ-1 because MQ-1 met refusal at 22 feet below ground surface (bgs) in a zone that exhibited evidence of soil contamination. MQ-2 was extended deeper than 22 feet bgs to evaluate the vertical extent of this zone and to install a

monitoring well. MQ-3 is located at the southeast corner of the Queen Anne Avenue North and Roy Street intersection. MQ-4 and MQ-5 are located inside the Marqueen basement garage about 10 feet south of the north building wall. The approximate locations of the borings, monitoring wells and known underground utilities are shown in Figure 1.

A representative of GeoEngineers monitored two interior catch basins within the Marqueen garage for combustible vapors on September 5, 2000. Combustible vapors were not detected in either catch basin. The catch basin locations are shown on Figure 1.

A representative of GeoEngineers observed the drilling, logged the soil encountered and obtained representative soil and ground water samples from each boring for chemical analytical testing. Field procedures are described in Appendix C. Boring logs and monitoring well construction records are included in Appendix C. Chemical analytical data for the soil and ground water samples are summarized in Tables 2, 3 and 4. Chemical analytical data and our review of laboratory quality control (QC) documentation are included in Appendix D.

## **SOIL AND GROUND WATER CONDITIONS**

The soil borings encountered fill and variable native soils (silt, silty sand and sand) beneath the surface paving and beneath the floor slab of the Marqueen garage. Native hard clay observed from 2 to 15 feet bgs beneath the former Unocal site was observed in one boring during this study; at a depth of 31 feet bgs in MQ-2. The upper surface of this hard clay exhibits a very strong slope downward from the northeast corner of the former Unocal site to the southwest. The overlying soil units are medium dense to dense and are discontinuous and heterogeneous. It is likely that the other borings completed during this study did not extend deep enough to encounter the hard clay.

Ground water was observed at depths ranging from 18 to 21 feet bgs in the borings along Roy Street and 19 to 20 feet below the grade of Roy Street in the borings completed in the underground Marqueen garage. Note that the surface elevation of the Marqueen garage borings is about 11 feet below the surface elevation of the borings conducted along Roy Street. Therefore, the approximate depths to ground water observed in all the borings was about 20 feet below the grade of Roy Street.

Two cross sections were prepared to evaluate the soil and ground water conditions in the vicinity of the former Unocal site and the north portion of the Marqueen property. Figure 2 shows the locations of the cross sections. These cross sections are presented in Figures 3 and 4 and are oriented north-south and east-west, respectively.

Field screening results indicated evidence of petroleum-related soil contamination at varying depths between 15 and 25 feet bgs in each of the borings along Roy Street. Petroleum-related soil contamination based on field screening was observed at a depth of about 20 feet below the grade of Roy Street in MQ-5 (MQ-5 was drilled near the northwest corner of the Marqueen's underground garage. As stated previously, the floor slab of the Marqueen garage is about 11 feet lower than the elevation of Roy Street). Petroleum-related soil contamination based on field screening was not observed in the other two borings drilled within the Marqueen garage (MQ-4



and MQ-6). Field screening results are presented in Table 2 and on the boring logs in Appendix C.

## **SOIL CHEMICAL ANALYTICAL RESULTS**

Soil samples from the unsaturated zone and zone of water table fluctuation in each boring were submitted for chemical analyses (Table 2). Gasoline-range hydrocarbons, ethylbenzene and/or xylenes were detected at concentrations exceeding MTCA Method A cleanup levels in the soil samples obtained from borings MQ-1, MQ-2, MQ-3, MQ-5 and MQ-7 through MQ-9 at depths between 16 and 22 feet below the grade of Roy Street. Gasoline-range hydrocarbons and BETX either were not detected or were detected at concentrations less than MTCA Method A cleanup levels in the soil samples obtained from borings MQ-4 and MQ-6 completed inside the Marqueen garage.

Diesel-range hydrocarbons either were not detected or were detected at concentrations less than the MTCA Method A cleanup levels in all the soil samples tested. Additionally, each soil sample was tested for volatile organic compounds (VOCs) by EPA Method 8260B. No chlorinated VOCs were detected in the soil samples tested. Chemical analytical data are summarized in Table 2. Selected analytical data also are summarized in Figure 5.

## **GROUND WATER MONITORING AND CHEMICAL ANALYTICAL RESULTS**

GeoEngineers measured depths to ground water and the presence of free product (if any) in MW-7U and MQ-2 through MQ-5 on a weekly basis during September 2000. Ground water samples were obtained from the monitoring wells installed in MQ-2 through MQ-5 on September 8, 2000. Additionally, discrete (one-time) water samples were obtained from borings MQ-6 through MQ-9 on September 6 and 8, 2000. Ground water samples were not obtained from MW-7U because the well contained free product. The ground water monitoring measurements are summarized in Table 1. Ground water elevations from September 18, 2000 are shown on Figure 5. Chemical analytical data are summarized in Tables 3 and 4. Selected analytical data also are summarized in Figure 7. Ground water sampling procedures are described in Appendix C. Chemical analytical data and our review of laboratory QC documentation are included in Appendix D.

The September 2000 ground water monitoring and sampling findings were as follows:

- The direction of shallow ground water flow was toward the southwest based on our September 2000 measurements, which is consistent with previous studies.
- LNAPL was measured in MW-7U at thicknesses less than 0.01 foot. The free product was removed using a passive collection device as described in previous sections of this report.
- LNAPL was not present in the remaining wells.
- One or more BETX compounds and/or gasoline- and diesel-range hydrocarbons were detected at concentrations exceeding the MTCA Method A cleanup levels in the September 2000 samples obtained from monitoring wells MQ-2 through MQ-5 and from discrete ground water samples obtained from borings MQ-6 through MQ-8. Petroleum

hydrocarbons were detected at concentrations less than MTCA Method A cleanup levels in the discrete water sample obtained from boring MQ-9 (Table 3). Laboratory reports indicate that the diesel-range hydrocarbons represent overlap from a gasoline-range product.

- Several chlorinated VOCs were detected in the September 8, 2000 ground water samples from MQ-4, MQ-5, MQ-6 and MQ-9 (Table 4).

## CONCLUSIONS

Nine soil borings, four of which were converted to monitoring wells, were completed along the sidewalk south of Roy Street and within the Marqueen underground parking garage during September 2000. Based on the September 2000 soil and ground water sampling and findings from previous studies in the vicinity of former Unocal Service Station 0255 we conclude as follows.

### CONTAMINANT TYPES AND DISTRIBUTION

#### LNAPL

GeoEngineers checked for the presence of LNAPL in MW-7U and the monitoring wells installed during this study on a weekly basis throughout September 2000. Based on the results of our monitoring, it appears that LNAPL is confined to an area immediately surrounding MW-7U. No LNAPL has been observed to date in the monitoring wells installed during this study (MQ-2, MQ-3, MQ-4 and MQ-5). The passive free product recovery program established in MW-7U appears to be effective. As a result, weekly monitoring and collection visits have been modified to monthly visits, consistent with our work plan dated July 28, 2000.

#### Soil

Gasoline-contaminated soil with contaminant concentrations exceeding MTCA Method A cleanup levels was identified in soil along the south side of Roy Street at depths ranging between 15 and 25 feet bgs; within the zone of seasonal ground water fluctuation. The zone of contaminated soil observed in the six borings completed in this area appears to thin to the east, west and south of MQ-1, MQ-2 and MQ-7. Gasoline-contaminated soil also was observed between about 20 and 22 feet below the grade of Roy Street in the Marqueen underground parking garage. This soil contamination also is within the zone of water table fluctuation. The gasoline-contaminated soil beneath the Marqueen garage appears to be present in a 2-foot-thick zone beneath the northwest corner of the building. Two other borings used to evaluate the extent of soil contamination beneath the Marqueen garage did not detect gasoline-contaminated soil at concentrations greater than MTCA Method A cleanup levels.

#### Ground Water

**Ground Water Flow Direction.** The direction of ground water flow beneath the study area has consistently been to the southwest. The ground water gradient is relatively steep beneath Roy Street, dropping approximately 7 feet between the northern and southern sidewalks of Roy Street. Ground water and contaminant migration pathways may vary in localized areas due to

heterogeneities within the fill and native soil above the clay and/or by the east-west extending sanitary sewer near the northern margin of Roy Street (Figure 6).

**Petroleum Hydrocarbons.** Gasoline-range hydrocarbon and BETX concentrations exceeding MTCA Method A cleanup levels are located between MQ-7 and MQ-3 along the south side of Roy Street and in MQ-5 and MQ-6 beneath the northwest corner of the Marqueen building (Figures 7 and 8). The hydrocarbon concentration present in the ground water sample obtained from MQ-4 (the easternmost sample obtained inside the Marqueen garage) slightly exceeds the MTCA Method A cleanup levels for benzene and total petroleum hydrocarbons. These results are consistent with the presence of petroleum-contaminated soil at these boring locations.

**Chlorinated VOCs.** The ground water samples collected during this study also were tested for chlorinated VOCs. Based on the chemical analytical results, PCE, TCE and VC were detected at concentrations exceeding MTCA Method A cleanup levels in four of the eight water samples collected. PCE and TCE-contaminated ground water was observed in MQ-9, located east of the Marqueen garage entrance. TCE and VC were detected in the ground water samples obtained from MQ-4, MQ-5 and MQ-6 (all located inside the Marqueen garage).

## **CONTAMINANT SOURCES**

### **LNAPL and Gasoline-Contaminated Soil**

Based on the results of this study, combined with prior findings, it is our opinion that the Unocal property is a potential source for the gasoline-contaminated soil encountered beneath Roy Street and the northwest portion of the Marqueen property. This opinion is supported by:

- ◆ The apparent continuity of the gasoline plume in soil extending from the former Unocal site to the Marqueen property,
- ◆ The similarity of gasoline-range contaminants in soil, with little or no diesel- and heavy oil-range hydrocarbons,
- ◆ The consistent presence of gasoline contamination within the zone of water table fluctuation beneath Roy Street and the Marqueen property,
- ◆ The steep ground water gradient from the Unocal site toward the Marqueen property, and
- ◆ A water table beneath Roy Street that is generally deeper than the utility corridors.

The available data suggest that an LNAPL plume formerly extended southwestward from the Unocal site to the Marqueen property. Residual soil contamination identifies the past extent of the LNAPL plume. The LNAPL in monitoring well MW-7U is likely a remnant of that plume. The gasoline source has been eliminated and the LNAPL in well MW-7U is no longer mobile, in our opinion. The residual gasoline in the water table zone is being attenuated gradually by natural processes.

### **Petroleum Contamination in the Marqueen Building Stairwell**

The reported soil contamination found in the Marqueen Building stairwell came from a soil sample obtained about 8 feet below the grade of Roy Street. This depth is at least 10 feet higher than the underlying ground water level and 10 to 12 feet higher than the depth of gasoline contamination found in our nearby soil borings. We have not been provided laboratory data identifying the type of hydrocarbons found in the stairwell sample (i.e., gasoline, diesel or heavy oil). Based on current information, we conclude that the reported petroleum contamination encountered in the stairwell is not attributable to Unocal activities.

### **Chlorinated VOCs in Ground Water**

Chlorinated VOCs were detected in ground water samples obtained from MQ-4, MQ-5, MQ-6 and MQ-9. The specific source of these compounds is not known. However, these chlorinated volatile organic compounds are common dry cleaning solvents that have been detected in soil and ground water samples on the former dry cleaning property located immediately east of the former Unocal site. PCE, TCE and VC have been detected in ground water samples obtained from wells located in the southeast corner of the former Unocal site (downgradient of the former dry cleaner). Therefore, it is our opinion that the former dry cleaning property east of the Unocal site is the most likely source of the chlorinated VOCs found during this study.

### **LIMITATIONS**

We have prepared this report for use by Unocal. This report may be made available to regulatory agencies and for review by other parties as designated by Unocal. This report is not intended for use by others and the information contained herein is not applicable to other sites. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely-spaced sampling locations. It is always possible that areas contaminated with hydrocarbons or other regulated compounds exist in areas that were not explored, sampled or analyzed.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.



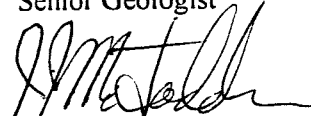
We appreciate the opportunity to be of continued service to Unocal AMG - West Division.  
Please contact us if you have questions regarding this report.

Yours very truly,

GeoEngineers, Inc.



FOR Dave A. Cook  
Senior Geologist



FOR Dana Carlisle, P.E.  
Associate

DAC:DLC:ja:pb

P:\Unocal\0161153\09\Finals\016115309R-S.doc

Attachments

**TABLE 1**  
**SUMMARY OF GROUND WATER ELEVATIONS**  
**AND LNAPL THICKNESSES**

MARQUEEN PROPERTY  
 SEATTLE, WASHINGTON

Monitoring Well <sup>1,2</sup> (Casing Elevation)	Date Measured	Depth to Ground Water <sup>3</sup> (feet)	Adjusted Depth to Ground Water (feet)	Free Product Thickness <sup>4</sup> (feet)	Ground Water Elevation <sup>5</sup> (feet)	Free Product Collected <sup>6</sup> (ml)
MW-7U 115.71	8/25/2000	18.77	18.76	0.01	96.95	0
	8/31/2000	18.72	18.71	0.01	97.00	0
	9/5/2000	19.86	19.85	0.01	95.86	200
	9/15/2000	21.21	21.20	0.01	94.51	100
	9/18/2000	21.24	21.24	0.00	94.47	100
	9/25/2000	21.10	21.10	0.00	94.61	0
MQ-2 116.73	9/8/2000	19.30	19.30	0.00	97.43	--
	9/15/2000	19.86	19.86	0.00	96.87	--
	9/18/2000	19.90	19.90	0.00	96.83	--
	9/25/2000	20.39	20.39	0.00	96.34	--
MQ-3 114.77	9/8/2000	19.40	19.40	0.00	95.37	--
	9/15/2000	19.44	19.44	0.00	95.33	--
	9/18/2000	19.50	19.50	0.00	95.27	--
	9/25/2000	19.54	19.54	0.00	95.23	--
MQ-4 104.52	9/8/2000	8.14	8.14	0.00	96.38	--
	9/15/2000	8.64	8.64	0.00	95.88	--
	9/18/2000	8.69	8.69	0.00	95.83	--
	9/25/2000	8.40	8.40	0.00	96.12	--
MQ-5 104.39	9/8/2000	9.05	9.05	0.00	95.34	--
	9/15/2000	9.23	9.23	0.00	95.16	--
	9/18/2000	9.28	9.28	0.00	95.11	--
	9/25/2000	9.29	9.29	0.00	95.10	--

**Notes:**

<sup>1</sup>The approximate monitoring well locations are shown in Figure 1.

<sup>2</sup>Elevations are measured relative to a temporary benchmark at an assumed elevation of 100.00 feet.

<sup>3</sup>Below casing rim.

<sup>4</sup>Light nonaqueous phase liquid (LNAPL) thickness measured after passive collection device was removed from well.

<sup>5</sup>Ground water elevations in MW-7U are adjusted to account for free product, where measured. A specific gravity of 0.75 was assumed for the product.

<sup>6</sup>Free product collected from passive product skimmer (PetroTrap™) installed in MW-7U.

ml = milliliters

" -- " = not measured

**TABLE 2 (PAGE 1 OF 2)**  
**SUMMARY OF SOIL CHEMICAL ANALYTICAL DATA**  
**SEPTEMBER 2000 SAMPLING**  
 MARQUEEN PROPERTY  
 SEATTLE, WASHINGTON

Sample Identification <sup>1</sup>	Sample Depth (feet bgs)	Date Sampled	Field Screening Results <sup>2</sup>		BETX <sup>3</sup> (mg/kg)				Gasoline-range Hydrocarbons <sup>4</sup> (mg/kg)	Diesel-range Hydrocarbons <sup>5</sup> (mg/kg)	Heavy Oil-range Hydrocarbons <sup>5</sup> (mg/kg)	VOCs <sup>6</sup> (mg/kg)
			Headspace Vapors (ppm)	Sheen	B	E	T	X				
MQ-1-8	8.0	09/05/00	--	NS	<0.0500	<0.0500	<0.0500	<0.100	<5.00	<10.0	<25.0	ND
MQ-1-16	16.0	09/05/00	--	MS	<0.600 <sup>7</sup>	10.2	2.42	26.1	1,050	<10.0	<25.0	ND
MQ-1-22	22.0	09/05/00	--	HS	<2.20 <sup>7</sup>	28.9	6.47	72.2	3,150	29.0	<25.0	ND
MQ-2-22	22.0	09/05/00	300	HS	<0.500	9.02	1.61	30.7	1,050	<10.0	<25.0	ND
MQ-2-26	26.0	09/05/00	11	NS	<0.0500	<0.0500	<0.0500	<0.100	14.4	<10.0	<25.0	ND
MQ-3-18	18.0	09/06/00	25	NS	<0.250	<1.40	<0.350	8.22	420	11.3	<25.0	ND
MQ-3-22	22.0	09/06/00	<1	NS	<0.0500	<0.250	<0.280	1.41	73.3	<10.0	<25.0	ND
MQ-4-2	2.0	09/06/00	55	NS	<0.0500	<0.0500	<0.0500	<0.100	<5.0	<10.0	<25.0	ND
MQ-4-10	10.0	09/06/00	250	SS	<0.0500	<0.0500	<0.0600	0.258	29.5	<10.0	<25.0	ND
MQ-5-10	10.0	09/06/00	3	HS	<0.500	<13.0	1.40	26.4	1,200	16.8	<25.0	ND
MQ-5-12	12.0	09/06/00	5	NS	<0.0500	<0.0500	<0.0500	<0.100	<5.00	<10.0	<25.0	ND
MQ-6-10	10.0	09/06/00	25	NS	<0.0500	<0.0500	<0.0500	<0.100	<5.00	<10.0	<25.0	ND
MQ-7-16	16.0	09/08/00	230	HS	<0.900 <sup>7</sup>	35.5	<5.00	44.4	3,300	25.8	<25.0	ND
MQ-7-18	18.0	09/08/00	<1	NS	<0.0500	0.0683	<0.0500	0.173	<5.00	<10.0	<25.0	ND
MQ-7-22	22.0	09/08/00	75	MS	<0.100	2.03	<0.800	7.89	215	24.8	<25.0	ND
MQ-7-24	24.0	09/08/00	5	NS	<0.0500	<0.0500	<0.0500	<0.100	<5.00	<10.0	<25.0	ND
MQ-8-8	8.0	09/08/00	<1	NS	<0.0500	<0.410	<0.100	1.34	83.4	<10.0	<25.0	ND
MQ-8-22	22.0	09/08/00	150	MS	<0.500	<8.00	<1.50	15.3	779	<10.0	<25.0	ND
MQ-8-24	24.0	09/08/00	<1	NS	<0.0500	<0.0500	<0.0500	<0.100	<5.00	<10.0	<25.0	ND
MQ-9-22	22.0	09/08/00	1,500	HS	<2.50 <sup>7</sup>	<37.5	<12.5	92.8	3,480	45.6	<25.0	ND
MQ-9-26	26.0	09/08/00	<1	NS	<0.0500	<0.0500	<0.0500	<0.100	<5.00	<10.0	<25.0	ND
MTCA Method A Cleanup Levels					0.5	20	40	20	100	200	200	--

See notes on Page 2 of 2.

## TABLE 2 (PAGE 2 OF 2)

### Notes:

<sup>1</sup>Approximate exploration locations are shown in Figure 1.

<sup>2</sup>Field methods are described in Appendix C. NS = no sheen, SS = slight sheen, MS = moderate sheen, HS = heavy sheen. Headspace vapors were measured using a MicroTip™ photoionization detector.

<sup>3</sup>B=benzene, E = ethylbenzene, T = toluene, X = xylenes. BETX analyzed by EPA Method 8020A.

<sup>4</sup>Analyzed by Ecology Method NWTPH-G.

<sup>5</sup>Analyzed by Ecology Method NWTPH-D extended.

<sup>6</sup>HVOCs = halogenated volatile organic compounds by EPA Method 8260B. HVOCs were not detected in any of the soil samples tested. Specific compounds tested and detection limits are presented in Appendix E.

<sup>7</sup>Detection limit greater than MTCA Method A cleanup level.

MTCA = Model Toxics Control Act

bgs = below ground surface

ppm = parts per million

mg/kg = milligrams per kilogram

"—" = not tested

Shaded concentrations are greater than MTCA Method A cleanup levels.

Chemical analyses by North Creek Analytical of Bothell, Washington. Laboratory reports are provided in Appendix D.

Please note that boring MQ-1 met refusal at 22 feet bgs. Boring MQ-2 was drilled adjacent to MQ-1 and extended to 32 feet bgs, below the zone of petroleum-contaminated soil.



**TABLE 3**  
**SUMMARY OF GROUND WATER CHEMICAL ANALYTICAL DATA**  
**PETROLEUM COMPOUNDS**  
**SEPTEMBER 2000 SAMPLING**

MARQUEEN PROPERTY  
 SEATTLE, WASHINGTON

Monitoring Well	Date Sampled	BETX <sup>1</sup> (EPA Method 8020 or 8021B) (µg/l)				Gasoline-range Hydrocarbons <sup>2</sup> (mg/l)	Diesel-range Hydrocarbons <sup>3</sup> (mg/l)	Heavy Oil-range Hydrocarbons <sup>3</sup> (mg/l)
		B	E	T	X			
MQ-2	09/08/00	848	1,010	3,260	3,690	23.4	3.23	<0.500
MQ-3	09/08/00	1,070	1,020	2,960	3,430	25.3	2.02	<0.500
MQ-4	09/08/00	6.09	<2.58	<1.31	<4.02	0.516	0.8	<0.588
MQ-5	09/08/00	244	203	119	236	2.761	0.836	<0.500
MQ-6-H2O	09/06/00	117	241	58.7	295	5.25	0.702	<0.500
MQ-7-H2O	09/08/00	108	1,230	1,660	5,130	26.1	2.63	<1.50
MQ-8-H2O	09/08/00	833	493	1,930	1,280	9.1	1.34	<0.500
MQ-9-H2O	09/08/00	2.16	2.05	1.56	5.08	0.107	0.323	<0.500
MTCA Method A Cleanup Level		5	30	40	20	1.0 <sup>4</sup>		

**Notes:**

<sup>1</sup>B = benzene, E = ethylbenzene, T = toluene, X = xylenes. Analyzed by EPA Method 8021B; results by EPA Method 8260B are presented in Table 4.

<sup>2</sup>Ecology Method WTPH-G or NWTPH-G.

<sup>3</sup>Ecology Method WTPH-D Extended or NWTPH-D extended with sulfuric acid/silica gel cleanup. The laboratory reports indicate that the diesel-range hydrocarbons represent overlap from a gasoline-range product.

<sup>4</sup>The Model Toxics Control Act (MTCA) Method A cleanup level for the sum of gasoline-range, diesel-range and heavy oil-range hydrocarbons is 1.0 mg/l, if carbon ranges are distinctly quantified using gas chromatography methods.

µg/l = micrograms per liter

mg/l = milligrams per liter

"-" = not tested

Shaded values indicate concentrations greater than the MTCA Method A cleanup level.

Chemical analyses conducted by North Creek Analytical of Bothell, Washington. The laboratory reports are presented in Appendix D.

Ground water samples obtained from MQ-6 through MQ-9 were discrete (one time) samples obtained from temporary well screens extended into these borings. Ground water samples from MQ-2 through MQ-5 were obtained from 1-inch diameter wells installed in these direct push borings. No well was installed in MQ-1. Therefore no ground water sample was obtained from MQ-1.

TABLE 4  
SUMMARY OF GROUND WATER CHEMICAL ANALYTICAL DATA  
VOLATILE ORGANIC COMPOUNDS  
SEPTEMBER 2000 SAMPLING  
MARQUEEN PROPERTY  
SEATTLE, WASHINGTON

Monitoring Well <sup>1</sup>	Date Sampled	Volatile Organic Compounds <sup>2</sup> (µg/l)				
		cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl Chloride
MQ-2	09/08/00	<1.00	<1.00	<1.00	<1.00	<1.00
MQ-3	09/08/00	<1.00	<1.00	<1.00	<1.00	<1.00
MQ-4	09/08/00	10.9	<1.00	<1.00	<1.00	9.93
MQ-5	09/08/00	61.1	<1.00	<1.00	<1.00	25.3
MQ-6-H2O	09/06/00	18.2	<1.00	<1.00	6.71	<1.00
MQ-7-H2O	09/08/00	14.9	<1.00	<1.00	<1.00	<1.00
MQ-8-H2O	09/08/00	5.98	<1.00	<1.00	<1.00	<1.00
MQ-9-H2O	09/08/00	251	1.18	11.8	14.8	<1.00
MTCA Method A or B cleanup levels		80	160	5	5	0.2

**Notes:**

<sup>1</sup>Approximate monitoring well locations are shown in Figure 1.

<sup>2</sup>Analyzed by EPA Method 8260B. Analytes detected are listed; refer to laboratory report in Appendix D for a complete list of method analytes and detection limits.

µg/l = micrograms per liter

-- = not detected

Shading indicates a concentration greater than the MTCA Method A or B single compound cleanup level (CLARC II, February 1996).

Chemical analyses by North Creek Analytical of Bothell, Washington. The laboratory reports are provided in Appendix D.

DRING WELL INSTALLED IN SEPTEMBER 2000

DRING DRILLED IN SEPTEMBER 2000

DRING WELL

ENT COLUMN

BASIN

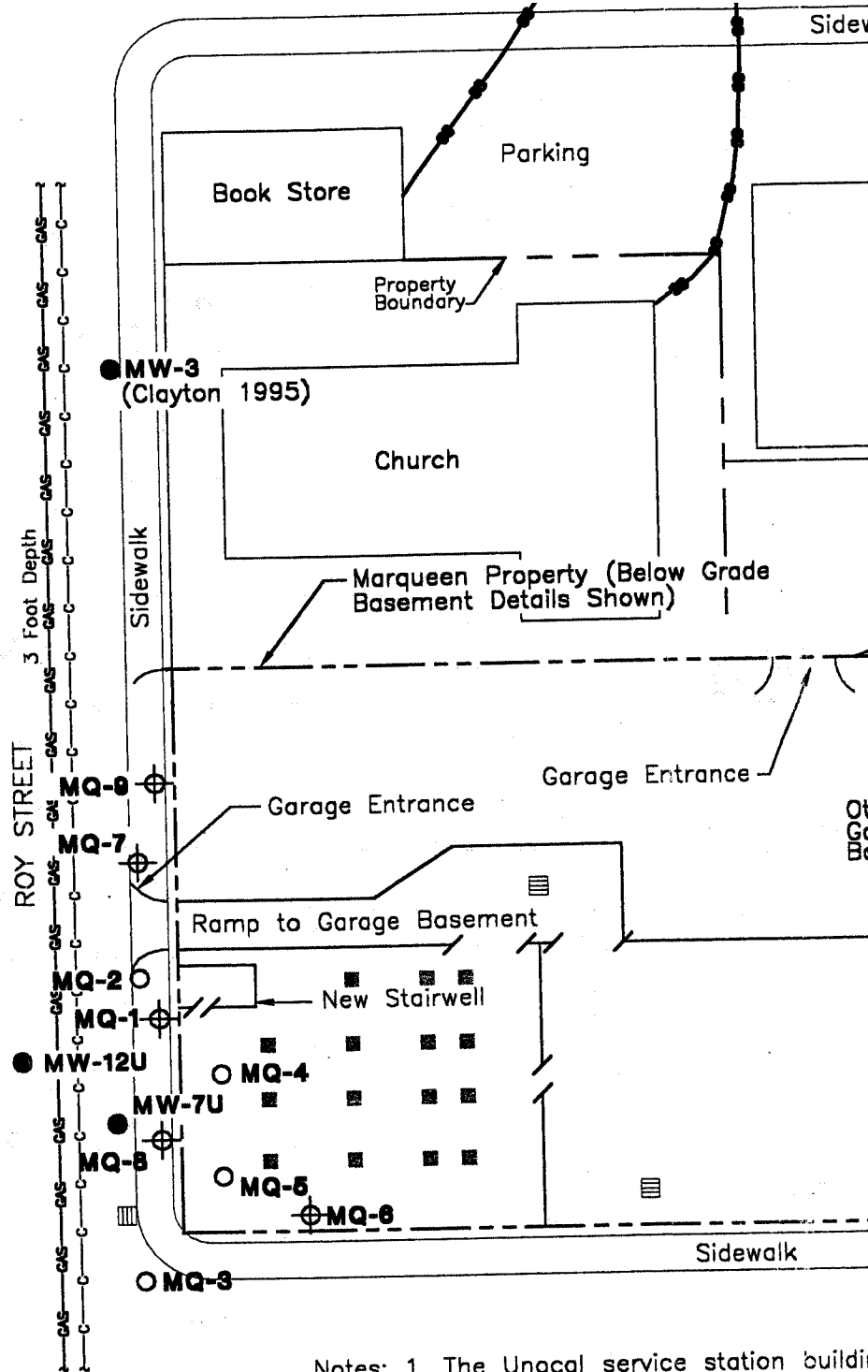
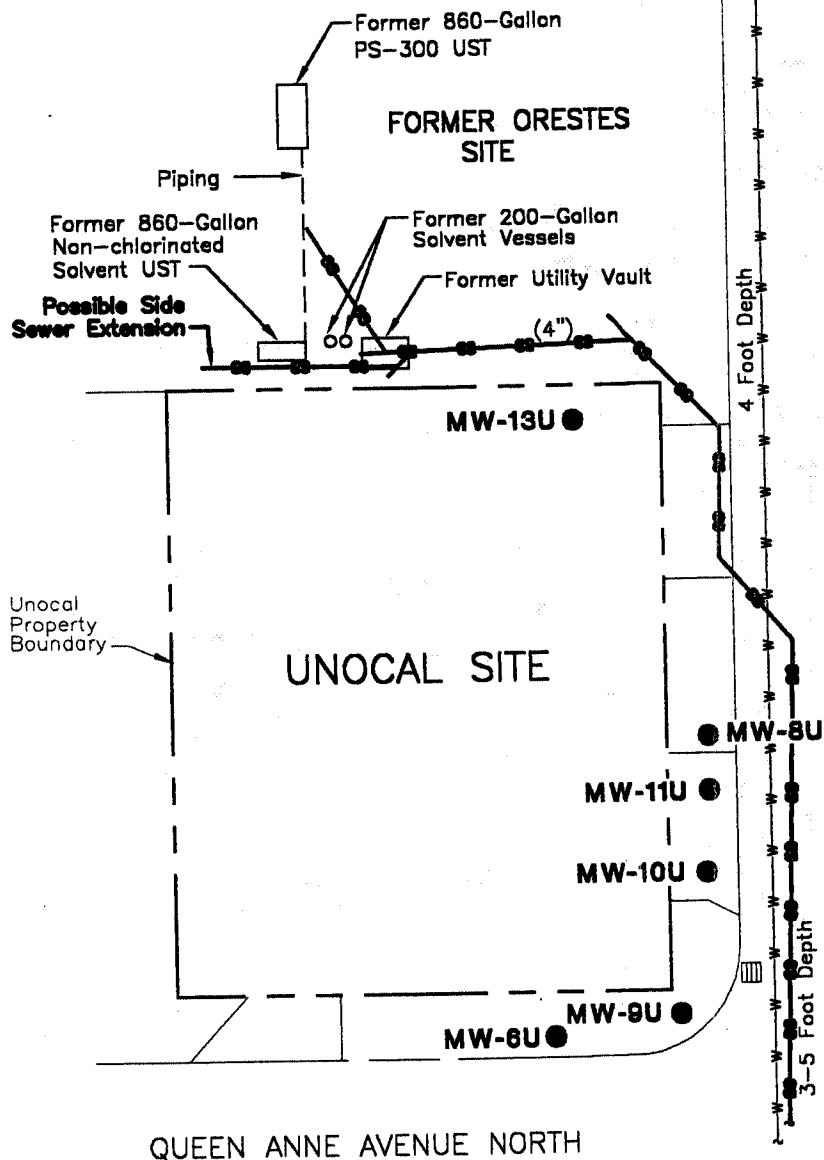
GROUND STORAGE TANK

H WATER MAIN

AL GAS LINE

H SANITARY SEWER

OPTIC CABLE



- Notes:
1. The Unocal service station building removed in January 1992 or earlier. McKales service station features shown.
  2. The locations of all features shown are approximate.
  3. Sewer locations per City of Seattle records. Marqueeen property not shown.

ALL INSTALLED IN SEPTEMBER 2000

DRILLED IN SEPTEMBER 2000

CELL

UMN

STORAGE TANK

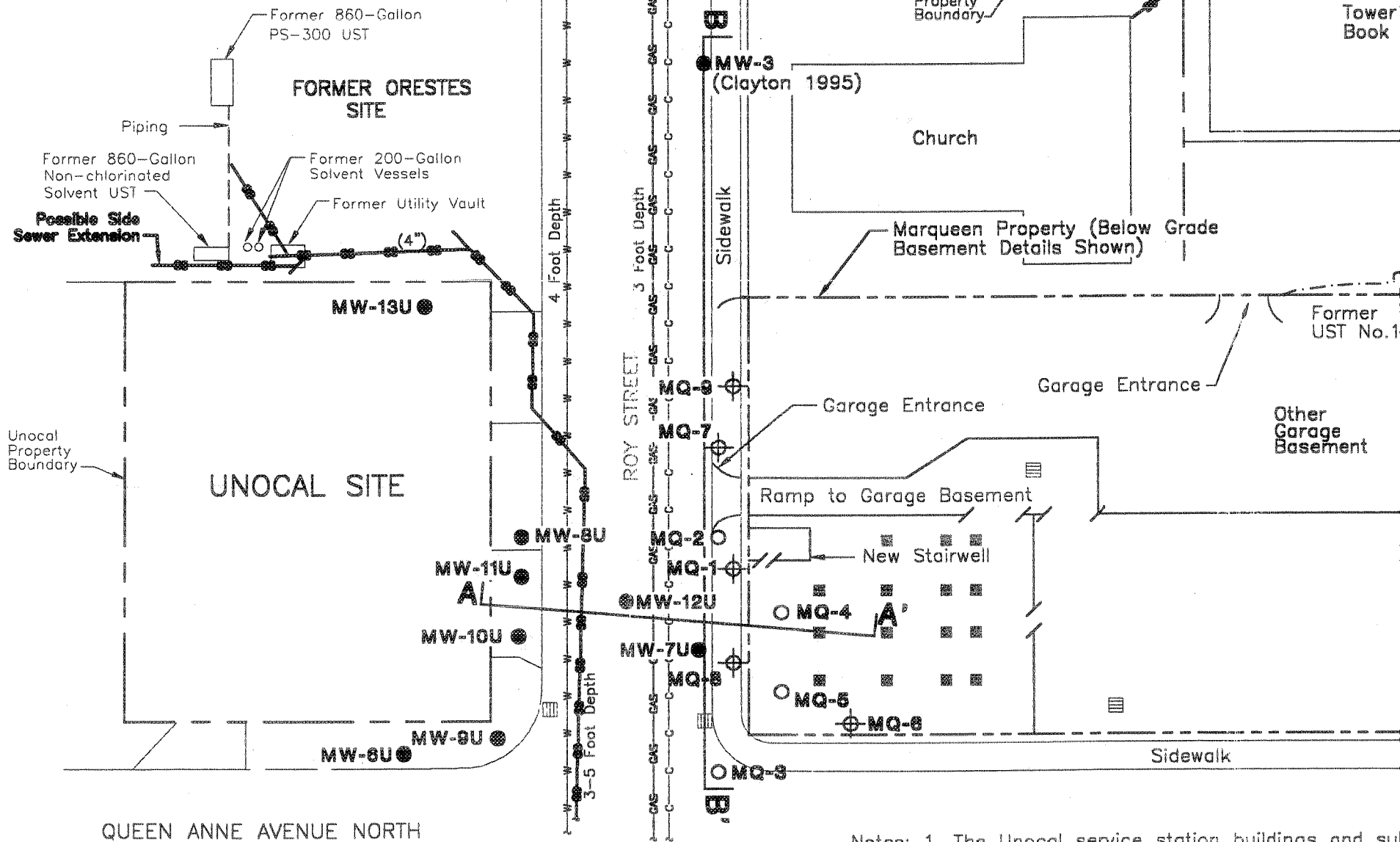
MAIN

LINE

ITARY SEWER

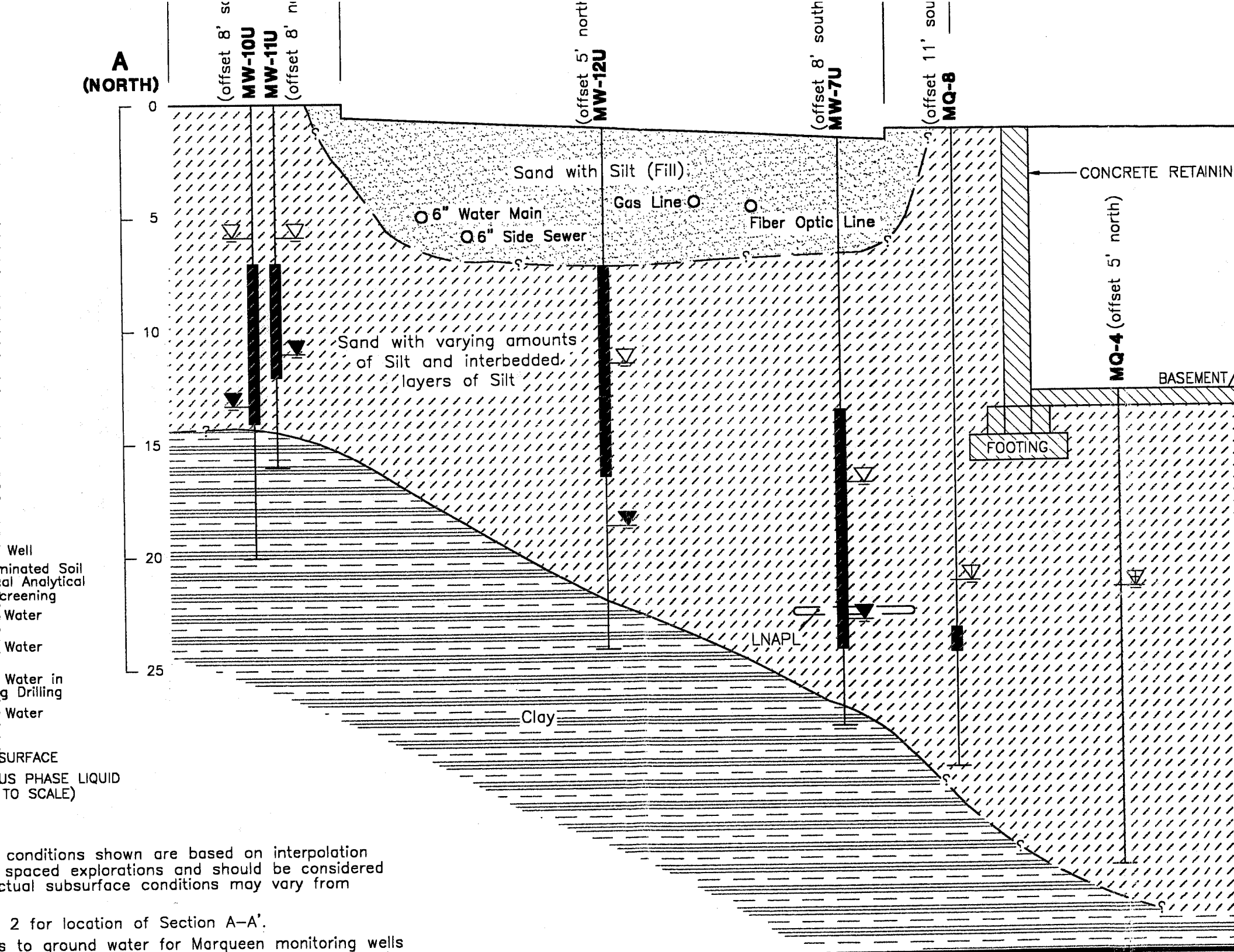
ABLE

N



- Notes:
1. The Unocal service station buildings and su removed in January 1992 or earlier. Refer McKales service station features.
  2. The locations of all features shown are app
  3. Sewer locations per City of Seattle sewer c Marqueen property not shown.

**A**  
(NORTH)



(offset 8' south)  
**MW-10U**  
**MW-11U**  
(offset 8' north)

(offset 5' north)  
**MW-12U**

(offset 8' south)  
**MW-7U**

(offset 11' south)  
**MQ-8**

**MQ-4** (offset 5' north)

Sand with Silt (Fill)

Sand with varying amounts of Silt and interbedded layers of Silt

Clay

6" Water Main  
6" Side Sewer

Gas Line

Fiber Optic Line

CONCRETE RETAINING WALL

BASEMENT

FOOTING

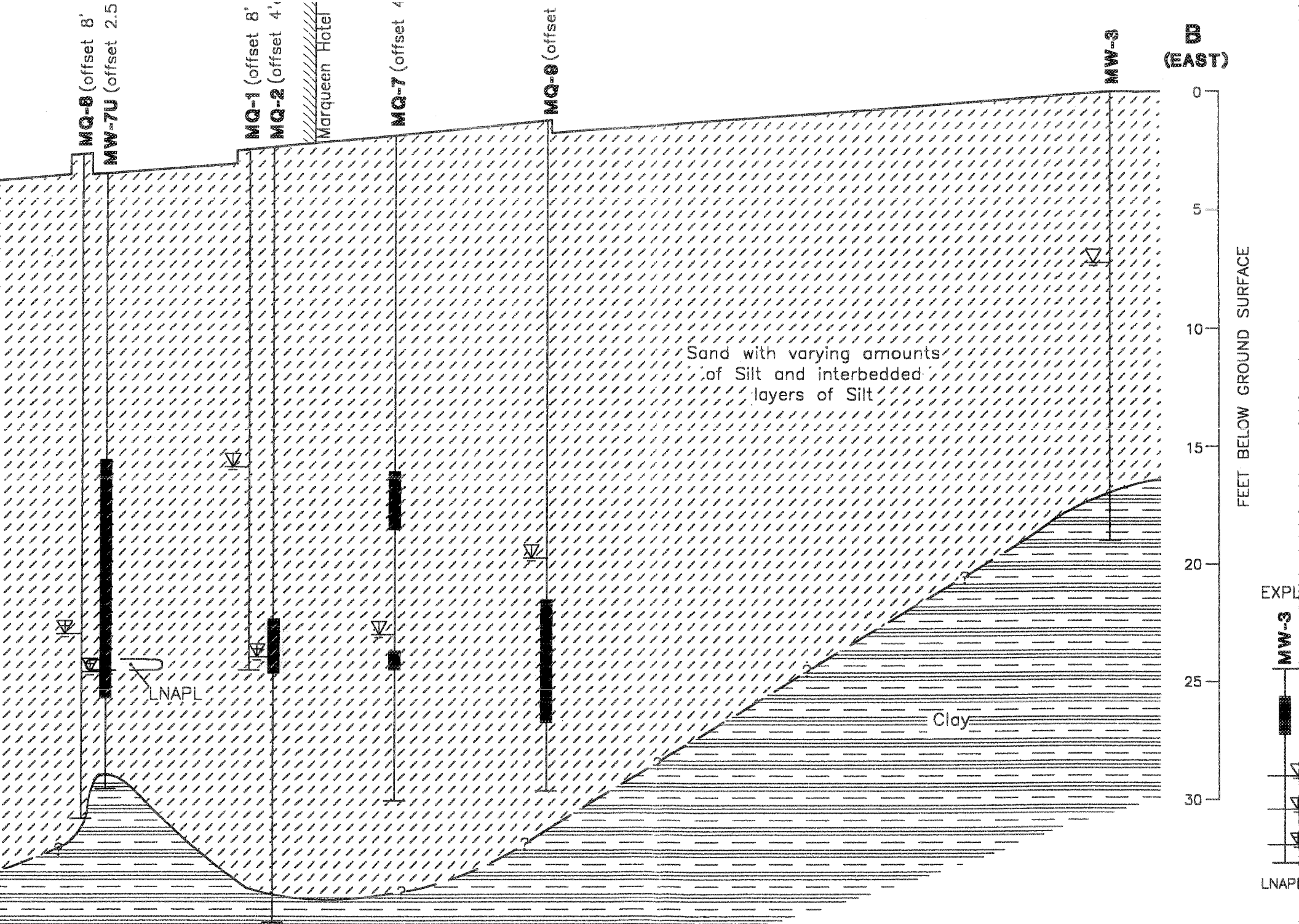
LNAPL

Well Water  
Contaminated Soil  
Analytical Screening  
Water  
Water  
Water in Drilling  
Water

SURFACE  
PHASE LIQUID  
(TO SCALE)

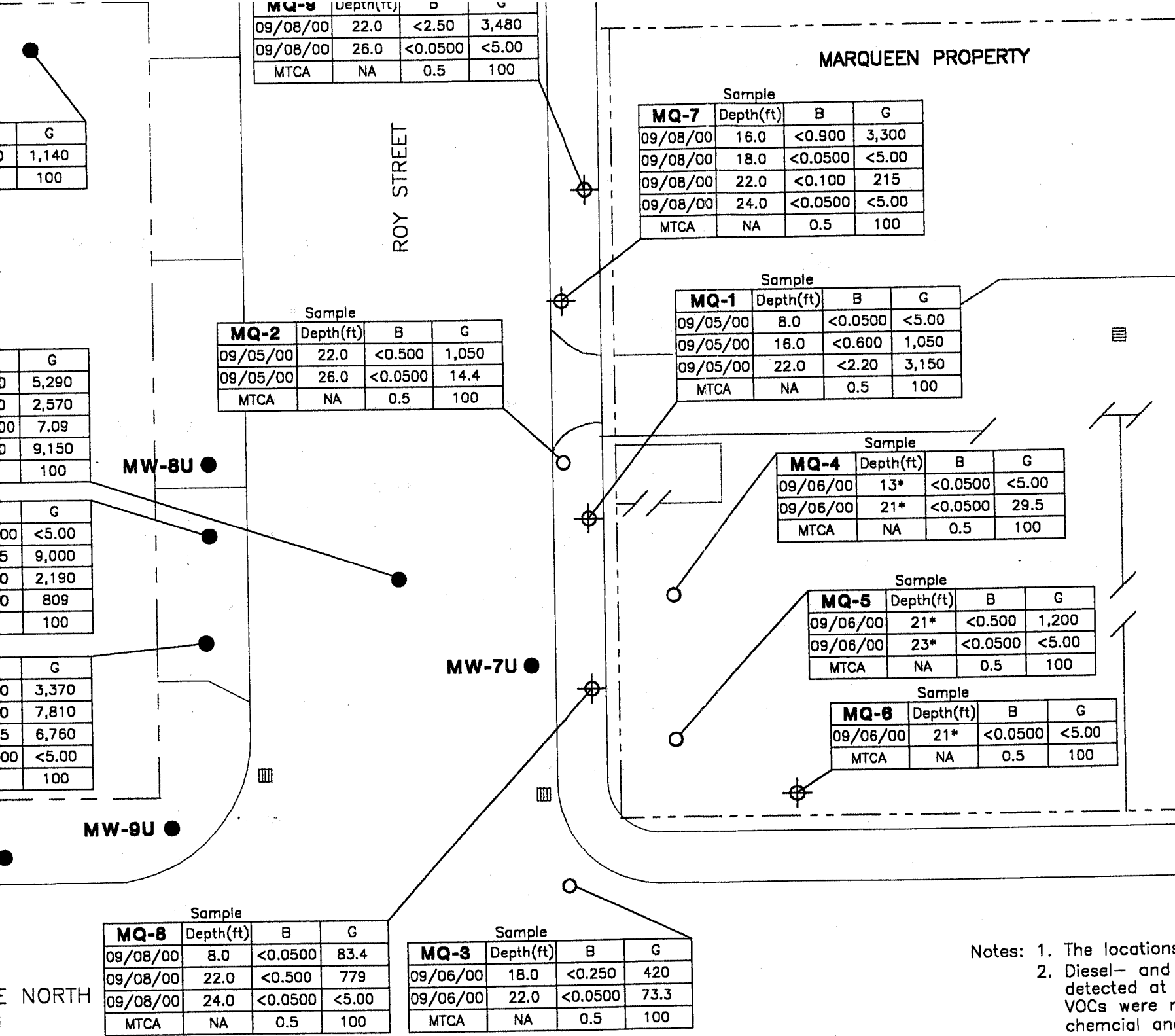
conditions shown are based on interpolation spaced explorations and should be considered actual subsurface conditions may vary from

2 for location of Section A-A'  
to ground water for Marqueen monitoring wells



Notes: 1. The subsurface conditions shown are widely spaced explorations and should not be taken as actual subsurface conditions may vary.

2. Refer to Figure 2 for location of Section



Sample	Depth(ft)	B	G
09/08/00	22.0	<2.50	3,480
09/08/00	26.0	<0.0500	<5.00
MTCA	NA	0.5	100

**MARQUEEN PROPERTY**

Sample			
MQ-7	Depth(ft)	B	G
09/08/00	16.0	<0.900	3,300
09/08/00	18.0	<0.0500	<5.00
09/08/00	22.0	<0.100	215
09/08/00	24.0	<0.0500	<5.00
MTCA	NA	0.5	100

Sample			
MQ-2	Depth(ft)	B	G
09/05/00	22.0	<0.500	1,050
09/05/00	26.0	<0.0500	14.4
MTCA	NA	0.5	100

Sample			
MQ-1	Depth(ft)	B	G
09/05/00	8.0	<0.0500	<5.00
09/05/00	16.0	<0.600	1,050
09/05/00	22.0	<2.20	3,150
MTCA	NA	0.5	100

Sample			
MQ-4	Depth(ft)	B	G
09/06/00	13*	<0.0500	<5.00
09/06/00	21*	<0.0500	29.5
MTCA	NA	0.5	100

Sample			
MQ-5	Depth(ft)	B	G
09/06/00	21*	<0.500	1,200
09/06/00	23*	<0.0500	<5.00
MTCA	NA	0.5	100

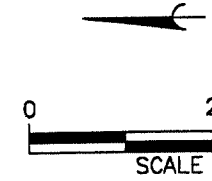
Sample			
MQ-6	Depth(ft)	B	G
09/06/00	21*	<0.0500	<5.00
MTCA	NA	0.5	100

Sample			
MQ-8	Depth(ft)	B	G
09/08/00	8.0	<0.0500	83.4
09/08/00	22.0	<0.500	779
09/08/00	24.0	<0.0500	<5.00
MTCA	NA	0.5	100

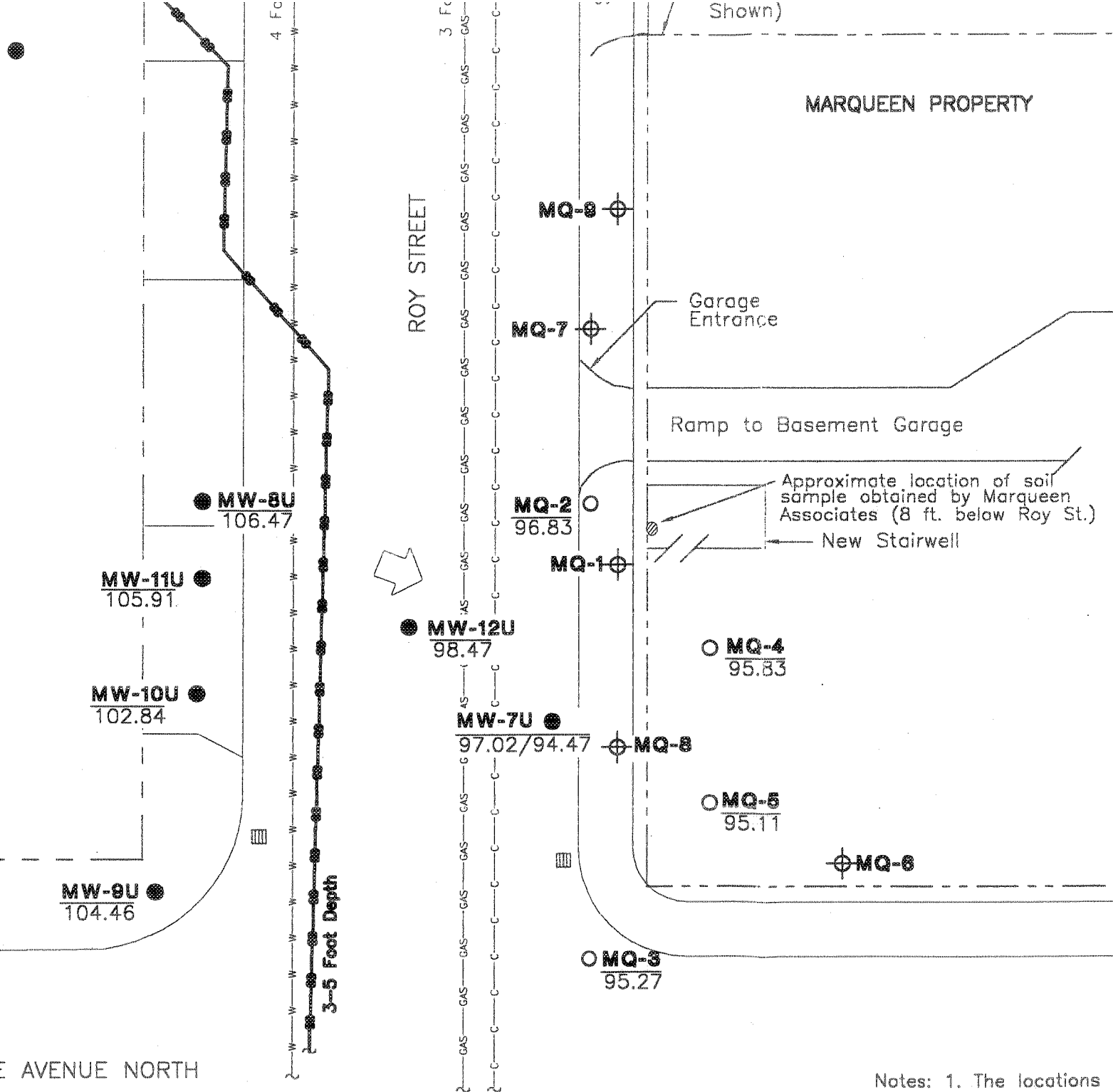
Sample			
MQ-3	Depth(ft)	B	G
09/06/00	18.0	<0.250	420
09/06/00	22.0	<0.0500	73.3
MTCA	NA	0.5	100

**EXPLANATION:**

- MW-1U** ● MONITORING WELL
- MQ-9** ⊕ SOIL BORING
- MQ-3** ○ MONITORING POINT
- B** BENZENE BY EPA METHOD 8160
- G** GASOLINE BY EPA METHOD 8160
- mg/kg** MILLIGRAMS PER KILOGRAM
- NA** NOT APPLICABLE
- MTCA** MODEL TOXICS METHOD
- \*** DEPTH BELOW GROUND SURFACE



- Notes:
- The locations of all features shown on this map are approximate.
  - Diesel- and oil-range hydrocarbons were not detected at concentrations less than 100 mg/kg. VOCs were not detected in any of the chemical analytical tables for additional information.
  - Refer to Figure 1 for identification of monitoring wells.



EXPLANATION:

- MW-1U** ● MONITORING
- MQ-9** ⊕ SOIL BORING SEPTEMBER
- MQ-3** ○ MONITORING IN SEPTEMBER
- 95.27 GROUND WATER ELEVATION
- 97.02/94.47 ELEVATION 08/10/00
- ↗ GENERAL GROUND FLOW DIRECTION

Notes: 1. The locations of all features shown are approximate.  
 2. See analytical results for additional details.  
 3. Ground water elevations for Unocal wells are from our  
 4. Refer to Figure 1 for identification of facilities.



PCE	TCE	VC
<1.00	20	1,050
5	5	0.2

SITE

PCE	TCE	VC
--	--	--
5	5	0.2

PCE	TCE	VC
--	--	--
5	5	0.2

PCE	TCE	VC
--	--	--
5	5	0.2

PCE	TCE	VC
--	--	--
5	5	0.2

PCE	TCE	VC
--	--	--
5	5	0.2

PCE	TCE	VC
--	--	--
5	5	0.2

MW-7U	B	G	PCE	TCE	VC
08/10/00	FREE PRODUCT				
MTCA	5	1.0	5	5	0.2

MQ-8	B	G	PCE	TCE	VC
09/08/00	833	9.10	<1.00	<1.00	<1.00
MTCA	5	1.0	5	5	0.2

ROY STREET

MARQUEEN PROPERTY

MQ-9	B	G	PCE	TCE	VC
09/08/00	2.16	0.107	11.8	14.8	<1.00
MTCA	5	1.0	5	5	0.2

MQ-7	B	G	PCE	TCE	VC
09/08/00	108	26.1	<1.00	<1.00	<1.00
MTCA	5	1.0	5	5	0.2

MQ-2	B	G	PCE	TCE	VC
09/08/00	848	23.4	<1.00	<1.00	<1.00
MTCA	5	1.0	5	5	0.2

MQ-1

MQ-4	B	G	PCE	TCE	VC
09/08/00	6.09	0.516	<1.00	<1.00	9.93
MTCA	5	1.0	5	5	0.2

MQ-5	B	G	PCE	TCE	VC
09/08/00	244	2.76	<1.00	<1.00	25.3
MTCA	5	1.0	5	5	0.2

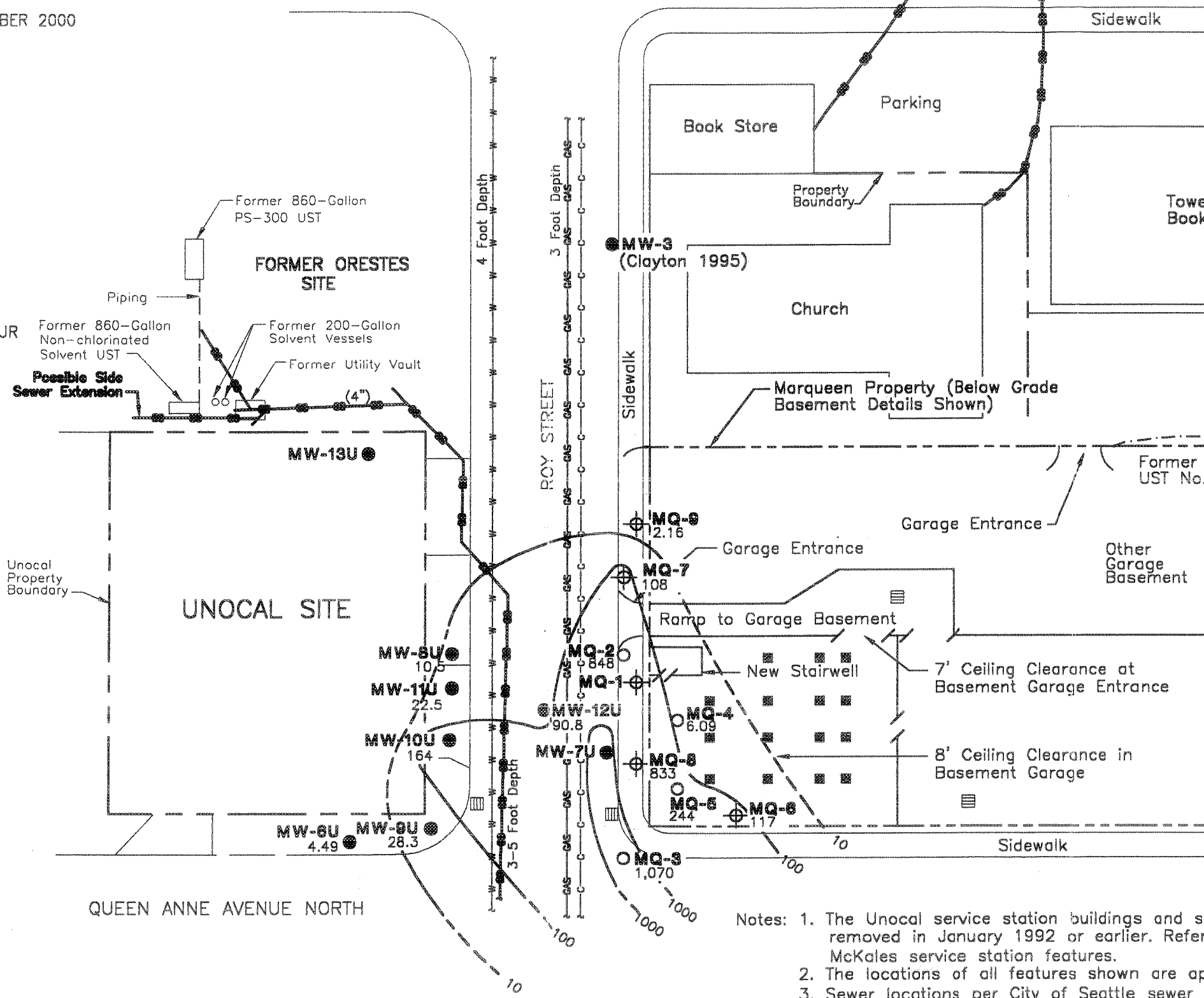
MQ-6	B	G	PCE	TCE	VC
09/08/00	117	5.25	<1.00	6.71	<1.00
MTCA	5	1.0	5	5	0.2

MQ-3	B	G	PCE	TCE	VC
09/08/00	1,070	25.3	<1.00	<1.0	<1.0
MTCA	5	1.0	5	5	0.2

QUEEN ANNE AVENUE NORTH

EXPLA  
MW-1  
MQ-8  
MQ-3

Notes: 1. The locations of  
2. See chemical and  
3. Refer to Figure 1



- Notes: 1. The Unocal service station buildings and su... removed in January 1992 or earlier. Refer... McKales service station features.
2. The locations of all features shown are app...
3. Sewer locations per City of Seattle sewer a... Marqueeen property not shown.

**GROUNDWATER ANALYTICAL RESULTS**

**Groundwater**

Former Queen Anne Texaco 211577

631 Queen Anne Avenue North

Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	TPH-G (µg/l)	TPH-D (µg/l)	TPH-O (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	m,p- xylenes (mg/l)	o-xylenes (mg/l)
<b>VP-1</b>										
	Mar-91	NA	--	--	--	--	--	--	--	--
	Oct-95	--	--	--	--	--	--	--	--	--
	Jan-97	--	--	--	--	--	--	--	--	--
	Apr-97	--	--	--	--	--	--	--	--	--
	Jul-97	--	--	--	--	--	--	--	--	--
	Nov-97	--	--	--	--	--	--	--	--	--
	Dec-99	--	--	--	--	--	--	--	--	--
	Jun-00	5,000	75,600	1,100U	21.60	14.4	32.8	435	--	--
	Jul-02	35,000	18,000	1,500	120	820	280	4,600	--	--
	Oct-02	27,300	7,500	598	170	756	334	4,820	--	--
<b>VP-2</b>										
	Mar-91	--	--	--	--	--	--	--	--	--
	Oct-95	--	--	--	--	--	--	--	--	--
	Jan-97	--	--	--	--	--	--	--	--	--
	Apr-97	--	--	--	--	--	--	--	--	--
	Jul-97	--	--	--	--	--	--	--	--	--
	Nov-97	--	--	--	--	--	--	--	--	--
	Dec-99	5,980	29,900	2,500U	935	345	43.80	305	--	--
	Jun-00	2,030	2,810	1,100U	45.90	16.2	3,000U	196	--	--
	Jul-02				UTL					
	Oct-02				UTA					
<b>VP-3</b>										
	Jul-02				DRY					
	Oct-02				DRY					

**GROUNDWATER ANALYTICAL RESULTS**

**Groundwater**

Former Queen Anne Texaco 211577  
631 Queen Anne Avenue North  
Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	TPH-G (µg/l)	TPH-D (µg/l)	TPH-O (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	m,p- xylenes (mg/l)	o-xylenes (mg/l)
<b>VP-4</b>										
	Mar-91	--	--	--	--	--	--	--	--	--
	Oct-95	--	--	--	--	--	--	--	--	--
	Jan-97	--	--	--	--	--	--	--	--	--
	Apr-97	--	--	--	--	--	--	--	--	--
	Jul-97	--	--	--	--	--	--	--	--	--
	Nov-97	--	--	--	--	--	--	--	--	--
	Dec-99	--	--	--	--	--	--	--	--	--
	Jun-00	26,400	1,850	1,100U	1,020	3,270	890	6,160	--	--
	Jul-02	89,000	78,000	9,700U	7,300	7,500	1,900	13,000	--	--
	Oct-02				UTA					
<b>VP-5 (MW-5)</b>										
	Mar-91	--	1,850	ND	5,300	1,300	900	4,600	--	--
	Oct-95	--	--	--	--	--	--	--	--	--
	Jan-97	--	--	--	--	--	--	--	--	--
	Apr-97	--	--	--	--	--	--	--	--	--
	Jul-97	--	--	--	--	--	--	--	--	--
	Nov-97	--	--	--	--	--	--	--	--	--
	Dec-99	23,400	2,490	5,000U	841	191	1,480	7,720	--	--
	Jun-00	25,600	1,340	1,120U	793	155	1,380	5,690	--	--
	Jul-02				UTL					
	Oct-02	15,900	3,900	500U	318	49.3	880	1,870	--	--
<b>VP-6</b>										
	Jul-02				SPH					
	Oct-02				SPH					

**GROUNDWATER ANALYTICAL RESULTS**

**Groundwater**

Former Queen Anne Texaco 211577

631 Queen Anne Avenue North

Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	TPH-G (µg/l)	TPH-D (µg/l)	TPH-O (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	m,p- xylenes (mg/l)	o-xylenes (mg/l)
<b>VP-7 (MW-3)</b>										
	Mar-91	0.03						3,500	--	--
	Oct-95	33,000	--	--	11,700	2,230	1,070	4,130	--	--
	Jan-97	51,000	--	--	12,400	5,200	990	RA	3,700	1,500
	Apr-97	53,000	--	--	11,100	4,800	1,400	RA	5,400	2,200
	Jul-97	37,000	--	--	11,000	3,700	1,500	RA	5,200	1,900
	Nov-97	34,000	--	--	15,900	3,600	1,500	RA	4,800	1,800
	Dec-99	73,400	3,310	5,000U	16,800	9,670	1,890	10,500	--	--
	Jun-00	54,400	931	1,460U	10,000	8,230	1,380	7,470	--	--
	Jul-02	60,000	5,800	580	8,200	7,000	1,500	8,300	--	--
	Oct-02	71,600	5,160	510	11,100	5,880	1,940	10,800	--	--
<b>VP-8 (MW-7)</b>										
	Mar-91	0.01						1,100	--	--
	Oct-95	3,100	--	--	2.50	1.20	3.00	16.0	--	--
	Jan-97	8,000	--	--	816	824	26.0	RA	412	182
	Apr-97	18,000	--	--	605	786	119	RA	1,260	514
	Jul-97	9,100J	--	--	96.0	246	52.0	RA	706	274
	Nov-97	830J	--	--	5.60	7.00	11.0	RA	23.0	9.60
	Dec-99	7,640	2,780	5,000U	540	927	201	1,430	--	--
	Jun-00	233	2,280	1,100U	1.10	1.81	1.95	7.99	--	--
	Jul-02	1,500	1,800	420	9.40	9.20	34.0	50.0	--	--
	Oct-02	552	1,830	500U	9.75	1.45	4.25	5.73	--	--

**GROUNDWATER ANALYTICAL RESULTS**

**Groundwater**

Former Queen Anne Texaco 211577

631 Queen Anne Avenue North

Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	TPH-G (µg/l)	TPH-D (µg/l)	TPH-O (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	m,p- xylenes (mg/l)	o-xylenes (mg/l)
<b>VP-9</b>										
	Mar-91	--	--	--	--	--	--	--	--	--
	Oct-95	--	--	--	--	--	--	--	--	--
	Jan-97	--	--	--	--	--	--	--	--	--
	Apr-97	--	--	--	--	--	--	--	--	--
	Jul-97	--	--	--	--	--	--	--	--	--
	Nov-97	--	--	--	--	--	--	--	--	--
	Dec-99	118	2,500U	5,000U	0.50U	0.50U	0.50U	0.50U	--	--
	Jun-00	474	1,420	1,130U	4.97	ND	55.6	4.80	--	--
	Jul-02				UTL					
	Oct-02	1,910	13,200	500U	11.3	2.62	8.86	14.7	--	--
<b>MW-4</b>										
102.07	Mar-91	--	--	--	10,000	12,000	500	9,800	--	--
	Oct-95	95,000	--	--	19,600E	12,000	2,070	10,800	--	--
	Jan-97	88,000	--	--	12,900	12,400	1,400	RA	7,500	3,100
	Apr-97	100,000	--	--	14,300	14,500	1,700	RA	7.80	3,200
	Jul-97	120,000	--	--	19,600	19,700	2,100	RA	9,300	3,800
	Nov-97	89,000	--	--	17,500	16,000	1,900	RA	8,800	3,400
	Dec-99	73,300	3,340	5,000U	13,700	13,500	1,830	11,000	--	--
	Jun-00	74,400	3,390	1,240U	14,400	9,440	1,840	10,800	--	--
	Jul-02	83,000	10,000	680	11,000	9,900	1,800	11,000	--	--
	Oct-02	110,000	9.86	0.697	14,500	11,600	2,630	15,200	--	--
<b>DUP</b>	Oct-02	92,400	7,100	500U	12,400	9,980	2,090	12,200	--	--

**GROUNDWATER ANALYTICAL RESULTS**

**Groundwater**

Former Queen Anne Texaco 211577

631 Queen Anne Avenue North

Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	TPH-G (µg/l)	TPH-D (µg/l)	TPH-O (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	m,p- xylenes (mg/l)	o-xylenes (mg/l)
<b>MW-6</b>										
	Mar-91	--	--	--	25,000	29,000	2,500	19,000	--	--
	Oct-95	--	--	--	12,000E	13,800E	920	5,680	4,170	1,520
	Jan-97	--	--	--	7,290	12,400	2,340	--	14,200	5,600
	Apr-97	--	--	--	--	--	--	--	--	--
	Jul-97	--	--	--	--	--	--	--	--	--
	Nov-97	--	--	--	--	--	--	--	--	--
	Dec-99	--	--	--	--	--	--	--	--	--
	Jun-00	--	--	--	--	--	--	--	--	--
	Jul-02	31,000	29,000	10,000U	8,900	1,600	820	4,200	ANR	ANR
	Oct-02				UTA					
<b>MW-9</b>										
	Mar-91	--	--	--	1,600	2,900	250	3,100	--	--
	Oct-95	3,400	--	--	3,520	70J	200U	10,800	--	--
	Jan-97	4,400	--	--	2,600	53.0	310	RA	7,500	3,100
	Apr-97	9,100	--	--	2,980	173	413	RA	7,800	3,200
	Jul-97	2,200J	--	--	2,680	127	460	RA	9,300	3,800
	Nov-97	5,000	--	--	2,010	80.0	334	RA	8,800	3,400
	Dec-99	4,460	8,510	5,000U	831	22.4	274	138	--	--
	Jun-00	4,740	6,070	500U	786	26.0	274	156	--	--
	Oct-02	6,380	43,600	671	493	13.0	230	107	--	--

**GROUNDWATER ANALYTICAL RESULTS**

**Groundwater**

Former Queen Anne Texaco 211577

631 Queen Anne Avenue North

Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	TPH-G (µg/l)	TPH-D (µg/l)	TPH-O (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	m,p- xylenes (mg/l)	o-xylenes (mg/l)
<b>MW-10</b>										
	Mar-91	--	--	--	5.00U	5.00U	5.00U	5.00U	--	--
	Oct-95	780	--	--	1.80	2.90J	0.82J	5.60	--	--
	Jan-97	180	--	--	1.50	1.00U	1.00U	RA	2.00U	1.00U
	Apr-97	420	--	--	5.10	1.00	1.00U	RA	2.00J	1.40U
	Jul-97	1,100	--	--	10.0	2.10	2.40	RA	3.80	0.54J
	Nov-97	1,000	--	--	4.20	2.00	4.80	RA	1.60	0.60J
	Dec-99	618	353	5,000U	7.02	0.91U	0.85U	4.22U	--	--
	Jun-00	99.2	2,500U	500U	1.56	ND	ND	ND	--	--
	Jul-02	240	320	600	2.50	0.500U	1.00U	1.50U	--	--
	Oct-02	490	667	500U	3.42	0.500U	1.34	5.00	--	--
<b>MW-11</b>										
	Jul-02	50.0U	250U	250U	0.500U	0.500U	0.500U	1.50U	--	--
	Oct-02	50.0U	250U	500U	0.500U	0.500U	0.500U	1.00U	--	--
<b>MW-12</b>										
	Oct-02	50.0U	250U	500U	0.516	0.869	0.500U	1.00U	--	--
<b>MW-13</b>										
	Oct-02				DRY					
<b>MW-14</b>										
	Oct-02				UTA					
	Nov-02	43,100	4,710	500U	9,900	4,930	1,540	6,020		
<b>MW-15</b>										
	Oct-02				UTA					
	Nov-02	3,280	780	500U	1,640	5.23	5.06	10.0U		



**GROUNDWATER ANALYTICAL RESULTS**

**Groundwater**

Former Queen Anne Texaco 211577

631 Queen Anne Avenue North

Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	TPH-G (µg/l)	TPH-D (µg/l)	TPH-O (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	m,p- xylenes (mg/l)	o-xylenes (mg/l)
<b>MW-16</b>										
	Oct-02				UTA					
	Nov-02	50.0U	250U	500U	0.500U	0.500U	0.500U	1.00U		
<b>MW-17</b>										
	Oct-02				UTA					
	Nov-02	2,780	250U	500U	569	31.0	91.1	250		
<b>RW-2</b>										
	Mar-91	--	--	--	19,000	46,000	2,500	120,000	--	--
	Oct-95	--	--	--	--	--	--	--	--	--
	Jan-97	390	--	--	31.0	14.0	6.00	RA	31.0	18.0
	Apr-97	11,000	--	--	189	243	99.0	RA	540	203
	Jul-97	24,000	--	--	4,230	2,490	389	RA	1,960	772
	Nov-97	4,400	--	--	3,140	1,200	338	RA	1,670	595
	Dec-99	--	--	--	--	--	--	--	--	--
	Jun-00	--	--	--	--	--	--	--	--	--
	Jul-02				UTL					
	Oct-02	1,380	988	500U	90.5	8.05	29.2	31.5	--	--
<b>RW-3</b>										
	Jul-02				UTA					
	Oct-02				UTA					
<b>RW-4</b>										
	Jul-02	990	15,000	2,000U	62.0	1.30	32.0	7.00	--	--
	Oct-02	3,160	8,930	939	59.8	2.50	40.4	15.6	--	--

**GROUNDWATER ANALYTICAL RESULTS**

**Groundwater**

Former Queen Anne Texaco 211577  
631 Queen Anne Avenue North  
Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	TPH-G (µg/l)	TPH-D (µg/l)	TPH-O (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	m,p- xylenes (mg/l)	o-xylenes (mg/l)
<b>RW-5</b>	Jul-02				UTL					
	Oct-02	3,370	84,900	3,650	696	67.2	63.0	408	--	--
<b>Trip Blank LB</b>	Oct-02	50.0U			0.500U	0.500U	0.500U	1.00U	--	--
	Nov-02	50.0U			0.500U	0.500U	0.500U	1.00U		

1 - Well designations have historically varied. The designations used here are consistent with the designations shown on Figure 1 (well designations in () indicate previous labeling)

2 - Date groundwater samples were collected. Mar-91 from Ecology and Environment, Oct-95 through Nov-97 from Ecology, Dec-99 - Jun-00 from Farallon.

(--)- Sample not analyzed.

ANR- Analyte not reported or reported as total value

DRY - Insufficient groundwater to sample

DUP - Duplicate samples

E - The analyte was detected at a concentration above the linear response range of the instrument, value reported is an estimate.

ND - Not detected at or above laboratory detection limits. Laboratory detection limits not available or reported.

P - The analyte was detected above the instrument detection limit but below the established minimum quantitation limit.

RA - Reported as m,p and o-xylene, total xylene not reported.

SPH - No sample collected due to the presence of separate phase hydrocarbons

U - The analyte was not detected at or above the reported value.

UTA- No sample collected, unable to access well due to parked vehicle.

UTL - No sample collected, unable to locate well

**GROUNDWATER ANALYTICAL RESULTS  
RCRA Metal**

Former Queen Anne Texaco 211577  
631 Queen Anne Avenue North  
Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	Silver (µg/l)	Arsenic (µg/l)	Barium (µg/l)	Cadmium (µg/l)	Chromium (µg/l)	Mercury (µg/l)	Lead (µg/l)	Selenium (µg/l)
VP-1	Jul-02	--		--	--	--	--	22.9	--
	Oct-02	--		--	--	--		1.80	
VP-2	Jul-02			UTL					
	Oct-02			UTA					
VP-3	Jul-02			DRY					
	Oct-02			DRY					
VP-4	Jul-02	--		--	--	--	--	28.0	--
	Oct-02			UTA					
VP-5 (MW-5)	Jul-02			UTL					
	Oct-02	--		--	--	--		2.29	--
VP-6	Jul-02			SPH					
	Oct-02			SPH					
VP-7 (MW-3)	Jul-02	0.068	97.2	33.6	0.080U	2.20	0.079U	25.0	1.10U
	Oct-02	--		--	--	--		2.40	--

**GROUNDWATER ANALYTICAL RESULTS  
RCRA Metal**

Former Queen Anne Texaco 211577  
631 Queen Anne Avenue North  
Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	Silver (µg/l)	Arsenic (µg/l)	Barium (µg/l)	Cadmium (µg/l)	Chromium (µg/l)	Mercury (µg/l)	Lead (µg/l)	Selenium (µg/l)
VP-8 (MW-7)	Jul-02	0.050U	2.1	49.5	0.13	0.82	0.079U	11.4	3.10U
	Oct-02	--	--	--	--	--	--	1.93	--
VP-9	Jul-02	--	--	--	--	--	--	1.00U	--
	Oct-02	--	--	--	--	--	--	--	--
MW-4	Jul-02	0.050U	31.0	63.8	0.080U	0.28U	0.079U	15.5	1.10U
	Oct-02	--	--	--	--	--	--	10.7	--
DUP	Oct-02	--	--	--	--	--	--	9.61	--
MW-6	Jul-02	--	--	--	--	--	--	5.10	--
	Oct-02	--	--	UTA	--	--	--	--	--
MW-9	Oct-02	--	--	--	--	--	--	2.66	--
MW-10	Jul-02	0.050U	4.1	52.1	0.17	0.38	0.079U	1.30	1.10U
	Oct-02	--	--	--	--	--	--	1.00U	--

**GROUNDWATER ANALYTICAL RESULTS  
RCRA Metal**

Former Queen Anne Texaco 211577  
631 Queen Anne Avenue North  
Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	Silver (µg/l)	Arsenic (µg/l)	Barium (µg/l)	Cadmium (µg/l)	Chromium (µg/l)	Mercury (µg/l)	Lead (µg/l)	Selenium (µg/l)
MW-11	Jul-02	--	--	--	--	--	--	1.20U	--
	Oct-02	--	--	--	--	--	--	1.00U	--
MW-12	Oct-02	--	--	--	--	--	--	--	--
MW-13	Oct-02			DRY					
MW-14	Oct-02			UTA					
	Nov-02	1.00U	17.0	18.4	1.00U	1.00U	1.00U	1.82	1.48
MW-15	Oct-02			UTA					
	Nov-02	1.00U	1.33	1.00U	1.00U	1.00U	1.00U	1.04	1.00U
MW-16	Oct-02			UTA					
	Nov-02	--	--	--	--	--	--	1.00U	--
MW-17	Oct-02			UTA					
	Nov-02	--	--	--	--	--	--	1.00U	
RW-2	Jul-02								
	Oct-02	--	--	--	--	--	--	2.23	--

**GROUNDWATER ANALYTICAL RESULTS  
RCRA Metal**

Former Queen Anne Texaco 211577  
631 Queen Anne Avenue North  
Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	Silver (µg/l)	Arsenic (µg/l)	Barium (µg/l)	Cadmium (µg/l)	Chromium (µg/l)	Mercury (µg/l)	Lead (µg/l)	Selenium (µg/l)
RW-3	Jul-02			UTA					
	Oct-02			UTA					
RW-4	Jul-02	0.050U	6.10	66.9	0.080U	1.20	0.079	3.30	1.10
	Oct-02	--	--	--	--	--		1.23	--
RW-5	Jul-02			UTL					
	Oct-02	--		--	--	--		3.91	--

1 - Well designations have historically varied. The designations used here are consistent with the designations shown on Figure 1 (well designations in () indicate previous labeling)

(--)- Sample not analyzed.

J - Analyte was positively identified. The associated numerical result is an estimate.

ND - Not detected and reporting limit not available.

P - The analyte was detected above the instrument detection limit but below the established minimum quantitation limit.

U - The analyte was not detected at or above the reported value.

UTA- No sample collected, unable to access well due to parked vehicle.

UTL - No sample collected, unable to locate well

DRY - Insufficient groundwater to sample

SPH - No sample collected due to the presence of separate phase hydrocarbons

\* - Metals results for dissolved metals (filtered).

**GROUNDWATER ANALYTICAL RESULTS**

**Dissolved Metals Data Prior to 7/02**

Former Queen Anne Texaco 211577  
631 Queen Anne Avenue North  
Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	Lead (total) (µg/l)	Lead (dissolved) (µg/l)	Manganese (mg/l)	Ferrous Iron(mg/l)	Nitrate- Nitrogen (mg/l as N)	Sulfate (mg/l)
<b>VP-1</b>							
	Mar-91	--	--	--	--	--	--
	Oct-95	--	--	--	--	--	--
	Jan-97	--	--	--	--	--	--
	Apr-97	--	--	--	--	--	--
	Jul-97	--	--	--	--	--	--
	Nov-97	--	--	--	--	--	--
	Dec-99	--	--	--	--	--	--
	Jun-00	33.4	33.9	--	--	--	--
<b>VP-2</b>							
	Mar-91	--	--	--	--	--	--
	Oct-95	--	--	--	--	--	--
	Jan-97	--	--	--	--	--	--
	Apr-97	--	--	--	--	--	--
	Jul-97	--	--	--	--	--	--
	Nov-97	--	--	--	--	--	--
	Dec-99	262	61.7	--	--	--	--
	Jun-00	37.8	9.87	--	--	--	--
<b>VP-4</b>							
	Mar-91	--	--	--	--	--	--
	Oct-95	--	--	--	--	--	--
	Jan-97	--	--	--	--	--	--
	Apr-97	--	--	--	--	--	--
	Jul-97	--	--	--	--	--	--
	Nov-97	--	--	--	--	--	--
	Dec-99	--	--	--	--	--	--
	Jun-00	9.12	4.66	--	--	--	--

**GROUNDWATER ANALYTICAL RESULTS**

**Dissolved Metals Data Prior to 7/02**

Former Queen Anne Texaco 211577  
631 Queen Anne Avenue North  
Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	Lead (total) (µg/l)	Lead (dissolved) (µg/l)	Maganese (mg/l)	Ferrous Iron(mg/l)	Nitrate- Nitrogen (mg/l as N)	Sulfate (mg/l)
<b>VP-5 (MW-5)</b>							
	Mar-91	--	--	--	--	--	--
	Oct-95	--	--	--	--	--	--
	Jan-97	--	--	--	--	--	--
	Apr-97	--	--	--	--	--	--
	Jul-97	--	--	--	--	--	--
	Nov-97	--	--	--	--	--	--
	Dec-99	6.76	2.57	--	--	--	--
	Jun-00	3.75	2.66	--	--	--	--
<b>VP-7 (MW-3)</b>							
	Mar-91	--	--	--	--	--	--
	Oct-95	5.60P	--	--	--	--	--
	Jan-97	9.90	--	--	--	--	--
	Apr-97	3.40	--	--	--	--	--
	Jul-97	4.30J	--	--	--	--	--
	Nov-97	5.00	--	--	--	--	--
	Dec-99	5.91	2.11	7.76	11.7	0.10U	13.4
	Jun-00	--	2.13	--	--	--	--
<b>VP-8 (MW-7)</b>							
	Mar-91	--	--	--	--	--	--
	Oct-95	3.40P	--	--	--	--	--
	Jan-97	3.70	--	--	--	--	--
	Apr-97	24.6	--	--	--	--	--
	Jul-97	2.30	--	--	--	--	--
	Nov-97	12.7	--	--	--	--	--
	Dec-99	40.6	5.02	--	--	--	--
	Jun-00	17.7	7.95	--	--	--	--



**GROUNDWATER ANALYTICAL RESULTS**

**Dissolved Metals Data Prior to 7/02**

Former Queen Anne Texaco 211577  
631 Queen Anne Avenue North  
Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	Lead (total) (µg/l)	Lead (dissolved) (µg/l)	Maganese (mg/l)	Ferrous Iron(mg/l)	Nitrate- Nitrogen (mg/l as N)	Sulfate (mg/l)
<b>VP-9</b>							
	Mar-91	--	--	--	--	--	--
	Oct-95	--	--	--	--	--	--
	Jan-97	--	--	--	--	--	--
	Apr-97	--	--	--	--	--	--
	Jul-97	--	--	--	--	--	--
	Nov-97	--	--	--	--	--	--
	Dec-99	15.0	1.00U	420	9400	9200	34000
	Jun-00	15.2	1.00U	--	--	--	--
<b>MW-4</b>							
	Mar-91	--	--	--	--	--	--
	Oct-95	30.6	--	--	--	--	--
	Jan-97	36.5	--	--	--	--	--
	Apr-97	20.7	--	--	--	--	--
	Jul-97	19.5	--	--	--	--	--
	Nov-97	16.2	--	--	--	--	--
	Dec-99	19.8	9.86	10.5	6.15	0.10U	0.20U
	Jun-00	21.4	9.72	--	--	--	--

**GROUNDWATER ANALYTICAL RESULTS**

**Dissolved Metals Data Prior to 7/02**

Former Queen Anne Texaco 211577  
631 Queen Anne Avenue North  
Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	Lead (total) (µg/l)	Lead (dissolved) (µg/l)	Manganese (mg/l)	Ferrous Iron(mg/l)	Nitrate- Nitrogen (mg/l as N)	Sulfate (mg/l)
<b>MW-6</b>							
	Mar-91	--	--	--	--	--	--
	Oct-95	--	--	--	--	--	--
	Jan-97	--	--	--	--	--	--
	Apr-97	--	--	--	--	--	--
	Jul-97	--	--	--	--	--	--
	Nov-97	--	--	--	--	--	--
	Dec-99	--	--	--	--	--	--
	Jun-00	--	--	--	--	--	--
<b>MW-9</b>							
	Mar-91	--	--	--	--	--	--
	Oct-95	4.60P	--	--	--	--	--
	Jan-97	--	--	--	--	--	--
	Apr-97	6.80	--	--	--	--	--
	Jul-97	8.60J	--	--	--	--	--
	Nov-97	3.30	--	--	--	--	--
	Dec-99	15.0	1.03	10.5	6.15	--	--
	Jun-00	7.86	1.59	--	--	--	--
<b>MW-10</b>							
	Mar-91	--	--	--	--	--	--
	Oct-95	1.00U	--	--	--	--	--
	Jan-97	--	--	--	--	--	--
	Apr-97	1.00U	--	--	--	--	--
	Jul-97	1.20J	--	--	--	--	--
	Nov-97	4.90	--	--	--	--	--
	Dec-99	1.00U	1.00U	5.12	2.00U	0.72	70.6
	Jun-00	ND	ND	--	--	--	--

**GROUNDWATER ANALYTICAL RESULTS**

**Dissolved Metals Data Prior to 7/02**

Former Queen Anne Texaco 211577  
631 Queen Anne Avenue North  
Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	Lead (total) (µg/l)	Lead (dissolved) (µg/l)	Maganese (mg/l)	Ferrous Iron(mg/l)	Nitrate- Nitrogen (mg/l as N)	Sulfate (mg/l)
<b>RW-2</b>							
	Mar-91	--	--	--	--	--	--
	Oct-95	--	--	--	--	--	--
	Jan-97	--	--	--	--	--	--
	Apr-97	--	--	--	--	--	--
	Jul-97	--	--	--	--	--	--
	Nov-97	--	--	--	--	--	--
	Dec-99	--	--	--	--	--	--
	Jun-00	--	--	--	--	--	--

1 - Well designations have historically varied. The designations used here are consistent with the designations shown on Figure 1 (well designations in () indicate previous labeling)

(--)- Sample not analyzed.

J - Analyte was positively identified. The associated numerical result is an estimate.

ND - Not detected and reporting limit not available.

P - The analyte was detected above the instrument detection limit but below the established minimum quantitation limit.

U - The analyte was not detected at or above the reported value.

UTA- No sample collected, unable to access well due to parked vehicle.

UTL - No sample collected, unable to locate well

DRY - Insufficient groundwater to sample

SPH - No sample collected due to the presence of separate phase hydrocarbons

**GROUNDWATER ANALYTICAL RESULTS**

**Volatile Organic Compounds**

Former Queen Anne Texaco 211577

631 Queen Anne Avenue North

Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	Isopropyl- benzene (ug/l)	n- Propylbenzene (ug/l)	1,3,5- Trimethyl benzene (ug/l)	1,2,4- Trimethylbenzene (ug/l)	p-Isopropyl toluene (ug/l)	n- butylbenzene (ug/l)	Naphthalene (ug/l)	Tetra- chloroethene (ug/l)	Tri- chloroethene (ug/l)	1,2- Dichloroethene (ug/l)	Chloroform (ug/l)	cis-1,2-Dichloroethene (ug/l)	sec-Butylbenzene (ug/l)
VP-1	Jul-02	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
VP-2	Jul-02	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
VP-3	Jul-02	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
VP-4	Jul-02	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
VP-5 (MW-5)	Jul-02	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--

**GROUNDWATER ANALYTICAL RESULTS**

**Volatile Organic Compounds**

Former Queen Anne Texaco 211577

631 Queen Anne Avenue North

Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	Isopropyl- benzene (ug/l)	n- Propylbenzene (ug/l)	1,3,5- Trimethyl benzene (ug/l)	1,2,4- Trimethylbenzene (ug/l)	p-Isopropyl toluene (ug/l)	n- butylbenzene (ug/l)	Naphthalene (ug/l)	Tetra- chloroethene (ug/l)	Tri- chloroethene (ug/l)	1,2- Dichloroethene (ug/l)	Chloroform (ug/l)	cis-1,2-Dichloroethene (ug/l)	sec-Butylbenzene (ug/l)
<b>VP-6</b>														
	Jul-02	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>VP-7 (MW-3)</b>														
	Jul-02	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>VP-8 (MW-7)</b>														
	Jul-02	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>VP-9</b>														
	Jul-02	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>MW-4</b>														
	Jul-02	46.0	140	500	1,800	10.0U	23.0	360	8.00U	10.0U	5.00U	8.00U	8.00U	10.0U
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--

**GROUNDWATER ANALYTICAL RESULTS**

**Volatile Organic Compounds**

Former Queen Anne Texaco 211577

631 Queen Anne Avenue North

Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	Isopropyl- benzene (ug/l)	n- Propylbenzene (ug/l)	1,3,5- Trimethyl benzene (ug/l)	1,2,4- Trimethylbenzene (ug/l)	p-Isopropyl toluene (ug/l)	n- butylbenzene (ug/l)	Naphthalene (ug/l)	Tetra- chloroethene (ug/l)	Tri- chloroethene (ug/l)	1,2- Dichloroethene (ug/l)	Chloroform (ug/l)	cis-1,2-Dichloroethene (ug/l)	sec-Butylbenzene (ug/l)
<b>MW-6</b>	Jul-02	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>MW-9</b>	Jun-00	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>MW-10</b>	Jul-02	2.00U	1.00U	1.00U	1.00U	1.00U	1.00U	2.00U	1.00U	1.00U	1.00U	1.00U	15.0	1.00
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>MW-11</b>	Jul-02	2.00U	1.00U	1.00U	1.00U	1.00U	1.00U	2.00U	1.00U	1.00U	1.00U	1.00U	1.00U	1.00U
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>MW-12</b>	Oct-02	1.00U	1.00U	1.00U	1.00U	1.00U	1.00U	1.00U	9.58	2.75	1.00	1.68	9.07	1.00U

**GROUNDWATER ANALYTICAL RESULTS**

**Volatile Organic Compounds**

Former Queen Anne Texaco 211577

631 Queen Anne Avenue North

Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	Isopropyl- benzene (ug/l)	n- Propylbenzene (ug/l)	1,3,5- Trimethyl benzene (ug/l)	1,2,4- Trimethylbenzene (ug/l)	p-Isopropyl toluene (ug/l)	n- butylbenzene (ug/l)	Naphthalene (ug/l)	Tetra- chloroethene (ug/l)	Tri- chloroethene (ug/l)	1,2- Dichloroethene (ug/l)	Chloroform (ug/l)	cis-1,2-Dichloroethene (ug/l)	sec-Butylbenzene (ug/l)
MW-13	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-14	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-15	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-16	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-17	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
RW-2	Jul-02	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
RW-3	Jul-02	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--

**GROUNDWATER ANALYTICAL RESULTS**

**Volatile Organic Compounds**

Former Queen Anne Texaco 211577

631 Queen Anne Avenue North

Seattle, WA

Sample I.D. <sup>(1)</sup>	Date	Isopropyl- benzene (ug/l)	n- Propylbenzene (ug/l)	1,3,5- Trimethyl benzene (ug/l)	1,2,4- Trimethylbenzene (ug/l)	p-Isopropyl toluene (ug/l)	n- butylbenzene (ug/l)	Naphthalene (ug/l)	Tetra- chloroethene (ug/l)	Tri- chloroethene (ug/l)	1,2- Dichloroethene (ug/l)	Chloroform (ug/l)	cis-1,2-Dichloroethene (ug/l)	sec-Butylbenzene (ug/l)
<b>RW-4</b>														
	Jul-02	2.00U	3.00	1.00U	20.0	2.00	1.00	5.00	1.00U	1.00U	1.00U	1.00U	1.00U	1.00U
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>RW-5</b>														
	Jul-02	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>Trip Blank LB</b>														
	Oct-02	--	--	--	--	--	--	--	--	--	--	--	--	--

1 - Well designations have historically varied. The designations used here are consistent with the designations shown on Figure \_\_\_\_\_  
(well designations in () indicate previous labeling)

(--)- Sample not analyzed.

DRY - Insufficient groundwater to sample

DUP - Duplicate samples

RA - Reported as o-xylene, total xylene not reported.

SPH - No sample collected due to the presence of separate phase hydrocarbons

U - The analyte was not detected at or above the reported value.

UTA- No sample collected, unable to access well due to parked vehicle.

UTL - No sample collected, unable to locate well



**GROUNDWATER ANALYTICAL RESULTS**

**Semivolatile Organic Compounds**

Former Queen Anne Texaco 211577

631 Queen Anne Avenue North

Seattle, WA

Sample I.D.	Date	2-Methylnaphthalene (µg/l)	2,4-Dichlorophenol (µg/l)	2,4-Dimethylphenol (µg/l)	Naphthalene (µg/l)	2-Methylphenol (µg/l)	4-Methylphenol (µg/l)	Bis(2-ethylhexyl) phthalate (µg/l)	Benzoic Acid (µg/l)	Phenol (µg/l)
VP-1	7/24/02	84.0	5.0U	80.0	160	13.0	18.0	31.0	10.0U	5.0U
VP-7	7/24/02	69.0	5.0U	28.0	420	5.0U	6.0	10.0U	34.0	5.0U
VP-8	7/24/02	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	10.0U	10.0U	5.0U
MW-4	7/24/02	160	5.0U	24.0	500	6.0	9.0	10.0U	10.0U	5.0U
MW-10	7/24/02	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	13.0	10.0U	5.0U
MW-11	7/24/02	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	10.0U	10.0U	5.0U
MW-12	10/18/02	10.0U	10.0U	10.0U	10.0U	10.0U	10.0U	50.0U	20.0U	10.0U
MW-14	11/14/02	52.2	10.0U	13.4	242	11.0	24.8	50.0U	20.0U	34.5
MW-15	11/14/02	10.0U	10.0U	10.0U	10.0U	10.0U	10.0U	50.0U	20.0U	37.0
RW-4	7/24/02	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	10.0U	10.0U	5.0U

<sup>(1)</sup> Results are for water, and reported as ug/L.

U - Analyte was not detected at or above the reported value.

Note: Only those analytes detected in the samples listed at or above the laboratory reporting limits have been included in this table, complete analytical laboratory reports are included as Appendix \_\_\_\_.