SOMA
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March 2, 2010

Mr. Paresh C. Khatri
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: **Fuel Leak Case #RO0000346**
Site Address: 3519 Castro Valley Boulevard, Castro Valley, CA
Castro Valley Gasoline Service Station

Dear Mr. Khatri:

SOMA's "Workplan for Well Reconstruction and Shallow Well Installation" for the subject property has been uploaded to the State GeoTracker database and Alameda County's FTP site for your review.

Thank you for your time in reviewing our report. If you have any questions or comments, please call me at (925) 734-6400.

Sincerely,

Mansour Sepehr, Ph.D., PE
Principal Hydrogeologist

Enclosure

cc: Mr. Mirazim Shakoori w/enclosure
Mr. Matt Herrick – Broadbent & Associates, Inc. w/enclosure

Workplan for Well Reconstruction and Shallow Well Installation

3519 Castro Valley Boulevard
Castro Valley, California

Project 2760

March 2, 2010

Prepared for:
Mr. Mirazim Shakoori
4313 Mansfield Drive
Danville, California

SOMA ENVIRONMENTAL ENGINEERING, INC.
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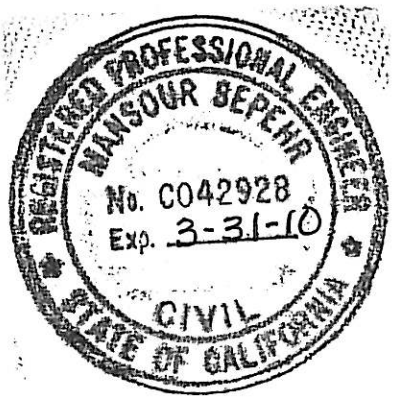
CERTIFICATION

SOMA Environmental Engineering, Inc. has prepared this workplan on behalf Mr. Mirazim Shakoori, property owner at 3519 Castro Valley Boulevard, Castro Valley, California in accordance with SOMA's September 28, 2009 "Soil and Groundwater Investigation Report." This workplan was prepared in response to a request by Alameda County Environmental Health Services, Environmental Protection division in correspondence dated February 10, 2010.

Mansour Sepehr, PhD, PE
Principal Hydrogeologist



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1. INTRODUCTION

SOMA Environmental Engineering, Inc. (SOMA) has prepared this workplan on behalf of Mr. Mirazim Shakoori, property owner of the Shell Service Station at 3519 Castro Valley Boulevard, Castro Valley, California. This workplan was prepared in response to a request from Alameda County Environmental Health Services (ACEHS), Environmental Protection division in correspondence dated February 10, 2010, and in accordance with SOMA's "Soil and Groundwater Investigation Report" dated September 28, 2009.

1.1 Site Location and Description

The site is located on the corner of Redwood Road and Castro Valley Boulevard (Figure 1). Prior to 1989, the site was a Mobil gasoline service station. In 1989, British Petroleum (BP) purchased and operated the station until ownership was transferred to Mr. Shakoori in 1993. The station was operated under the Chevron brand until recently, and now operates as a Shell gasoline service station.

Site features, including former and current USTs and the former dispenser island, are shown in Figure 2. Site history, including previous remediation activities, is summarized in Appendix A.

1.2 Regional and Site Geology and Hydrogeology

The site is located in the Coast Range Geomorphic Province, on the eastern side of San Francisco Bay, approximately 1 mile west of the Hayward Fault. The U.S. Geologic Survey (USGS) mapped the site as weakly consolidated, slightly weathered, poorly sorted, irregular interbedded clay, silt, sand, and gravel. In addition, in developed urban areas such as the Bay Area, earthwork construction often involves emplacement of artificial fill derived from nearby cuts or quarries; quite often, artificial fill is emplaced over native earth materials to provide level building pads and base rock for roadways.

Per ACEHS correspondence in 1994, the site is located in the Castro Valley Basin, an isolated structural basin surrounded on the west, north, and east by folded and faulted uplands comprised of Cretaceous sandstone, shale, and conglomerates of marine origin. The valley is bounded on the west by active traces of the Hayward fault. Sediments collected in the valley are mostly of fluvial origin and relatively thin (<100 feet thick). Based on overall structure and topography of the basin in which Castro Valley is located, heterogeneity of sediments (sands, silts, and clays), depth at which groundwater is first encountered and where it eventually stabilizes, and past evidence at this and nearby sites, it is reasonable to conclude that groundwater may be present under confined or semi-confined conditions in the vicinity of the site.

According to California's Groundwater Bulletin 118, the principal water bearing formation of the Castro Valley Groundwater Basin is alluvium of Pleistocene age, which unconformably overlies consolidated non–water-bearing rock of Jurassic age and underlies a thin surficial deposit of alluvium of Holocene age. The Pleistocene alluvium is a heterogeneous mixture of unconsolidated clay, silt, sand, and gravel with a maximum thickness of 80 feet. Per Bulletin 118, groundwater is unconfined and yields are limited, usually sufficient only for lawn irrigation. Per USGS (W-RIR 02-4259, 2003), this alluvium is part of the Newark aquifer that is present in the East Bay Flatlands to a depth of 30 to 130 feet below ground surface (bgs). Water in the Newark aquifer is generally confined except near recharge areas along the mountain front.

The uplands north, east, and west of the valley likely represent areas of groundwater recharge from rain infiltration to aquifers present in the valley. The major drainage through the valley is San Lorenzo Creek located approximately 0.75 mile east of the site.

Depth to first encountered groundwater at the site has historically been between 18 and 31 feet bgs, later stabilizing to between 6.5 and 11.5 feet bgs (except in DP-4, which stabilized to only 28 feet bgs). Stable groundwater has historically been observed from 2.36 to 12.02 feet bgs in groundwater monitoring wells. During the First Semi-Annual 2010 groundwater monitoring event, groundwater was observed to flow southeasterly across the site at an approximate gradient of 0.014 feet/feet. The Rose diagrams in Figure 2 demonstrate historical groundwater flow directions at the site and vicinity.

1.3 Evaluation of Appropriateness of Well Screening Intervals

In their January 8, 2009 correspondence, ACEHS questioned the appropriateness of screening intervals for several monitoring wells located at the site. Specifically, the correspondence pointed out that some screening intervals may be excessively long and that static groundwater is above the screened intervals for MW-6, MW-7, SOMA-1, SOMA-2, and SOMA-4; therefore, concentrations of contaminants in these wells might not be representative of actual site conditions. Currently, ESE-1 and ESE-2 are screened from 10 to 30 feet bgs, ESE-5 from 9 to 24 feet bgs, SOMA-3 from 10 to 15 feet bgs, MW-6 and MW-7 from 18 to 30 feet bgs, SOMA-1 from 22 to 30 feet bgs, and SOMA-2 and SOMA-4 from 16 to 23 feet bgs. MW-8 was screened from 9 to 20 feet bgs prior to decommissioning during expansion of Redwood Road.

Stable groundwater has historically been observed from 2.36 (abnormally high and possibly unrepresentative of on-site conditions) to 12.02 feet bgs in groundwater monitoring wells, seasonal groundwater fluctuations are shown in Table 1. In the March 2009 Site Conceptual Model (SCM) report, a data gap was identified during evaluation of well screening intervals regarding whether the

screened water-bearing zone (WBZ) at the site is confined, semi-confined or unconfined. If the WBZ is semi-confined to confined, then some wells are screened through the petroleum hydrocarbon (PHC) impacted confining unit, which may be introducing contaminants to the groundwater; if unconfined, then contaminant concentrations may be diluted within wells with excessively long screening intervals.

To address this data gap, SOMA installed shallow groundwater monitoring well SOMA-5 within the vadose zone to a depth of 15 feet bgs. The well was placed within five feet of ESE-1 on the east side of the station building and is screened from 5 to 15 feet bgs, through the potentiometric surface. No groundwater was encountered during well placement on August 18, 2009. On September 4, 2009, during well surveying as part of the SCM, SOMA field personnel measured depth to water for the newly installed well. Groundwater was encountered at 10.48 feet bgs, suggesting either seepage flow from the confined WBZ or a possible shallow perched water bearing zone. Groundwater elevations measured during the most recent groundwater monitoring event (First Semi-Annual 2010) for SOMA-5 was 172.37 feet, compared to 172.14 feet for SOMA-1 (screened entirely within the confined WBZ. Due to insignificant groundwater elevation difference between the two WBZ, it may be concluded that the perched WBZ is entirely being recharged from the confined WBZ through vertical upward seepage.

Based on the response of groundwater in DP-1 through DP-7 (fast recovery to much shallower depth, except in DP-4) groundwater under the site appears to be confined. Based on information presented in the cross-sections (Figures 5 through 7) the confining unit at the site is laterally continuous. The presence of groundwater at shallow depth bgs, above the Confined WBZ suggests that there is a shallow perched WBZ with a low recharge rate or as stated above, that vertical seepage is occurring within the confining unit. It is likely that the existing wells with long screened intervals are completed within the shallow zone and the Confined WBZ. As such, some of the existing wells are most likely causing cross contamination between the shallow zone and the Confined WBZ. Figure 4 illustrates locations of cross-sections, and Figures 5, 6, and 7 illustrate updated cross-sections A-A', B-B', and B-A'.

Elevated PHC and BTEX concentrations (Table 1) at SOMA-5 suggest that the shallow zone is significantly impacted by PHCs. In order to determine if there is a shallow perched WBZ or if seepage flow is occurring, as well as whether the PHC impact results from on-site or off-site sources, additional investigation to characterize the shallow perched zone is warranted.

2. SCOPE OF WORK

SOMA recommended replacing existing wells that are screened across the shallow zone and the confined WBZ (ESE-1, ESE-2, ESE-5, MW-6, and MW-7)

with wells screened only within the confined WBZ. In their February 10, 2009 correspondence, ACEHS recommended installing well clusters with wells screened in the shallow zone and placed adjacent to wells screened within the confined WBZ to evaluate both WBZs. SOMA concurs with the ACEHS recommendation. Below are listed the basic tasks to achieve it, with details following.

Task 1: Permit acquisition, Health and Safety Plan preparation, and subsurface utility clearance

Task 2: Well installation and development

Task 3: Soil and groundwater sample collection and laboratory analysis

Task 4: Report Preparation

2.1 Task 1: Permit Acquisition, Health and Safety Plan, Subsurface Utility Clearance

2.1.1 Permit Acquisition

Prior to initiating field assessment activities, SOMA will obtain all required drilling permits from Alameda County Department of Public Works.

2.1.2 Health and Safety Plan

SOMA will prepare a site-specific Health and Safety Plan (HASP). The HASP is a requirement of the Occupational Safety and Health Administration (OSHA), "Hazardous Waste Operation and Emergency Response" guidelines (29 CFR 1910.120) and the California Occupational Safety and Health Administration (Cal/OSHA) "Hazardous Waste Operation and Emergency Response" guidelines (CCR Title 8, section 5192). The HASP is designed to address safety provisions during field activities and protect the field crew from physical and chemical hazards resulting from drilling and sampling. The HASP establishes personnel responsibilities, general safe work practices, field procedures, personal protective equipment standards, decontamination procedures, and emergency action plans. The HASP will be reviewed and signed by field staff and contractors prior to beginning field operations at the site.

2.1.3 Subsurface Utility Clearance

SOMA's field crew will mark the site with washable white paint and then notify Underground Service Alert (USA) to ensure that drilling areas are clear of underground utilities. Following USA clearance, SOMA will retain a private utility locator to survey proposed drilling areas and locate any additional subsurface conduits.

2.2 Well Reconstruction and Shallow Well Installation

2.2.1 Well Reconstruction

SOMA proposes replacing ESE-1, ESE-2, ESE-5, MW-6 and MW-7 with wells screened within the confined WBZ (Figure 3). The wells will be over drilled utilizing a hollow stem drilling auger (HSA) and all casing and annular materials removed. Based on subsurface lithology (Figures 5 through 7), SOMA recommends that ESE-1, ESE-2, and MW-6, which were originally advanced to 30 feet bgs, be backfilled so that the total well depth is 25 feet bgs for ESE-1 and 28 feet bgs for ESE-2 and MW-6. After all annular and casing material is removed, the wells will be reinstalled with 2-inch-diameter PVC casings and 0.02-inch-wide by 1.5-inch-long factory-slotted perforations; the upper portion of each well will consist of blank PVC. Based on previous investigations, the length of perforated interval of each well will be screened within the confined WBZ as shown in the table below.

Well ID	Current TD (feet)	Current Screen Interval (feet)	Proposed TD (feet)	Proposed Screen Interval (feet)	Proposed Annular Seal (feet)
ESE-1	30	10 to 30	25	18 to 25	0 to 16
ESE-2	30	10 to 30	28	22 to 28	0 to 20
ESE-3	24	9 to 24	24	18 to 24	0 to 16
MW-6	30	18 to 30	28	22 to 28	0 to 20
MW-7	30	18 to 30	30	24 to 30	0 to 22

A No. 3 Monterey sand pack filter, or other appropriate sand pack based on observed lithology, will be emplaced around the screens and, if possible, surged to consolidate the filter packs and eliminate voids. The filter packs will be emplaced to a height of at least 1 foot above the top of the screens. The filter pack will be sealed with at least a 1-foot-thick hydrated bentonite plug followed by an annular grout seal of neat cement. A PVC cap will be fitted to the bottom casings, without adhesives or tape, to protect the monitoring wells from accidental damage or tampering; traffic rated utility box with internal steel protective covers and locking caps will be placed over the monitoring wellheads, and will be set in concrete and resting flush with existing grade. A description of general field procedures is included in Appendix B

2.3 Shallow Well Installation

SOMA proposes installing four additional groundwater monitoring wells (SOMA-6 through SOMA-9) adjacent to the reconstructed wells (within 5 feet) and completed within the shallow zone. As shown in Figure 3, the proposed wells would form a cluster allowing for evaluation of both WBZs as well as evaluation

of the extent of cross-contamination. Because SOMA-5 was constructed approximately 5 feet from ESE-1, SOMA does not recommend constructing a second shallow monitoring well adjacent to ESE-1.

To clear all underground utilities, wells will be hand augured to 5 feet bgs. Using HSA drilling technology, well boreholes will be continuously cored to 14 or 15 feet bgs as shown below and dependent on observed subsurface lithologies observed in the field. SOMA's field geologist will log the continuous soil core and characterize the content of each soil-filled tube using the Visual-Manual method of the Unified Soil Classification System. In addition, cored soil will be checked for attributes characteristic of smear zone, including hydrocarbon odors, visual staining, liquid phase hydrocarbons (free product), and screened using a photo-ionizing detector (PID). PID readings will be noted on boring logs. Soil samples will be collected at intervals of elevated PID readings, staining, or odor. Absent elevated PID readings or obvious signs of contamination, two soil samples will be collected from each shallow well borehole. Both ends of each sampling tube will be secured using Teflon tape and end caps and tubes will be immediately placed in a chilled ice chest. Soil samples will be delivered to a California state-certified laboratory for analysis.

Well ID	Adjacent to Well	Proposed TD (feet)	Proposed Screen Interval (feet)	Proposed Annular Seal (feet)
SOMA-6	ESE-2	15	5 to 15	0 to 3
SOMA-7	ESE-5	14	5 to 14	0 to 3
SOMA-8	MW-6	15	5 to 15	0 to 3
SOMA-9	MW-7	14	5 to 14	0 to 3

Wells will be installed with 2-inch-diameter PVC casings and 0.02-inch-wide by 1.5-inch-long factory-slotted perforations; the upper portion of each well will consist of blank PVC. Based on previous investigations, the length of perforated interval of each well will be as shown above, varying depending on observed lithology and field observations. A No. 3 Monterey sand pack filter, or other appropriate sand pack based on the observed lithology, will be emplaced around the screens and, if possible, surged to consolidate the filter packs and eliminate voids. The filter packs will be emplaced to a height of at least 1 foot above the top of the screens. The filter pack will be sealed with at least a 1-foot-thick hydrated bentonite plug followed by an annular grout seal of neat cement. A PVC cap will be fitted to the bottom casings, without adhesives or tape, to protect the monitoring wells from accidental damage or tampering; a traffic rated utility box with internal steel protective covers and locking caps will be placed over the monitoring wellheads, and will be set in concrete and resting flush with existing grade.

Soil and wastewater generated during boring activities will be temporarily stored on-site in separate DOT-rated, 55-gallon steel drums pending characterization, profiling, and transport to an approved disposal/recycling facility. A description of general field procedures is included in Appendix B

2.3.1 Well Survey and Development

A licensed surveyor will survey all reconstructed and newly installed wells to comply with Geotracker requirements. The survey report will be included as an appendix to SOMA's final report.

SOMA will develop the reconstructed and newly installed wells a minimum of 72 hours following installation. Wells will be developed by bailing out sediment-rich groundwater followed by pumping and surging. This process will continue until the purged groundwater clarifies substantially and groundwater quality parameters have stabilized. Groundwater stabilization parameters will be maintained during the development process and records of this data will be included as an appendix to SOMA's final report. Upon well development, groundwater samples will be collected in 1-liter containers and in 40-mL VOA vials, pre-preserved with hydrochloric acid (depending on planned sample analysis), which will be completely filled and sealed properly to prevent air bubbles from forming within the vial headspace. Samples will then be labeled with unique sample identifiers and date and time of sample collection, recorded on a chain-of-custody form, and placed in a cooled ice chest pending transport to a California state-certified analytical laboratory for analysis.

2.3.2 Soil and Groundwater Sample Analysis

Grab groundwater and soil samples will be submitted to a California state-certified environmental laboratory for analyses and analyzed for the following:

- Total PHCs as gasoline (TPH-g), diesel (TPH-d), and motor oil (TPH-mo)
- Benzene, toluene, ethyl benzene and total xylenes (BTEX), methyl tertiary-butyl ether (MtBE)
- Volatile organic compounds (VOCs) and fuel oxygenates, additives and lead scavengers including tertiary-butyl alcohol (TBA), ethyl tertiary-butyl ether (ETBE), diisopropyl ether (DIPE), tertiary-amyl methyl ether (TAME), 1,2-dichloroethane (1,2-DCA), 1,2-dibromoethane (EDB), and ethanol.

All analysis will be conducted using USEPA Method 8260B, except for TPH-d and TPH-mo to be conducted using USEPA Method 8015.

3. SCHEDULE

The workplan will be implemented upon receipt of written authorization from ACEHS. SOMA anticipates that the scope of work described in this workplan will be completed within 90 days, under normal conditions, from the date of obtaining necessary approvals, authorizations and permits. Field activities will be scheduled according to availability of necessary equipment and field personnel.

FIGURES

N

approximate scale in feet

0 60 120

Figure 1: Site vicinity map.

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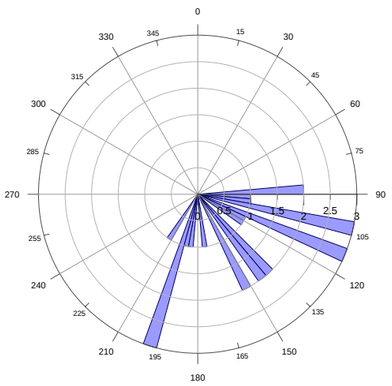
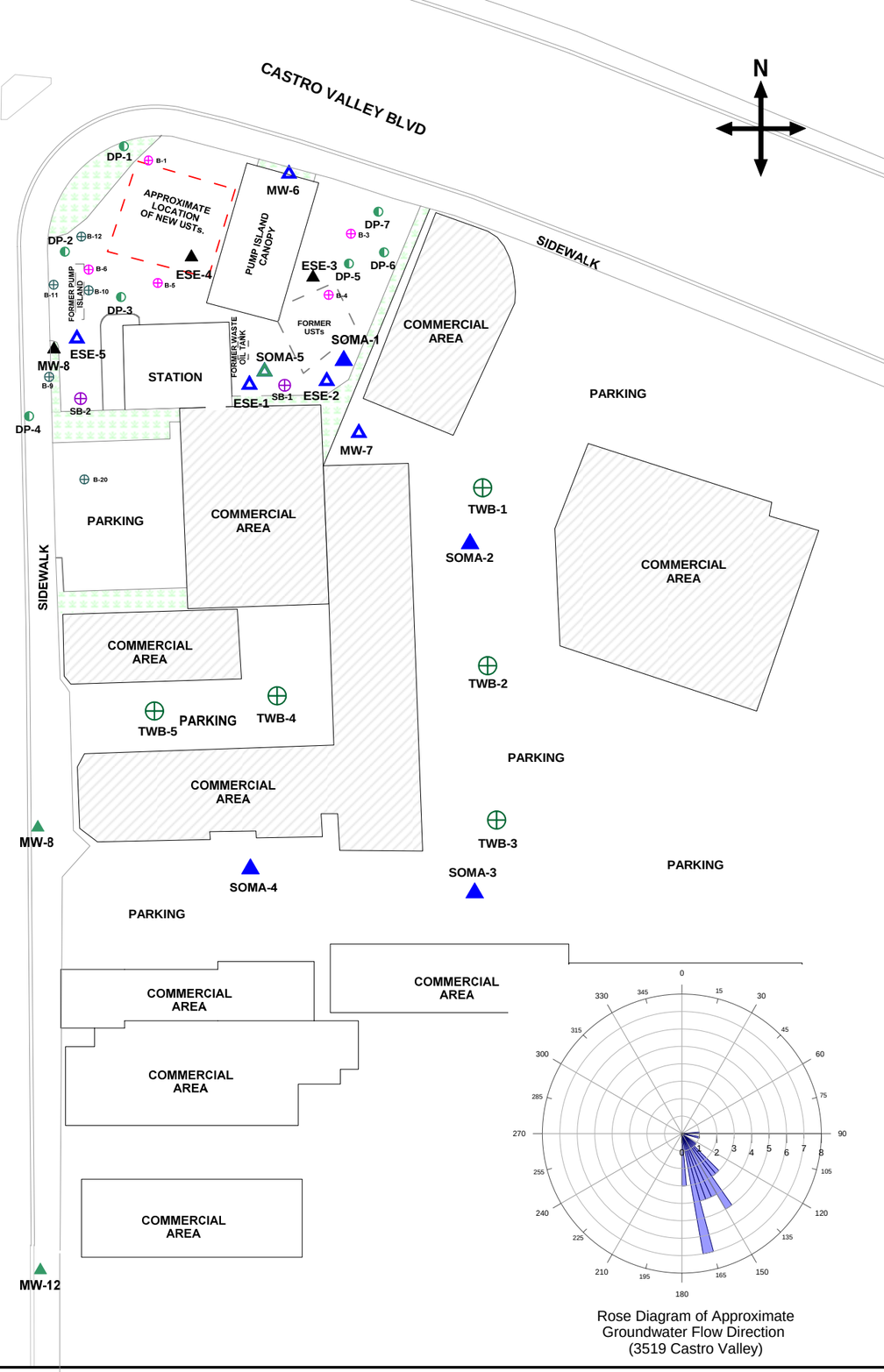


Rose Diagram of Approximate Groundwater Flow Direction (3495 Castro Valley)

NOTES:
ESE-3 and ESE-4 were decommisioned during UST tank excavation activites.

MW-8 was decommissioned by the previous consultant.



Rose Diagram of Approximate Groundwater Flow Direction (3519 Castro Valley)

approximate scale in feet
0 60 120

Figure 2: Site Map Showing Locations of Existing Monitoring Wells, Decommissioned Wells, Off-Site Temporary Well Boreholes, Monitoring Wells Installed by SOMA, Monitoring Wells Located at Neighboring Service Station, and On-Site Boreholes

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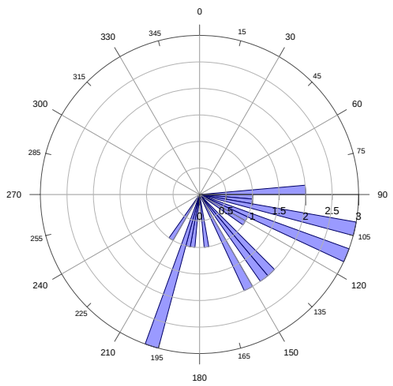
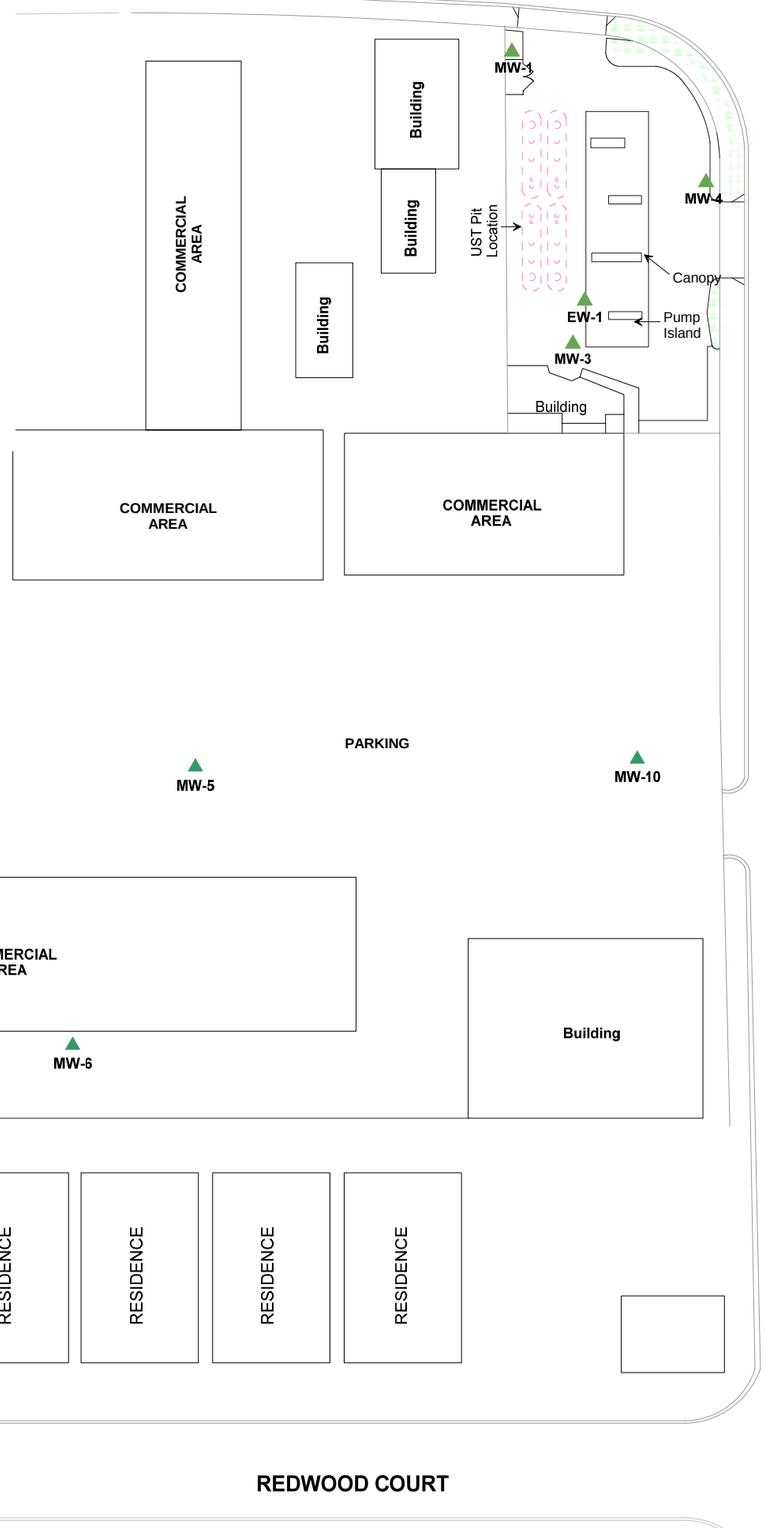
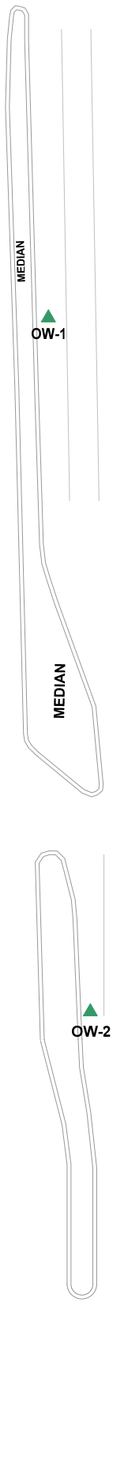
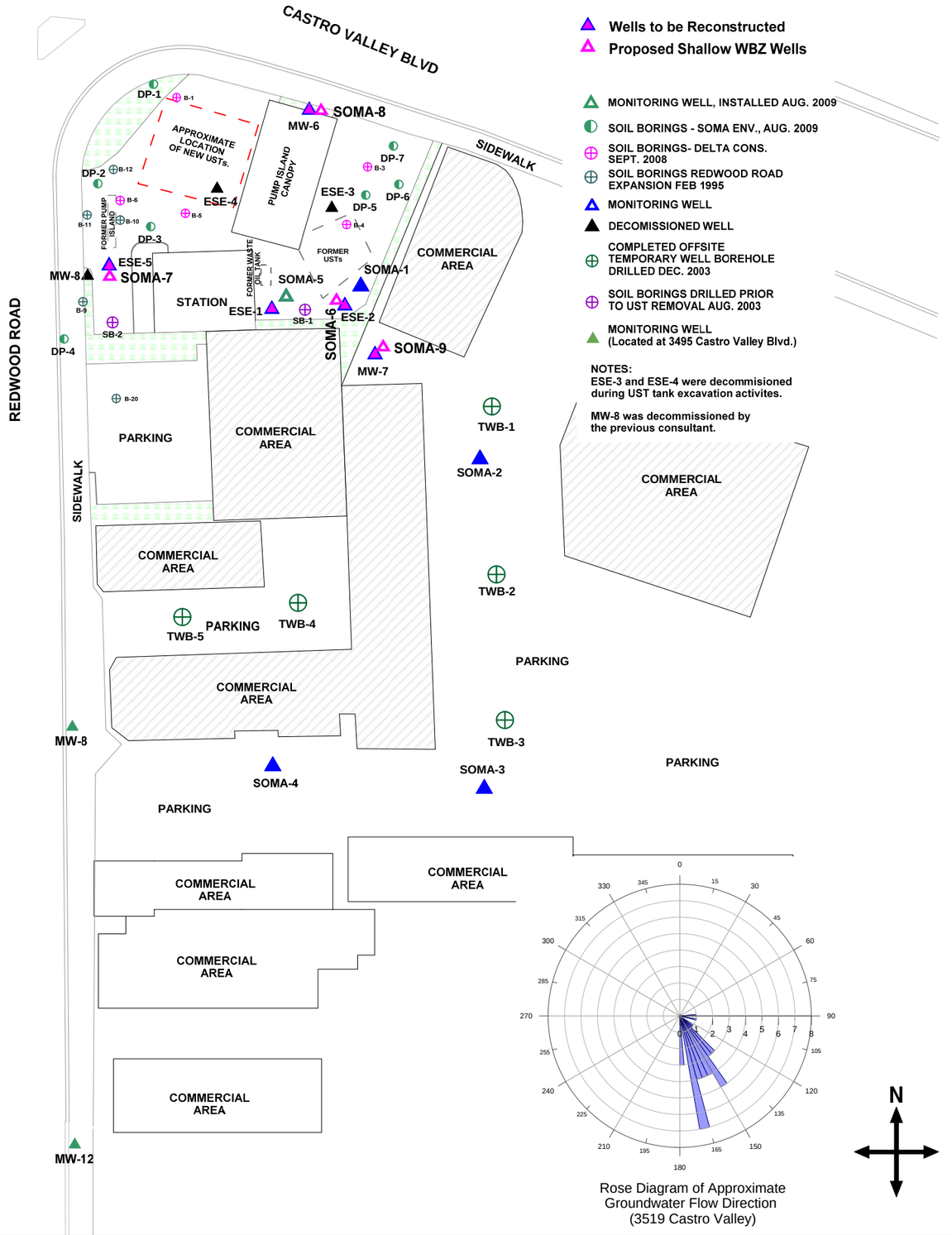


Rose Diagram of Approximate Groundwater Flow Direction (3495 Castro Valley)







- Wells to be Reconstructed
- Proposed Shallow WBZ Wells
- MONITORING WELL, INSTALLED AUG. 2009
- SOIL BORINGS - SOMA ENV., AUG. 2009
- SOIL BORINGS- DELTA CONS. SEPT. 2008
- SOIL BORINGS REDWOOD ROAD EXPANSION FEB 1995
- MONITORING WELL
- DECOMISSIONED WELL
- COMPLETED OFFSITE TEMPORARY WELL BOREHOLE DRILLED DEC. 2003
- SOIL BORINGS DRILLED PRIOR TO UST REMOVAL AUG. 2003
- MONITORING WELL (Located at 3495 Castro Valley Blvd.)

NOTES:
ESE-3 and ESE-4 were decommisioned during UST tank excavation activites.

MW-8 was decommissioned by the previous consultant.

Rose Diagram of Approximate Groundwater Flow Direction (3519 Castro Valley)

N

approximate scale in feet
0 60 120

Figure 3: Site Map Showing Location of Proposed Monitoring Well Clusters

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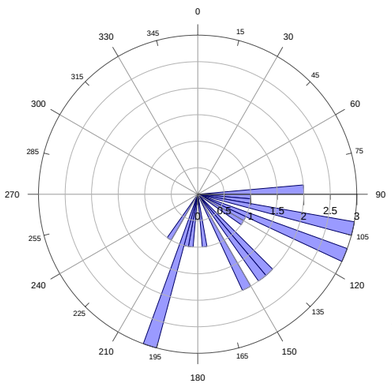

Rose Diagram of Approximate Groundwater Flow Direction (3495 Castro Valley)

NOTES:
ESE-3 and ESE-4 were decommisioned during UST tank excavation activites.

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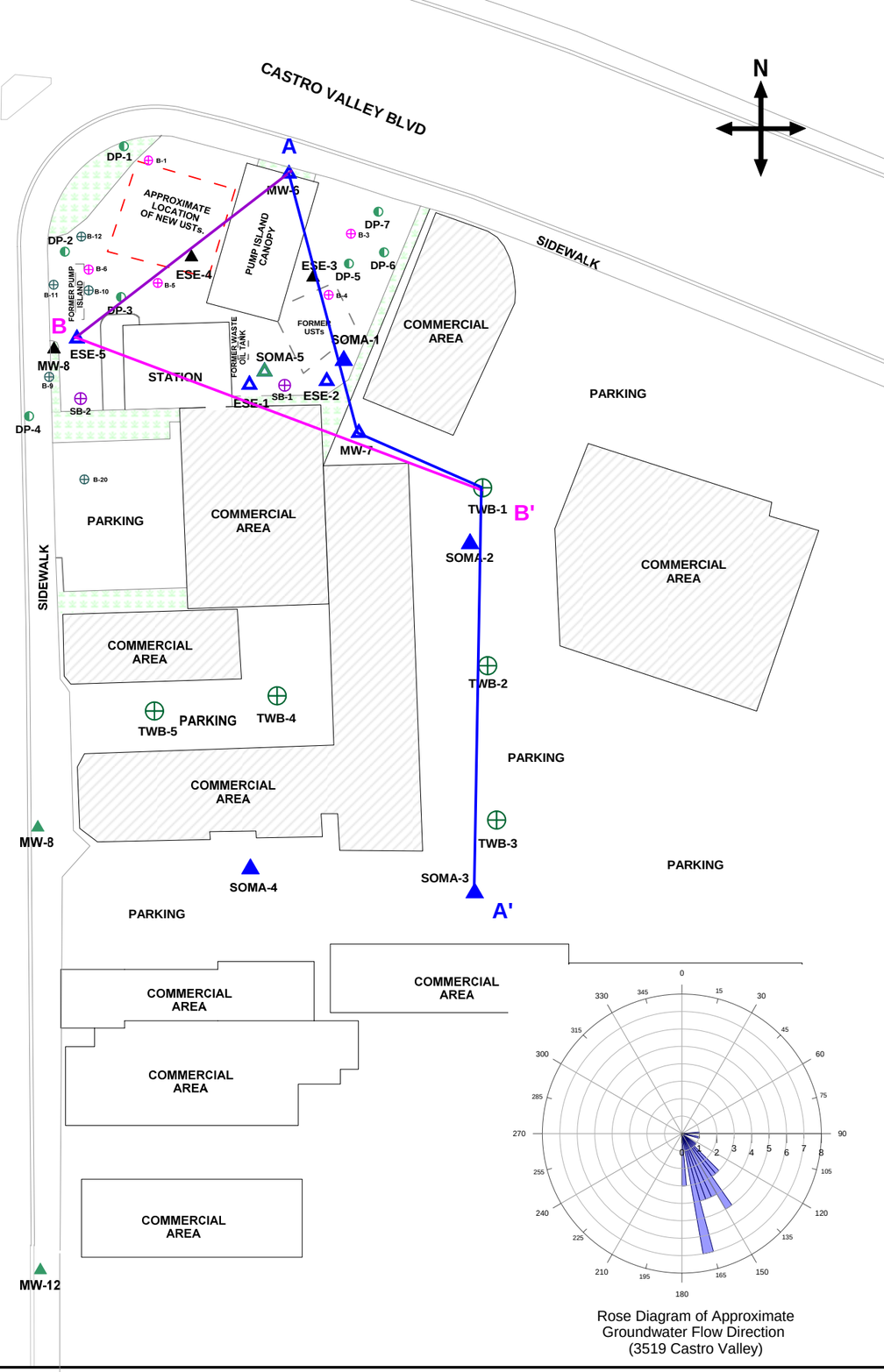

Rose Diagram of Approximate Groundwater Flow Direction (3519 Castro Valley)

approximate scale in feet
0 60 120

Figure 4: Site Map Showing the Locations of Geological Cross-Sections

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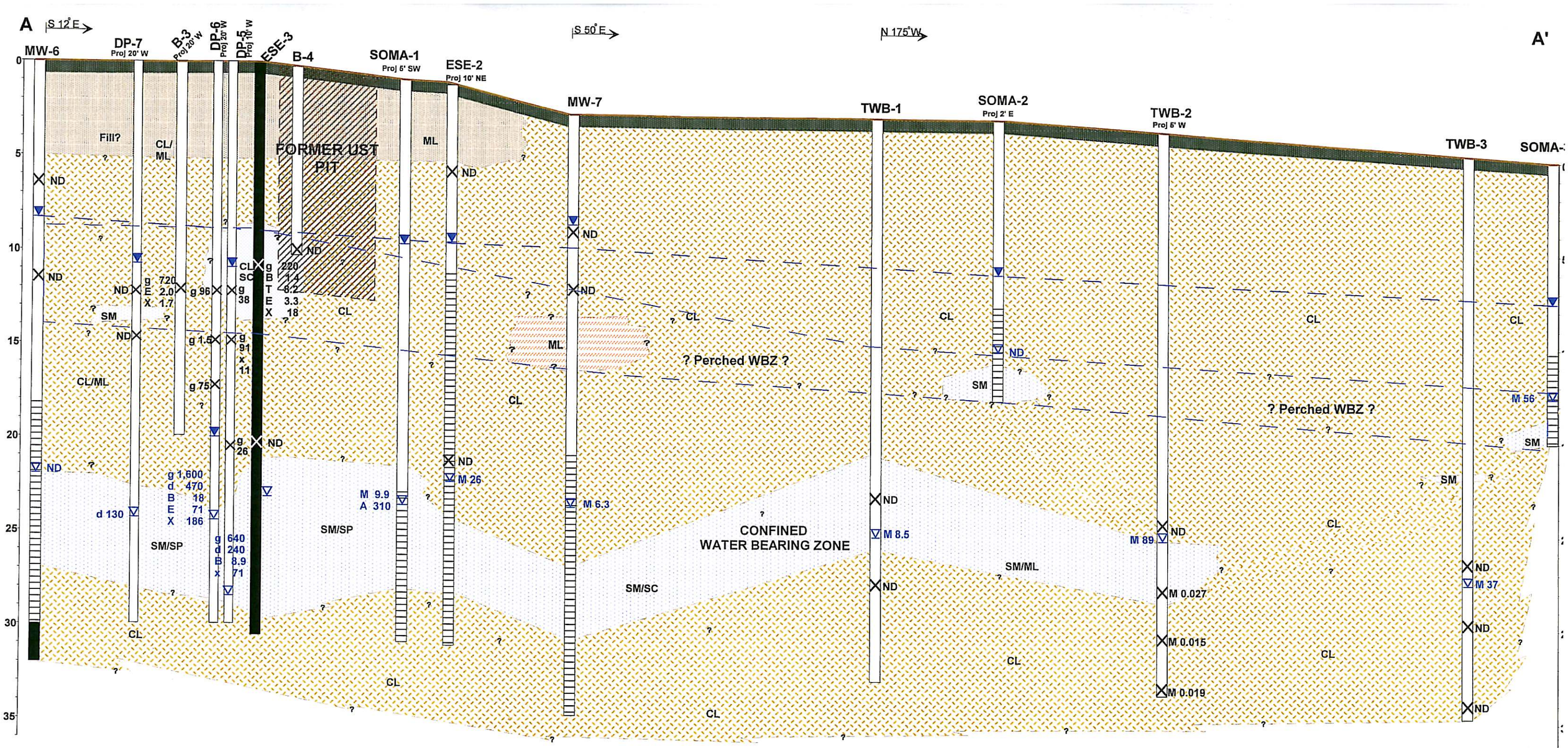

5

0 20

approximate scale in feet

100 Soil Sampling Data (mg/kg)
g - TPH-g
d - TPH-d
B - Benzene
T - Toluene
E - Ethyl Benzene
X - Total Xylenes
M - MtBE

ND - below detection limits

100 Groundwater Sampling Data (ug/L)
Samples 1/27/10, TWB Samples 12/2/03

g - TPH-g
d - TPH-d
B - Benzene
T - Toluene
E - Ethyl Benzene
X - Total Xylenes
M - MtBE

ND - below detection limits

Legend

ML Sandy Silt
CL Clay/Silty Clay
SM Silty Sand
SP Sand
SC Clayey Sand

EXPLANATION

First groundwater observed in sediment cores
Stabilized Groundwater Observed during Monitoring
Stabilized Groundwater Level
Screened Interval
Well Destroyed Dec 2003

Figure 5: Geologic Cross-Section A-A'

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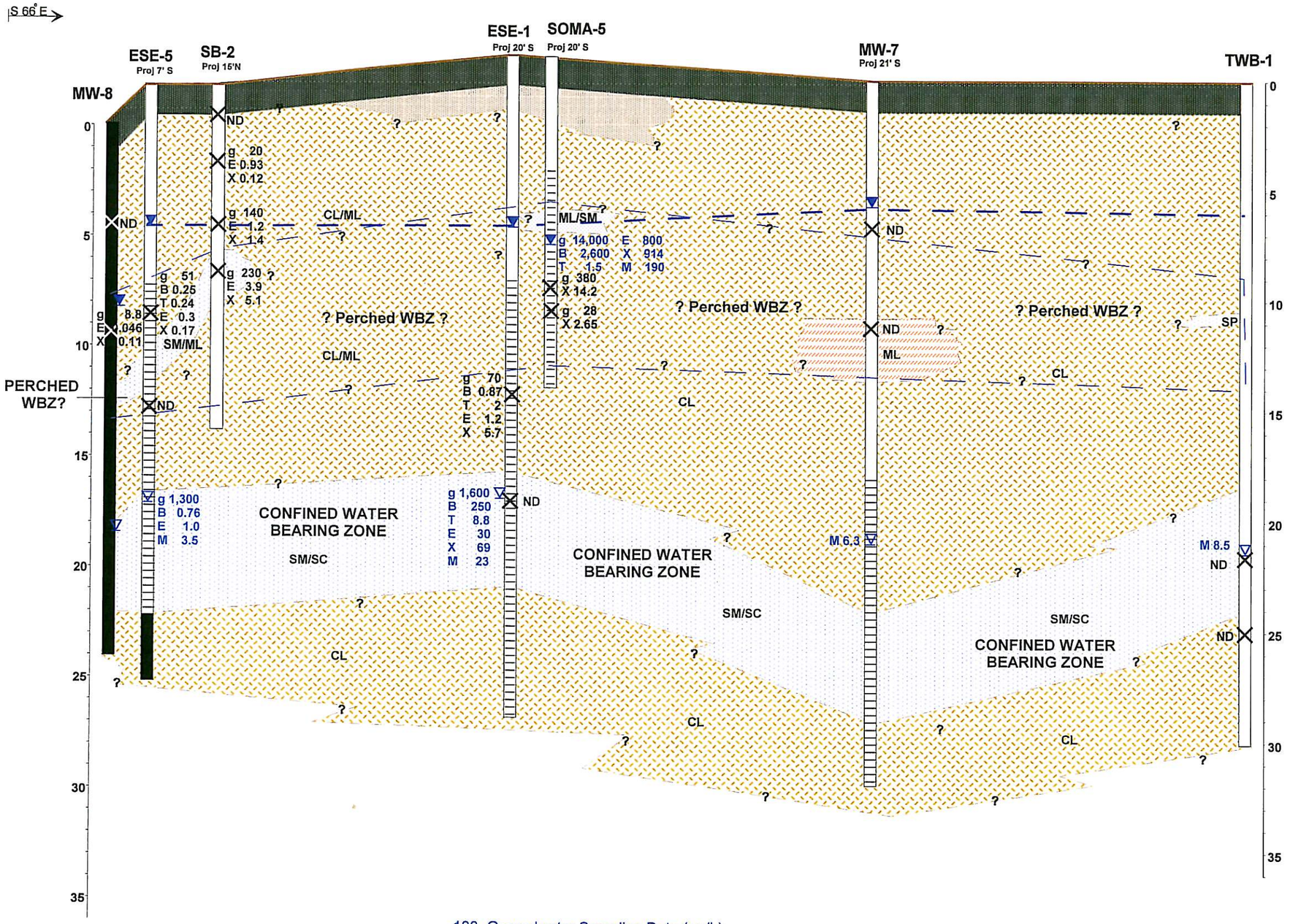
B

B'



5
0 20
approximate scale in feet

100 Soil Sampling Data (mg/kg)
g - TPH-g
d - TPH-d
B - Benzene
T - Toluene
E - Ethyl Benzene
X - Total Xylenes
M - MtBE

ND - below detection limits

100 Groundwater Sampling Data (ug/L)
Samples 1/27/10, TWB Samples 12/2/03

g - TPH-g
d - TPH-d
B - Benzene
T - Toluene
E - Ethyl Benzene
X - Total Xylenes
M - MtBE
A - TBA
ND - below detection limits

Legend

ML Sandy Silt
CL Clay/Silty Clay
SM Silty Sand
SP Sand
SC Clayey Sand

EXPLANATION

First groundwater observed in sediment cores
Stabilized Groundwater Observed during Monitoring
Stabilized Groundwater Level
Screened Interval
Well Destroyed Dec 2003

Figure 6: Geologic Cross-Section B-B'

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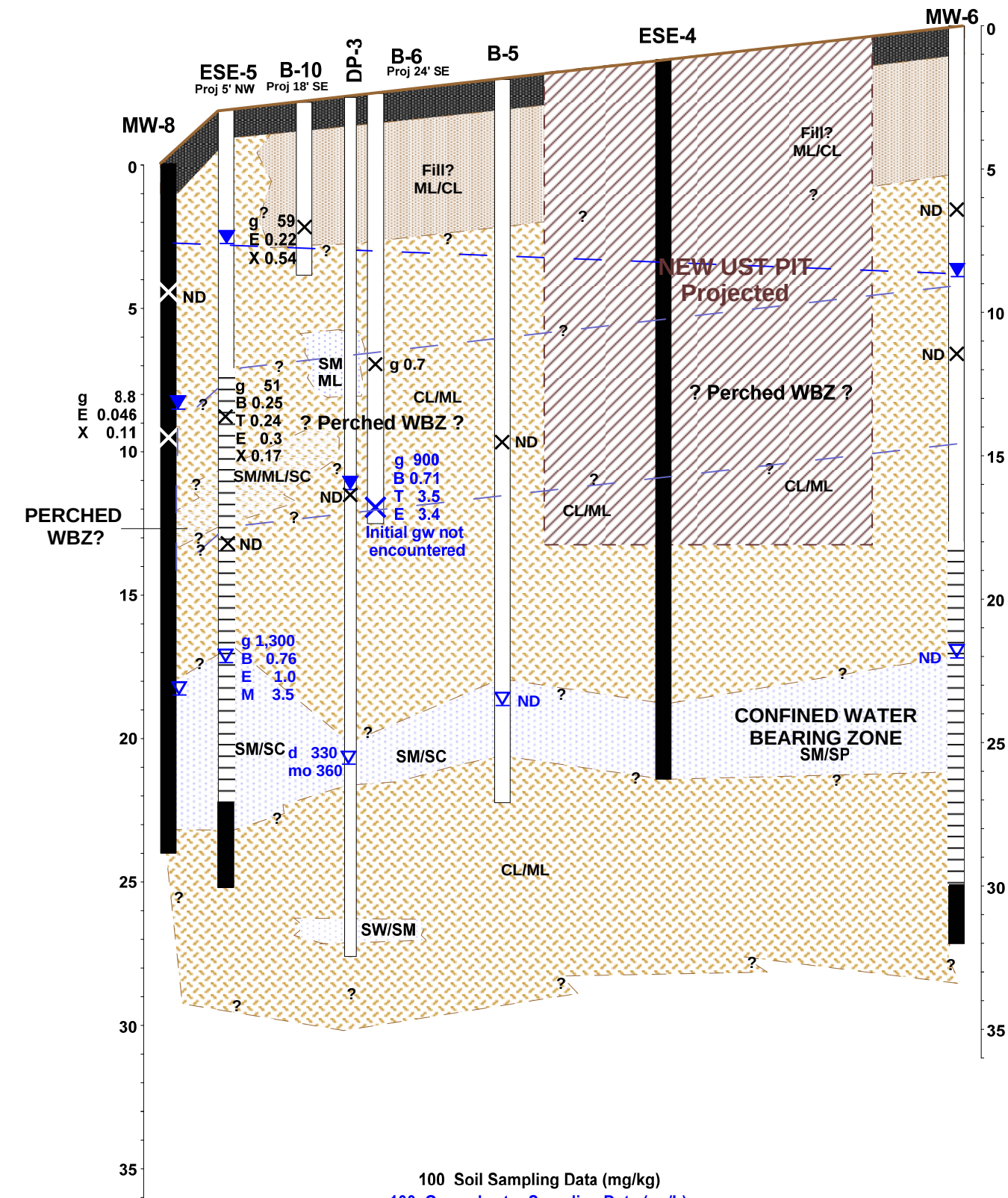

100 Soil Sampling Data (mg/kg)

100 Groundwater Sampling Data (ug/L)
Samples 1/27/10

g - g - TPH-g
d - d - TPH-d
B - B - Benzene
T - T - Toluene
E - E - Ethyl Benzene
X - X - Total Xylenes
M - M - MtBE
A - TBA
ND - ND - below detection limits

Legend

ML Sandy Silt
CL Clay/Silty Clay
SM Silty Sand
SP Sand
SC Clayey Sand

EXPLANATION

- First groundwater observed in sediment cores
- Stabilized Groundwater Observed during Monitoring
- Stabilized Groundwater Level
- Screened Interval
- Well Destroyed Dec 2003

5

0 20

approximate scale in feet

Figure 7: Geologic Cross-Section B-A

SOMA ENVIRONMENTAL ENGINEERING, INC.

TABLES

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
ESE-1	10/5/1992	177.69	11.22	166.47	2100	370	150	17	110	NA
	10/5/1992	177.69	NM	NM	2300	370	160	16	110	NA
	4/1/1993	177.69	8.79	168.90	5900	1500	410	110	390	NA
	6/29/1993	177.69	10.34	167.35	7600	2900	390	130	460	NA
	9/23/1993	177.69	10.91	166.78	2000	490	40	20	56	600
	9/23/1993	177.69	NM	NM	1500	420	39	19	56	550
	12/10/1993	177.69	9.93	167.76	1800	480	42	19	66	921
	12/10/1993	177.69	NM	NM	1500	380	38	17	55	770
	2/17/1994	177.69	9.64	168.05	1900	380	48	24	80	585
	2/17/1994	177.69	NM	NM	2200	430	42	19	65	491
	8/8/1994	177.69	11.72	165.97	2100	450	46	16	50	760
	10/12/1994	177.69	10.48	167.21	760	240	16	51	39	230
	1/19/1995	177.69	7.77	169.92	840	600	120	22	58	NA
	5/2/1995	177.69	8.69	169.00	2000	640	67	24	98	NA
	7/28/1995	177.69	10.12	167.57	190	<0.50	<0.50	<0.50	<1.0	NA
	11/17/1995	177.69	10.57	167.12	200	3.4	<1.0	1	<2.0	600
	2/7/1996	177.69	7.41	170.28	750	370	23	21	64	680
	4/23/1996	177.69	9.12	168.57	310	100	<1.0	<1.0	<1.0	1500
	7/9/1996	177.69	10.12	167.57	730	230	74	13	63	750
	10/10/1996	177.69	10.80	166.89	420	26	1.6	7.3	12	430

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
ESE-1 cont.	1/20/1997	177.69	10.52	167.17	660	290	4.2	13	36	450
	4/25/1997	177.69	9.77	167.92	410	<0.5	<1.0	<1.0	<1.0	580
	7/18/1997	177.69	10.55	167.14	420	<0.5	<1.0	<1.0	<1.0	370
	10/27/1997	177.69	10.36	167.33	300	56	<1.0	6.5	<1.0	220
	1/22/1998	177.69	7.52	170.17	4200	440	9	15	17.7	1300
	4/23/1998	177.69	8.80	168.89	15000	3400	190	910	900	4900
	4/23/1998	177.69	NM	NM	15000	2800	140	730	730	4400
	7/29/1998	177.69	9.73	167.96	NA	NA	NA	NA	NA	NA
	7/30/1998	177.69	NM	NM	15000	<2.5	<5.0	<5.0	<5.0	15000
	12/17/1998	177.69	9.51	168.18	2400	73	1	2.8	4.6	2000
	3/19/1999	177.69	8.65	169.04	4700	58	<1.0	<1.0	<1.0	4700
	6/23/1999	177.69	10.51	167.18	600	170	<1.0	7.2	5	3900
	9/27/1999	177.69	10.32	167.37	920	200	<25	<25	<25	4900
	12/9/1999	177.69	10.24	167.45	460	130	1.2	5.2	1.5	5100
	3/9/2000	177.69	7.72	169.97	3000	1300	120	80	140	7300
	6/8/2000	177.69	9.40	168.29	2900	540	9.7	20	17	5200
	9/18/2000	177.69	10.05	167.64	890	3.4	<0.5	1.4	<0.5	2800
	12/14/2000	177.69	8.20	169.49	1600	11.1	<0.5	<0.5	<0.5	2730
	3/21/2001	177.69	9.75	167.94	5700	2.28	<0.5	0.51	<1.5	6810
	6/18/2001	177.69	10.21	167.48	2000	152	0.669	3.62	2.34	1980
	9/18/2001	177.69	10.30	167.39	2500	57.1	<5.0	6.25	<15	2090
	12/13/2001	177.69	9.82	167.87	2800	208	6.05	8.54	9.66	2030
	3/14/2002	177.69	9.10	168.59	1800	140	6.31	4.5	9.41	1970
	6/19/2002	177.69	9.92	167.77	1100	220	2.02	4.23	3.8	1280
	9/10/2002	177.69	10.21	167.48	490	39	2.9	<2.0	4.9	670
	12/16/2002	177.69	8.56	169.13	730	140	6	3.2	9.1	670

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
ESE-1 cont.	3/11/2003	177.69	9.40	168.29	1700	490	21	22	41	530
	6/17/2003	177.69	9.86	167.83	1300	140	<10	<10	<10	480
	12/9/2003	177.69	9.32	168.37	1400	390	12	14	26.1	260
	2/26/2004	177.69	7.71	169.98	3200	880	50	44	89	200
	5/21/2004	177.69	10.19	167.50	1500	370	10	14	25.2	140
	8/10/2004	180.24	10.41	169.83	460	390	7	8.1	15.4	110
	10/19/2004	180.24	10.40	169.84	1600	490	13	12	25.3	110
	1/14/2005	180.24	8.26	171.98	790 Z	420	26	19	52	91
	4/14/2005	180.24	8.77	171.47	3020	766	25.6	21.3	25.26	88.2
	7/7/2005	180.24	9.94	170.30	1940	440	15.5	15.7	21	80.6
	11/15/2005	180.24	10.21	170.03	1260	259	6.2	8.2	10.81	45.8
	2/8/2006	180.24	9.01	171.23	1430	332	13.6	18.1	25.03	43
	4/27/2006	180.24	9.14	171.10	1,600	519	23.2	32.4	40.20	63.4
	8/1/2006	180.24	9.92	170.32	1,530	395	11.8	25.4	28.01	40
	10/19/2006	180.24	10.34	169.90	1,230	327	10.2	21.6	21.19	29.6
	1/12/2007	180.24	9.84	170.40	561	153	7.18	14.4	14.95	30.9
	4/17/2007	180.24	9.78	170.46	467	192	7.59	13.8	16.42	30.4
	7/17/2007	180.24	9.82	170.42	755	271	8.6	17.8	22.06	26.7
	10/16/2007	180.24	8.99	171.25	164	80.2	<2.0	5.24	2.47	16.6
	1/17/2008	180.24	9.35	170.89	70	10.8	<2.0	<0.50	<2.0	19.3
	4/17/2008	180.24	9.80	170.44	687	89.7	<2.0	4.01	5.30	8.79
	7/16/2008	180.24	10.17	170.07	1,400	223	3.88	12.6	17.88	18.1
	10/14/2008	180.24	10.86	169.38	540	95	2.7	7.7	18	15
	1/6/2009	180.24	10.10	170.14	500 Y	130	3	8.8	17.1	13
	4/6/2009	180.24	10.05	170.19	910 Y	230	2.4	11	12.1	17
	7/7/2009	180.24	10.42	169.82	850 Y	89	1.9	7.8	15.1	15
	1/27/2010	**180.24**	**7.94**	**172.30**	**1,600**	**250**	**8.8**	**30**	**69**	**23**

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
ESE-2	10/5/1992	178.23	11.68	166.55	300	5.4	16	3.9	45	NA
	4/1/1993	178.23	9.17	169.06	240	27	<0.5	17	2.6	123
	6/29/1993	178.23	10.88	167.35	1,700	260	24	110	23	NA
	6/29/1993	178.23	NM	NM	1,300	240	17	110	25	NA
	9/23/1993	178.23	11.56	166.67	240	3.1	0.5	0.6	2.5	643
	12/10/1993	178.23	10.48	167.75	250	2.4	2.4	1.5	11	940
	2/17/1994	178.23	10.06	168.17	900	<0.5	<0.5	<0.5	<0.5	930
	8/8/1994	178.23	11.11	167.12	750	<0.5	<0.5	<0.5	<0.5	1400
	10/12/1994	178.23	11.31	166.92	1,700	<0.5	<0.5	<0.5	<0.5	3000
	1/19/1995	178.23	8.25	169.98	300	2	0.9	0.7	1	NA
	5/2/1995	178.23	9.21	169.02	1,200	4	<2.5	<2.5	<5	NA
	7/28/1995	178.23	10.64	167.59	2,000	<2.5	<2.5	<2.5	<5	NA
	11/17/1995	178.23	11.13	167.10	3,600	<25	<25	<25	<50	12000
	11/17/1995	178.23	NM	NM	3,400	<25	<25	<25	<50	12000
	2/7/1996	178.23	7.94	170.29	450	<0.5	<1	<1	<1	2300
	4/23/1996	178.23	9.73	168.50	260	0.9	<1	<1	<1	8600
	7/9/1996	178.23	10.70	167.53	780	<2.5	<5	<5	<5	13393
	10/10/1996	178.23	11.39	166.84	2,900	<0.5	<1	<1	<1	12000
	1/20/1997	178.23	9.04	169.19	<250	<2.5	<5	<5	<5	13000
	4/25/1997	178.23	10.31	167.92	2,700	<0.5	<1	<1	<1	15000
	7/18/1997	178.23	11.02	167.21	11,000	<5	<10	<10	<10	11000
	10/27/1997	178.23	10.93	167.30	6,100	<2.5	<5.0	<5.0	<5.0	7100
	10/27/1997	178.23	NM	NM	6,600	<2.5	<5.0	<5.0	<5.0	7400
	1/22/1998	178.23	7.93	170.30	13,000	<0.5	<1	<1	<1	10000
	1/22/1998	178.23	NM	NM	13,000	<0.5	<1	<1	<1	10000
	4/23/1998	178.23	9.34	168.89	19,000	<5	<10	<10	<10	36000
	7/29/1998	178.23	10.29	167.94	NA	NA	NA	NA	NA	NA
	7/30/1998	178.23	NM	NM	19,000	<5	<10	<10	<10	36000
	12/17/1998	178.23	10.20	168.03	12,000	<5	<5	<5	<5	13000

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TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
ESE-2 cont	3/19/1999	178.23	9.02	169.21	18,000	160	<1	<1	<1	18000
	6/23/1999	178.23	9.99	168.24	280	<1	<1	<1	<1	16000
	9/27/1999	178.23	10.69	167.54	<500	<25	<25	<25	<25	12000
	12/9/1999	178.23	11.26	166.97	<50	<0.3	<0.3	<0.3	<0.6	12000
	3/9/2000	178.23	7.95	170.28	<50	1.6	<0.5	<0.5	<0.5	7900
	6/8/2000	178.23	9.66	168.57	1,600	<0.5	0.73	<0.5	2.2	9400
	12/14/2000	178.23	11.15	167.08	6,000	0.75	<0.5	<0.5	<0.5	11200
	3/21/2001	178.23	10.35	167.88	6,900	786	45.7	37.7	71.5	3790
	6/18/2001	178.23	11.24	166.99	6,400	<2.5	<2.5	<2.5	<7.5	9320
	9/18/2001	178.23	11.35	166.88	4,800	<12.5	<12.5	<12.5	<37.5	6960
	12/13/2001	178.23	10.97	167.26	59,000	0.592	<0.5	<0.5	<1	5940
	3/14/2002	178.23	10.13	168.10	4,500	76	<0.5	<0.5	<1	6660
	6/19/2002	178.23	10.91	167.32	250	<12.5	<12.5	<12.5	<25	4900
	9/10/2002	178.23	10.82	167.41	1,500	<5	<5	<5	6.3	3100
	12/16/2002	178.23	7.87	170.36	1,400	<5	<5	<5	<5	2400
	3/11/2003	178.23	10.24	167.99	2,800	<10	<10	<10	<10	4800
	6/17/2003	178.23	10.19	168.04	10,000	<100	<100	<100	<100	4400
	12/9/2003	178.23	9.97	168.26	<50	<0.5	<0.5	<0.5	<0.5	3400
	2/26/2004	178.23	7.89	170.34	<50	<0.5	<0.5	<0.5	<0.5	3000
	5/21/2004	178.23	10.70	167.53	<50	<0.5	<0.5	<0.5	<0.5	1100
	8/10/2004	180.79	10.99	169.80	<50	<0.5	<0.5	<0.5	<0.5	550
	10/19/2004	180.79	10.46	170.33	<50	<0.5	<0.5	<0.5	<0.5	410
	1/14/2005	180.79	8.66	172.13	<50	<8.3	<8.3	<8.3	<8.3	1200
	4/14/2005	180.79	9.38	171.41	<860	<2.15	<2.15	<2.15	<4.30	1020
	7/7/2005	180.79	10.46	170.33	<860	<2.15	<8.60	<2.15	<4.30	378
	11/15/2005	180.79	10.55	170.24	<50	<0.5	<2.0	<0.5	<1.0	210
	2/8/2006	180.79	9.46	171.33	<215	<2.15	<8.6	<2.15	<4.3	419
	4/27/2006	180.79	10.67	170.12	<100	1.71	<4.0	<1.0	<2.0	432
	8/1/2006	180.79	10.29	170.50	<100	2.83	<4.0	<1.0	<2.0	222
	10/19/2006	180.79	10.65	170.14	<50	0.8	<2.0	<0.5	<1.0	221

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
ESE-2 cont	1/12/2007	180.79	NM	NM	NA	NA	NA	NA	NA	NA
	4/17/2007	180.79	10.20	170.59	<50	3.17	<2.0	4.49	<2.0	158
	7/17/2007	180.79	10.31	170.48	<50	1.65	<2.0	<0.5	<2.0	105
	10/16/2007	180.79	9.22	171.57	<50	5.67	<2.0	<0.5	<2.0	73.9
	1/17/2008	180.79	9.88	170.91	<50.0	<0.50	<2.0	<0.50	<2.0	80.2
	4/17/2008	180.79	10.29	170.50	<50	<0.5	<2.0	<0.5	<2.0	45
	7/16/2008	180.79	10.64	170.15	<50	<0.5	<2.0	<0.5	<2.0	54
	10/14/2008	180.79	11.41	169.38	<50	<0.5	<0.5	<0.5	<0.5	41
	1/6/2009	180.79	10.60	170.19	<50	<0.5	<0.5	<0.5	<0.5	36
	4/6/2009	180.79	10.62	170.17	<50	<0.5	<0.5	<0.5	<0.5	30
	7/7/2009	180.79	10.92	169.87	<50	2.4	<0.5	<0.5	<0.5	32
	1/27/2010	**180.79**	**8.36**	**172.43**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**26**
ESE-3	10/5/1992	178.20	10.58	167.62	430	57	31	3.6	34	NA
	4/1/1993	178.20	8.14	170.06	2400	460	220	74	210	NA
	6/29/1993	178.20	9.72	168.48	280	56	14	15	13	NA
	9/23/1993	178.20	10.46	167.74	72	13	3.5	1.7	4.1	NA
	12/10/1993	178.20	9.30	168.90	270	71	32	6.1	33	NA
	2/17/1994	178.20	8.97	169.23	520	140	10	20	33	5.74
	8/8/1994	178.20	10.02	168.18	<50	8.8	1.6	1.6	2.3	<5.0
	10/12/1994	178.20	10.32	167.88	470	190	6.4	15	18	<5.0
	1/19/1995	178.20	7.40	170.80	330	260	27	21	20	NA
	5/2/1995	178.20	8.26	169.94	530	180	30	23	44	NA
	7/28/1995	178.20	9.54	168.66	<50	<0.50	<0.50	<0.50	<1	NA
	11/17/1995	178.20	10.04	168.16	<50	1.7	<0.50	<0.50	<1	<5.0
	2/7/1996	178.20	7.08	171.12	<50	8.6	<1	<1	<1	<10
	4/1/2396	178.20	8.79	169.41	<50	7.6	<1	<1	<1	65
	7/9/1996	178.20	10.09	168.11	<50	12	2.6	2	3.9	26
	10/10/1996	178.20	10.48	167.72	NA	NA	NA	NA	NA	NA
	10/11/1996	178.20	NM	NM	260	140	<1	<1	2.6	<10

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TPH-g, BTEX, MtBE
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Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
ESE-3 cont.	1/20/1997	178.20	8.65	169.55	<50	1.5	1.7	<1	<1	14
	4/25/1997	178.20	10.02	168.18	<50	<0.5	<1	<1	<1	14
	7/18/1997	178.20	10.66	167.54	10000	1400	1400	300	1280	<250
	10/27/1997	178.20	9.83	168.37	<250	<2.5	<5.0	<5.0	36	<50
	1/22/1998	178.20	7.06	171.14	130	<0.5	<1.0	<1.0	<1.0	120
	4/23/1998	178.20	8.44	169.76	4800	560	<10	15	<10	4000
	7/29/1998	178.20	9.27	168.93	NA	NA	NA	NA	NA	NA
	7/30/1998	178.20	NM	NM	1800	6.2	<5.0	<5.0	<5.0	1700
	12/17/1998	178.20	9.15	169.05	600	54	<1.0	2.1	4.9	340/480
	3/19/1999	178.20	8.14	170.06	2000	260	4.4	13	28	870
	6/23/1999	178.20	9.44	168.76	290	91	<1.0	8.3	16	240
	9/27/1999	178.20	9.69	168.51	130	35	<1.0	2.7	3.8	100
	12/9/1999	178.20	10.99	167.21	380	84	1.7	8.7	6.3	160
	3/9/2000	178.20	7.12	171.08	950	190	4.6	39	62	350
	6/8/2000	178.20	10.92	167.28	300	37	<0.5	2.3	1.3	400
	9/18/2000	178.20	11.12	167.08	920	140	1.3	15	4.8	170
	12/14/2000	178.20	9.70	168.50	320	64	<0.5	6.24	1.76	201
	3/21/2001	178.20	10.07	168.13	680	80.5	0.546	21.1	18.2	398
	6/18/2001	178.20	11.42	166.78	380	47	<0.5	3.11	<1.5	242
	9/18/2001	178.20	11.55	166.65	340	54.8	<0.5	4.36	<1.5	79.7
	12/13/2001	178.20	10.12	168.08	270	31.4	<0.5	1.31	2.24	129
	3/14/2002	178.20	9.84	168.36	670	89.8	0.769	23.4	30.4	413
	6/19/2002	178.20	10.57	167.63	130	18.6	<0.5	<0.5	<1	166
	9/10/2002	178.20	9.90	168.30	88	12	<0.5	<0.5	<0.5	93
	12/16/2002	178.20	9.23	168.97	290	55	17	3.7	14	78
	3/11/2003	178.20	9.05	169.15	100	3.4	<0.5	0.54	<0.50	140
	6/17/2003	178.20	9.30	168.90	520	17	<5	5.3	<5	130

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Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
ESE-4	10/5/1992	177.73	10.33	167.40	98	7.2	1.3	1.1	6.1	NA
	4/1/1993	177.73	7.88	169.85	550	93	20	23	33	NA
	6/29/1993	177.66	8.33	169.33	150	23	0.6	5.4	0.5	54
	9/23/1993	177.66	10.05	167.61	110	14	1.7	3.2	4.6	NA
	12/10/1993	177.66	8.95	168.71	110	21	7.2	4.2	10	28.75
	2/17/1994	177.66	8.65	169.01	210	26	1.2	4.7	11	113
	8/8/1994	177.66	9.76	167.90	76	9.6	<0.5	2	<0.5	62
	10/12/1994	177.66	9.62	168.04	<50	<0.5	<0.5	<0.5	<0.5	44
	1/19/1995	177.66	6.97	170.69	140	56	14	24	23	NA
	5/2/1995	177.66	7.85	169.81	130	21	2.8	8.6	8.2	NA
	7/28/1995	177.66	9.20	168.46	<50	<0.5	<0.5	<0.5	<1	NA
	11/17/1995	177.66	9.68	167.98	<50	<0.5	0.6	<0.5	<1	18
	2/7/1996	177.66	6.59	171.07	100	2.6	<1	1.6	4.1	42
	4/23/1996	177.66	8.30	169.36	160	37	15	16	31	43
	7/9/1996	177.66	9.21	168.45	60	17	1.5	6.8	11.6	27
	10/10/1996	177.66	9.97	167.69	NA	NA	NA	NA	NA	NA
	10/11/1996	177.66	NM	NM	<50	<0.5	<1.0	<1.0	<1.0	18
	1/20/1997	177.66	7.68	169.98	<50	<0.5	<1.0	<1.0	<1.0	130
	4/25/1997	177.66	9.15	168.51	<250	<2.5	<5.0	<5.0	<5.0	<50
	7/18/1997	177.66	9.71	167.95	<50	15	<10	<10	<10	<100
	10/27/1997	177.66	9.38	168.28	<250	<2.5	<5.0	<5.0	<5.0	<50
	1/22/1998	177.66	6.59	171.07	<50	<0.5	<1.0	<1.0	<1.0	<10
	4/23/1998	177.66	7.90	169.76	<250	<2.5	<5.0	<5.0	<5.0	<50
	7/29/1998	177.66	8.96	168.70	NA	NA	NA	NA	NA	NA
	7/30/1998	177.66	NM	NM	<50	<0.5	<1.0	<1.0	<1.0	<10
	12/17/1998	177.66	8.32	169.34	NA	NA	NA	NA	NA	NA

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
ESE-4 cont.	3/19/1999	177.66	7.71	169.95	NA	NA	NA	NA	NA	NA
	6/23/1999	177.66	8.78	168.88	NA	NA	NA	NA	NA	NA
	9/27/1999	177.66	9.27	168.39	NA	NA	NA	NA	NA	NA
	12/9/1999	177.66	9.21	168.45	NA	NA	NA	NA	NA	NA
	3/9/2000	177.66	6.82	170.84	NA	NA	NA	NA	NA	NA
	6/8/2000	177.66	8.72	168.94	NA	NA	NA	NA	NA	NA
	9/18/2000	177.66	8.72	168.94	NA	NA	NA	NA	NA	NA
	12/14/2000	177.66	8.61	169.05	NA	NA	NA	NA	NA	NA
	3/21/2001	177.66	8.61	169.05	NA	NA	NA	NA	NA	NA
	6/18/2001	177.66	9.24	168.42	NA	NA	NA	NA	NA	NA
	9/18/2001	177.66	9.35	168.31	NA	NA	NA	NA	NA	NA
	12/13/2001	177.66	8.53	169.13	NA	NA	NA	NA	NA	NA
	3/14/2002	177.66	8.44	169.22	NA	NA	NA	NA	NA	NA
	6/19/2002	177.66	10.97	166.69	NA	NA	NA	NA	NA	NA
	9/10/2002	177.66	9.27	168.39	NA	NA	NA	NA	NA	NA
	12/16/2002	177.66	6.90	170.76	NA	NA	NA	NA	NA	NA
	3/11/2003	177.66	8.83	168.83	NA	NA	NA	NA	NA	NA
	6/17/2003	177.66	8.84	168.82	NA	NA	NA	NA	NA	NA
ESE-5	10/5/1992	176.08	9.22	166.86	1300	200	3.8	1.2	18	NA
	4/1/1993	176.08	7.02	169.06	13000	2200	26	730	1000	NA
	4/1/1993	176.08	NM	NM	13000	2500	25	740	1100	NA
	6/29/1993	176.08	10.21	165.87	7600	1500	9.3	170	100	NA
	9/23/1993	176.08	10.64	165.44	560	19	1.2	0.9	1.8	NA
	12/10/1993	176.08	9.42	166.66	1700	300	3	76	110	14.07

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
ESE-5 cont	2/7/1994	176.08	9.35	166.73	3500	640	7.8	90	130	45.13
	8/8/1994	176.08	8.76	167.32	2600	210	4.6	9.4	4.4	33
	8/8/1994	176.08	NM	NM	2500	230	4.6	13	4.8	32
	10/12/1994	176.08	8.95	167.13	5600	560	9.5	75	21	79.2
	10/12/1994	176.08	NM	NM	6000	550	10	78	22	77
	1/19/1995	176.08	5.40	170.68	1900	620	<5	95	15	NA
	1/19/1995	176.08	NM	NM	1600	620	<5	93	17	NA
	5/2/1995	176.08	6.48	169.60	5700	1100	<10	180	58	NA
	5/2/1995	176.08	NM	NM	5300	1100	<10	180	58	NA
	7/28/1995	176.08	7.97	168.11	520	15	<0.50	1.7	1.3	NA
	7/28/1995	176.08	NM	NM	460	7.2	<0.50	1.9	1.5	NA
	11/17/1995	176.08	8.39	167.69	850	39	1.8	7.6	2.7	24
	2/7/1996	176.08	4.71	171.37	4100	670	6	190	140	<50
	4/23/1996	176.08	7.35	168.73	3000	570	<5	79	100	84
	7/9/1996	176.08	9.40	166.68	620	150	1.7	9.3	6.4	25
	10/10/1996	176.08	9.04	167.04	1100	29	<5	<5	<5	<50
	10/10/1996	176.08	NM	NM	1100	31	<5	<5	<5	<50
	1/20/1997	176.08	5.82	170.26	2100	980	<25	280	80	<250
	1/20/1997	176.08	NM	NM	2700	910	8.8	280	84	180
	4/25/1997	176.08	7.24	168.84	NA	NA	NA	NA	NA	NA
	4/28/1997	176.08	NM	NM	<250	7.9	<5.0	<5.0	<5.0	<50
	7/18/1997	176.08	7.86	168.22	1200	<5	<10	<10	<10	<100
	7/18/1997	176.08	NM	NM	630	31	<5.0	<5.0	<5.0	130
	10/27/1997	176.08	7.91	168.17	<250	5.4	<5.0	<5.0	<5.0	<50

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
ESE-5 cont.	1/22/1998	176.08	4.64	171.44	170	7.7	<1.0	<1.0	<1.0	130
	4/23/1998	176.08	6.31	169.77	720	79	<5.0	9	<5.0	180
	7/29/1998	176.08	7.43	168.65	NA	NA	NA	NA	NA	NA
	7/30/1998	176.08	NM	NM	840	9.8	<1.0	4	<1.0	710
	12/17/1998	176.08	7.05	169.03	NA	NA	NA	NA	NA	NA
	3/19/1999	176.08	5.00	171.08	<250	<5.0	<5.0	<5.0	<5.0	<5.0
	6/23/1999	176.08	7.77	168.31	NA	NA	NA	NA	NA	NA
	9/27/1999	176.08	8.11	167.97	450	10	<5.0	6.3	<5.0	220
	12/9/1999	176.08	7.66	168.42	NA	NA	NA	NA	NA	NA
	3/9/2000	176.08	5.08	171.00	1700	170	2.5	45	6.4	140
	6/8/2000	176.08	7.36	168.72	NA	NA	NA	NA	NA	NA
	9/18/2000	176.08	7.71	168.37	130	0.65	<0.50	0.71	<0.50	51
	12/14/2000	176.08	2.36	173.72	NA	NA	NA	NA	NA	NA
	3/21/2001	176.08	7.42	168.66	1000	10.3	<2.5	11	<7.5	70.8
	6/18/2001	176.08	7.92	168.16	NA	NA	NA	NA	NA	NA
	9/18/2001	176.26	8.23	168.03	200	0.868	<0.50	0.55	<1.5	57.5
	12/13/2001	176.26	7.80	168.46	NA	NA	NA	NA	NA	NA
	3/14/2002	176.26	6.55	169.71	1300	17.1	1.35	15.4	1.42	37.4
	6/19/2002	176.26	7.83	168.43	NA	NA	NA	NA	NA	NA
	9/10/2002	176.26	8.22	168.04	680	9.9	<5.0	<5.0	<5.0	44
	12/16/2002	176.26	6.58	169.68	NA	NA	NA	NA	NA	NA
	3/11/2003	176.26	6.77	169.49	2100	14	<2.5	15	3	80
	6/17/2003	176.26	6.75	169.51	NA	NA	NA	NA	NA	NA
	9/17/2003	176.26	8.48	167.78	970	10 C	<0.5	<0.5	5.3	34
	12/9/2003	176.26	7.32	168.94	700	6.5	<0.5	3.1	2.7 C	34

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
ESE-5 cont.	2/26/2004	176.26	5.21	171.05	2400 H	41	2.8 C	18	2.4 C	29
	5/21/2004	176.26	7.50	168.76	1500	2.6 C	<0.5	2.1 C	2.1 C	25
	8/10/2004	178.80	8.28	170.52	680	<0.5	<0.5	<0.5	<0.5	33
	10/19/2004	178.80	8.26	170.54	380	<0.5	<0.5	<0.5	1.4	39
	1/14/2005	178.80	5.16	173.64	2400	18	1.4	22	2.1	26
	4/14/2005	178.80	6.13	172.67	4800	7.75	1.26	14.3	<1.0	23.1
	7/7/2005	178.80	7.52	171.28	3240	0.78	<2.0	1.18	<1.0	36.6
	11/15/2005	178.80	7.85	170.95	1190	0.51	<2.0	<0.5	<1.0	30
	2/8/2006	178.80	5.83	172.97	2510	1.91	<2.0	2.82	<1.0	20.7
	4/27/2006	178.80	5.71	173.09	4,700	2.76	<2.0	4.77	<1.0	28.3
	8/1/2006	178.80	7.71	171.09	1,890	0.7	<2.0	0.75	<1.0	24.7
	10/19/2006	178.80	8.00	170.80	474	<0.5	<2.0	3.39	<1.0	29
	1/12/2007	178.80	7.41	171.39	868	2.18	<2.0	2.66	<2.0	16.3
	4/17/2007	178.80	7.51	171.29	1,240	10.2	<2.0	10.4	2.37	17.2
	7/17/2007	178.80	7.47	171.33	836	3.1	<2.0	4.91	2.35	25.8
	10/16/2007	178.80	6.26	172.54	2,120	2.5	<2.0	6.19	2.61	17.5
	1/17/2008	178.80	6.59	172.21	2,730	5.74	<2.0	14.3	<2.0	13.1
	4/17/2008	178.80	6.81	171.99	2,770	4.7	<2.0	15.9	<2.0	<0.5
	7/16/2008	178.80	7.76	171.04	2,160	0.9	<2.0	1.1	<2.0	6.28
	10/14/2008	178.80	8.40	170.40	1,300	<0.5	<0.5	0.6	<0.5	9.9
	1/6/2009	178.80	7.66	171.14	1,100 Y	0.61	<0.5	1.6	<0.5	8
	4/6/2009	178.80	7.79	171.01	1,900 Y	4.6	<0.5	9.3	0.59	5.3
	7/7/2009	178.80	7.84	170.96	2,700 Y	3.0	<0.5	2.3	<0.5	6.6
	1/27/2010	**178.80**	**4.82**	**173.98**	**1,300 Y**	**0.76**	**<0.5**	**1.0**	**<0.5**	**3.5**
MW-6	7/28/1995	179.24	10.00	169.24	<50	<0.50	<0.50	<0.50	<1.0	NA
	11/17/1995	179.24	10.44	168.80	<50	<0.50	<0.50	<0.50	<1.0	<5.0
	2/7/1996	179.24	7.68	171.56	<50	<0.5	<1.0	<1.0	<1.0	<10
	4/23/1996	179.24	9.33	169.91	<50	<0.5	<1.0	<1.0	<1.0	<10
	7/9/1996	179.24	10.10	169.14	<50	<0.5	<1.0	<1.0	<1.0	<10
	10/10/1996	179.24	11.00	168.24	<50	<0.5	<1.0	<1.0	<1.0	<10

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
MW-6 cont.	1/20/1997	179.24	8.70	170.54	<50	<0.5	<1.0	<1.0	<1.0	<10
	4/25/1997	179.24	10.16	169.08	<50	<0.5	<1.0	<1.0	<1.0	<10
	7/18/1997	179.24	10.66	168.58	<50	<0.5	<1.0	<1.0	<1.0	<10
	10/27/1997	179.24	10.25	168.99	<50	<0.5	<1.0	<1.0	<1.0	<10
	1/22/1998	179.24	7.76	171.48	<50	<0.5	<1.0	<1.0	<1.0	<10
	4/23/1998	179.24	9.10	170.14	<50	<0.5	<1.0	<1.0	<1.0	<10
	7/29/1998	179.24	10.40	168.84	NA	NA	NA	NA	NA	NA
	7/30/1998	179.24	NM	NM	<50	<0.5	<1.0	<1.0	<1.0	<10
	12/17/1998	179.24	9.40	169.84	NA	NA	NA	NA	NA	NA
	3/19/1999	179.24	9.10	170.14	NA	NA	NA	NA	NA	NA
	6/23/1999	179.24	9.79	169.45	NA	NA	NA	NA	NA	NA
	9/27/1999	179.24	10.10	169.14	NA	NA	NA	NA	NA	NA
	12/9/1999	179.24	9.97	169.27	NA	NA	NA	NA	NA	NA
	3/9/2000	179.24	8.56	170.68	NA	NA	NA	NA	NA	NA
	6/8/2000	179.24	9.11	170.13	NA	NA	NA	NA	NA	NA
	9/18/2000	179.24	9.77	169.47	NA	NA	NA	NA	NA	NA
	12/14/2000	179.24	9.17	170.07	NA	NA	NA	NA	NA	NA
	3/21/2001	179.24	9.82	169.42	NA	NA	NA	NA	NA	NA
	6/18/2001	179.24	10.19	169.05	NA	NA	NA	NA	NA	NA
	9/18/2001	179.24	10.25	168.99	NA	NA	NA	NA	NA	NA
	12/13/2001	179.24	9.75	169.49	NA	NA	NA	NA	NA	NA
	3/14/2002	179.24	9.53	169.71	NA	NA	NA	NA	NA	NA
	6/19/2002	179.24	9.87	169.37	NA	NA	NA	NA	NA	NA
	9/10/2002	179.24	9.49	169.75	NA	NA	NA	NA	NA	NA
	12/16/2002	179.24	8.39	170.85	NA	NA	NA	NA	NA	NA
	3/11/2003	179.24	9.40	169.84	NA	NA	NA	NA	NA	NA
	6/17/2003	179.24	9.71	169.53	NA	NA	NA	NA	NA	NA
	9/17/2003	179.24	10.21	169.03	<50	<0.5	<0.5	<0.5	<0.5	<2.0
	12/9/2003	179.24	9.66	169.58	<50	<0.5	<0.5	<0.5	<0.5	<0.5

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Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
MW-6 cont.	2/26/2004	179.24	7.83	171.41	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	5/21/2004	179.24	9.75	169.49	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	8/10/2004	181.80	10.28	171.52	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	10/19/2004	181.80	9.91	171.89	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	1/14/2005	181.80	8.40	173.40	<50	0.6	<0.5	<0.5	<0.5	<0.5
	4/14/2005	181.80	9.04	172.76	<200	<0.5	<0.5	<0.5	<1.0	<0.5
	7/7/2005	181.80	9.94	171.86	<200	<0.5	<2.00	<0.5	<1.00	<0.5
	11/15/2005	181.80	9.98	171.82	<50	<0.5	<2.0	<0.5	<1.0	<0.5
	2/8/2006	181.80	9.91	171.89	<50	<0.5	<2.0	<0.5	<1.0	<0.5
	4/27/2006	181.80	9.54	172.26	<50	<0.5	<2.0	<0.5	<1.0	<0.5
	8/1/2006	181.80	9.61	172.19	<50	<0.5	<2.0	<0.5	<1.0	0.51
	10/19/2006	181.80	10.23	171.57	<50	<0.5	<2.0	<0.5	<1.0	0.63
	1/12/2007	181.80	10.13	171.67	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	4/17/2007	181.80	10.22	171.58	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	7/17/2007	181.80	9.76	172.04	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	10/16/2007	181.80	9.82	171.98	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	1/17/2008	181.80	9.43	172.37	<50	<0.50	<2.0	<0.50	<2.0	<0.5
	4/17/2008	181.80	9.54	172.26	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	7/16/2008	181.80	9.80	172.00	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	10/14/2008	181.80	10.48	171.32	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	1/6/2009	181.80	10.01	171.79	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	4/6/2009	181.80	10.15	171.65	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	7/7/2009	181.80	10.28	171.52	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	1/27/2010	**181.80**	**8.28**	**173.52**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-7	7/28/1995	176.55	9.25	167.30	<50	0.54	0.54	<0.50	<1.0	NA
	11/17/1995	176.55	9.73	166.82	1100	<10	<10	<10	<20	4000

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
MW-7 cont.	2/7/1996	176.55	6.48	170.07	610	<0.50	<1.0	<1.0	<1.0	2500
	2/7/1996	176.55	NM	NM	280	<0.50	<1.0	<1.0	<1.0	2600
	4/23/1996	176.55	8.37	168.18	110	<0.50	<1.0	<1.0	<1.0	3500
	4/23/1996	176.55	NM	NM	230	<0.50	<1.0	<1.0	<1.0	3500
	7/9/1996	176.55	9.24	167.31	230	<0.50	<1.0	<1.0	<1.0	4296
	7/9/1996	176.55	NM	NM	220	<0.50	<1.0	<1.0	<1.0	4400
	10/10/1996	176.55	10.05	166.50	NA	NA	NA	NA	NA	NA
	10/11/1996	176.55	NM	NM	1600	<0.50	<1.0	<1.0	<1.0	3000
	1/20/1997	176.55	7.51	169.04	<50	0.63	<1.0	<1.0	<1.0	2600
	4/25/1997	176.55	8.79	167.76	NA	NA	NA	NA	NA	NA
	4/28/1997	176.55	NM	NM	1500	<0.50	<1.0	<1.0	<1.0	3600
	4/28/1997	176.55	NM	NM	7700	3500	<25	74	37	<250
	7/18/1997	176.55	9.50	167.05	1400	<0.50	<1.0	<1.0	<1.0	2600
	10/27/1997	176.55	9.19	167.36	420	<0.50	<1.0	<1.0	<1.0	560
	1/22/1998	176.55	6.45	170.10	3100	<0.50	<1.0	<1.0	1.4	2300
	4/23/1998	176.55	8.02	168.53	3800	<0.50	<1.0	<1.0	<1.0	3800
	7/29/1998	176.55	8.88	167.67	NA	NA	NA	NA	NA	NA
	7/30/1998	176.55	NM	NM	500	<2.5	<5.0	<5.0	<5.0	<50
	7/30/1998	176.55	NM	NM	4700	<12	<25	<25	<25	4700
	12/17/1998	176.55	8.62	167.93	NA	NA	NA	NA	NA	NA
	3/19/1999	176.55	7.52	169.03	3800	<1.0	<1.0	<1.0	<1.0	3800
	6/23/1999	176.55	9.63	166.92	NA	NA	NA	NA	NA	NA
	9/27/1999	176.55	9.39	167.16	140	<10	<10	<10	<10	3800
	12/9/1999	176.55	9.94	166.61	NA	NA	NA	NA	NA	NA
	3/9/2000	176.55	6.72	169.83	<50	<0.50	<0.50	<0.50	<0.50	1400
	6/8/2000	176.55	7.38	169.17	NA	NA	NA	NA	NA	NA
	9/18/2000	176.55	9.18	167.37	190	<0.50	<0.50	<0.50	<0.50	580
	12/14/2000	176.55	8.13	168.42	NA	NA	NA	NA	NA	NA

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
MW-7 cont.	3/21/2001	176.55	8.98	167.57	1300	<0.50	<0.50	<0.50	<1.5	1460
	6/18/2001	176.55	9.68	166.87	NA	NA	NA	NA	NA	NA
	9/18/2001	176.55	9.80	166.75	<0.50	<0.50	<0.50	<0.50	<1.5	94.9
	12/13/2001	176.55	9.26	167.29	NA	NA	NA	NA	NA	NA
	3/14/2002	176.55	8.69	167.86	800	<0.50	<0.50	<0.50	<1.0	952
	6/19/2002	176.55	9.06	167.49	NA	NA	NA	NA	NA	NA
	9/10/2002	176.55	9.23	167.32	260	<2.0	<2.0	<2.0	<2.0	580
	12/16/2002	176.55	7.77	168.78	NA	NA	NA	NA	NA	NA
	3/11/2003	176.55	8.30	168.25	620	<2.5	<2.5	<2.5	<2.5	1100
	6/17/2003	176.55	9.51	167.04	NA	NA	NA	NA	NA	NA
	9/17/2003	176.55	9.52	167.03	<50	<0.5	<0.5	<0.5	<0.5	460
	12/9/2003	176.55	8.99	167.56	<50	<0.5	<0.5	<0.5	<0.5	420
	2/26/2004	176.55	6.55	170.00	<50	<0.5	<0.5	<0.5	<0.5	330
	5/21/2004	176.55	8.90	167.65	<50	<0.5	<0.5	<0.5	<0.5	630
	8/10/2004	179.11	9.58	169.53	<50	<0.5	<0.5	<0.5	<0.5	750
	10/19/2004	179.11	9.20	169.91	<50	<0.5	<0.5	<0.5	<0.5	550
	1/14/2005	179.11	7.25	171.86	<50	<2.0	<2.0	<2.0	<2.0	250
	4/14/2005	179.11	7.94	171.17	<200	<0.5	<0.5	<0.5	<1.0	285
	7/7/2005	179.11	9.08	170.03	<400	<1.0	<4.0	<1.0	<2.0	452
	11/15/2005	179.11	9.14	169.97	<50	<0.5	<2.0	<0.5	<1.0	110
	2/8/2006	179.11	7.93	171.18	<50	<0.5	<2.0	<0.5	<1.0	101
	4/27/2006	179.11	8.40	170.71	<50	<0.5	<2.0	<0.5	<1.0	131
	8/1/2006	179.11	8.89	170.22	<50	<0.5	<2.0	<0.5	<1.0	68.6
	10/19/2006	179.11	9.44	169.67	<50	<0.5	<2.0	<0.5	<1.0	65.5
	1/12/2007	179.11	8.91	170.20	<50	<0.5	<2.0	<0.5	<2.0	38
	4/17/2007	179.11	8.58	170.53	<50	<0.5	<2.0	<0.5	<2.0	24.7
	7/17/2007	179.11	9.04	170.07	<50	2.07	<2.0	<0.5	<2.0	29.3
	10/6/2007	179.11	7.88	171.23	<50	0.88	<2.0	<0.5	<2.0	5.26

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
MW-7 cont.	1/17/2008	179.11	NM	NM	NA	NA	NA	NA	NA	NA
	4/17/2008	179.11	8.85	170.26	<50	1.87	<2.0	<0.5	<2.0	21.6
	7/16/2008	179.11	9.34	169.77	<50	<0.5	<2.0	<0.5	<2.0	11.4
	10/14/2008	179.11	10.06	169.05	<50	0.78	<0.5	<0.5	<0.5	12
	1/6/2009	179.11	9.12	169.99	<50	<0.5	<0.5	<0.5	<0.5	14
	4/6/2009	179.11	9.28	169.83	<50	<0.5	<0.5	<0.5	<0.5	13
	7/7/2009	179.11	9.59	169.52	<50	<0.5	<0.5	<0.5	<0.5	15
	1/27/2010	**179.11**	**6.98**	**172.13**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**6.3**
MW-8	7/28/1995	176.34	7.80	168.54	1,100	<2.5	<2.5	<2.5	<5.0	NA
	11/17/1995	176.34	8.29	168.05	8,300	75	5.3	670	240	140
	2/7/1996	176.34	4.99	171.35	2,300	33	<10	190	216	<100
	4/23/1996	176.34	6.09	170.25	2,000	390	<10	150	26	<250
QC-2	4/1/1993	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	NA
	6/29/1993	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	NA
	9/23/1993	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	NA
	12/10/1993	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/17/1994	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	NA
	8/8/1994	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	NA
	10/12/1994	NM	NM	NM	<50	<0.5	<0.5	<0.5	<0.5	NA
	1/19/1995	NM	NM	NM	<50	<0.5	<0.5	<0.5	<1.0	NA
	5/2/1995	NM	NM	NM	<50	<0.50	<0.50	<0.50	<1.0	NA
	7/28/1995	NM	NM	NM	<50	<0.50	<0.50	<0.50	<1.0	NA
	11/17/1995	NM	NM	NM	<50	<0.50	<0.50	<0.50	<1.0	<5.0
	2/7/1996	NM	NM	NM	<50	<0.5	<1.0	<1.0	<1.0	<10
	4/23/1996	NM	NM	NM	<50	<0.5	<1.0	<1.0	<1.0	<10
	7/9/1996	NM	NM	NM	<50	<0.5	<1.0	<1.0	<1.0	<10

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
SOMA-1	8/10/2004	180.95	11.53	169.42	84	<0.5	<0.5	1.5 C	2.2	2100
	10/19/2004	180.95	10.41	170.54	56	<0.5	<0.5	1.3 C	1.4 C	1600
	1/14/2005	180.95	9.68	171.27	58	<3.1	<3.1	<3.1	<3.1	330
	4/14/2005	180.95	9.37	171.58	<2200	<5.5	<5.5	<5.5	<11	668
	7/7/2005	180.95	10.21	170.74	<860	<2.15	<8.6	<2.15	<4.3	591
	11/15/2005	180.95	10.70	170.25	<50	<0.5	<2.0	1.1	<1.0	256
	2/8/2006	180.95	9.30	171.65	127	1.56	<2.0	3.23	3.12	176
	4/27/2006	180.95	9.64	171.31	81.6	1.14	<2.0	2.8	<1.0	189
	8/1/2006	180.95	10.25	170.70	<50	1.07	<2.0	1.46	<1.0	122
	10/19/2006	180.95	10.73	170.22	<50	0.68	<2.0	4.17	<1.0	116
	1/12/2007	180.95	10.38	170.57	<50	<0.5	<2.0	<0.5	<2.0	68.7
	4/17/2007	180.95	10.09	170.86	<50	5.76	<2.0	4.33	2.59	33.4
	7/17/2007	180.95	10.35	170.60	<50	14.8	<2.0	4.63	3.32	39.4
	10/16/2007	180.95	9.71	171.24	<50	5.7	<2.0	<0.5	<2.0	14.2
	1/17/2008	180.95	10.01	170.94	<50	1.02	<2.0	<0.5	<2.0	12.8
	4/17/2008	180.95	10.17	170.78	<50	3.13	<2.0	<0.5	<2.0	12.8
	7/16/2008	180.95	10.63	170.32	<50	10.6	<2.0	<0.5	<2.0	15.8
	10/14/2008	180.95	11.36	169.59	<50	1.1	<0.5	<0.5	<0.5	15
	1/6/2009	180.95	10.81	170.14	<50	0.6	<0.5	<0.5	<0.5	14
	4/6/2009	180.95	10.69	170.26	<50	<0.5	<0.5	<0.5	<0.5	12
	7/7/2009	180.95	11.01	169.94	<50	0.57	<0.5	1.2	0.91	12
	1/27/2010	**180.95**	**8.81**	**172.14**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**9.9**
SOMA-2	8/10/2004	178.99	10.69	168.30	<50	<0.5	<0.5	<0.5	<0.5	0.8
	10/19/2004	178.99	10.75	168.24	<50	<0.5	<0.5	<0.5	<0.5	2.4
	1/14/2005	178.99	9.45	169.54	<50	<0.5	<0.5	<0.5	<0.5	1.1
	4/14/2005	178.99	10.46	168.53	<200	<0.5	<0.5	<0.5	<1.0	<0.5
	7/7/2005	178.99	11.81	167.18	<200	<0.5	<2.0	<0.5	<1.0	<0.5
	11/15/2005	178.99	12.02	166.97	<50	<0.5	<2.0	<0.5	<1.0	1.61

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
SOMA-2 cont	2/8/2006	178.99	11.88	167.11	<50	<0.5	<2.0	<0.5	<1.0	<0.5
	4/27/2006	178.99	10.95	168.04	<50	<0.5	<2.0	<0.5	<1.0	<0.5
	8/1/2006	178.99	11.85	167.14	<50	<0.5	<2.0	<0.5	<1.0	1.11
	10/19/2006	178.99	10.62	168.37	<50	<0.5	<2.0	<0.5	<1.0	1.36
	1/12/2007	178.99	10.26	168.73	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	4/17/2007	178.99	11.88	167.11	<50	<0.5	<2.0	<0.5	<2.0	0.87
	7/17/2007	178.99	10.84	168.15	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	10/16/2007	178.99	9.69	169.30	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	1/17/2008	178.99	9.62	169.37	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	4/17/2008	178.99	10.06	168.93	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	7/16/2008	178.99	10.63	168.36	<50	<0.5	<2.0	<0.5	<2.0	<0.5
	10/14/2008	178.99	11.26	167.73	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	1/6/2009	178.99	10.22	168.77	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	4/6/2009	178.99	10.38	168.61	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	7/7/2009	178.99	10.40	168.59	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	1/27/2010	**178.99**	**8.19**	**170.80**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
SOMA-3	8/10/2004	176.81	9.97	166.84	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	10/19/2004	176.81	9.59	167.22	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	1/14/2005	176.81	8.23	168.58	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	4/14/2005	176.81	8.64	168.17	<200	<0.5	<0.5	<0.5	<1.0	<0.5
	7/7/2005	176.81	9.60	167.21	<200	<0.5	<2.0	<0.5	<1.0	<0.5
	11/15/2005	176.81	10.01	166.80	<50	<0.5	<2.0	<0.5	<1.0	5.1
	2/8/2006	176.81	8.80	168.01	<50	<0.5	<2.0	<0.5	<1.0	7.16
	4/27/2006	176.81	9.00	167.81	<50	<0.5	<2.0	<0.5	<1.0	14.2
	8/1/2006	176.81	9.91	166.90	<50	<0.5	<2.0	<0.5	<1.0	7.29
	10/19/2006	176.81	10.21	166.60	<50	<0.5	<2.0	<0.5	<1.0	41.4
	1/12/2007	176.81	9.73	167.08	<50	<0.5	<2.0	<0.5	<2.0	20.9
	4/17/2007	176.81	9.81	167.00	<50	<0.5	<2.0	<0.5	<2.0	32.1
	7/17/2007	176.81	10.06	166.75	<50	<0.5	<2.0	<0.5	<2.0	23.6
	10/16/2007	176.81	9.54	167.27	<50	<0.5	<2.0	<0.5	<2.0	22.3

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
SOMA-3 cont.	1/17/2008	176.81	9.06	167.75	<50	<0.5	<2.0	<0.5	<2.0	11.1
	4/17/2008	176.81	9.57	167.24	<50	<0.5	<2.0	<0.5	<2.0	23.7
	7/16/2008	176.81	10.25	166.56	<50	<0.5	<2.0	<0.5	<2.0	10.6
	10/14/2008	176.81	10.76	166.05	<50	<0.5	<0.5	<0.5	<0.5	19
	1/6/2009	176.81	9.53	167.28	<50	<0.5	<0.5	<0.5	<0.5	1.1
	4/6/2009	176.81	9.65	167.16	<50	<0.5	<0.5	<0.5	<0.5	5.7
	7/7/2009	176.81	10.19	166.62	<50	<0.5	<0.5	<0.5	<0.5	6
	1/27/2010	**176.81**	**7.80**	**169.01**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**56**
SOMA-4	8/10/2004	176.94	9.44	167.50	140	0.98	<0.5	7.8	<0.5	11
	10/19/2004	176.94	9.91	167.03	150	<0.5	<0.5	10	<0.5	8.8
	1/14/2005	176.94	8.36	168.58	500	3.7	<0.5	53	<0.5	7.6
	4/14/2005	176.94	7.89	169.05	<200	0.74	<0.5	3.21	<1.0	5.65
	7/7/2005	176.94	11.62	165.32	<200	<0.5	<2.0	0.56	<1.0	7.09
	11/15/2005	176.94	9.33	167.61	<50	<0.5	<2.0	<0.5	<1.0	8.6
	2/8/2006	176.94	9.18	167.76	55.8	<0.5	<2.0	0.85	<1.0	10.4
	4/27/2006	176.94	8.75	168.19	172	1.35	<2.0	8.83	<1.0	11.7
	8/1/2006	176.94	9.52	167.42	<50	0.52	<2.0	1.53	<1.0	14.1
	10/19/2006	176.94	9.51	167.43	<50	<0.5	<2.0	<0.5	<1.0	19.2
	1/12/2007	176.94	8.98	167.96	<50	<0.5	<2.0	<0.5	<2.0	20.4
	4/17/2007	176.94	8.96	167.98	<50	<0.5	<2.0	4.33	<2.0	15.8
	7/17/2007	176.94	9.31	167.63	<50	<0.5	<2.0	4.47	<2.0	13.3
	10/16/2007	176.94	8.96	167.98	<50	<0.5	<2.0	4.5	<2.0	8.57
	1/17/2008	176.94	8.84	168.10	<50	<0.5	<2.0	<0.5	<2.0	8.87
	4/17/2008	176.94	9.44	167.50	<50	<0.5	<2.0	<0.5	<2.0	1.22
	7/16/2008	176.94	9.52	167.42	<50	<0.5	<2.0	<0.5	<2.0	8.58
	10/14/2008	176.94	9.98	166.96	<50	<0.5	<0.5	<0.5	<0.5	9.7
	1/6/2009	176.94	9.29	167.65	<50	<0.5	<0.5	<0.5	<0.5	10
	4/6/2009	176.94	9.31	167.63	<50	<0.5	<0.5	<0.5	<0.5	5.3
	7/7/2009	176.94	9.54	167.40	<50	<0.5	<0.5	<0.5	<0.5	7
	1/27/2010	**176.94**	**7.35**	**169.59**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**5.1**

Table 1
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA

Monitoring Well	Date	Top of casing elevation [1] (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) 8260B
SOMA-5	**1/27/2010**	**180.31**	**7.94**	**172.37**	**14,000**	**2,600**	**1.5**	**800**	**914**	**190**
Equipment Blanks										
EB-PMP	1/17/2008	NA	NA	NA	<50	<0.5	<2.0	<0.5	<2.0	<0.5
EB-PRB	1/17/2008	NA	NA	NA	<50	<0.5	<2.0	<0.5	<2.0	<0.5
EB-PMP2	1/17/2008	NA	NA	NA	<50	<0.5	<2.0	<0.5	<2.0	<0.5
EB-PRB2	1/17/2008	NA	NA	NA	<50	<0.5	<2.0	<0.5	<2.0	<0.5

Notes:
< : Not detected above laboratory reporting limit.
1 Top of Casing Elevations were resurveyed by Kier & Wright Engineers Surveyors of Pleasanton, CA on June 21, 2004.

C: Presence confirmed, but RPD between columns exceeds 40%.
H: Heavier hydrocarbons contributed to the quantitation.
NA: Not Applicable/Not Analyzed. Due to construction activities in the Third Quarter 2003, which consisted of the replacement of the USTs and dispensers, wells ESE-1 & ESE-2 were inaccessible. Well ESE-2 also inaccessible during the First Quarter 2007. Well MW-7 had a car parked over it and was inaccessible during the First Quarter 2008 monitoring event
NM: Not Measured
Well ESE-2 was covered over with dirt during the First Quarter 2007 monitoring event.
Well MW-7 had a car parked over it and was inaccessible during the First Quarter 2008 monitoring event.
Equipment Blanks (EB-PRB & EB-PMP) were done to make sure decon efforts were adequate.
Z: Sample exhibits unknown single peak or peaks.
The Third Quarter 2003 was the first time that SOMA analyzed groundwater samples at the site.
The Third Quarter 2004 was the first time that SOMA analyzed groundwater samples at wells SOMA-1 to SOMA-4.

APPENDIX A
Site History and Previous Remediation Activities

Violation History

A Notice of Violation (NOV) was issued in June 1991 due to non-compliance issues at the station; a second NOV was issued in October 1991. An Unauthorized Release was detected during the 1992 Preliminary Site Assessment. A second Unauthorized Release was reported in May 2000, due to a leaking shear valve on piping in the former UST pit. The site underwent remodeling in December 2003, when the former UST pit was excavated and four USTs were removed. Soils were over excavated to 12 feet bgs; the shallow soil (top 5 feet) was reused to backfill the new UST pit, after confirmation sampling determined that no chemicals of potential concern (COCs) were present. The remaining soil and purge water were transported off-site for disposal. The upgraded gasoline USTs, with capacities of 12,000 gallons and 20,000 gallons, as well as new piping and distribution lines, were installed during remodeling. A former dispenser island (and possible source of on-site contamination) was located along the western side of the site and was removed sometime prior to the 1995 Phase II Site Investigation (BP).

Previous Activities

1984: Three single-walled fiberglass underground storage tanks (USTs) with capacities of 6,000 gallons, 8,000 gallons, and 10,000 gallons, were installed in the southeastern portion of the site. A former dispenser island reportedly existed on the west side of the site; however, there was no available information about the dispenser removal date.

1988: A 1,000-gallon, double-walled, fiberglass waste oil tank (WOT) was installed to replace the previous 380-gallon WOT. In September, Kaprealian Engineering, Inc. removed the original 380-gallon WOT and observed holes in this UST. As a result, confirmation soil samples were collected from the bottom of the excavation. The following analytical soil results were observed: benzene and toluene were detected at 6.8 µg/kg and 9.5 µg/kg, respectively; total petroleum hydrocarbons (TPH) and total oil and grease (TOG) constituents were not detected.

September and October 1992: Environmental Science & Engineering, Inc. (ESE) drilled five soil boreholes and converted them into monitoring wells (ESE-1 through ESE-5). Soil and groundwater samples were collected during well installation. In the soil samples, the maximum level of soil contamination was detected in monitoring well borehole ESE-5 at 220,000 µg/kg TPH as gasoline (TPH-g); 1,400 µg/kg benzene; 8,200 µg/kg toluene; 3,300 µg/kg ethylbenzene; and 18,000 µg/kg xylenes. In the groundwater samples collected from ESE-1, maximum concentrations were TPH-g at 2,300 µg/L; benzene at 370 µg/L; toluene at 160 µg/L; ethylbenzene at 17 µg/L; and xylenes at 110 µg/L.

July 1995: Three additional monitoring wells were installed: two on-site wells, MW-6 and MW-8, and one off-site well, MW-7.

April 1996: Well MW-8, located on the western margin of the site, was decommissioned to accommodate the road-widening project along Redwood Boulevard.

August 20, 2003: Prior to UST removal, SOMA oversaw drilling of two boreholes by Vironex. The boreholes were drilled in order to characterize the soil for landfill acceptance criteria.

September 2003: Three single-walled, fiberglass USTs, with capacities of 6,000 gallons, 8,000 gallons, and 10,000 gallons, were removed and replaced with two new double-walled, fiberglass USTs with capacities of 12,000 gallons and 20,000 gallons. In addition, the dispensers, product lines, and vent lines were removed and replaced. Soil below 5 feet bgs was disposed of off-site. Shallow soil was used as backfill material for the former UST pit after confirmation.

Third Quarter 2003: Two monitoring wells, ESE-3 and ESE-4, were decommissioned due to construction activities.

Fourth Quarter 2003: In December, SOMA oversaw drilling of off-site temporary well boreholes TWB-1 through TWB-5 to determine the horizontal extent of off-site petroleum hydrocarbon contamination.

June 2004: On June 10, SOMA installed on- and off-site monitoring wells: SOMA-1 in the southeastern section of the site, and SOMA-2 to SOMA-4 south and southeast of the site. Kier and Wright Engineers Surveyors, of Pleasanton, California, surveyed all site wells on June 21.

August 2006: SOMA conducted a sensitive receptor survey and it was concluded that no irrigation or domestic wells, and no sensitive groups or environments, evaluated during this sensitive receptor survey and located within ½-mile radius have the potential to be impacted by the site's contaminants at this time

Third Quarter 1993 to Present: On-going quarterly groundwater monitoring events have been conducted at the site.

September 2008: Shell Oil conducted a Phase II investigation. Elevated TPH-g concentrations 900 µg/L in groundwater and 720 mg/kg in soil were observed in the borings. Based on these elevated readings, Shell Oil filed a UST Unauthorized Release Report with Alameda County Environmental Health on September 24, 2008.

February 2009: Per ACEHD correspondence dated January 8, 2009, SOMA prepared a Site Conceptual Model and workplan to address data gaps at the site. SOMA proposed advancing soil borings to further define the lateral and

horizontal extent of COC impact to vadose zone and the WBZ (up to 31 feet bgs). Per the ACEHD correspondence dated March 27, 2009, SOMA submitted a workplan addendum which was approved by the ACEHD on July 10, 2009 which reduced the number of DP borings from 9 to 7 and proposed the advancement of a shallow groundwater monitoring well within the vadose zone (screened across the potentiometric surface) to determine the appropriateness of the screening interval for existing wells at the site.

August 2009: SOMA advanced DP-1 through DP-7 and installed shallow monitoring well SOMA-5, screened across the potentiometric surface. Results of this investigation suggest that there is a shallow perched WBZ and a confined to semi-confined WBZ at the site. Several well screens are excessively long and may serve as a conduit between the WBZs, therefore SOMA proposed decommissioning these wells and installing wells screened within the specified WBZ. Elevated concentrations of TPH-g and Benzene were observed along the western portion of the site and in vicinity of ESE-1. TPH-g was elevated in groundwater samples along the northwestern portion of the site and along the eastern portion of the station. TPH-d was elevated in groundwater samples from DP-4 and DP-7. TPH-mo was only observed along the western portion of the site. COC concentrations were elevated in SOMA-5 relative to concentrations observed in the DP borings and during quarterly monitoring events.

APPENDIX B
General Field Procedures

Hydraulic Push (GEOPROBE) Drilling

Utility Locating

Prior to drilling, boring locations are marked with white paint or other discernible marking and cleared for underground utilities through Underground Service Alert (USA). In addition, the first five feet of each borehole are air-knifed, or carefully advanced with a hand auger if shallow soil samples are necessary, to help evaluate the borehole location for underground structures or utilities.

Borehole Advancement

Pre-cleaned push rods (typically one to two inches in diameter) are advanced using a hydraulic push type rig for the purpose of collecting samples and evaluating subsurface conditions. The drill rod serves as a soil sampler, and an acetate liner is inserted into the annulus of the drill rod prior to advancement. Once the sample is collected, the rods and sampler are retracted and the sample tubes are removed from the sampler head. The sampler head is then cleaned, filled with clean sample tubes, inserted into the borehole and advanced to the next sampling point where the sample collection process is repeated.

Soil Sample Collection

The undisturbed soil samples intended for laboratory analysis are cut away from the acetate sample liner using a hacksaw, or equivalent tool, in sections approximately 6 inches in length. The 6 inch samples are lined at each end with Teflon® sheets and capped with plastic caps. Labels documenting job number, borehole identification, collection date, and depth are affixed to each sample. The samples are then placed into an ice-filled cooler for delivery under chain-of-custody to a laboratory certified by the State of California to perform the specified tests. The remaining collected soil that has not been selected for laboratory analysis is logged using the United Soil Classification System (USCS) under the direction of a State Registered Professional Geologist, and is field screened for organic vapors using a photo-ionization detector (PID), or an equivalent tool. Soil cuttings generated are stored in Department of Transportation (DOT) approved 55-gallon steel drums, or an equivalent storage container.

Groundwater Sample Collection

Once the desired groundwater sampling depth has been reached, a Hydropunch tip is affixed to the head of the sampling rods. The Hydropunch tip is advanced between approximately 6 inches to one foot within the desired groundwater sampling zone (effort is made to emplace the Hydropunch screen across the center and lower portion of the water table), and retracted to expose the Hydropunch screen.

Grab groundwater samples are collected by lowering a pre-cleaned, single-sample polypropylene, disposable bailer down the annulus of the sampler rod. The groundwater sample is discharged from the bailer to the sample container through a bottom emptying flow control valve to minimize volatilization.

Because the sampling section of the non-discrete groundwater sampler is not protected or sealed, this sampler should only be used where cross contamination from overlying materials is

not a concern. Discrete groundwater samplers are driven to the sample interval, then o-rings, a protective tube/sheath, and an expendable point provide a water-tight seal.

Collected water samples are discharged directly into laboratory-provided, pre-cleaned vials or containers and sealed with Teflon-lined septum, screw-on lids. Labels documenting sample number, well identification, collection date, and type of preservative (if applicable, e.g., HCl for TPPH, BTEX, and fuel oxygenates) are affixed to each sample. The samples are then placed into an ice-filled cooler for delivery under chain-of-custody to a laboratory certified by the State of California to perform the specified tests.

Borehole Completion

Upon completion of drilling and sampling, the rods are retracted. Neat cement grout, mixed at a ratio of 6 gallons of water per 94 pounds of Portland cement, is introduced, *via* a tremmie pipe, and pumped to displace standing water in the borehole. Displaced groundwater is collected at the surface into DOT approved 55-gallon steel drums, or an equivalent storage container. In areas where the borehole penetrates asphalt or concrete, the borehole is capped with an equivalent thickness of asphalt or concrete patch to match finished grade.

Organic Vapor Procedures

Soil samples are collected for analysis in the field for ionizable organic compounds using a PID with a 10.2 eV lamp. The test procedure *involves* measuring approximately 30 grams from an undisturbed soil sample, placing this subsample in a Ziploc--type bag or in a clean glass jar, and sealing the jar with aluminum foil secured under a ring-type threaded lid. The container is warmed for approximately 20 minutes (in the sun); then the head-space within the container is tested for total organic *vapor,* measured in parts per million as benzene (ppm; volume/volume). The instrument is calibrated prior to drilling. The results of the field-testing are noted on the boring logs. PID readings are useful for indicating relative levels of contamination, but cannot be used to evaluate petroleum hydrocarbon levels with the confidence of laboratory analyses.

Equipment Decontamination

Equipment that could potentially contact subsurface media and compromise the integrity of the samples is carefully decontaminated prior to drilling and sampling. Drill augers and other large pieces of equipment are decontaminated using high pressure hot water spray. Samplers, groundwater pumps, liners and other equipment are decontaminated in an Alconox scrub solution and double rinsed in clean tap water rinse followed by a final distilled water rinse.

The rinsate and other wastewater are contained in 55-gallon DOT-approved drums, labeled (to identify the contents, generation date and project) and stored on-site pending waste profiling and disposal.

Soil Cuttings and Rinsate/Purge Water

Soil cuttings and rinsate/purge water generated during drilling and sampling are stored onsite in DOT-approved 55-gallon steel drums pending characterization. A label is affixed to the drums indicating the contents of the drum, suspected contaminants, date of generation, and the boring number from which the waste is generated. The drums are removed from the site by a licensed waste disposal contractor under manifest to an appropriate facility for treatment/recycling.

Hollow Stem Auger Drilling/Monitoring Well Installation

Utility Locating

Prior to drilling, boring locations are marked with white paint or other discernible marking, and cleared for underground utilities through Underground Service Alert (USA). In addition, the first five feet of each borehole are air-knifed, or carefully advanced with a hand auger if shallow soil samples are necessary, to help evaluate the presence of underground structures or utilities.

Borehole Advancement

Pre-cleaned hollow stem augers (typically 8 to 10 inches in diameter) are advanced using a drill rig for the purpose of collecting samples and evaluating subsurface conditions. Upon completion of drilling and sampling, if no well is to be constructed, the augers are retracted, and the borehole is filled with neat cement grout, mixed at a ratio of 6 gallons of water per 94 pounds of Portland cement, through a tremmie pipe to displace standing water in the borehole. In areas where the borehole penetrates asphalt or concrete, the borehole is capped with an equivalent thickness of asphalt or concrete patch to match finish grade.

During the drilling process, a physical description of the encountered soil characteristics (i.e. moisture content, consistency or density, odor, color, and plasticity), drilling difficulty, and soil type as a function of depth are described on boring logs. The soil cuttings are classified in accordance with the uses.

Split-Spoon Sampling

The precleaned split spoon sampler lined with three 6-inch long brass or stainless steel tubes is driven 18 inches into the underlying soils at the desired sample depth interval. The sampler is driven by repeatedly dropping a 140-pound hammer a free fall distance of 30 inches. The number of blows (blow count) to advance the sampler for each six-inch drive length is recorded on the field logs. Once the sampler is driven the 18-inch drive length or the sampler has met refusal (typically 50 blows per six inches), the sampler is retrieved.

Of the three sample tubes, the bottom sample is generally selected for laboratory analysis. The sample is carefully packaged for chemical analysis by capping each end of the sample with a Teflon sheet followed by a tight-fitting plastic cap, and sealing the cap with nonvolatile organic compound (VOC), self-adhering silicon tape. A label is affixed to the sample indicating the sample identification number, borehole number, sampling depth, sample collection date and time, and job number. The sample is then annotated on a chain-of custody form and placed in an ice-filled cooler for transport to the laboratory.

The remaining soil samples are used for soil classification and field evaluation of headspace volatile organic vapors, where applicable, using a photo ionization or flame ionization detector calibrated to a calibration gas (typically isobutylene or hexane). VOC vapor concentrations are recorded on the boring logs.

Grab Groundwater Sample Collection

Grab groundwater samples are collected by lowering a pre-cleaned, single-sample

polypropylene, disposable bailer down the borehole or temporary casing. The groundwater sample is discharged from the bailer to the sample container through a bottom emptying flow control valve to minimize volatilization.

Collected water samples are discharged directly into laboratory provided, pre-cleaned, vials or containers and sealed with Teflon-lined septum, screw-on lids. Labels documenting sample number, well identification, collection date and time, type of sample and type of preservative (if applicable, i.e. HCI for TPPH, BTEX, and fuel oxygenates) are affixed to each sample. The samples are then placed into an ice-filled cooler for delivery under chain-of-custody to a laboratory certified by the State of California to perform the specified tests.

Groundwater Monitoring Well Installation and Development

Groundwater monitoring wells are constructed by inserting or tremmieing well materials through the annulus of the hollow stem auger. The groundwater monitoring wells are constructed with a screen interval determined from the encountered soil stratigraphy, to maintain a proper seal at the surface (minimum three feet), to allow flow from permeable zones into the well, and to avoid penetrating aquicludes. Groundwater wells are installed in accordance with the conditions of the well construction permit issued by the regulatory agency exercising jurisdiction over the project site.

The well screen generally consists of schedule 40 polyvinyl chloride (PVC) casing with 0.01 to 0.02-inch factory slots. As a general rule, 0.01-inch slots are used in fine-grained silts and clays, and 0.02-inch slots are used in coarse-grained materials. The screen is then filter packed with #2/12 or #3 sand, or equivalent, for the 0.01 and 0.02 inch slots, respectively.

Once the borehole has been drilled to the desired depth, the well screen and blank well casing are inserted through the annulus of the hollow stem augers. The well screen is sand packed by tremmieing the appropriate filter sand through the annulus between the casing and augers while slowly retracting the augers. During this operation, the depth of the sand pack in the auger is continuously sounded to make sure that the sand remains in the auger annulus during auger retraction to avoid short-circuiting the well. The sand pack is tremmied to approximately two feet above the screen, at which time pre-development surging is performed to consolidate the sand pack. Additional sand is added as necessary so that the sand pack extends approximately two feet above top of screen. Following construction of the sand pack, a one to two foot thick bentonite seal is tremmied over the sand and hydrated in place. The remainder of the borehole is backfilled with Portland neat cement grout (or the equivalent), mixed at ratio of 6 gallons of water per 94 pounds of neat cement. The well head is then capped with a locking cap and secured with a lock to protect the well from surface water intrusion and vandalism.

The well head is further protected from damage with traffic a rated well box in paved areas or locking steel riser in undeveloped areas. The protective boxes or risers are set in concrete. The details of well construction are recorded on well construction logs.
Following well construction, the wells are developed in accordance with agency protocols by intermittently surging and bailing the wells. Development is determined to be sufficient once pH, conductivity, and temperature stabilize to within s 0.1, s 3%, and s 10%, respectively.

Groundwater Monitoring Well Sampling

Depth to Groundwater/SPH Thickness Measurements

Prior to the beginning of purging and sampling the wells, the depth to groundwater and thickness of SPH, if present, within each well casing are measured to the nearest 0.01 foot

using either an electronic water level indicator or an electronic oil-water interface probe. This is done in within as narrow a time frame as possible, and before the first well is purged. Measurements are taken from a point of known elevation on the top of each well casing as determined in accordance with surveys by licensed land surveyors.

Groundwater Monitoring Well Purging

Groundwater wells are purged using low-flow protocol at a flow rate of less the 1 liter per minute using a bladder pump. The purge intake is placed opposite the portion of the saturated zone expected to contain the greatest hydrocarbon impact, and the depth of the purge intake is recorded during and after purging. The water level in each well is monitored, and care is taken that the well is not dewatered. The conductivity, temperature, and pH of the delivered effluent are monitored and recorded using a flow-through cell during purge operations. Purge operations are determined to be sufficient once three successive measurements of pH, conductivity, and temperature of the purged water at 3 to 5 minute intervals following the evacuation of on system or line volume vary by s 0.1, s 3%, and s 10%, respectively. System or line volumes, actual purge volumes, and the purging equipment used are recorded on the field data sheets.

Groundwater Sample Acquisition, Handling, and Analysis

Following purging operations, groundwater samples are collected from each of the wells, using a low-flow bladder pump. The groundwater sample is discharged from the pump tubing to the sample container before the water passes through the flow-through cell. The sampling equipment is recorded on the field data sheets.

Collected water samples are discharged directly into laboratory provided, pre-cleaned, and chemically preserved sample containers for the analyses requested. Preservatives are used in the samples if appropriate for the analyses, i.e., hydrochloric acid (HCI) for TPPH, BTEX, and fuel oxygenates by EPA Method 8260B.

Labels documenting sample number, well identification, collection date and time, type of sample and type of preservative (if applicable) are affixed to each sample. The samples are then placed into an ice-filled cooler for delivery under chain of custody to a certified laboratory. The type of preservative used is documented on the chain of custody form.

To help assure the quality of the collected samples and to evaluate the potential for cross contamination during transport to the laboratory, a distilled-water trip blank accompanies the samples in the cooler. The trip blank is analyzed for the presence of volatile organic compounds of concern. For petroleum hydrocarbons, the trip blank is typically analyzed for TPPH, BTEX, and fuel oxygenates by EPA Method 8260.

Organic Vapor Procedures

Soil samples are collected for analysis in the field for ionizable organic compounds using a PID with a 10.2 eV lamp. The test procedure involves measuring approximately 30 grams from an undisturbed soil sample, placing this subsample **in** a Ziploc™-type bag or in a clean glass jar, and sealing the jar with aluminum foil secured under a ring-type threaded lid. The container is warmed for approximately 20 minutes (in the sun); then the head-space within the container is tested for total organic vapor, measured in parts per million as benzene (ppm; volume/volume). The instrument is calibrated prior to drilling. The results of the field-testing are noted on the boring logs. PID readings are useful for indicating relative levels of contamination, but cannot be used to evaluate petroleum hydrocarbon levels with the

confidence of laboratory analyses.

Equipment Decontamination

Equipment that could potentially contact subsurface media and compromise the integrity of the samples is carefully decontaminated prior to drilling and sampling. Drill augers and other large pieces of equipment are decontaminated using high pressure hot water spray. Samplers, groundwater pumps, liners and other equipment are decontaminated in an Alconox scrub solution and double rinsed in clean tap water rinse followed by a final distilled water rinse.

The rinsate and other wastewater are contained in 55-gallon DOT-approved drums, labeled (to identify the contents, generation date and project) and stored on-site pending waste profiling and disposal.

Soil Cuttings and Rinsate/Purge Water

Soil cuttings and rinsate/purge water generated during drilling and sampling are stored on-site in DOT-approved 55-gallon steel drums pending characterization. A label is affixed to the drums indicating the contents of the drum, suspected contaminants, date of generation, and the boring number from which the waste is generated. A licensed waste disposal contractor removes the drums from the site to an appropriate facility for treatment/recycling.

APPENDIX C
Borehole Logs

ESE-1

Environmental Science & Engineering, Inc.

BORING LOG AND WELL COMPLETION SUMMARY

[redacted]

WELL COMPLETION

Completion Depth: 30 Feet

Size/Type	From	To
Casing: 2" Diam. Sched. 40 PVC	10 Feet	0 Feet
Screen: 2" Diam. Sched. 40 Slotted (0.02") PVC	30 Feet	10 Feet
Filter: #3 Sand	30 Feet	9 Feet
Seal: Bentonite	9 Feet	7.5 Feet
Grout	7.5 Feet	0 Feet

Well Cap or Box: Flush Mounted Well Box

Project Name: BP Oil Company Project No: 6-92-5428
Location: BP Station #11105
3519 Castro Valley Boulevard
Castro Valley, CA

Driller: Soils Exploration Services, Inc.
Method: HSA
Hole Diameter: 8" Total Depth: 30 Feet
Ref. Elevations:
Logged By: Chris Valcheff

Page 1 of 1

Dates:
Start: 9-29-92
Finish: 9-29-92

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks: Water, drilling/completion, summary, sample type
0	Asphalt FILL GRAVEL NATIVE [redacted] black, stiff, damp, no odor.	GM CL					
5	[redacted] black, 10-20% coarse, very stiff, damp, no odor.		2 7 9			7	SAMPLE @ 5 FEET
	[redacted] blue-grey, 10-20% coarse, very stiff, damp, heavy hydrocarbon odor.						
10	As above, with orange mottles.		4 8 11				SAMPLE @ 10.5 FEET
	[redacted] orange with blue-grey mottles, 5-10% medium grained sand, stiff, damp, heavy hydrocarbon odor.	ML					
15	As above, no odor. 70,000 / 830		3 7 8				SAMPLE @ 15 FEET
20	[redacted] red-brown, 10-20% coarse sand, 70-80% medium sand, dense, moist, no odor.		2 4 6			6	SAMPLE @ 20 FEET [redacted]
	As above [redacted]	SM	2 3 5				
25	[redacted] grey with orange mottles, 30-40% medium grained sand, stiff, moist, no odor.						
	[redacted] grey, damp, stiff, no odor.	CL	2 3 4				
30							TOTAL DEPTH = 30 FEET

REGISTERED GEOLOGIST
SUSAN G. WICKHAM
#5571
STATE OF CALIFORNIA

sample conc. — TPH/benzene (ug/kg)

ESE-2

Environmental Science & Engineering, Inc.
A CILCORP Company

BORING LOG AND WELL COMPLETION SUMMARY

[redacted]

Page 1 of 1

WELL COMPLETION

Completion Depth: 30 Feet

Size/Type	From	To
Casing: 2" Diam. Sched. 40 PVC	10 Feet	0 Feet
Screen: 2" Diam. Sched. 40 Slotted (0.02") PVC	30 Feet	10 Feet
Filter: #3 Sand	30 Feet	9 Feet
Seal: Bentonite	9 Feet	7.5 Feet
Grout	7.5 Feet	0 Feet

Well Cap or Box: Flush Mounted Well Box

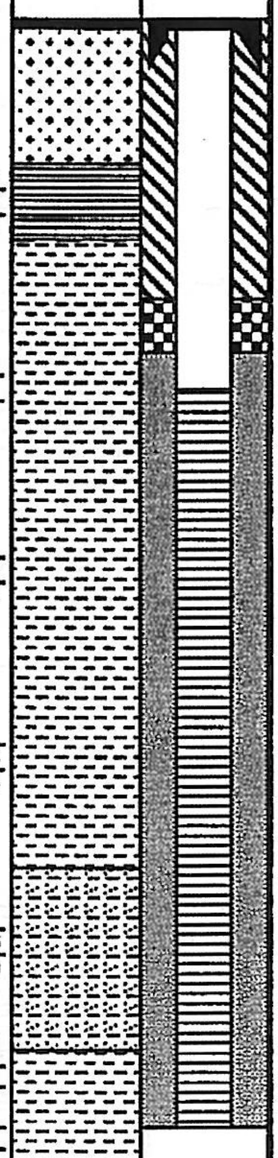
Project Name: BP Oil Company　Project No: 6-92-5428
Location: BP Station #11105
3519 Castro Valley Boulevard
Castro Valley, CA

Driller: Soils Exploration Services, Inc.
Method: HSA
Hole Diameter: 8"　Total Depth: 31 Feet
Ref. Elevations:
Logged By: Chris Valcheff

Dates:
Start: 9-28-92
Finish: 9-29-92

Depth (ft)	Lithologic Description	USC	Sample/ Blows	Vapor	Remarks (Water, drilling/completion, summary, sample type)
0	Asphalt FILL GRAVEL	GP			
5	NATIVE [redacted]black, stiff, damp, no odor.	CL	3, 3, 6	20	SAMPLE @ 4.5 FEET
	[redacted]grey with orange mottles, stiff, damp, slight odor.				
10	(ND) As above, heavy hydrocarbon odor.	ML	5, 7, 9	25	SAMPLE @ 10.5 FEET
15	[redacted]ange with grey mottles, stiff, damp, heavy hydrocarbon odor.		8, 13, 16	15	SAMPLE @ 14.5 FEET
20	[redacted]ange, 50-60% medium to coarse grained sand, stiff, damp, no odor. (ND)		8, 14, 14		SAMPLE @ 20 FEET
				10	[redacted]
25	[redacted]ange-brown, 5-10% silt, medium to coarse grained sand, dense[redacted]no odor.	SM	9, 15, 13		
30	[redacted]rey, stiff,[redacted]no odor.	ML	3, 5, 6, 3, 5, 6		STANDARD PEN. TOTAL DRILLED DEPTH = 30 FEET TOTAL DEPTH = 31 FEET

Graphic Log (Lithology / Well Installation)



REGISTERED GEOLOGIST
STATE OF CALIFORNIA

ESE-5

Environmental Science & Engineering, Inc.

BORING LOG AND WELL COMPLETION SUMMARY

[redacted]

Page 1 of 1

WELL COMPLETION

Completion Depth: 24 Feet

Size/Type	From	To
Casing: 2" Diam. Sched. 40 PVC	9 Feet	0 Feet
Screen: 2" Diam. Sched. 40 Slotted (0.02") PVC	24 Feet	9 Feet
Filter: #3 Sand	24 Feet	8 Feet
Seal: Bentonite	8 Feet	5.5 Feet
Grout	5.5 Feet	0 Feet

Well Cap or Box: Flush Mounted Well Box

Project Name: BP Oil Company Project No: 6-92-5428
Location: BP Station #11105
3519 Castro Valley Boulevard
Castro Valley, CA

Driller: Soils Exploration Services, Inc.
Method: HSA
Hole Diameter: 8" Total Depth: 27 Feet
Ref. Elevations:
Logged By: Chris Valcheff

Dates:
Start: 9-26-92
Finish: 9-28-92

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks: Water, drilling/completion, summary, sample type
0	Asphalt FILL [redacted] NATIVE [redacted] black-grey, 20-30% medium to coarse grained sand, stiff, damp, slight hydrocarbon odor.	GP					
5	[redacted] ive with blue-grey mottling, 25-30% fine to coarse grained sand, stiff, damp, slight hydrocarbon odor.		3 4 5			40	SAMPLE @ 5 FEET
	[redacted] ive, decrease in sand content, stiff, damp, slight hydrocarbon odor.						
10	51,800 / 250 →		5 8 11				SAMPLE @ 10 FEET
	[redacted] ive with blue-grey mottle, 60-90% silt and clay, stiff, damp.	ML					
	[redacted] range-brown with minor mottling, 30-40% fine to coarse grained sand, stiff, damp.		7 12 12			8.5	SAMPLE @ 14 FEET
15	[redacted] ight brown, stiff, damp, no odor.		6 9 12				STANDARD PEN.
	As abov[redacted], slight increase in sand content.		8 10 10				
20	As above, orange-brown, dry.		10 21 22				
25	As above, damp.		8 12 12				TOTAL DRILLED DEPTH = 24 FEET TOTAL DEPTH = 27 FEET
30							

REGISTERED GEOLOGIST
SUSAN S. WICKHAM
#3851
STATE OF CALIFORNIA

Sample conc. — TPH / benzene (ug/kg)

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING MW-6

Page 1 of 1

SEE SITE PLAN

ALISTO PROJECT NO: 10-138-03 DATE DRILLED: 07/18/95

CLIENT: BP Oil Company

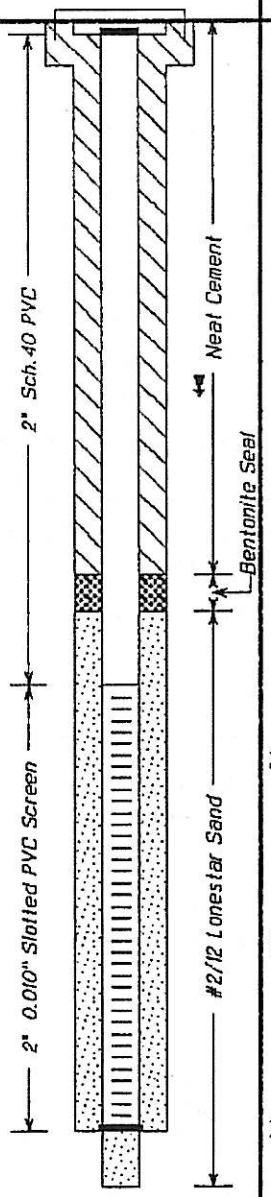
LOCATION: 3519 Castro Valley Boulevard, Castro Valley, CA.

DRILLING METHOD: Hollow-stem auger (8"); 2" split-spoon sampler

DRILLING COMPANY: Soils Exploration Srvs. CASING ELEVATION: 179.24 'MSL

LOGGED BY: C. Ladd APPROVED BY: Al Sevilla

BLOWS/6 IN.	PID VALUES	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
						Planter
					SM	sandy SILT: brown, dry. Observed from cuttings.
12,18,18	1.4	5			ML	clayey SILT: brown, damp, very stiff; minor fines; Fe oxide stain to approximately 3%.
20,43,24	1.7	10				Same: medium brown mottled with Fe oxide stain to 25%, damp, hard; root traces to aproximately 15%; minor fines.
16,18,22	1.1	15				Same: at 15 feet.
12,15,17	1.0	20			CL	silty CLAY: brown/gray, damp, hard.
					SM	At 22 feet, observed water on auger.
10,8,7	0	25				silty SAND: multi-color browns, saturated, medium dense; fine- to medium-grained sand.
					ML	clayey SILT: brown, wet; minor fines.
					CL	
11,10,13	0	30				silty-CLAY: brown, moist, very stiff; minor fines.
						Stabilized groundwater measured on July 28, 1995.



ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING MW-7

SEE SITE PLAN

ALISTO PROJECT NO: 10-138-03 DATE DRILLED: 07/18/95

CLIENT: BP Oil Company

LOCATION: 3519 Castro Valley Boulevard, Castro Valley, CA.

DRILLING METHOD: Hollow-stem auger (8"); 2" split-spoon sampler

DRILLING COMPANY: Soils Exploration Srvs. CASING ELEVATION: 178.55 'MSL

LOGGED BY: C. Ladd APPROVED BY: Al Sevilla

BLOWS/6 IN.	PID VALUES	DEPTH feet	SOIL CLASS	GEOLOGIC DESCRIPTION
				10" Concrete
			ML	
15,18,14	10.0	5		clayey SILT: dark brown, damp, very stiff; Fe oxide stain to approximately 5%.
			CL	silty CLAY: brown/gray, damp, hard; Fe oxide stain to approximately 10%; rootlets to 10%; very fine-grained minor fines.
14,23,17	10.0	10	ML	clayey SILT: red/brown, damp, hard; Fe oxide stain and rootlets; some fine-grained sand; occasional subrounded gravel to 1/4"-diameter.
			CL	
15,20,24	9.7	15		silty CLAY: brown, damp, hard; Fe oxide stain; occasional subrounded gravel to 1/4"-diameter; minor fines.
			CL	
17,17,19	8.1	20		CLAY: brown/gray, wet, hard; rootlets to 5%; Fe oxide stain to approximately 3%; minor fines.
			SM	
11,11,15	0	25		silty SAND: brown, wet, medium dense; fine-grained sand.
			SC	clayey SAND: brown/gray, wet to saturated, medium dense; fine- to medium-grained sand; minor fines.
			CL	
9,10,13	0	30		silty CLAY: brown/gray, moist, very stiff; some very fine-grained sand.
				Stabilized groundwater measured on July 28, 1995.

WELL DIAGRAN