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Alameda County Environmental Health



March 9, 2009

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

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

Dear Mr. Khatri:

As requested in your letter dated January 8, 2009, SOMA's "Site Conceptual Model and Workplan to Address Data Gaps" for the subject property has been uploaded to the State's 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. Azim Shakoori w/enclosure Mr. Matt Herrick w/Broadbent & Associates, Inc. w/enclosure

Site Conceptual Model and Workplan to Address Data Gaps

3519 Castro Valley Boulevard Castro Valley, California

March 9, 2009

Project 2762

Prepared for

Mr. Mirazim Shakoori 3519 Castro Valley Boulevard Castro Valley, California



CERTIFICATION

SOMA Environmental Engineering, Inc. has prepared this Site Conceptual Model on behalf Mr. Mirazim Shakoori, for the property located at 3519 Castro Valley Blvd., Castro Valley, California. This Site Conceptual Model was prepared in accordance with Alameda County Environmental Health Services, Environmental Protection Divisions' correspondence, dated January 8, 2009.

Mansour Sepehr, PhD, PE Principal Hydrogeologist



Site Conceptual Model and Workplan to Address Data Gaps

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Site Conceptual Model and Workplan to Address Data Gaps

1. INTRODUCTION

SOMA Environmental Engineering, Inc. (SOMA) has prepared this document on behalf of Mr. Mirazim Shakoori, for the property located at 3519 Castro Valley Boulevard, Castro Valley, California. It presents the Site Conceptual Model (SCM) and a workplan to address data gaps as requested by Alameda County Environmental Health Services (ACEHS) Environmental Protection Division correspondence dated January 8, 2009. The ACEHS correspondence was in response to the Phase II Investigation conducted by Delta Consulting on behalf of Shell Corporation, and subsequent filing of an Underground Storage Tank Unauthorized Release (Leak) Report on September 24, 2008.

1.1 Site Location and Description

The site is located on the corner of Redwood Road and Castro Valley Boulevard. Figure 1 shows the site and vicinity. 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. Mirazim Shakoori in 1993. The station was operated under Chevron brand until recently, and now operates as a Shell gasoline service station.

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). Site features including the former and current USTs and former dispenser island are shown on Figure 2. Site history and remediation background are summarized in Appendix A.

1.2 Regional and Site Geology

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 (1994), the site is located in the Castro Valley Basin, an isolated, structural basin surrounded to 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), and depth at which groundwater is first encountered and where it eventually stabilizes, and on past evidence at this and nearby sites, per the referenced ACEHS correspondence it is not unreasonable to conclude that groundwater is present under confined or semi-confined conditions in vicinity of the site.

1.3 Regional and Site Hydrology

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. According to Bulletin 118, groundwater in Castro Valley is unconfined and yields to wells are limited, usually only sufficient for irrigation.

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 ³/₄ mile east of the site.

Depth to first encountered groundwater at the site has historically been between 18 and 25 feet below ground surface (bgs). Stable groundwater has historically been observed from 2.36 to 12.02 feet bgs in groundwater monitoring wells. During the First Quarter 2009 Groundwater Monitoring Event, groundwater was observed to flow southeasterly across the site at an approximate gradient of 0.0129 feet/feet. The Rose diagram on Figure 2 demonstrates historical groundwater flow directions at the site. Groundwater elevation, flow, and direction are discussed in depth in Sections 2.4 and 2.6. All monitoring wells on-site and off-site have been surveyed using the NAVD88 and NAD83 Datums (Tables 3 and 4, Appendix C)

Site Conceptual Model and Workplan to Address Data Gaps

1.4 Land Use

According the General Plan, the site is zoned "general commercial," and located in an area consisting primarily of commercial and some residential properties. The properties surrounding and downgradient of the site are all commercial. At this time, there are no plans to rezone the site or vicinity for residential land use. Figure 3 illustrates the zoning subdivision of the site and its general vicinity.

1.5 Evaluation of Delta Environmental Investigation (September 24, 2008)

During the September 24, 2008 Phase II Investigation conducted by Delta Consultants on behalf of Shell Oil Products US (Appendix B), residual soil impact was observed north of the former USTs, in B-3 at 12 feet bgs (TPH-g at 720 mg/kg) and next to the planter area in the northwestern corner of the site, B-1 at 17 feet bgs (TPH-g, 120 mg/kg). Although contamination has been observed previously in the vicinity of B-3, in samples collected from ESE-3 at 10.5 feet bgs (TPH-g, 220 mg/kg, benzene 1.4 mg/kg), the observed levels were significantly lower. ESE-3 was decommissioned as part of UST remodeling in 2003. Soil contamination was also observed in vicinity of SB-1 from 1 to 8 feet bgs, east of the station building (TPH-g between 140 and 310 mg/kg) and at SB-2 from 5 to 8 feet bgs, west of the station building, (TPH-g between 20 and 230 mg/kg). No other Delta soil samples exhibited COC concentrations above laboratory detection limits.

Elevated COC concentrations in groundwater were observed in B-5, B-6, MW-1 (ESE-1), MW-2 (ESE-2) and MW-3 (SOMA-1), Figure 2. Delta gave ESE-1, ESE-2, and SOMA-1 unique identifiers during their investigation due to a lack of historical review. TPH-g was detected in B-6 (900 μ g/L), which is similar to concentrations observed in nearby ESE-5 (1,100 μ g/L) during the First Quarter 2009 monitoring event (Tables 2, 3, and 4). MtBE was elevated in remaining groundwater samples. MtBE in B-5 was 5 μ g/L, and in the monitoring wells concentrations were comparable to the First Quarter 2009 monitoring event: ESE-1 (15 μ g/L compared to 13 μ g/L), ESE-2 (51 μ g/L compared to 36 μ g/L), and SOMA-1 (19 μ g/L compared to 14 μ g/L). TBA was elevated in ESE-1 (38 μ g/L) when Delta sampled in September, and was further elevated when sampled on January 6, 2009 (93 μ g/L). No other COCs were observed above detection limits in the groundwater samples collected by Delta.

The subsurface and groundwater contamination observed by Delta is consistent with historical site contamination, and likely a result of previous releases (1988 and 2000) and possible co-mingling plumes from off-site migration.

Site Conceptual Model and Workplan to Address Data Gaps

2. SITE CONCEPTUAL MODEL

The following interprets all data obtained to date to increase understanding of stability, extent, and impact of the contamination on public health and the environment. The following sections summarize the lateral and vertical extent of impacted media; identify contaminants of concern, preferential flow paths, and sensitive receptors; and evaluate current data gaps in the Site Conceptual Model (SCM). Figure 4 presents a flow chart for the SCM and Figure 5 presents a 2-D representation of the SCM, demonstrating the vertical extent of contamination as well as potential preferential flow paths.

2.1 Beneficial Uses of Groundwater

The Water Quality Control Plan ("Basin Plan") for the San Francisco Bay Region adopted by California Regional Water Quality Control Board (CRWQCB), San Francisco Bay Region (Regional Board) declares that all surface and ground waters of the state are suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards unless total dissolved solids (TDS) exceed 3,000 mg/L (5,000 μ S/cm, electrical conductivity, EC) and the well is not capable of sustaining a yield of 200 gallons per day.

During the groundwater monitoring event of January 2009, TDS values were not recorded, but EC measurements during the groundwater monitoring event ranged from 699 μ S/cm to 962 μ S/cm.

Based on observed EC values, it is hypothesized that groundwater at the site is a current or potential source of drinking water. In general, the Basin Plan states that drinking water resources shall not contain concentrations of constituents that exceed the Maximum Contaminant Levels (MCLs).

2.2 Identification of Chemicals of Potential Concern

The goal of this site conceptual model is to identify COCs and their presence in soil, soil vapor and groundwater, to determine whether these COCs have been fully delineated in soil and groundwater.

Identified site-specific COCs include total petroleum hydrocarbons as gasoline (TPH-g); benzene, toluene, ethylbenzene, and total xylenes (collectively known as BTEX); methyl tertiary-butyl ether (MtBE); and tertiary-butyl alcohol (TBA). COCs have been detected in soil and groundwater beneath the site, including recently at concentrations that exceed CRWQCB Environmental Screening Limits (ESLs). There has been no historical or current observation of light or dense non-aqueous phase liquids (LNAPL/DNAPL) or free product in groundwater at the site.

Site Conceptual Model and Workplan to Address Data Gaps

2.3 Nearby Release Sites

Xtra Oil is an active gasoline station located at 3495 Castro Valley Boulevard, directly west of the site (Figures 2 and 6). A similar lithology is observed at the site, consisting primarily of silty and clay with coarser sediments observed below 18 to 19 feet bgs. There are currently four 12,000-gallon USTs at the site; these tanks were installed in 1992 after removal of the former tanks. During the 1992 tank removal, surrounding soil was excavated from the tank pit and disposed of off-site. In 1990, MW-1 through MW-3 were installed at the Xtra Oil Station. TPH-g was detected in the soil at concentrations of 25 to 1,400 mg/kg. TPH-d was detected at 120 mg/kg. Also during this time, three boreholes were advanced at the site; TPH-g was detected in these boreholes ranging from 450 to 2,000 mg/kg. MW-2 was destroyed in 1996 during the widening of Redwood Road. In 1997, MW-4 was installed. In 2007, a groundwater extraction system was installed in EW-1. In late 2007, MW-5 through MW-12 were installed on-site and off-site downgradient of the USTs. Groundwater monitoring events have been ongoing since 1990. During the Fourth Quarter 2008 monitoring event at the site, approximately 0.33 feet of free product was encountered in OW-1 (located in Redwood Road, between Xtra Oil and subject site (approximately 55) feet west of subject site's property boundary). Free product was also observed in MW-4, along the eastern boarder of the Xtra Oil station (approximately 120 feet west of subject site's boundary). A reported groundwater flow direction at Xtra Oil station has fluctuated from easterly toward the subject site to the southsouthwesterly (rose diagram of groundwater flow direction is shown on Figure 2). During the latest groundwater monitoring event dated January 9, 2009, TPH-g was detected at concentrations ranging from 18,000 to 87,000 µg/L, and TPH-d was observed from 3,800 to 7,600 µg/L. Benzene was detected at concentrations ranging from 180 to 26,000 µg/l, MtBE was detected in MW-3 and EW-1 from 4,700 to 7,700 µg/L, TBA was detected in the same wells at levels of 8,000 and 10,000 µg/L. Groundwater monitoring well MW-8 installed within the eastern sidewalk west of groundwater monitoring well SOMA-4 exhibited TPH-d and TPH-g concentrations of 1,500 μ g/l and 6,200 μ g/L illustrating the plume migration in the southeasterly direction from Xtra Oil Site. Figure 2 shows locations of groundwater monitoring wells.

Groundwater was observed to flow south/southeast with a gradient of 0.015 ft/ft in the vicinity of Redwood Road. Groundwater at this site has historically flowed due east, to south of east in the vicinity of the USTs; rose diagram of approximate groundwater flow direction is shown of Figure 2. Recent and historical environmental investigation and monitoring reports for 3495 Castro Valley Blvd (Xtra Oil station) is attached in Appendix B.

A Unocal station is situated 0.2 miles north of our site on Redwood Road; Figure 2 shows the station location. Groundwater monitoring was conducted at this site from 1999 to 2003. An SCM for this location has recently been requested from ACEHS. Per the October 2003 monitoring report, groundwater flows slightly east of south with a 0.012 ft/ft gradient. TPH-g was detected at concentrations of 140

to 3,000 μ g/L and MtBE was detected between 13 and 1,00 μ g/L. Benzene, ethylbenzene and total xylenes were all detected in MW-101 at approximately 100 μ g/L.

2.4 Lithology and Hydrogeology

As shown in cross sections A-A', B-B', and B-A' (Figure 7) presented in Figures 8, 9, and 10, the site is underlain with interbedded silty clay, sandy silt/silty sand, clayey sand, and clayey silt. As shown in these cross-sections, an unconsolidated sequence of permeable and relatively impermeable sediments underlies the site. As borehole logs for TWB-1 through TWB-5 and SOMA-4 demonstrate, these unconsolidated sequences continue off-site to the south, with no obvious changes in lithology. Boring logs utilized to create the geological cross-sections are included in Appendix D.

During soil and groundwater investigations only one water bearing zone (WBZ) was encountered. An 18 to 22 foot thick bed of confining silty clay and clayey silt overlies the WBZ. The WBZ is composed of silty sand, sand, and clayey sand with a thickness of 2 to 15 feet. As seen in B-5 and ESE-4, this WBZ narrows under the center of the site to an approximately 2-foot thickness. If viewed south from ESE-5, along TWB-5 and SOMA-4, the WBZ thickens to 10 to 15 feet, possibly due to fossilized stream channels (which can happen in fluvial depositional environments). Preferential flow (stream) channels have also been observed south (downgradient) of the Xtra Oil station across Redwood Road. The WBZ appears to be continuous and extends off-site to the southeast. Below the WBZ is a fairly homogenous silty clay unit that extends to 30 feet bgs, the greatest depths explored during historical investigations on-site.

Based on historical boring logs (Appendix D), initial groundwater was encountered at depths of 18 to 25 feet bgs. Depth to stabilized groundwater in the monitoring wells has historically ranged between 2.36 feet to 12.02 feet bgs. Stable depth to groundwater levels during the January 2009 groundwater monitoring event were observed between 7.66 feet in ESE-5 and 10.81 feet in SOMA-1. This implies that groundwater in the WBZ reflects potentiometric pressure; therefore, the WBZ is considered a semi-confined to confined aquifer and the wells on- and off-site appear to be screened appropriately within the First WBZ.

The January 2009 groundwater elevation measurements at this site reveal that groundwater flow in the WBZ is southeasterly at a gradient of 0.0129 feet/feet. Groundwater elevations measured during this event varied from 167.28 feet mean sea level (MSL) in well SOMA-3 to 171.79 feet MSL in MW-6. Figure 11 shows the contour map of groundwater elevation and groundwater flow direction across the site. Figure 2 shows rose diagrams of historical flow directions for groundwater at both the subject site and the Xtra Oil station across Redwood Road. Historically, groundwater flow at the subject site has been

south/southeasterly while flow at the Xtra Oil station has been due east to southwest.

2.5 Lateral and Vertical Extent of Historical Soil Contamination

An Unauthorized Release was detected during the 1992 Preliminary Site Assessment at the subject site. A second Unauthorized Release was reported in May 2000, due to a leaking shear valve on the piping in the former UST pit. The site underwent remodeling in December 2003, when the former UST pit was excavated and the four USTs removed, a 2,000-gallon waste-oil tank was also removed at this time (location shown on Figure 2). Soils were over excavated to 12 feet bgs (8 feet for the waste-oil tank); the shallow soil (top 5 feet) was reused to backfill the new UST pit, after confirmation sampling determined that no COCs were present. The remaining soil and purge water from the former UST pit 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).

During removal of the USTs, piping, and distribution lines in 2003, TPH-g was detected at 530 mg/kg in PL1 at 4 feet bgs and in SB2-Composite at 390 mg/kg. MtBE was detected in samples taken from 8 to 10 feet bgs in the former UST tank pit along the northeast, northwest, and southwest tank wall. (0.059 to 0.075 mg/kg) and in the SB1-Composite at 0.23 mg/kg. During the off-site TWB investigation (December 2003), all COCs were non-detect or below ESLs, except MtBE, which was observed in TWB-2 at 24 feet bgs (0.027 mg/kg).

During the September 2008 Phase II Investigation conducted by Delta (Appendix B), what appears to be a residual soil impact was observed north of the former USTs, in B-3 at 12 feet bgs (TPH-g at 720 mg/kg). Although contamination has been observed previously in the vicinity of B-3, in samples collected from ESE-3 at 10.5 feet bgs (TPH-g, 220 mg/kg, benzene 1.4 mg/kg), the observed levels were significantly lower. The lateral and vertical extent of soil contamination around B-3 boring at this time constitutes a data gap in SCM. ESE-3 was decommissioned as part of the UST remodeling in 2003. Soil contamination was also observed in vicinity of SB-1 from 1 to 8 feet bgs, east of the station building (TPH-g between 140 and 310 mg/kg) and at SB-2 from 5 to 8 feet bgs, west of the station building, (TPH-g between 20 and 230 mg/kg). Contamination observed next to the planter area in the northwestern corner of the site, B-1 at 17 feet bgs (TPH-g, 120 mg/kg). All other Delta-collected soil samples were nondetect for COCs. Figures 12 and 13 show the lateral extent of TPH-g and benzene contamination in soil. Based on the historical concentrations observed in ESE-3 and other borings, it could be assumed that soil contamination observed by Delta in September 2008 does not constitute a new release and is rather a residual contamination from historical releases.

To further define the lateral and vertical extent of residual soil impact, SOMA proposes advancing two soil borings in the vicinity of the current UST pit (adjacent to B-1) to determine the lateral extent and the origin of soil contamination. Elevated TPH-g concentration in B-3 is consistent with the source area around the historical UST pit; therefore, SOMA believes that no further investigation in this area is necessary at this time. The vertical extent of soil contamination appears to be limited to the vadose zone. These proposed borings are discussed further in Section 3.

2.6 Lateral and Vertical Extent of Contaminants in Groundwater

Based on existing analytical data derived from historical site investigations and ongoing guarterly groundwater monitoring events, the WBZ appears to be impacted with TPH-g and benzene along the western portion of the site and in vicinity of ESE-1, south of the station building. The highest concentration of TPH-g is observed in ESE-5 and B-6 (1,100 and 900 µg/L), southwest of the UST pit. The TPH-g groundwater impact observed on-site may be due to contamination from the Xtra Oil station west of the site, across Redwood Road. Free product was observed in observation well OW-1 and MW-4, west and northwest of ESE-5 during the October 2008 monitoring event, and TPH-g, benzene, and MtBE were detected in the Xtra Oil on-site wells at concentrations up to two orders of magnitude greater than at the subject site. Groundwater has historically flowed easterly to southeasterly across the subject site. Figures 14, 15, and 16 illustrate TPH-g, MtBE, TBA, and TAME contamination in the WBZ. MtBE, TBA, and TAME impact are centered in the southeastern portion of the site, downgradient and crossgradient of the former and current USTs. The plume appears to be centered on SOMA-1 and ESE-2 and has moved off-site beyond SOMA-2 and SOMA-3 (Figures 22 and 23). Elevated MtBE concentrations were observed in SOMA-4 (10 µg/L), downgradient of the site and the Xtra Oil release. The full extent of off-site migration of the MtBE/TBA plume, as well as the origin of the TPH-g contamination along the western border of the property is not fully delineated and represents a current data gap.

To address this data gap, SOMA proposes to advance four soil borings northeast and west/northwest of B-6 and ESE-5 to further define the lateral extent of on-site contamination in the WBZ and determine if a comingling may exist between the on-site PHC plume and the plume at the nearby station west of the site. This is discussed in greater detail in Section 3.

2.7 Environmental Screening Levels

The representative site-specific concentrations for COCs were compared to the most conservative CRWQCB Final ESLs as well as MCLs, in order to determine whether additional site-specific risk evaluation is warranted. Commercial ESLs based on site land use (Section 1.4) are used as screening values and can be

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revisited as relevant data becomes available. Soil and groundwater samples collected at this site have historically demonstrated concentrations moderately above listed ESLs (Tables 1 through 4).

сос	Groundwater As current or potential source of drinking water (µg/L)	Soil <3.0 m (mg/kg)	Soil >3.0 m (mg/kg)	Soil Vapor Intrusion (μg/m³)	Vapor Intrusion into Buildings (μg/L)
TPH-g	100	83	83	1,000	1,000
Benzene	1	0.044	0.044	84	540
Toluene	40	2.9	2.9	63,000	380,000
Ethyl- Benzene	30	2.3	3.2	980	170,000
Total Xylenes	20	2.3	2.3	21,000	160,000
MtBE	5	0.023	0.025	9,400	24,000
ТВА	12	0.075	0.075	NL	NL

Note: NL = not listed; California Regional Water Quality Control Board, Interim Final November 2007, revised May 2008, Environmental Screening Limits, Tables A, C, E, F1-a.

ESL screening levels are Tier 1 levels (conservative target risk and hazard levels) that take into consideration additive risk due to presence of multiple chemicals with similar target health effects. For carcinogens, the human health risk screening levels represented by ESLs are based on a target cancer risk of 10⁻⁶ for both residential and commercial exposure scenarios; this represents the lower end of the acceptable range of 10^{-4} and 10^{-6} recommended by the USEPA. Furthermore, as stated by CRWQCB, active remediation is generally warranted at sites where estimated cancer risk exceeds 10⁻⁶. To evaluate potential health risks associated with on-site and off-site occupants, hypothetical residents, and future construction workers, SOMA compared representative chemical concentrations at the site to established ESLs. The ESLs were used to establish initial cleanup goals, to prioritize areas of concern, to estimate the potential health risks, and to determine if further evaluation is warranted. The presence of a chemical at concentration exceeding an ESL does not indicate that adverse impact to the human health or environment will occur. SOMA evaluated the potential exposure routes for the on-site and off-site areas (Figure 4). Although the site is capped with concrete and no soil is exposed at the surface, at this time, as a conservative measure, site analytical data was compared to ESLs for residential, commercial, and trench workers exposure scenario and to ESLs for groundwater as current or potential source of drinking water. As shown in Tables 1 through 4, existing TPH-g concentrations in soil north of the former USTs, and TPH-g, benzene, MtBE, and TBA concentrations in groundwater along the southern portion of the site and off-site to the south, exceed corresponding ESLs intended to address human health, groundwater protection, and nuisance concerns for construction/trench worker exposure scenario.

2.8 On-Site Vapor Intrusion Concerns

Depth to the water table is 18 to 22 feet bgs, and the WBZ is overlaid with an 18-foot-thick confining layer. Groundwater COC levels are below the ESL for Vapor Intrusion into Buildings except TPH-g in ESE-5 (1,100 μ g/L vs. ESL of 1,000 μ g/L); ESE-5 is located 25 feet west of the station building. Based on the distance from ESE-5 it was assumed that concentrations would decrease beneath the site building, as shown on Figure 14, reducing the risks of vapor intrusion. Therefore, at this time a soil vapor study is not deemed necessary, unless requested by the regulatory agency.

2.9 Plume Behavior Evaluation

Behavior of the plume margin is of concern when defining dissolved contaminant plume behavior. Evaluation of plume behavior assists in determining if the plume is a receding plume, a stable plume or an advancing plume.

After the 2003 UST removal, COC concentrations dropped in ESE-2, MW-7, and SOMA-1 (Figures 18, 20, and 21). MtBE is observed to migrate off-site, passing SOMA-2 from October 2004 through September 2007 and concentrations increased in SOMA-3 from early 2006, until dropping below ESLs during recent monitoring events (Figures 22 and 23). TPH-g was elevated in SOMA-4, until August 2006, when levels dropped below ESL and have remained constant at approximately 10 μ g/L (Figure 24).

Removal of the former USTs did not impact ESE-5 (Figure 19), where TPH-g concentrations have fluctuated with spikes in early 2005 and 2006, when concentrations jumped from 2,500 and 3,500 to nearly 5,000 μ g/L. TPH-g levels have decreased with some minor fluctuations. TPH-g concentrations were recently detected at 1,100 μ g/L. The UST removal appears to have affected MtBE concentrations in ESE-1 (Figure 17). Since 2003, MtBE in ESE-1 has decreased. Benzene and TPH-g concentration have fluctuated, but remained around 100-200 μ g/L for benzene and around 1,000 μ g/L for TPH-g. This suggest that the plume affecting these wells did not result from the documented 2000 piping release, but continued elevated concentrations suggest that the plume affecting these wells did not result from the site, in an easterly direction.

To evaluate movement of the contaminant plume, concentration versus distance was plotted. Figure 25 shows the MtBE plume shrinking over time and with

distance from the former USTs. TBA is seen to increase near the former USTs pit, with a sharp drop in TBA past the property line at ESE-2 (Figure 26). Figures 27, 28, and 29 shows TPH-g, MtBE, and TBA concentrations with distance from the western property boundary. The TPH-g plume is stable beneath ESE-5 and advancing under the site, as shown by the increased concentrations in ESE-1. The MtBE plume is shrinking and the TBA plume has advanced to the center of the southern portion of the site.

Based on the most recent groundwater monitoring event (Q1 2009), groundwater flows southeasterly across the site at an approximate gradient of 0.0129 feet/feet. In addition to determining the directions of groundwater flow, it is essential to determine approximate rates of groundwater movement. Hydraulic conductivity and gradient data are required to estimate the Darcian or bulk flow rates of ground water. Since at this time, no slug or pumping test has been conducted at the site, hydraulic conductivity data was estimated based on lithologies observed within the site WBZ. The WBZ is comprised of silty sands (SM) and sandy silts (ML) and some sands (SP). Therefore, hydraulic conductivity was estimated between 10⁻⁵ and 10⁻³ (cm/s).

Using Darcy's Law and the groundwater flow gradient of 0.012 ft/ft and aquifer porosity of 0.25, the groundwater flow velocity was calculated to be between 0.5 and 50 ft/year.

2.10 Preferential Flow Pathway Study

To evaluate whether existing utility lines, including water, sewer, and storm drain lines, are acting as preferential flow paths, utility maps of the site vicinity were obtained from the Castro Valley Sanitary District and Alameda County Public Works Department. As Figure 30 shows, no sewer main, storm or water lines pass through the site. A sewer, storm, water and high-pressure gas main pass the site along Redwood Road and Castro Valley Blvd. at depths from 2 to 7.2 feet bgs. Private lines that connect the site to the main sewer, storm, and main water lines run at approximately 4 feet bgs. Since groundwater occurs below 21 feet bgs, it is unlikely that private or public utility lines act as preferential flow pathways.

2.11 Sensitive Receptor Survey

SOMA conducted a sensitive receptor survey in August 2006. After reviewing records from the Department of Water Resources District, 14 properties were identified as having well(s) on their premises. Of the 14 properties, five were reported to have irrigation wells. The remaining nine properties (locations) were reported to have monitoring or decommissioned wells. All five irrigation wells were located to the northeast (upgradient of the site) and are not expected to be impacted by contaminant plumes migrating off-site. Figure 31 illustrates the locations of these sensitive receptors.

Based on records obtained from the Alameda County Public Works Agency, 11 properties were identified as having well(s) on their premises. Of the 11 properties, two were reported to have irrigation wells; the remaining nine were reported to have decommissioned well(s), monitoring wells, or soil borings on their premises. From the two identified irrigation wells, one (No 11) is located upgradient, and the other (No 4) is located approximately 2,000 feet downgradient from the site. Figure 32 illustrates the locations of these sensitive receptors. Although the off-site wells show detectable levels of COCs, the concentration levels are relatively low and decrease notably with distance. Therefore, the downgradient irrigation well (No 4), is not likely to be impacted by the contaminant plume in the immediate future.

The public records also indicated presence of seven potential sensitive receptors (facilities) within a ½-mile radius of the site. These receptors consisted of educational facilities such as learning centers and schools. Figure 33 illustrates the locations and lists the names of the sensitive receptors. As illustrated in this figure, most of these are located up- or crossgradient from the site. Based on data from obtained from the sensitive receptor survey, there is no immediate threat from site groundwater contaminants to individuals living or working in the vicinity of this site.

Based on the information obtained from the Castro Valley General Plan, Castro Valley Creek, a tributary to the San Lorenzo Creek, is located approximately 200 feet to the east-southeast. Figure 33 shows the location of the creek in relation to the site. The section of the creek, adjacent to the site and running from Castro Valley Boulevard north to Pine Street, was identified by the Alameda County Public Works Department as an improved channel with "Oak Riparian Woodland/ Wildlife Corridor." The creek's base flow channel is unlined and is approximately 15 to 20 feet wide. No special-status species were reported to use the Castro Valley Creek or its vicinity as their habitat. Although Castro Valley Creek is a potentially sensitive environment, due to the fact that no special-status species were reported to use this creek as their habitat and the creek's relative non-proximity to the site, the likelihood of significant impact from site groundwater contaminants is minimal.

2.12 Data Gaps Evaluation

The SCM flow chart and 2-D SCM (Figures 4 and 5) show current areas of contamination and illustrate areas where further investigation is recommended. For the purpose of this SCM evaluation, the hypothetical site construction worker was assumed to be exposed to COC detected in soil and groundwater by direct dermal contact, incidental ingestion, and inhalation of airborne particulates. No other complete exposure pathways were identified at this time, further site investigation data will be used to prepare a revised SCM during preparation of

which all potential exposure pathways will be reevaluated. Incomplete exposure pathways are illustrated on Figure 4.

Based on the initial SCM, SOMA proposes activities outlined in Section 3 to address the following existing data gap:

- Possibility of contaminant plume migration from the neighboring property (Xtra Oil) and comingling with the smaller on-site plume adjacent to the southwestern portion of the site.
- Extent of soil contamination identified in boring B-3 (TPH-g at 720 mg/kg) during Delta's investigation.

3. PROPOSED ADDITIONAL INVESTIGATION

3.1 **Pre-Fieldwork Activities**

Prior to initiating all field assessment activities, SOMA will obtain required drilling permits from Alameda County Public Works Department. Furthermore, a site-specific HASP according to 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) will be prepared and implemented prior to initiating field activities.

SOMA will mark boring locations and notify Underground Service Alert (USA) to verify 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.

3.2 Borehole Advancement

To further define the lateral and horizontal extent of COC impact to vadose zone and the WBZ (up to 31 feet bgs), SOMA proposes advancing soil boreholes at the site. Proposed borings DP-1 through DP-9 (Figure 34) will be advanced using direct push technology (DPT).

Five borings will be advanced in the area around west of the former USTs, in the vicinity of ESE-5 and one between the new USTs and the station building and three around B-3 location where TPH-g was detected at 720 mg/kg (Figure 34). The purpose of this subsurface assessment is to determine the lateral extent and origin of the elevated concentrations of COCs reported in groundwater samples from ESE-5 and B-6, determine if there is any comingling of the site plume with the plume at the neighboring station west of the site, and to delineate soil contamination around boring B-3.

Site Conceptual Model and Workplan to Address Data Gaps

The purpose of each boring is collection of soil and groundwater samples at discrete depths. Each boring will be advanced to approximately 30 feet bgs depending on the encountered lithology and detection of contamination. This depth was chosen because it encompasses depths of contamination seen during previous investigations. A description of general field procedures is included in Appendix E.

3.2.1 Soil Sampling

DPT is an efficient method of collecting continuous soil cores while preventing cross-contamination. DPT involves hydraulically hammering a set of steel rods into the subsurface with the lead section consisting of a polyethylene-lined sampler. After pushing the drilling rods to the desired depth, the soil-filled liner will be retrieved. SOMA's field geologist will log the continuous soil cores from each boring location, characterizing the content of each soil-filled tube using the Unified Soil Classification System.

Encountered subsurface lithologies will be recorded on the geologic borehole logs. On boring logs SOMA will indicate percent gravel, sand, silt, and clay. At each interval of depth-discrete soil sampling, the DPT drilling rig will obtain a 4-foot soil core sample. The contents of each sediment-filled tube will be screened using a PID. Vapors from the soil core samples will be screened for volatile compounds and documented on geologic borehole logs.

For vertical definition, SOMA proposes that soil samples be collected at depths where historical soil contamination was observed or where PID readings or visual observations indicate the presence of significant soil contamination, or at significant changes in lithology. SOMA's field geologist will select and collect sediments into 6-inch-long stainless steel sampling tubes and cap both ends of each sample with a Teflon liner and polyethylene end caps. The samples will be labeled with a unique identifier and immediately placed into a chilled ice chest for transportation to a California state-certified environmental laboratory for analysis. Field procedures are included in Appendix D.

3.2.2 Discrete Groundwater Sampling

To collect groundwater samples at the field-identified depth intervals, a Dual Tube groundwater profiler will be used. It is designed for discrete groundwater sampling without cross-contaminating WBZs at different depth intervals. The dual-walled sampler involves hydraulically driving or hammering a cased set of rods into the ground with the lead rod section consisting of a hollow acetate-lined sampler. After pushing the cased rods to the desired depth, the 1-inch-diameter drilling rods are withdrawn from within the 2.125-inch-diameter outer casing to insert the screened sampler. The field crew will use disposable bailers or a

Watera sampler fitted into plastic tubing to collect grab groundwater samples. General field procedures are included in Appendix D.

3.2.3 Borehole Abandonment and Waste Disposal

Following soil and groundwater sampling, borings will be abandoned with a neat cement grout mixture tremmied into place and completed at the surface with materials to match existing grade.

Soil and groundwater generated during boring activities will be temporarily stored on-site in separate DOT-rated, 55-gallon steel drums pending characterization, profiling, and transportation to an approved disposal/recycling facility. Waste manifests will be made part of the subsequent report.

3.2.4 Laboratory Analyses

Groundwater and soil samples will be submitted to a California state-certified environmental laboratory under the appropriate sample handling protocol for analysis of the following:

- TPH-g and TPH-d
- BTEX, MtBE
- VOCs and fuel oxygenates, additives and lead scavengers including TBA, ETBE, DIPE, TAME, 1,2-DCA, EDB, and ethanol.

Above analysis will be conducted using USEPA Method 8260B (full list) and Method 8015D.

3.3 Report Preparation

SOMA will prepare a report detailing additional site investigation, which will include the following:

- A description of field activities; tabulation of groundwater sample analytical data, and soil sample analytical data; maps illustrating boring locations and lateral/vertical extent of impacted soil and groundwater.
- Conclusions regarding lateral and vertical extent of impact at the assessment area of concern, based on data and information derived from fieldwork and laboratory analysis.
- Evaluation of remediation options to deal with residual soil contamination on-site.
- If residual levels of contamination warrant, SOMA will propose No Further Action Status for the site.

Site Conceptual Model and Workplan to Address Data Gaps

4. REFERENCES

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Alameda County Health Care Services, June 22, 2006. A Letter in Connection with Request for Conducting Sensitive Receptor Survey at 3519 Castro Valley Blvd., Castro Valley, CA."

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Delta Consultants, Inc., November 21, 2008. "Phase II Environmental Site Assessment."

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Site Conceptual Model and Workplan to Address Data Gaps

Alameda County Environmental Health Services, January 8, 2009. Correspondence requesting preparation of Site Conceptual Model and Data Gaps Workplan.

FIGURES

Site Conceptual Model and Workplan to Address Data Gaps





0

approximate scale in feet 60 120

Figure 1: Site vicinity map.





Castro Valley Central District



Residential 0-4 du/ac Large Lot Single Family

Residential 5-8 du/ac Single Family

Residential 9-17 du/ac Town Houses & Low Density Apartments

Residential 18-30 du/ac Medium Density Apartments

Residential over 30 du/ac High Density Apartments

Mobile Home Parks

General Commercial Personal Services, Financial & Real Estate, etc Retail Commercial Restaurants & Entertainment Automotive Service, Sales & Parts Mixed Use Office

Medical Dental

Light Industrial & Storage

Public/Institutional

Park/Open Space

Other/Unclassified

Vacant ••• Castro Valley General Plan Area Grove Way/Center St/Redwood Dr/South of 580



Source: Castro Valley General Plan (Figure 2-4b) Alameda County Community Development Agency, 2004; and Dyett & Bhatia fieldwork.



3519 Castro Valley Blvd., Castro Valley, CA



Source: ASTM E-1689-95 Standard Guide for Developing Conceptual Site Models for Contaminated Sites











Figure 6: Location of Nearby Release Sites in the Vicinity of 3519 Castro Valley Bloulevard







Figure 8: Geologic Cross-Section A-A'



<u>S 66 E </u> MW-8 ESE-5 SB-2 Proj 7' S Proj 15'N



Figure 9: Geologic Cross-Section B-B'

5

0

TWB-1

EXPLANATION

First groundwater observed in sediment cores Stabilized Groundwater Observed during Monitoring Stabilized Groundwater Level

Well Destroyed Dec 2003



В'

S 129 E

Β

5



Figure 10: Geologic Cross-Section B-A





MEDIAN



Figure 11: Groundwater Elevation Contour Map in Feet












Figure 17: Contaminant Concentration Vs. Time in ESE-1



Figure 18: Contamination Concentration Vs. Time in ESE-2



Figure 19: Contaminant Concentration Vs. Time in ESE-5



Figure 20: Contaminant Concentration Vs. Time in MW-7



Figure 21: Contaminant Concentration Vs. Time in SOMA-1



Figure 22: Contaminant Concentration Vs. Time in SOMA-2



Figure 23: Contaminant Concentration Vs. Time in SOMA-3



Figure 24: Contaminant Concentration Vs. Time in SOMA-4







Figure 26: TBA Conc vs. Distance from Former USTs



Figure 27: TPH-g Conc vs. Distance from Western Edge of Property



Figure 28: MtBE Conc Vs. Distance from Western Edge of Property



Figure 29: TBA Conc vs. Distance from Western Edge of Property

Distance (ft.)





AerialSource: In agery (c) 2006 Aerials Express (Yahoo Inc.)









Figure 32: Sensitive Receptor Survey Map Based on the Data Obtained from the Alameda County Public Works Agency





approximate scale

0.25 miles

Figure 33: Receptor Survey of Sensitive Groups and Environments

ENVIRONMENTAL ENGINEERING, INC.



TABLES

Site Conceptual Model and Workplan to Address Data Gaps

Sample ID	Consultant	Sample Depth (feet)	Sample Date	TPH-g (mg/kg)	TPH-d (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl Benzene (mg/kg)	Total Xylenes (mg/kg)	TOG (mg/kg)	MtBE (mg/kg)	Lead (mg/kg)
WO1	Kaprealian	8.5	9/20/1988	<1.0	NA	0.0068	0.0095	<0.005	<0.005	<1.0	NA	NA
Comp A	Kaprealian	Composite	9/20/1988	<1.0	NA	NA	NA	NA	NA	100	NA	NA
Comp B	Kaprealian	Composite	10/4/1988	<1.0	<10	NA	NA	NA	NA	<50	NA	NA
ESE-1	Alisto	15	9/29/1992	70	<5.0	0.87	2	1.2	5.7	<50	NA	NA
ESE-1	Alisto	20	9/29/1992	<1.0	<5.0	<0.005	<0.005	<0.005	<0.005	<50	NA	NA
ESE-2	Alisto	10.5	9/28/1992	<1.0	<5.0	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
ESE-2	Alisto	20	9/28/1992	<1.0	NA	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
ESE-3	Alisto	10.5	9/29/1992	220	NA	1.4	8.2	3.3	18	NA	NA	NA
ESE-3	Alisto	20	9/29/1992	<1.0	NA	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
ESE-4	Alisto	6.5	9/28/1992	<1.0	NA	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
ESE-4	Alisto	10	9/28/1992	24	NA	0.15	0.17	0.23	0.82	NA	NA	NA
ESE-5	Alisto	10	9/28/1992	51	NA	0.25	0.24	0.3	0.17	NA	NA	NA
ESE-5	Alisto	14	9/28/1992	<1.0	NA	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
B-9	ACC Env	2	12/5/1994	9.9	NA	0.016	<0.005	0.067	0.23	NA	NA	NA
B-9	ACC Env	4	12/5/1994	1	NA	0.0058	<0.005	0.0065	0.009	NA	NA	NA
B-10	ACC Env	4	12/6/1994	59	NA	<50	<0.005	0.22	0.54	NA	NA	NA
B-11	ACC Env	2	12/6/1994	<10	NA	<50	<0.005	<0.005	<0.005	NA	NA	NA
B-12	ACC Env	4	12/6/1994	<10	NA	<50	<0.005	<0.005	<0.005	NA	NA	NA
B-12	ACC Env	6	12/6/1994	<10	NA	<50	<0.005	<0.005	<0.005	NA	NA	NA
B-20	ACC Env	3	12/8/1994	<1.0	NA	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
B-20	ACC Env	5	12/8/1994	<1.0	NA	<0.005	<0.005	<0.005	<0.005	NA	NA	NA
MW-6	Alisto	6 to 6.5	7/18/1995	<2.5	NA	<0.025	<0.025	<0.025	<0.05	NA	NA	NA
MW-6	Alisto	11 to 11.5	7/18/1995	<2.5	NA	<0.025	<0.025	<0.025	<0.05	NA	NA	NA
MW-7	Alisto	6 to 6.5	7/18/1995	<2.5	NA	<0.025	<0.025	<0.025	<0.05	NA	NA	NA
MW-7	Alisto	11 to 11.5	7/18/1995	<2.5	NA	<0.025	<0.025	<0.025	<0.05	NA	NA	NA
MW-8	Alisto	3.5 to 4	7/19/1995	<2.5	NA	<0.025	<0.025	<0.025	<0.050	NA	NA	NA
MW-8	Alisto	7.5 to 8	7/19/1995	8.8	NA	<0.025	<0.025	0.046 ^E	0.11 ^E	NA	NA	NA
SB-1	Alisto	1.5 to 2	7/19/1995	140	NA	<0.1	<0.1	1.4	4.1	NA	NA	NA
SB-1	Alisto	3.5 to 4	7/19/1995	190	NA	<0.25	0.33	4.5	18	NA	NA	NA
SB-1	Alisto	7 to 7.5	7/19/1995	310	NA	0.088	0.088 ^E	0.41	2	NA	NA	NA
SB-2	Alisto	1.5 to 2	7/19/1995	<2.5	NA	<0.025	<0.025	<0.025	<0.05	NA	NA	NA
SB-2	Alisto	3.5 to 4	7/19/1995	20	NA	<0.025	<0.025	0.93 ^E	0.12 ^E	NA	NA	NA

Table 1Historical Soil Analytical Data3519 Castro Valley Blvd., Castro Valley

Sample ID	Consultant	Sample Depth (feet)	Sample Date	TPH-g (mg/kg)	TPH-d (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl Benzene (mg/kg)	Total Xylenes (mg/kg)	TOG (mg/kg)	MtBE (mg/kg)	Lead (mg/kg)
SB-2	Alisto	5.5 to 6	7/19/1995	140	NA	<0.25	<0.25	1.2	1.4	NA	NA	NA
SB-2	Alisto	7.5 to 8	7/19/1995	230	NA	<0.25	<0.25	3.9	5.1	NA	NA	NA
UST-NE	SOMA	9.5	9/4/2003	<0.96	<1.0	<0.0048	<0.0048	<0.0048	<0.0048	NA	0.059	NA
UST-NW	SOMA	9.5	9/4/2003	2 ^H	<1.0	<0.0047	<0.0047	0.007	<0.0047	NA	0.069	NA
UST-SE	SOMA	8	9/4/2003	<1.1	<1.0	<0.0053	<0.0053	<0.0053	<0.0053	NA	<0.021	NA
UST-SW	SOMA	8	9/4/2003	17 ^H	36 ^{LY}	<0.0049	0.044 ^C	0.28	0.112	NA	0.071	NA
UST-SW	SOMA	10	9/4/2003	<1.0	<1.0	<0.0052	<0.0052	<0.0052	<0.0052	NA	0.075	NA
WOT-W	SOMA	5.5	9/4/2003	<0.97	<0.99	<0.0049	<0.0049	<0.0049	<0.0049	NA	<0.019	6.3
Pumps 1&2	SOMA	2.5	9/11/2003	4.5 ^{HY}	NA	<0.0055	0.0055 ^C	0.016	0.0197 ^C	NA	<0.022	9.1
Pumps 3&4	SOMA	3	9/11/2003	<1.1	NA	<0.0054	<0.0054	<0.0054	<0.0054	NA	<0.022	6.9
Pumps 5&6	SOMA	3	9/11/2003	<1.1	NA	<0.0054	<0.0054	<0.0054	<0.0054	NA	<0.022	7.6
Pumps 7&8	SOMA	3	9/11/2003	<1.1	NA	<0.0053	<0.0053	<0.0053	<0.0053	NA	<0.021	18
Intersection	SOMA	3	9/11/2003	<1.1	NA	<0.0055	<0.0055	<0.0055	<0.0055	NA	<0.022	7.7
PL1 ¹	SOMA	4	9/13/2003	530 ^{HY}	NA	<0.011	<0.011	0.34 ^C	0.524 ^C	NA	<0.043	NA
PL2 ²	SOMA	4	9/13/2003	<1.1	NA	<0.0055	<0.0055	<0.0055	<0.0055	NA	<0.022	NA
SB1- Comp	SOMA	Composite	8/20/2003	<1.0	NA	0.02 ^C	<0.0052	0.0098	0.013	NA	0.23	7.2
SB2 - Comp	SOMA	Composite	8/20/2003	390	NA	<0.13	<0.13	2.8	9.8	NA	<0.5	8.2
Comp 1	SOMA	Composite	9/3/2003	8.8	NA	<0.0054	<0.0054	0.032	0.049	NA	<0.018	10
Comp 2	SOMA	Composite	9/4/2003	<0.99	NA	<0.0048	<0.0048	<0.0048	<0.0048	NA	<0.0048	4.6
Comp 2R	SOMA	Composite	9/5/2003	21 ^H	4.8 ^{HLY}	<0.01	0.024 ^C	0.054 ^C	0.01 ^C	NA	<0.041	5.3
Comp ESE-3WA	SOMA	Composite	10/3/2008	<1.1	NA	<0.0055	<0.0055	<0.0055	0.008	NA	<0.022	4
TWB-1	SOMA	22	12/2/2003	<1.0	NA	<0.0044	<0.0044	<0.0044	<0.0044	NA	<0.0044	NA
TWB-1	SOMA	25	12/2/2003	<0.94	NA	<0.0047	<0.0047	<0.0047	<0.0047	NA	<0.0047	NA
TWB-2	SOMA	22	12/2/2003	<1.1	NA	<0.0047	<0.0047	<0.0047	<0.0047	NA	<0.0047	NA
TWB-2	SOMA	24	12/2/2003	<1.0	NA	<0.0048	<0.0048	<0.0048	<0.0048	NA	0.027	NA
TWB-2	SOMA	27	12/2/2003	<1.1	NA	<0.0043	<0.0043	<0.0043	<0.0043	NA	0.015	NA
TWB-2	SOMA	29	12/2/2003	<1.0	NA	<0.0047	<0.0047	<0.0047	<0.0047	NA	0.019	NA
TWB-3	SOMA	22	12/2/2003	<0.95	NA	<0.0049	<0.0049	<0.0049	<0.0049	NA	<0.0049	NA
TWB-3	SOMA	25	12/2/2003	<0.95	NA	<0.0048	<0.0048	<0.0048	<0.0048	NA	<0.0048	NA
TWB-3	SOMA	29	12/2/2003	<1.0	NA	<0.0047	<0.0047	<0.0047	<0.0047	NA	<0.0047	NA
TWB-4	SOMA	10	12/2/2003	<0.93	NA	<0.0045	<0.0045	<0.0045	<0.0045	NA	<0.0045	NA

Table 1Historical Soil Analytical Data3519 Castro Valley Blvd., Castro Valley

Table 1
Historical Soil Analytical Data
3519 Castro Valley Blvd., Castro Valley

Sample ID	Consultant	Sample Depth (feet)	Sample Date	TPH-g (mg/kg)	TPH-d (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl Benzene (mg/kg)	Total Xylenes (mg/kg)	TOG (mg/kg)	MtBE (mg/kg)	Lead (mg/kg)
TWB-4	SOMA	27	12/2/2003	<1.1	NA	<0.0047	<0.0047	<0.0047	<0.0047	NA	<0.0047	NA
TWB-4	SOMA	29	12/2/2003	<0.98	NA	<0.0048	<0.0048	<0.0048	<0.0048	NA	<0.0048	NA
TWB-5	SOMA	16	12/2/2003	<1.0	NA	0.018	<0.0045	0.041	0.187	NA	<0.0045	NA
TWB-5	SOMA	18	12/2/2003	<0.93	NA	<0.0045	<0.0045	<0.0045	<0.0045	NA	<0.0045	NA
TWB-5	SOMA	29	12/2/2003	<0.97	NA	<0.0045	<0.0045	0.0051	0.018	NA	<0.0045	NA
B-1	Delta	17	8/28/2008	120	NA	<0.12	<0.12	<0.12	<0.24	NA	<0.12	NA
B-3	Delta	12	8/28/2008	720	NA	<0.5	<0.5	2	1.7	NA	<0.5	NA
B-4	Delta	10	8/28/2008	<0.5	NA	<0.005	<0.005	<0.005	<0.01	NA	<0.005	NA
B-5	Delta	12	8/28/2008	<0.5	NA	<0.005	<0.005	<0.005	<0.01	NA	<0.005	NA
B-6	Delta	9 to 10	8/28/2008	0.7	NA	<0.005	<0.005	<0.005	<0.01	NA	<0.005	NA
ESL - Shallow Soil, Commercial			83	83	0.044	2.9	3.3	2.3	2500	0.023	750	
ESL ·	Deep Soils,	Commercia	l	83	83	0.044	2.9	3.3	2.3	5000	0.023	750

Notes:

< - not detected above laboratory reporting limits

NA - not analyzed

C - Presence confirmed but RPD between columns exceeds 40%

E - Analyte Amount Exceeds the Calibration Range

H - Heavier hydrocarbons contributed to the quantitation

L - Lighter Hydrocarbons contriuted to quantitiation

Y - Sample exhibits chromatographic pattern that does not resemble standard

1 - located adjacent to pumps 5&6

2 - located adjacent to pumps 3&4

Petroleum Hydrocarbons analyzed by EPA 8015, 8021, and 8260

ESL - Environmental Screening Level, California Regional Water Control Board, Interim Final November 2007, revised May 2008

	3519 Castro Valley Blvd., Castro Valley											
Sample ID	Consultant	Sample Date	TPH-g (μg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethyl Benzene (μg/L)	Total Xylenes (μg/L)	MtBE (µg/L)	TBA (μg/L)			
ESE-1	Alisto	7/28/1995	190	<0.5	<0.5	<0.5	<1.0	NA	NA			
ESE-2	Alisto	7/28/1995	2,000	<2.5	<2.5	<2.5	<5.0	NA	NA			
ESE-3	Alisto	7/28/1995	<50	<0.5	<0.5	<0.5	<1.0	NA	NA			
ESE-4	Alisto	7/28/1995	<50	<0.5	<0.5	<0.5	<1.0	NA	NA			
ESE-5	Alisto	7/28/1995	520	15	<0.5	1.7	1.3	NA	NA			
ESE-5 QC1	Alisto	7/28/1995	460	7.2	<0.5	1.9	1.5	NA	NA			
MW-6	Alisto	7/28/1995	<50	<0.5	<0.5	<0.5	<1.0	NA	NA			
MW-7	Alisto	7/28/1995	<50	0.54 ^E	0.54	<0.5	<1.0	NA	NA			
MW-8	Alisto	7/28/1995	1,100	<2.5	<2.5	<2.5	<5.0	NA	NA			
S-10	Alisto	7/28/1995	<50	<0.5	<0.5	<0.5	<1.0	NA	NA			
ESE-3 WA	SOMA	10/3/2003	110	<5.0	<5.0	0.59	1.2	3.3	NA			
TWB-1	SOMA	12/2/2003	<50	<0.5	<0.5	<0.5	0.8	8.5	NA			
TWB-2	SOMA	12/2/2003	<50	<0.5	<0.5	<0.5	<0.5	89	NA			
TWB-3	SOMA	12/2/2003	<50	<0.5	<0.5	<0.5	<0.5	37	NA			
TWB-4	SOMA	12/2/2003	<50	<0.5	<0.5	<0.5	2.3	<0.5	NA			
TWB-5	SOMA	12/2/2003	32,000	500	13	540	1,150	9.5	NA			
B-4	Delta	8/28/2008	<50	<0.5	<1.0	<1.0	<2.0	<1.0	<10			
B-5	Delta	8/28/2008	<50	<0.5	<1.0	<1.0	<2.0	<1.0	<10			
B-6	Delta	8/28/2008	900	0.71	3.5	3.4	<2.0	<1.0	<10			
MW-1 ¹	Delta	10/28/2008	<50	<0.5	<1.0	<1.0	<2.0	15	38			
MW-2 ¹	Delta	10/28/2008	74	<0.5	<1.0	<1.0	<2.0	51	<10			
MW-3 ¹	Delta	10/28/2008	<50	<0.5	<1.0	<1.0	<2.0	19	<10			
MW-4 ¹	Delta	10/28/2008	<50	<0.5	<1.0	<1.0	<2.0	<1.0	<10			
ES	L - Drinking \	Water	100	1	40	30	20	5	12			
ESL -	Non-Drinkin	g Water	210	46	130	43	100	1,800	18,000			

Table 2Historical Grab Groundwater Analytical Data3519 Castro Valley Blvd., Castro Valley

Notes:

1: Wells designated by Delta, Correct designation for monitoring wells is: MW-1 is ESE-1, MW-2 is ESE-2, MW-3 is SOMA-1, MW-4 is MW-6

ESL - Environmental Screening Level, California Regional Water Control Board, Interim Final November 2007, revised May 2008

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

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

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
	////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

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	1700	260	24	110	23	NA
	6/29/1993	178.23	NM	NM	1300	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	1700	<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	1200	4	<2.5	<2.5	<5	NA
	7/28/1995	178.23	10.64	167.59	2000	<2.5	<2.5	<2.5	<5	NA
	11/17/1995	178.23	11.13	167.10	3600	<25	<25	<25	<50	12000
	11/17/1995	178.23	NM	NM	3400	<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	2900	<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	2700	<0.5	<1	<1	<1	15000
	7/18/1997	178.23	11.02	167.21	11000	<5	<10	<10	<10	11000
	10/27/1997	178.23	10.93	167.30	6100	<2.5	<5.0	<5.0	<5.0	7100
	10/27/1997	178.23	NM	NM	6600	<2.5	<5.0	<5.0	<5.0	7400
	1/22/1998	178.23	7.93	170.30	13000	<0.5	<1	<1	<1	10000
	1/22/1998	178.23	NM	NM	13000	<0.5	<1	<1	<1	10000
	4/23/1998	178.23	9.34	168.89	19000	<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	19000	<5	<10	<10	<10	36000
	12/17/1998	178.23	10.20	168.03	12000	<5	<5	<5	<5	13000

Table 3
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	3/19/1999	178.23	9.02	169.21	18000	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	1600	<0.5	0.73	<0.5	2.2	9400
	12/14/2000	178.23	11.15	167.08	6000	0.75	<0.5	<0.5	<0.5	11200
	3/21/2001	178.23	10.35	167.88	6900	786	45.7	37.7	71.5	3790
	6/18/2001	178.23	11.24	166.99	6400	<2.5	<2.5	<2.5	<7.5	9320
	9/18/2001	178.23	11.35	166.88	4800	<12.5	<12.5	<12.5	<37.5	6960
	12/13/2001	178.23	10.97	167.26	59000	0.592	<0.5	<0.5	<1	5940
	3/14/2002	178.23	10.13	168.10	4500	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	1500	<5	<5	<5	6.3	3100
	12/16/2002	178.23	7.87	170.36	1400	<5	<5	<5	<5	2400
	3/11/2003	178.23	10.24	167.99	2800	<10	<10	<10	<10	4800
	6/17/2003	178.23	10.19	168.04	10000	<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
	////2005	180.79	10.46	170.33	<860	<2.15	<8.60	<2.15	<4.30	3/8
	2/8/2006	180.79	0.46	170.24	<00	<0.5	<2.0	<0.5	<1.0	210
	2/0/2000	100.79	9.40 10.67	170.12	<215	<2.10 1.71	<0.0	<2.10 <1.0	<4.3	419
	4/2//2000 8/1/2006	180.79	10.07	170.12	<100	2.83	~4.0	<1.0	>∠.0	43Z 222
	10/19/2006	180.79	10.65	170.14	<50	0.8	<2.0	<0.5	<1.0	221

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	
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	
	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	

Table 3 Historical Groundwater Elevations & Analytical Data TPH-a, BTEX, MtBE

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.	1/22/1998	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

Table 3
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 3
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 3										

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

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

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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-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
	-				-	-		-		
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

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

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
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 3
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 3
Historical Groundwater Elevations & Analytical Data
TPH-g, BTEX, MtBE
3519 Castro Valley Blvd, Castro Valley, CA
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
	//1//2007	1/9.11	9.04	170.07	<50	2.07	<2.0	<0.5	<2.0	29.3
	10/6/2007	179.11	δΩ. /	1/1.23	<50	0.88	<2.0	<0.5	<2.0	5.26

Table 3
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
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 3
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
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

Monitoring Well	Date	Top of casing elevation ¹ (feet)	Depth to Groundwater (feet)	h to Groundwater T Iwater Elevation (et) (feet)		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
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 3
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
					-					
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
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
	-	ESL - Drinking W	Vator		100	1	40	30	20	5
	ES	SL - Non-Drinking	Water		210	46	130	43	100	1.800

Table 3Historical Groundwater Elevations & Analytical DataTPH-g, BTEX, MtBE3519 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
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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.

ESL - Environmental Screening Level, California Regional Water Control Board, Interim Final November 2007, revised May 2008

Monitoring	Data	TBA	DIPE	ETBE	TAME	ETHANOL	1,2-DCA	EDB
Well	Date	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μg/L)	(μ <mark>g/L)</mark>	(μ g/L)
ESE-1	6/17/2003	<400	<10	<10	18	NA	NA	NA
	9/17/2003	NA	NA	NA	NA	NA	NA	NA
	12/9/2003	290	<1.0	<1.0	9.5	<2,000	<1.0	<1.0
	2/26/2004	410	<0.5	<0.5	9.7	<1000	<0.5	<0.5
	5/21/2004	190	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	8/10/2004	180	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	10/19/2004	270	<0.7	<0.7	4.4	<1400	9.9	<0.7
	1/14/2005	280	<1.3	<1.3	<1.3	<2,500	<1.3	<1.3
	4/14/2005	144	<2.15	<2.15	<8.6	<4300	<2.15	<2.15
	7/7/2005	119	<2.15	<2.15	<8.6	<4300	<2.15	<2.15
	11/15/2005	107	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	2/8/2006	181	<2.15	<2.15	<8.6	<4300	<2.15	<2.15
	4/27/2006	261	<2.15	<2.15	<8.6	<4300	<2.15	<2.15
	8/1/2006	165	<1.0	<1.0	<4.0	<2000	<1.0	<1.0
	10/19/2006	154	<1.0	<1.0	<4.0	<2000	<1.0	<1.0
	1/12/2007	103	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/17/2007	80.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/17/2007	128	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/16/2007	98.7	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	1/17/2008	61.5	<0.5	<0.5	2.52	<1000	<0.5	<0.5
	4/17/2008	76.4	<0.5	<0.5	<2.0	<1000	59.2	<0.5
	7/16/2008	179	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/14/2008	87	<0.5	<0.5	2.6	<1000	<0.5	<0.5
	1/6/2009	93	<1.0	<1.0	<1.0	<2000	<1.0	<1.0

Monitoring	Dete	TBA	DIPE	ETBE	TAME	ETHANOL	1,2-DCA	EDB
Well	Date	(μ g/L)	(μ g/L)	(μ <mark>g/L)</mark>	(μg/L)	(μg/L)	(μ g/L)	(μ g/L)
ESE-2	6/17/2003	<4000	<100	<100	<100	NA	NA	NA
	9/17/2003	NA	NA	NA	NA	NA	NA	NA
	12/9/2003	500	<13	<13	77	<25,000	<13	<13
	2/26/2004	1200	<0.5	<0.5	92	<1000	<0.5	<0.5
	5/21/2004	2400	<10	<10	25	<20,000	<10	<10
	8/10/2004	2300	<2.5	<2.5	12	<5000	<2.5	<2.5
	10/19/2004	1800	<3.6	<3.6	8.6	<7100	<3.6	<3.6
	1/14/2005	470	<8.3	<8.3	28	<17,000	<8.3	<8.3
	4/14/2005	<10.8	<2.15	<2.15	17.9	<4300	<2.15	<2.15
	7/7/2005	109	<2.15	<2.15	9.7	<4300	<2.15	<2.15
	11/15/2005	64.7	<0.5	<0.5	3.43	<1000	<0.5	<0.5
	2/8/2006	46.4	<2.15	<2.15	11	<4300	<2.15	<2.15
	4/27/2006	47.7	<1.0	<1.0	8.29	<2000	<1.0	<1.0
	8/1/2006	20.6	<1.0	<1.0	4.67	<2000	<1.0	<1.0
	10/19/2006	28.9	<0.5	<0.5	4.55	<1000	<0.5	<0.5
	1/12/2007	NA	NA	NA	NA	NA	NA	NA
	4/17/2007	60.8	<0.5	<0.5	3.85	<1000	<0.5	<0.5
	7/17/2007	62.3	<0.5	<0.5	2.95	<1000	<0.5	<0.5
	10/16/2007	46	<0.5	<0.5	2.21	<1000	<0.5	<0.5
	1/17/2008	18.8	<0.5	<0.5	3.38	<1000	<0.5	<0.5
	4/17/2008	18.8	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/16/2008	9.95	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/14/2008	<10	< 0.5	< 0.5	0.85	<1000	< 0.5	< 0.5
	1/6/2009	27	<0.5	<0.5	0.83	<1000	<0.5	<0.5
ESE-3	6/17/2003	<200	<5.0	<5.0	<5.0	NA	NA	NA
		-		-	•		-	
ESE-5	9/17/2003	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	12/9/2003	<10	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5
	2/26/2004	<10	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5
	5/21/2004	<10	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5
	8/10/2004	<10	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5
	10/19/2004	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5

Monitoring	ing Date	TBA	DIPE	ETBE	TAME	ETHANOL	1,2-DCA	EDB
Well	Date	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μg/L)	(μg/L)	(μ g/L)
ESE-5 cont.	1/14/2005	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	4/14/2005	17	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/7/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	11/15/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	2/8/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/27/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	8/1/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/19/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	1/12/2007	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/17/2007	8.7	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/17/2007	15.4	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/16/2007	11.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	1/17/2008	17.2	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/17/2008	<2.0	<0.5	<0.5	<2.0	<1000	5.44	<0.5
	7/16/2008	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/14/2008	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	1/6/2009	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
							_	
MW-6	9/17/2003	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	12/9/2003	<10	< 0.5	< 0.5	< 0.5	<1,000	< 0.5	< 0.5
	2/26/2004	<10	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5
	5/21/2004	<10	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5
	8/10/2004	<10	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5
	10/19/2004	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	1/14/2005	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	4/14/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/7/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	11/15/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	2/8/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/27/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	8/1/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/19/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	1/12/2007	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/17/2007	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/17/2007	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/16/2007	<2.0	< 0.5	< 0.5	<2.0	<1000	< 0.5	< 0.5
	1/17/2008	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/17/2008	<2.0	< 0.5	< 0.5	<2.0	<1000	< 0.5	< 0.5
	//16/2008	<2.0	<0.5	< 0.5	<2.0	<1000	<0.5	<0.5
	10/14/2008	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	1/6/2009	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5

Monitoring	Dete	TBA	DIPE	ETBE	TAME	ETHANOL	1,2-DCA	EDB
Well	Date	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μg/L)	(μ <mark>g/L)</mark>	(μg/L)
		-						
MW-7	9/17/2003	<10	<0.5	<0.5	9.8	<1000	<0.5	<0.5
	12/9/2003	<25	<1.3	<1.3	8.1	<2500	<1.3	<1.3
	2/26/2004	<10	<0.5	<0.5	9.9	<1000	<0.5	<0.5
	5/21/2004	<10	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5
	8/10/2004	<25	<1.3	<1.3	19	<2500	<1.3	<1.3
	10/19/2004	<100	<5.0	<5.0	11	<10,000	<5.0	<5.0
	1/14/2005	<40	<2.0	<2.0	5.1	<4,000	<2.0	<2.0
	4/14/2005	2.62	<0.5	<0.5	4.57	<1000	<0.5	<0.5
	7/7/2005	55.6	<1.0	<1.0	10.2	<2000	<1.0	<1.0
	11/15/2005	10.6	<0.5	<0.5	2.07	<1000	<0.5	<0.5
	2/8/2006	<10	<0.5	<0.5	2.19	<1000	<0.5	<0.5
	4/27/2006	<10	<0.5	<0.5	2.63	<1000	<0.5	<0.5
	8/1/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/19/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	1/12/2007	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/17/2007	11.6	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/17/2007	13.3	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/16/2007	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	1/17/2008	NA	NA	NA	NA	NA	NA	NA
	4/17/2008	8.63	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/16/2008	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/14/2008	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	1/6/2009	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
SOMA-1	8/10/2004	2300	<6.3	<6.3	53	<13000	<6.3	<6.3
	10/19/2004	2400	<13	<13	36	<25,000	<13	<13
	1/14/2005	530	<3.1	<3.1	7.1	<6,300	<3.1	<3.1
	4/14/2005	<27.5	<5.5	<5.5	<22	<11000	<5.5	<5.5
	7/7/2005	2180	<2.15	<2.15	12.9	<4300	<2.15	<2.15
	11/15/2005	792	<0.5	<0.5	5.01	<1000	<0.5	<0.5
	2/8/2006	618	<0.5	<0.5	3.67	<1000	<0.5	<0.5
	4/27/2006	983	<0.5	<0.5	3.48	<1000	<0.5	<0.5
	8/1/2006	639	<0.5	<0.5	2.27	<1000	<0.5	<0.5
	10/19/2006	603	<0.5	<0.5	2.25	<1000	<0.5	<0.5
	1/12/2007	396	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/17/2007	148	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/17/2007	555	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/16/2007	65	<0.5	<0.5	<2.0	<1000	<0.5	< 0.5
	1/17/2008	29.6	<0.5	<0.5	2.06	<1000	<0.5	<0.5
	4/17/2008	339	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/16/2008	264	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/14/2008	250	<0.5	<0.5	<0.5	<1000	<0.5	<0.5

Monitoring	Data	TBA	DIPE	ETBE	TAME	ETHANOL	1,2-DCA	EDB
Well	Date	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μg/L)	(μg/L)	(μ <mark>g/L)</mark>
	1/6/2009	180	<0.5	<0.5	<0.5	<1000	<0.5	<0.5

Monitoring	Date	TBA	DIPE	ETBE	TAME	ETHANOL	1,2-DCA	EDB
Well	Date	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μg/L)	(μ g/L)	(μ g/L)
SOMA-2	8/10/2004	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	10/19/2004	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	1/14/2005	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	4/14/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/7/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	11/15/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	2/8/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/27/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	8/1/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/19/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	1/12/2007	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/17/2007	14.6	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/17/2007	2.58	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/16/2007	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	1/17/2008	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/17/2008	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/16/2008	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/14/2008	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	1/6/2009	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
SOMA-3	8/10/2004	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	10/19/2004	<10	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5
	1/14/2005	<10	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5
	4/14/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/7/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	11/15/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	2/8/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/27/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	8/1/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/19/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	1/12/2007	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/17/2007	6.72	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/17/2007	7.6	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/16/2007	9.96	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	1/17/2008	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/17/2008	6.05	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/16/2008	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/14/2008	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	1/6/2009	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5

Historical Groundwater Analytical Data Gasoline Oxygenates & Lead Scavengers 3519 Castro Valley Blvd, Castro Valley, CA

Monitoring	Data	TBA	DIPE	ETBE	TAME	ETHANOL	1,2-DCA	EDB
Well	Date	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μg/L)	(μ g/L)	(μ g/L)
SOMA-4	8/10/2004	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	10/19/2004	<10	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5
	1/14/2005	<10	<0.5	<0.5	<0.5	<1,000	<0.5	<0.5
	4/14/2005	<2.5	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/7/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	11/15/2005	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	2/8/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/27/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	8/1/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/19/2006	<10	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	1/12/2007	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/17/2007	3.98	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/17/2007	6.31	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/16/2007	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	1/17/2008	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	4/17/2008	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	7/16/2008	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
	10/14/2008	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
	1/6/2009	<10	<0.5	<0.5	<0.5	<1000	<0.5	<0.5
EB-PMP	1/17/2008	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
EB-PRB	1/17/2008	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
EB-PMP2	1/17/2008	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
EB-PRB2	1/17/2008	<2.0	<0.5	<0.5	<2.0	<1000	<0.5	<0.5
							0.5	0.05
ESL - Drinl	king Water	12	NL	NL	NL	NL	0.5	0.05
ESL - Non-Drinking Water		18,000	NL	NL	NL	NL	200	150

Notes:

< : Not detected above laboratory reporting limit.

NA: 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 was inaccessible duirng the First Quarter 2007, dirt was covered over well

Well MW-7 had a car parked over it and was inaccessible during the First Quarter 2008 monitoring event.

Lead Scavengers:

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.

Gasoline Oxygenates:

TBA: tertiary butyl alcohol

DIPE: isopropyl ether

ETBE: ethyl tertiary butyl ether

TAME: methyl tertiary amyl ether

Ethanol

ESL - Environmental Screening Level, California Regional Water Control Board, Interim Final November 2007, revised May 2008

1,2-DCA: 1,2-Dichloroethane

EDB: 1,2-Dibromoethane

APPENDIX A

Site History and Previous Remediation Activities

Site Conceptual Model and Workplan to Address Data Gaps

Previous Activities

<u>1984</u>: 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.

<u>1988</u>: 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 μ g/kg and 9.5 μ g/kg, respectively; total petroleum hydrocarbons (TPH) and total oil and grease (TOG) constituents were not detected.

<u>September and October 1992</u>: 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 μ g/kg TPH as gasoline (TPH-g); 1,400 μ g/kg benzene; 8,200 μ g/kg toluene; 3,300 μ g/kg ethylbenzene; and 18,000 μ g/kg xylenes. In the groundwater samples collected from ESE-1, maximum concentrations were TPH-g at 2,300 μ g/L; benzene at 370 μ g/L; toluene at 160 μ g/L; ethylbenzene at 17 μ g/L; and xylenes at 110 μ g/L.

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

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

<u>August 20, 2003</u>: 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.

<u>September 2003</u>: 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.

Site Conceptual Model and Workplan to Address Data Gaps

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

<u>Fourth Quarter 2003</u>: 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.

<u>June 2004</u>: 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.

<u>August 2006:</u> 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 $\frac{1}{2}$ -mile radius have the potential to be impacted by the site's contaminants at this time

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

<u>September 2008:</u> Shell Oil conducted a Phase II investigation. Elevated TPH-g concentrations 900 μ g/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.

APPENDIX B

Delta Environmental Investigation (September 24, 2008) and Current and Historical Data for 3495 Castro Valley Blvd Gasoline Station

Site Conceptual Model and Workplan to Address Data Gaps

PHASE II ENVIRONMENTAL SITE ASSESSMENT

SHELL OIL PRODUCTS US, SAP #171445 3519 CASTRO VALLEY BOULEVARD CASTRO VALLEY, CALIFORNIA

DELTA PROJECT NO. CASHL-BADW-A-171445

Prepared for:

Shell Oil Products US 20945 S. Wilmington Ave. Carson, CA 90810

Prepared by:

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November 21, 2008

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- Appendix B Boring Logs
- Appendix C Laboratory Reports and Chain of Custody Forms
- Appendix D Groundwater Monitoring and Sampling Field Procedures
- Appendix E Waste Inventory Form and/or Waste Disposal Manifests (if available at report time)
- Appendix F Release Notification to Agency and Response

PHASE II ENVIRONMENTAL SITE ASSESSMENT

SHELL OIL PRODUCTS US, SAP #171445 3519 CASTRO VALLEY BOULEVARD CASTRO VALLEY, CALIFORNIA DELTA PROJECT NO. CASHL-BADW-A-171445

EXECUTIVE SUMMARY

Delta Consultants (Delta) on behalf of Shell Oil Products US has completed a Phase II Environmental Site Assessment (Phase II ESA) for Due Diligence at the Shell branded service station located at 3519 Castro Valley Boulevard, Castro Valley, Alameda County, California (Site).

- Prepared a site-specific Health & Safety Plan prior to the initiation of field activities.
- Notified USA-North to have public utilities in the area of the Site clearly marked.
- Contracted with a private underground utility locating firm (Cruz Brothers), in addition to the public locates, to clear each soil boring location.
- Cleared each soil boring location to 5-feet below ground surface (bgs) using air-knifing and vacuum truck equipment.
- Advanced five soil borings (B-1 and B-3 through B-6) to maximum depths ranging from 10 to 25 feet bgs using direct push probe drilling methods and equipment on August 28, 2008.
- Collected representative soil samples from continuously cored boreholes for logging and characterization of soil types, field screening, and potential analytical laboratory testing.
- Conducted headspace screening of the soil samples for volatile organic compound (VOC) vapors using a portable photo-ionization detector (PID).
- Collected one soil sample from each soil boring, the location of which was selected by the following ordered criteria:
 - o The sample interval exhibiting the highest PID reading, or
 - In the event that impacts are not observed, the sample interval directly above the soil/groundwater interface, or
 - In the event that groundwater is not encountered in the boring, the termination point of the boring.
- Collected a groundwater sample from each boring in which groundwater was encountered.
- Collected a grab groundwater sample from each existing monitoring well at the Site.
- Submitted all samples to CalScience Environmental Laboratories (CalScience) in Garden Grove, California to be analyzed for:
 - Total petroleum hydrocarbons as gasoline (TPH-G) using US Environmental Protection Agency (EPA) Method 8260B.

Select VOCs by EPA Method 8260B, including benzene, toluene, ethylbenzene, total xylenes (BTEX), 1,2-dibromoethane (EDB), 1,2-dichloroethane (EDC), methyl tert-butyl ether (MTBE), tertiary butyl alcohol (TBA), diisopropyl ether (DIPE), ethyl tert-butyl ether, (ETBE), tert amyl-butyl ether (TAME), and ethanol.

A summary of findings is as follows: All soil and groundwater analytical laboratory results were reviewed for detections of petroleum hydrocarbon constituents above the laboratory method reporting limits (MRLs) and compared to the California Regional Water Quality Control Board Environmental Screening Levels (ESLs)¹. For comparison purposes the following assumptions were used in selecting the ESLs:

- Residential land use,
- Shallow Soil (less than 3 meters) or Deep Soil (greater than 3 meters) as appropriate, and;
- Groundwater is a current or potential source of drinking water.

The appropriate ESLs were obtained from Summary Table A and Summary Table C in the document *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*¹. Comparisons between the ESLs and laboratory results can be found in **Table 1** for soil samples and **Table 2** for groundwater samples.

- None of the soil samples collected and submitted for laboratory analysis during this investigation exhibited concentrations of any constituent in excess of the ESLs with two exceptions. TPH-G were detected in excess of the ESL (83 milligrams per kilogram [mg/kg]) in soil samples B-1 (120 mg/kg) and B-3 (720 mg/kg).
- None of the groundwater samples collected and submitted for laboratory analysis during this investigation exhibited concentrations of any constituent in excess of the ESLs with the following exceptions. TPH-G were detected in excess of the ESL (100 micrograms/liter [µg/L]) in the groundwater sample collected from boring B-6 (900 µg/L). MTBE was detected in excess of the ESL (5 µg/L) in the groundwater samples collected from wells MW-1 (15 µg/L), MW-2 (51 µg/L), and MW-3 (19 µg/L). TBA was detected in excess of the ESL (12 µg/L) in the groundwater sample collected from well MW-1 (38 µg/L).
- Based on Delta's evaluation of the analytical data, Delta notified the Alameda County Environmental Health Department that TPH-G was detected in soil and groundwater samples collected from the Site. Delta also submitted an Underground Storage Tank Unauthorized Release (Leak)/Contamination Site Report.

¹ California Regional Water Quality Board, San Francisco Bay Region. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. Interim Final – November 2007, revised May 2008.

• Water wells were not located within 1,000 feet of the Site.

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PHASE II ENVIRONMENTAL SITE ASSESSMENT

SHELL OIL PRODUCTS US, SAP #171445 3519 CASTRO VALLEY BOULEVARD CASTRO VALLEY, CALIFORNIA DELTA PROJECT NO. CASHL-BADW-A-171445

1.0 INTRODUCTION

1.1 General

At the request of Shell Oil Products US (Shell), Delta Consultants (Delta) has conducted a Phase II Environmental Site Assessment (Phase II ESA) for Due Diligence at the Shell Retail Store located at 3519 Castro Valley Boulevard, Castro Valley, Alameda County, California (Site). This Site is an active Shell service station.

1.2 Purpose and Scope

In order to establish a baseline of environmental conditions, Delta conducted this Phase II ESA to assess subsurface conditions and potential hydrocarbon impacts through implementation of the following scope of work:

- Prepared a site-specific Health & Safety Plan prior to the initiation of field activities.
- Notified USA-North to have public utilities in the area of the Site clearly marked.
- Contracted with a private underground utility locating firm (Cruz Brothers), in addition to the public locates, to clear each soil boring location.
- Cleared each soil boring location to 5-feet below ground surface (bgs) using air-knifing and vacuum truck equipment.
- Advanced five soil borings (B-1 and B-3 through B-6) to maximum depths ranging from 10 to 25 feet bgs using direct push probe drilling methods and equipment on August 28, 2008. Borings were placed in the vicinity of the underground storage tank (UST) basin and in the vicinity of dispensers. The scope of work, as defined by Shell, limited drilling depth to 40 feet bgs around tank basins and 20 feet bgs near dispensers or to the depth of first encountered groundwater, whichever was encountered first.
- Collected representative soil samples from continuously cored boreholes for logging and characterization of soil types, field screening, and potential laboratory analysis.
- Conducted headspace screening of the soil samples for volatile organic carbon (VOC) vapors using a portable photo-ionization detector PID.
- Collected one soil sample from each soil boring, the location of which was selected by the following ordered criteria:
 - o The sample interval exhibiting the highest PID reading, or

- In the event that impacts are not observed, the sample interval directly above the soil/groundwater interface, or
- In the event that groundwater is not encountered in the boring, the termination point of the boring.
- Collected a groundwater sample from each boring in which groundwater was encountered.
- Collected a grab groundwater sample from each existing monitoring well at the Site.
- Submitted all samples to CalScience Environmental Laboratories (CalScience) in Garden Grove, California to be analyzed for:
 - Total petroleum hydrocarbons as gasoline (TPH-G) using US Environmental Protection Agency (EPA) Method 8260B.
 - Select VOCs by EPA Method 8260B, including benzene, toluene, ethylbenzene, total xylenes (BTEX), 1,2-dibromoethane (EDB), 1,2-dichloroethane (EDC), methyl tert-butyl ether (MTBE), tertiary butyl alcohol (TBA), diisopropyl ether (DIPE), ethyl tert-butyl ether, (ETBE), tert amyl-butyl ether (TAME), and ethanol.
- Evaluated and compiled field observations and laboratory analytical data into this report, documenting boring installations, soil and groundwater sampling, and analytical data.

1.3 Deviations

The following list summarizes deviations from the proposed scope of work and reasons for such deviations:

- Proposed boring location B-2, proposed to investigate the northeastern portion of the UST pit, was not advanced due to the presence of underground utilities. Critical areas could not be avoided and the boring was not relocated.
- Soil boring B-1, proposed to investigate the northwestern corner of the UST pit, was terminated at 20 feet bgs, instead of the proposed 40 feet bgs, after a sampling rod broke in the borehole. The broken section of the sampler was abandoned in the ground and the boring was backfilled according to the standard procedure followed throughout this project.

1.4 Background

The Site is an active retail gasoline station located in Castro Valley, California in Alameda County at 3519 Castro Valley Boulevard (Figure 1). Above ground structures include a station building on the Site's southwestern corner and a canopy structure covering two dispenser islands on the eastern side of the Site (Figure 2). The Site is primarily covered with asphalt and concrete pavement. The USTs are located within a common excavation to the west of the canopy structure. Local access to the Site is gained from Redwood Road to the west and Castro Valley Blvd to the north.

Water wells were not located within 1,000 feet of the Site. The Environmental Data Resources (EDR) well survey report is included in **Appendix A**.

2.0 SOIL AND GROUNDWATER ENVIRONMENTAL ASSESSMENT

2.1 Drilling and Soil Sampling

Soil borings were advanced using a direct-push hydraulic drive point system to depths ranging from 10 to 25 feet bgs. Soil samples were collected continuously using a 5-foot macrocore sampler with a 1.5-inch inside diameter driven into undisturbed formation materials utilizing a hydraulic piston mechanism. The soils encountered were logged using the Unified Soil Classification System (USCS) and field screened using a PID by a Delta field technician working under the supervision of a California Professional Geologist. Field observations, including soil color, odor, and PID readings, were recorded on the soil boring logs, included as **Appendix B**.

One soil sample from the sample interval exhibiting the highest PID reading, or if no field indications of impacts were noted, the interval located directly above the soil/groundwater interface or at the termination point in each soil boring was submitted for laboratory analysis. Soil samples were either placed in laboratory prepared glass containers or the macrocore sample liner was cut into a 6-inch long section and sealed with Teflon tape and end caps. Soil samples were placed into ice-chilled coolers. Standard chain-of-custody (COC) protocol was followed for transporting soil samples to CalScience in Garden Grove, California. Soil analytical laboratory results are summarized in **Table 1** and shown spatially in **Figure 3**. The soil sample analytical laboratory report and COC records are included in **Appendix C**.

All soil borings were backfilled with bentonite grout and the ground surfaces were repaired to approximate original conditions.

2.2 Grab Groundwater Sampling

Following borehole advancement, groundwater samples were collected utilizing Hydropunch sampling techniques. Hydropunch sampling utilizes a probe rod with a retractable stainless steel screen with a steel drop-off tip. The probe rods are advanced a minimum of two feet into the water table, at which point the tip is released. The drill rods are then retracted to expose the disposable screen. Groundwater was collected from the screened interval using a peristaltic pump and disposable polyethylene tubing.

Grab groundwater samples were collected from existing monitoring wells at the Site using a disposable polyethylene bailer. Well designations were assigned to the wells by Delta personnel; historical well information was not available.

Groundwater samples were decanted directly into laboratory prepared sample containers and placed in an iced cooler for transport to CalScience following standard COC protocols. Groundwater analytical laboratory results are summarized in **Table 2** and shown spatially in **Figure 4**. The analytical laboratory reports and COC records for the groundwater sampling event are included in **Appendix C**.

2.3 Investigation Derived Waste

All investigation derived waste generated during the investigation was stored in US Department of Transportation-approved 55-gallon drums for subsequent disposal following proper waste characterization. Decontamination wash water generated during the investigation was stored in a separate drum for subsequent recycling. Copies of waste disposal records are included as **Appendix E**, if they were available at the time this report was prepared.

2.4 Laboratory Analytical Results

All soil and groundwater analytical laboratory results were reviewed for detections of petroleum hydrocarbon constituents above the laboratory method reporting limits (MRLs) and compared to the California Regional Water Quality Control Board Environmental Screening Levels (ESLs)¹. For comparison purposes the following assumptions were used in selecting the ESLs:

- Residential land use,
- Shallow soil (less than 3 meters) or Deep Soil (greater than 3 meters) as appropriate, and;
- Groundwater is a current or potential source of drinking water.

The appropriate ESLs were obtained from Summary Table A and Summary Table C in the document *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*¹. Comparisons between the ESLs and laboratory results can be found in **Table 1** for soil samples and **Table 2** for groundwater samples.

¹ California Regional Water Quality Board, San Francisco Bay Region. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. Interim Final – November 2007, revised May 2008.

Soil analytical laboratory results are summarized in **Table 1**. Within the table, samples with concentrations that exceed the ESLs are bolded. The soil sample analytical laboratory report and COC records are included in **Appendix C**.

Groundwater analytical laboratory results are summarized in **Table 2**. Within the table, samples with concentrations that exceed the ESLs are bolded. The analytical laboratory reports and COC records for the groundwater event are included in **Appendix C**.

2.5 Release Notification

Based on Delta's evaluation of the analytical data, Delta notified the Alameda County Environmental Health Department that TPH-G was detected in soil and groundwater samples collected at the Site. Delta also submitted an *Underground Storage Tank Unauthorized Release (Leak)/Contamination Site Report*. A copy of the release report is included in **Appendix F.**

3.0 SUMMARY OF FINDINGS

Based on the scope of work performed, Delta presents the following summary of findings:

- Five soil exploration borings (B-1 and B-3 through B-6) were advanced on August 28, 2008, to a maximum depth of 25 feet bgs.
- Grab groundwater samples were collected from existing monitoring wells at the Site on October 28, 2008.
- All soil and groundwater laboratory results were reviewed for detections of petroleum constituents above the laboratory MRLs and compared to the California Regional Water Quality Control Board ESLs. Comparisons between the ESLs and laboratory results can be found in **Tables 1 and 2**.
- None of the soil samples collected and submitted for laboratory analysis during this investigation exhibited concentrations of any constituent in excess of the ESLs with two exceptions. TPH-G were detected in excess of the ESL (83 mg/kg) in soil samples B-1 (120 mg/kg) and B-3 (720 mg/kg).
- None of the groundwater samples collected and submitted for laboratory analysis during this investigation exhibited concentrations of any constituent in excess of the ESLs with the following exceptions. TPH-G were detected in excess of the ESL (100 µg/L) in the groundwater sample collected from boring B-6 (900 µg/L). MTBE was detected in excess of the ESL (5 µg/L) in the groundwater samples collected from wells MW-1 (15 µg/L), MW-2 (51 µg/L), and MW-3 (19 µg/L). TBA was detected in excess of the ESL (12 µg/L) in the groundwater sample collected from well MW-1 (38 µg/L).

- Based on Delta's evaluation of the analytical data, Delta notified the Alameda County Environmental Health Department that TPH-G was detected in soil and groundwater samples collected at the Site. Delta also submitted an *Underground Storage Tank Unauthorized Release* (*Leak*)/Contamination Site Report. A copy of the release report is included in Appendix f.
- Water wells were not located within 1,000 feet of the Site.

Phase II Environmental Site Assessment Shell Oil Products US, SAP#171445 3519 Castro Valley Blvd. Castro Valley, California Delta Project No. CASHL-BADW-A-171445

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4.0 REMARKS

The recommendations contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This report is based upon a specific scope of work requested by the client. The Contract between Delta and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Delta's Client and anyone else specifically listed on this report.

This report was prepared by DELTA CONSULTANTS

Chris Dowd Staff Scientist

Reviewed by:

Rich Garlow, P.G.

California Professional Geologist

Date: 11/21/2008



Date: 11/21/2008

TABLES
							Т	able 1								
						Summa	arv of Soil Analy	tical Results -	TPH & VOCs							
							SAP	No 171445								
							3510 Cas	tro Valley Blvd								
							Contro M	uo valley bivu.								
		1		1	1	1	Castro va	alley, California			1				1	1
Sample	Sample Depth	Sample	TPH-G	TPH-D	Benzene	Toluene	Ethylbenzene	Total Xylenes	EDB	EDC	MTBE	TBA	DIPE	ETBE	TAME	Ethanol
Identification	(feet)	Date	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
B-1	17	08/28/08	120	NA	< 0.12	< 0.12	< 0.12	< 0.24	< 0.12	< 0.12	< 0.12	< 1.2	< 0.25	< 0.25	< 0.25	< 12
B-3	12	08/28/08	720	NA	< 0.50	< 0.50	2.0	1.7	< 0.50	< 0.50	< 0.50	< 5.0	< 1.0	< 1.0	< 1.0	< 50
B-4	10	08/28/08	< 0.50	NA	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	< 0.50
B-5	12	08/28/08	< 0.50	NA	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	< 0.50
B-6	9-10	08/28/08	0.70	NA	< 0.0050	< 0.0050	< 0.0050	< 0.010	< 0.0050	< 0.0050	< 0.0050	< 0.050	< 0.010	< 0.010	< 0.010	< 0.50
ESL ¹ : Shallow So Use, Groundwate Source of Drinkin	ils (<3m), Reside r is Current or Po g Water (Table A	ntial Land otential	83	83	0.044	2.9	2.3	2.3	0.00033	0.0045	0.023	0.075	NA	NA	NA	NA
ESL ¹ : Deep Soils (>3m), Residential Land Use, Groundwater is Current or Potential Source of Drinking Water (Table C)			83	83	0.044	2.9	3.3	2.3	0.00033	0.0045	0.023	0.075	NA	NA	NA	NA

Notes:

mg/kg = milligrams per kilogram

< = Not detected at concentration exceeding laboratory method reporting limit (MRL)</p>

VOC = Volatile organic compound

TPH-G = Total Petroleum Hydrocarbons as Gasoline

TPH-D = Total Petroleum Hydrocarbons as Diesel

EDB = 1,2-dibromoethane

EDC = 1,2-dichloroethane

MTBE = Methyl tert-Butyl Ether

TBA = Tertiary Butyl Alcohol

DIPE = Diisopropyl Ether

ETBE = Ethyl tert-Butyl Ether

TAME = Tert-Amyl Butyl Ether

NA = Not Analyzed, Not Available

VOC analysis by EPA Method 8260B

Gasoline-range hydrocarbons by EPA Method 8260B

Diesel-range hydrocarbons by EPA Method 8015B

¹ESL = Environmental Screening Level. Screening criteria referenced are from the Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, California Regional Water Quality Control Board, San Francisco Bay Region, Interim Final, November 2007, revised May 2008.

r																
								Table 2								
						Summary	of Groundwate	er Analytical R	esults - TPH	& VOCs						
							SA	P No. 171445								
							3519 0	Castro Valley Bl	/d.							
							Castro	Valley, Californ	nia							
Sample	Sample Date	Depth to Water														
Identification	Campio Dato	(feet)	TPH-G	TPH-D	Benzene	Toluene	Ethylbenzene	Total Xylenes	EDB	EDC	MTBE	TBA	DIPE	ETBE	TAME	Ethanol
			(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
B-4	08/28/08	NA	< 50	NA	< 0.50	< 1.0	< 1.0	< 2.0	< 1.0	< 0.50	< 1.0	< 10	< 2.0	< 2.0	< 2.0	< 100
B-5	08/28/08	NA	< 50	NA	< 0.50	< 1.0	< 1.0	< 2.0	< 1.0	< 0.50	< 1.0	< 10	< 2.0	< 2.0	< 2.0	< 100
B-6	08/28/08	NA	900	NA	0.71	3.5	3.4	< 2.0	< 1.0	< 0.50	< 1.0	< 10	< 2.0	< 2.0	< 2.0	< 100
MW-1 ²	10/28/08	11.76	< 50	NA	< 0.50	< 1.0	< 1.0	< 2.0	< 1.0	< 0.50	15	38	< 2.0	< 2.0	< 2.0	< 100
MW-2 ²	10/28/08	12.54	74	NA	< 0.50	< 1.0	< 1.0	< 2.0	< 1.0	< 0.50	51	< 10	< 2.0	< 2.0	< 2.0	< 100
MW-3 ²	10/28/08	12.42	< 50	NA	< 0.50	< 1.0	< 1.0	< 2.0	< 1.0	< 0.50	19	< 10	< 2.0	< 2.0	< 2.0	< 100
MW-4 ²	10/28/08	11.31	< 50	NA	< 0.50	< 1.0	< 1.0	< 2.0	< 1.0	< 0.50	< 1.0	< 10	< 2.0	< 2.0	< 2.0	< 100
ESL ¹ : Shallow So Use, Groundwate Source of Drinkin	oils (<3m), Reside er is a Current or ng Water (Table /	ential Land Potential A)	100	100	1	40	30	20	0.05	0.5	5	12	NA	NA	NA	NA
ESL ¹ : Deep Soils (>3m), Residential Land Use, Groundwater is a Current or Potential Source of Drinking Water ESLs (Table C)		100	100	1	40	30	20	0.05	0.5	5	12	NA	NA	NA	NA	

Notes:

µg/L = micrograms per liter

< = Not detected at concentration exceeding laboratory method reporting limit (MRL)</p>

VOC = Volatile organic compound

TPH-G = Total Petroleum Hydrocarbons as Gasoline

TPH-D = Total Petroleum Hydrocarbons as Diesel

EDB = 1,2-dibromoethane

EDC = 1,2-dichloroethane

MTBE = Methyl tert-Butyl Ether

TBA = Tertiary Butyl Alcohol

DIPE = Diisopropyl Ether

ETBE = Ethyl tert-Butyl Ether

TAME = Tert-Amyl Butyl Ether

NA = Not Analyzed, Not Available

VOC analysis by EPA Method 8260B Gasoline-range hydrocarbons by EPA Method 8260B

Diesel-range hydrocarbons by EPA Method 8015B

¹ ESL = Environmental Screening Level. Screening criteria referenced are from the Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, California Regional Water Quality Control Board, San Francisco Bay Region, Interim Final, November 2007, revised May 2008.

²Monitoring well designations assigned by Delta Consultants at time of sampling. Historically accurate well designations not available.

APPENDIX A

ENVIRONMENTAL DATA RESOURCES WELL SURVEY REPORT

GEOCHECK[®] - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1	
Soil Component Name:	Clear Lake
Soil Surface Texture:	clay
Hydrologic Group:	Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.
Soil Drainage Class: Hydric Status: Partially hydric	
Corrosion Potential - Uncoated Steel:	High
Depth to Bedrock Min:	> 0 inches
Depth to Watertable Min:	> 0 inches

			Soil Laye	r Information			
	Βοι	indary		Classi	fication	Saturated	
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	conductivity micro m/sec	Soil Reaction (pH)
1	0 inches	25 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.4
2	25 inches	59 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.4

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK[®] - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	0.189
Federal FRDS PWS	0.189
State Database	0.189

FEDERAL USGS WELL INFORMATION

		LOCATION
MAP ID	WELL ID	FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

APPENDIX B BORING LOGS

Dri Dri Dril Dri	llir llir ling llir	ng S ng C g Me ng C	Start Comp Sthod Comp	ed: 08/28/2008 oleted: 08/28/2008 and Diameter: Direct Push; 2" diameter Dany: Cascade Drilling	°į.	1	
ο Log Βοι	gg rin	ав ed E g: I	y: 3y: \$ 8—1	Steve Harquail	1	4	4
Depth (feet)	Samples	Recovery (%)	PID (ppm)	LITHOLOGIC DESCRIPTION	USCS	Graphic Log	Depth (feet)
- 2—	-			No Recovery – Air Knifed to 5 feet below ground surface (bgs)			- 2
4-	-			5.00	,°		-4
6	-			Sandy Silt: Dark brown. Reddish brown, dry, hard.	ML		- 6
8-	-	100	0.0				- 8
10			0.0	Reddish/dark brown, low plasticity, dry, hard.			
- 14-				Firm			- - -14
- 16—	-	100	0.0	Brown			-
- 18			5.0				- 18
20-		90	0.0	20.00 Boring terminated at 20 feet bgs.) ⁵		20
				Initial Water Level (Not Encountered)	PUS Coll ory	H ecte Ana	d for lysis
D			A	CASHL-BADW-A 10-03-2008 10-10-2008SHELL FACILITY NO. 171445Soil Boring LogScalifornia3519 Castro Valley Blvd. Castro Valley, CaliforniaB-1	g		FIGUKE

Dri Dri Dri Dri Dri Log Bor	llir llir ling llir lle ggo rin	ng (g Me ng (d B ed I g: J	Starto Comp Ithod Comp y: Sy: S 3-3	ed: 08/28/2008 bleted: 08/28/2008 and Diameter: Direct Push; 2" diameter bany: Cascade Drilling Steve Harquail			14
Depth (feet)	Samples	Recovery (%)	PID (ppm)	LITHOLOGIC DESCRIPTION	LISUS	Graphic	Log Depth (feet)
2	-			No Recovery – Air Knifed to 5 feet below ground surface (bgs)			- 2
4 - 6				Sandy Silt: Dark brown/black mix, hard.	5.00° M	L	- 4
- 8—				Clayey Silt: Brown, with 3% sand.	3.50 [°]	L	- 8
10-		100	0.0	With 20% greenish color. Greenish—brown, hard, dry.			10
12— - 14—			83.0	Medium to low plasticity.			
- 16-		100	6.3	15 Sandy Silt: Tan/light tan/reddish, hard, dry.	<u>5.00'</u> M	L	-16
- 18— -				Tan, homogenous, firm, dry.			- 18
20-		85	0.0	Boring terminated at 20 feet bgs.).00'		∐ _20
				▼ Initial Water Level (Not Encountered) ■ DIREC Samp	CT PU	SH	ed for
D			A	CASHL-BADW-A 10-03-2008 10-10-2008 CALIFORNIA 10 CRF 10-2008 CALIFORNIA 10 CRF 10-2008 CALI	_og		FIGURE

Dri Dri Dri Dri Dri Log Boi	llin llin llin lle gge	ng S ng (g Me ng (d B ed E g: I	Start Comp Hhod Comp y: Sy: S 3-4	ed: 08/28/2008 bleted: 08/28/2008 and Diameter: Direct Push; 2"diameter bany: Cascade Drilling Steve Harquail				11
Depth (feet)	Samples	Recovery (%)	PID (ppm)	LITHOLOGIC DESC	RIPTIO	N	USCS Graphic Log Denth	(feet)
- 2— - 4—				No Recovery — Air Knifed to 5 feet below ground	surface (bgs)		-	2
- 6 - 8				Sandy Silt: Blackish, hard.		5.00*		6 8
10-		95	0.0	Gravel 1", cobbles 1.25", light tan/light gray, dam Boring terminated at 10 feet bgs.	p/wet.	10.00°		10
				▼ Initial Water Level (No	ot Encountered)	DIRECT P Sample C	USH ollected f	for
D			A	CASHL—BADW—A10-03-200810-10-2008CALIFORNIACRFCALIFORNIACRFSH1445-B4SHELL FACILITY NO. 1714	445 Soil vd. nia	Boring Log B-4	FIG	URE

Dri Dri	llir Ilir	ng S	Start Comp	ed: 08/28/2008		1
Dril	ling	g Me	thod	and Diameter: Direct Push; 2" diameter		
Dri	llir	ng (Comp	pany: Cascade Drilling		14
Dri	911 911	ad R d R	y: ave s			the
Boi	in.	g: 1	370 S B-5			
┝	s	LA LA			0	.9
Depth (feet)	Sample	Recove: (%)	PID (ppm)	LITHOLOGIC DESCRIPTION	uscs	Graph Log Depth (feet)
-				No Recovery – Air Knifed to 5 feet below ground surface (bgs)		_
2-						-2
4-						-4
-				5. Clayey Silt: Dark brown, with 10% sand.	.00' ML	
6-				Hard, dry.		- 6
8-				Brown/tan/rust color mix.		8
- 10-		80	0.0			
-				Dark brown, very hard.		
12-	\mathbb{N}			Brown, dry.		-12
14-		~~				-14
- 16-		80	0.0	Brown, very hard, dry, with 10% sand.		- -16
-						
18-						
20-		70	0.0			-20
-				Silty Sand: Brown, damp.	.00' .00' SM	
- 22				Sand: Brown, homogenous, wet. 23.	.00 [,] SP	
24-		80	0.0	Siny Clay: Brown/light tan, soft, ary.	002	-24
-		00	0.0	Boring Terminated at 25 feet bgs.	.00	
				▼ Initial Water Level (22' bgs) DIREC Sampl Labor	T PUS e Coll atory	H ected for Analysis
				CASHL-BADW-A SHELL FACILITY NO 171445		FIGURE
				10-03-2008 10-10-2008 3519 Castro Valley Blvd.	og	
DI		LT	A	SH1445-B5 Castro Valley, California B-5		

Dril Dril Dril Dril Dril Log Bor	Ilin Iling Ilin Ilec gge	g (g (g (g (d B d B d B d B d B	Start Comp thod Comp y: 3y: S 3-6	ed: 08/28/2008 oleted: 08/28/2008 and Diameter: Direct Push; 2" diameter Dany: Cascade Drilling Steve Harquail	Contraction	1	
Depth (feet)	Samples	Recovery (%)	PID (ppm)	LITHOLOGIC DESCRIPT	TION	USCS	Graphic Log Depth (feet)
2 2 4				No Recovery — Air Knifed to 5 feet below ground surface (b	gs)		- -2 -4
6-				Clayey Silt: Dark brown/black, firm.		5.00' ML	-6
8		95	86.0	Dark brown, hard, damp, with 5% sand.			
- 12—				Tan, brown/light tan mix, hard.			
14-		40	0.0	Damp With 5–10% sand		5.00'	
				🗴 Initial Water Level (Not Encount	ered) DIRE Samı Labo	CT PUS ble Colle ratory	H ected for Analysis
DB		∧ _⊤	A	CASHL-BADW-A 10-03-2008SHELL FACILITY NO. 171445SHELL FACILITY NO. 1714453519 Castro Valley Blvd. Castro Valley, CaliforniaSH1445-B6SHELL FACILITY NO. 171445	Soil Boring B-6	Log	FIGURE

APPENDIX C LABORATORY REPORTS AND CHAIN OF CUSTODY FORMS

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Shell Oil Products Chain Of Custody Record

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	N	1W-2	10/28/2008	15:40	WATER	X				X	X	X	X	X	X																
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nvironmental CAMDLE DECEID			
aboratories, Inc.	IFUR	Cool	er <u>1</u> of <u>1</u>
CLIENT:		DATE:!	0130108
TEMPERATURE: (Criteria: 0.0 °C – 6.0 °C, not frozen)			_
Temperature °C + 1.8 °C (CF) = l	_°C □`E	Blank 🖂	Sample
□ Sample(s) outside temperature criteria (PM/APM contacted by:).		
\square Sample(s) outside temperature criteria but received on ice/chilled o	on same day o	of sampling.	
\square Received at ambient temperature, placed on ice for transpo	ort by Couri	er.	
Ambient Temperature: Air Filter			Initial:
CUSTODY SEALS INTACT:			
□ Cooler □ □ No (Not Intact)	Not Pres	sent	Initial:
□ Sample □ □ No (Not Intact)	Not Pres	sent	Initial: <u> </u>
SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	. 🖉		
Sampler's name indicated on COC	. J		
Sample container label(s) consistent with COC	. Z		
Sample container(s) intact and good condition	. 🛛		
Correct containers and volume for analyses requested	. 🗹		
Proper preservation noted on sample label(s)			
Volatile analysis container(s) free of headspace			
Tedlar bag(s) free of condensation			$\not\ge$
CONTAINER TYPE:			
Solid: □4ozCGJ □8ozCGJ □16ozCGJ □Sleeve □EnCord	es® 🗆 Terr	raCores® []
Water: VOA VOAh VOAna2 125AGB 125AGE	3h 🗍 125A0	GBpo₄ □1A	GB □1AGBna ₂
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Air: Tedlar® Summa® Container: C:Clear A:Amber P:Poly/Plastic G:Glass J:Jar B:Bottle Preservative: h:HCL n:HNO3 na2:Na2S2O3 na:NaOH po4:H3PO4 s:H2SO4 zr	ז na: ZnAc₂+NaOł	Checked/La Rev ⊣ Sc.	abeled by: <u>۲</u> /iewed by: <u>PS</u> anned by: <u>۲</u>

SOP T100_090 (10/23/08)

APPENDIX D COPIES of WASTE DISPOSAL MANIFESTS (as applicable and available) APPENDIX E

COPIES of RELEASE NOTIFICATIONS to AGENCY and RESPONSE

	UNDERGROUND STORAGE TANK UNAUTHO	ORIZED	RELEASE (LI	EAK) / CONTAMINAT	ION SITE REPORT				
EMEF	RGENCY HAS STATE OFFICE OF EMERGENCY SE	RVICES	FOR LOCAL AGENCY USE ONLY						
		INO	REPORTED THIS IN	FORMATION TO LOCAL OFFICIAL	S PURSUANT TO SECTION 25180.7 OF				
Sen	tember 24_2008								
bep			SIGNED		DATE				
	Charles O'Noill	(916) 8 ⁴	53-8927	SIGNATURE	00				
BY		()10) 0.	COMPANY OF ACENCY NAME						
EPORTED	□ LOCAL AGENCY □ REGIONAL BOARD ○ OWNER/OPERATOR □ OTHER		Shell Oil Pr	oducts US					
RE	20945 S. Wilmington Ave.		Carson		CA 90810 state zip				
BLE	NAME		CONTACT PERSO	DN .	PHONE (707) 964 1617				
NSIE RTY	ADDRESS	Unknown	Carol Camp	agna	(/0/) 804-101/				
RESPC PA	20945 S. Wilmington Ave	CA 90810 state zip							
	FACILITY NAME (IF APPLICABLE)		OPERATOR		PHONE				
TION	ADDRESS								
E LOCA	3519 Castro Valley Blvd	(Castro Valley	Alameda COUNTY	94546 ZIP				
SIT	CROSS STREET Redwood Road and Castro Valley								
0	LOCAL AGENCY AGENCY NAME				PHONE				
ENTING	Alameda County Environmental Health				(510) 567-6721				
AGEN	REGIONAL BOARD				PHONE				
N.	San Francisco Regional Water Board				()				
w	(1)	NAME		QUANT	ITY LOST (GALLONS)				
VED	TPPH (gasoline; 720 ppm soil, 900 ppb grou	indwate	er)		🛛 Unknown				
s∪BST∌ INVOL	(2) benzene (0.21 ppb groundwater)								
MEN	9/23/08	Tank Te	est	Tank Removal	Nuisance Conditions				
3ATE	DATE DISCHARGE BEGAN		METHOD USED T	O STOP DISCHARGE (CHECK	(ALL THAT APPLY)				
3Y/A			Remove Conte	ents Close Tank					
OVE	HAS DISCHARGE BEEN STOPPED?		Repair Tank	Change Procee	dure				
DISC	🖾 YES 🗌 NO 🛛 IF YES, DATE 🛛 Unknown		Repair Piping						
Ющ	SOURCE OF DISCHARGE	CAUSE(S)							
SOUR	🗌 Tank Leak 🔲 Piping Leak 🔲 Unknown 🖾 Other	Overfill	Corrosion [] Rupture/Failure 🗌 Unk	nown 🔲 Spill 🛛 Other				
ы В П	CHECK ONE ONLY								
Ϋ́́Ċ	Undetermined Soil Only Groundwater Drink	ing Water	- (CHECK ONLY	IF WATER WELLS HAVE	ACTUALLY BEEN AFFECTED)				
노이	No Action Taken	🗌 Ca	se Closed (Clear	nup Completed or Unnecess	sary)				
RREI	Leak Being Confirmed		Ilution Characteri	zation oring in Progress					
ы СС С	Preliminary Site Assessment Workplan Submitted		eanup Underway	og					
	Preliminary Site Assessment Underway CHECK APPROPRIATE ACTION(S)								
DIAL	Cap Site (CD) Excavate & Treat (ET)		Treatmen	t At Hookup (HU)	⊠ Other				
ACTI	Contamination Barrier (CB) No Action Required (NA	A) (FP)	Enhance	d Bio Degradation (IT) Supply (RS)					
"	Excavate & Dispose (ED)	vater (GT)	Vent Soil	(VS)					
S	During review of laboratory analytical results from so	oil and gr	oundwater sam	pling, concentrations of	benzene (0.21 ppb); and				
1ENT(TPPH (gasoline; 900 ppb groundwater, 720 ppm soi	l) were n	oted in ground	water and/or soil sample	es collected from the site				
MMO:	by Delta Consultants (Delta). Delta notified Alamet	da Count 3.16pm P	y Environment	al Health on $9/23/08$ by ocumenting the findings	y phoning and leaving a will be submitted to the				
	agency within 60 days.	5.10pm P	SI. A report d	ocumenting the mituiligs					

Instructions for Completing UST Unauthorized Release (Leak) / Contamination Site Report

EMERGENCY: Indicate whether emergency response personnel and equipment were involved at any time. If so, a Hazardous Material Incident Report should be filed with the State Office of Emergency Services (OES). Indicate whether the OES report has been filed as of the date of this report.

LOCAL AGENCY USE ONLY: To avoid duplicate notifications pursuant to Health and safety Code Section 25180.7, a designated government employee should sign and date the form in this block. A signature here <u>does not</u> mean that the leak has been determined to pose a significant threat to human health or safety, only that notification procedures have been followed if required.

REPORTED BY: Enter name, telephone number, and address. Indicate which party you represent and provide company or agency name.

<u>SIGNATURE</u>: Sign the form in the space provided.

<u>RESPONSIBLE PARTY</u>: Enter the name, telephone number, contact person, and address of the party responsible for the leak. The Responsible Party would normally be the tank owner.

SITE LOCATION: Enter information regarding the tank facility. At a minimum, you must provide the facility name and full site address.

IMPLEMENTING AGENCIES: Enter the names of the local agency and Regional Water Quality Control Board having jurisdiction over the site.

SUBSTANCES INVOLVED: Enter the name and quantity lost of the hazardous substance(s) involved. If more than two substances leaked, list the two of most concern for cleanup.

DISCOVERY/ABATEMENT: Provide information regarding the discovery and abatement of the leak.

SOURCE/CAUSE: Indicate the source(s) of leak. Check box(es) indicating the cause(s) of leak.

<u>CASE TYPE</u>: Check one box only. Indicate the Case Type category for this leak. Case Type is based on the most sensitive resource affected. For example, if both soil and ground water have been affected, Case Type will be "Groundwater." Indicate "Drinking Water" only if one or more municipal or domestic water wells have actually been affected. A "Groundwater" designation does not imply that the affected water cannot be, or is not, used for drinking water, but only that water wells have not yet been affected. It is understood that Case Type may change upon further investigation.

<u>CURRENT STATUS</u>: Check one box only. Indicate the category which best describes the Current Status of the case. The response should be relative to the Case Type. For example, if the Case Type is "Groundwater," then Current Status should refer to the status of the ground water investigation or cleanup, as opposed to that of soil. Descriptions of options are as follows:

- > No Action Taken No action has been taken by the Responsible Party beyond initial reporting of the leak.
- Leak Being Confirmed A leak is suspected at the site, but has not yet been confirmed.
- Remediation Plan Remediation Plan submitted evaluating long term remediation options. Proposal and implementation schedule for appropriate remediation options also submitted.
- Preliminary Site Assessment Workplan Submitted Workplan/proposal requested of/submitted by Responsible Party to determine whether ground water has been, or will be, impacted as a result of the release.
- > Preliminary Site Assessment Underway Workplan is being implemented.
- Case Closed Regional Water Quality Control Board and local agency Local Oversight Program (LOP) agree that no further work is necessary at the site.
- Pollution Characterization Responsible Party is in the process of fully defining the extent of contamination in soil and ground water and assessing impacts on surface and/or ground water.
- > Post Cleanup Monitoring in Progress Periodic ground water or other monitoring at site, as necessary, to verify and/or evaluate the effectiveness of remedial activities.
- > Cleanup Underway Remediation Plan is being implemented.

IMPORTANT: THE INFORMATION PROVIDED ON THIS FORM IS INTENDED FOR GENERAL STATISTICAL PURPOSES ONLY AND IS NOT TO BE CONSTRUED AS REPRESENTING THE OFFICIAL POSITION OF ANY GOVERNMENTAL AGENCY.

REMEDIAL ACTION: Indicate which actions have been used to clean up or remediate the leak. Descriptions of options are as follows:

- > Cap Site Install horizontal impermeable layer to reduce rainfall infiltration.
- > Containment Barrier Install vertical dike to block horizontal movement of contaminants.
- Excavate and Dispose Remove contaminated soil and dispose at approved site.
- Excavate and Treat Remove contaminated soil and treat (includes spreading or land farming).
- Remove Free Product Remove floating product from water table.
- > Pump and Treat Groundwater Generally employed to remove dissolved contaminants.
- Enhanced Biodegradation Use of any available technology to promote bacterial decomposition of contaminants.
- > Replace Supply Provide alternate water supply to affected parties.
- > Treatment at Hookup Install water treatment devices at each dwelling or other place of use.
- Vacuum Extract Use pumps or blowers to draw air through soil.
- Vent Soil Bore holes in soil to allow volatilization of contaminants.
- > No Action Required Incident is minor, requiring no remedial action.

COMMENTS: Use this space to elaborate on any aspects of the incident.

DISTRIBUTION: If this form is completed by the tank owner or his/her agent, retain a copy and forward the original to your local tank permitting agency for distribution.

- > Original Local UST permitting agency. (Agency contact information is available at www.unidocs.org.)
- > Copy Regional Water Quality Control Board. (Boundaries and contact information are available at www.swrcb.ca.gov/regions.html.)
- > Copy Local Oversight Program (LOP) agency. (Agency contact information is available at www.unidocs.org.)
- Copy Local Health Officer and County Board of Supervisors or their designee to receive Proposition 65 notifications.
- > Copy Owner/Responsible Party.

2307 Pacific Ave., Alameda, CA 94501 Phone: 510-865-9503 Fax. 510-865-1889 E-mail: xtraoil@prodigy.net

Xtra Oil Company

January 9, 2009

Mr. Steven Plunkett Alameda County Environmental Health Department 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502

SUBJECT: QUARTERLY GROUNDWATER MONITORING AND SAMPLING REPORT CERTIFICATION County Case # RO 285 Xtra Oil Company 3495 Castro Valley Blvd. Castro Valley, CA

Dear Mr. Plunkett:

P&D Environmental, Inc. has prepared the following document:

Quarterly Groundwater Monitoring and Sampling Report (September Through November 2008) dated January 9, 2009 (document 0014.R72).

I declare under penalty of perjury that the contents and conclusions in the document are true and correct to the best of my knowledge.

Should you have any questions, please do not hesitate to contact me at (510) 865-9506.

Sincerely,

.

Xtra Oil Company Keith Sinsa

0014.L159

Retail Fueling/Convenience Stores

RECEIVED

9:49 am, Jan 23, 2009

Alameda County Environmental Health

P&D ENVIRONMENTAL, INC.

55 Santa Clara Ave, Suite 240 Oakland, CA 94610 (510) 658-6916

January 9, 2009 Report 0014.R72

Mr. Ted Simas Mr. Keith Simas Xtra Oil Company 2307 Pacific Ave. Alameda, CA 94501

SUBJECT: QUARTERLY GROUNDWATER MONITORING AND SAMPLING REPORT (SEPTEMBER THROUGH NOVEMBER 2008) County Case # RO 285 Xtra Oil Company 3495 Castro Valley Blvd. Castro Valley, California

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Gentlemen:

P&D Environmental, Inc. (P&D) is pleased to present this report documenting the results of the most recent quarterly monitoring and sampling of both the on- and off-site wells for the subject property. This work was performed in accordance with P&D's proposal 020599.P1 dated February 5, 1999. Onsite wells MW1, MW3, MW4, and EW1, offsite observation wells OW1 and OW2, and offsite monitoring wells MW5 through MW12 were monitored on October 22, 2008 and wells MW1, MW3, EW1, and MW5 through MW12 were sampled on October 22 and 23, 2008. The reporting period is for September through November 2008.

A Site Location Map (Figure 1), a Site Plan showing onsite well locations (Figure 2), and a Site Vicinity Map showing offsite well locations (Figure 3) are attached with this report. Figure 3 has been updated to show the correct location of OW2. Norbridge School shown on Figure 1 to the south of the subject site has been demolished and replaced with the Castro Valley BART station and associated parking lot.

BACKGROUND

The site is currently used as a gasoline station. Four 12,000 gallon underground fuel storage tanks are present at the site. Three of the tanks contain gasoline and the fourth tank contains diesel fuel. A 550 gallon waste oil tank was removed from the site in November 1988. The fuel tanks were replaced during August 1992.

Three monitoring wells, designated MW1, MW2 and MW3, were installed at the site on February 14 and 15, 1990 by Western Geo-Engineers. The subsurface materials encountered in the boreholes consisted primarily of silt and clay. The locations of the monitoring wells are shown on Figure 2. Soil samples collected during drilling of the boreholes for the monitoring wells revealed the presence of total petroleum hydrocarbons as gasoline (TPH-G) and total petroleum hydrocarbons as diesel (TPH-D).

TPH-G was encountered in borehole MW1 at depths of 5 and 10 feet below grade at concentrations of 40 and 1,400 mg/kg, respectively; in borehole MW2 at depths of 10 and 15 feet below grade at concentrations of 230 and 95 mg/kg, respectively; and in borehole MW3 at depths of 5, 10, and 15 feet at concentrations of 140, 250 and 25 mg/kg, respectively. In addition, 120 mg/kg TPH-D was detected in borehole MW3 at a depth of 5 feet. Soil samples collected at a depth of 20 feet in borehole MW1 and at a depth of 18 feet in boreholes in MW2 and MW3 did not show any detectable concentration of TPH-G or TPH-D. Groundwater was encountered in the boreholes at depths of approximately 15 to 16 feet below grade.

On February 15, 1990 Western Geo-Engineers drilled three exploratory boreholes at the site designated as SB1, SB2 and SB3. The subsurface materials encountered in the boreholes consisted primarily of silt and clay. The approximate locations of the boreholes are shown on Figure 2. It is P&D's understanding that soil samples were collected from the exploratory boreholes at depths of 10 and 12 feet and evaluated in the field using a photoionization detector. In borehole SB1, TPH-G was detected at the depths of 10 and 12 feet at concentrations of 1,700 and 450 mg/kg, respectively. In boreholes SB2 and SB3, TPH-G was detected at the depths of 10 and 12 feet in both boreholes at concentrations of 800 mg/kg and greater than 2,000 mg/kg, respectively. A groundwater monitoring and sampling program was initiated at the site on February 20, 1990.

It is P&D's understanding that during fuel tank replacement activities in August, 1992 soil surrounding the tank pit was removed and disposed of offsite. An extraction well, designated as EW1, was designed and constructed in one corner of the new tank pit by K&B Environmental at the time of installation of the new tanks. The location of EW1 is shown on Figure 2.

On February 7, 1996 well MW2 was destroyed associated with the widening of Redwood Road. The destruction was overseen by ACC Environmental Consultants of Oakland, California.

On August 15, 1997 P&D personnel oversaw the installation of one groundwater monitoring well, designated as MW4, at the subject site. The location of the monitoring well is shown on the attached Site Plan, Figure 2. This work was performed in accordance with P&D's work plan 0014.W4 dated June 27, 1997. The work plan was approved by the Alameda County Department of Environmental Health (ACDEH) in a telephone conversation with Mr. Scott Seery on August 14, 1997. During the conversation, Mr. Seery indicated that he would record his approval of the work plan in the county file for the site. In accordance with an October 25, 2002 letter from Mr. Seery, groundwater samples are to be analyzed for fuel oxygenates methyl tertiary-butyl ether (MTBE), tertiary amyl methyl ether (TAME), ethyl tertiary-butyl ether (ETBE), diisopropyl ether (DIPE), and tertiary-butyl alcohol (TBA), and lead scavengers ethylene dibromide (EDB), 1,2-dichloroethane (1,2-DCA) using EPA Method 8260; and data for observation wells OW1 and OW2, located in Redwood Road, are to be incorporated into monitoring and sampling reports for the subject site. Documentation of the well installation is provided in P&D's Monitoring Well Installation Report dated September 30, 1997 (document 0014.R25).

On May 31, 2005, P&D submitted an Interim Source Area Remediation Plan (ISARP) to ACDEH proposing free product removal at the site (document 0014.W9). P&D proposed using existing extraction well EW1 in the existing UST pit to dewater the existing pit and the previous UST pit.

Monitoring of existing wells MW1, MW3, and MW4 to evaluate the effectiveness of water table drawdown at the site for plume control and associated free product recovery was also proposed.

In January 2007, P&D installed a groundwater extraction system consisting of a pump in well EW1, associated piping for discharge of water from the well, and a carbon filtration system. System operation began in February 2007. Documentation of the system installation and operation is provided in P&D's Interim Source Area Remediation Plan Progress Evaluation Report dated October 25, 2007 (document 0014.R67).

In response to a February 6, 2007 letter request from the ACDEH, P&D submitted a Groundwater Monitoring Well Installation Work Plan (MW5 Through MW13) dated March 5, 2007 (document 0014.W10) to the ACDEH proposing the installation of nine offsite groundwater monitoring wells in the vicinity of the subject site designated as MW5 through MW13. The ACDEH conditionally approved the work plan in an April 4, 2007 letter. P&D subsequently submitted a Groundwater Monitoring Well Installation Work Plan Amendment (MW5 Through MW12) dated May 3, 2007 (document 0014.W10A) to the ACDEH proposing the installation of eight offsite groundwater monitoring wells in the vicinity of the subject site designated as MW5 through MW12. Documentation of the implementation of the work plan and work plan amendment is provided in P&D's Groundwater Monitoring Well Installation Report (MW5 Through MW12) dated January 30, 2008 (document 0014.R68).

FIELD ACTIVITIES

Onsite wells MW1, MW3, MW4, and EW1, offsite observation wells OW1 and OW2, and offsite monitoring wells MW5 through MW12 were monitored on October 22, 2008 and wells MW1, MW3, EW1, and MW5 through MW12 were sampled on July 22 and 23, 2008. The monitoring and sampling was performed in conjunction with monitoring and sampling by SOMA Environmental Engineering, Inc. of Pleasanton, California at the Former BP site at 3519 Castro Valley Boulevard.

The wells at the subject site were monitored for depth to water and the presence of free product or sheen. In well MW4 the depth to water and depth to free product were measured to the nearest 1/32-inch with a steel tape and water-finding and product-finding paste. The passive hydrocarbon collection device in well MW4 was removed by P&D personnel and placed in storage near MW1 during pressure transducer installation in well MW4 on November 2, 2006. In wells OW1, OW2, MW1, MW3, and EW1, the depth to water was measured to the nearest 0.01 foot using an electric water level indicator. The presence of free product and sheen was also evaluated using a transparent bailer in wells MW1, MW3, MW5 through MW12, and EW1. The measured free product thickness in well MW4 was 0.08 feet. Approximately 0.33 feet of free product was encountered in observation well OW1 located in Redwood Road. No water was present in OW1.

No sample was collected from MW4 due to the presence of free product in the well.

Prior to well sampling, onsite wells MW1, MW3, and EW1, and offsite wells MW5 through MW12 were purged of a minimum of three casing volumes of water or until the wells had been purged dry. Petroleum hydrocarbon odors were detected on the purge water from all three of the

onsite sampled wells (MW1, MW3 and EW1), and a petroleum hydrocarbon sheen was encountered on wells MW1 and MW3. Petroleum hydrocarbon odors were also detected for the samples collected from offsite wells MW6, MW8, and MW12 and petroleum hydrocarbon sheen was observed on the sample collected from offsite well MW6. Very strong petroleum hydrocarbon odors and free product were encountered on the electric water level indicator probe when monitoring well OW1 for water or free product.

During purging operations, the field parameters of electrical conductivity, temperature, and pH were monitored and recorded on a groundwater monitoring/well purging data sheet....Once the field parameters were observed to stabilize and a minimum of three casing volumes had been purged, or the wells had purged dry and partially recovered, water samples were collected using a clean, new disposable bailer. Records of the field parameters measured during well purging are included with this report.

The water samples were transferred to 40-milliliter glass VOA vials and 1-liter amber glass bottles that were sealed with Teflon-lined screw caps. The VOA vials were overturned and tapped to ensure that no air bubbles were present. The VOA vials and bottles were then transferred to a cooler with ice, until they were transported to McCampbell Analytical, Inc. in Pittsburg, California. McCampbell Analytical, Inc. is a State-accredited hazardous waste testing laboratory. Chain of custody documentation accompanied the samples to the laboratory.

HYDROGEOLOGY

Water levels were measured in all of the wells once during the reporting period.

On January 7, 2008 Kier & Wright (State-licensed surveyors) surveyed the top of all of the wells, including onsite wells MW1, MW3, MW4 and EW1, and offsite observation wells OW1 and OW2. The new top of well casing elevations for the wells and the associated calculated groundwater surface elevations are shown in Table 1. Comparison of the previous top of well casing elevations for wells MW1, MW3 and MW4 with the January 7, 2008 elevations shows that the January 7, 2008 elevations are 2.85, 3.06, and 2.86 feet higher, respectively, than the previously surveyed elevations. The groundwater surface elevations and associated groundwater flow direction were calculated using the January 7, 2008 survey elevations for all of the wells.

On October 22, 2008, the measured depth to water in wells MW1, MW3, MW4, and EW1 was 8.80, 9.29, 8.46, and 11.40 feet, respectively. A separate phase hydrocarbon layer measuring approximately 0.08 feet in thickness was measured in well MW4. Using a specific gravity of 0.75, the corrected depth to water in well MW4 is 8.40 feet. Since the previous monitoring event on July 16, 2008, the groundwater elevations (corrected for the presence of any detected free product) have decreased in wells MW1, MW3, and MW4 by 0.40, 0.26, and 0.52 feet, respectively, and the groundwater elevation in well EW1 has remained the same. Since the previous monitoring and sampling event for the offsite wells on July 16, 2008 the groundwater elevations have decreased in offsite groundwater monitoring wells MW5, MW6, MW7, MW8, MW9, MW10, MW11, and MW12 by 0.54, 0.48, 0.18, 0.71, 0.39, 0.63, 0.49, and 0.55 feet, respectively. Although the measured change in the water level in well MW11 has been attributed to very slow recovery of the well during previous sampling episodes, the change in water level since the previous sampling event in well MW11of 0.49 feet is approximately comparable to the water level change in nearby

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well MW7 of 0.18 feet. The measured depth to water in the wells and the separate phase layer thickness measured in monitoring well MW4 and observation well OW1are summarized in Table 1.

Based on the measured depth to groundwater (corrected for the presence of any detected free product) in the onsite groundwater monitoring wells MW1, MW3 and MW4, the apparent groundwater flow direction at the site on October 22, 2008 was calculated to be to the south-southeast with a gradient of 0.011. During the previous quarterly monitoring and sampling event on July 16, 2008, the groundwater flow direction was calculated to be to the south-southwest with a gradient of 0.013. The groundwater flow direction at the site on October 22, 2008 is shown on Figure 2. The groundwater flow direction and gradient are consistent with the flow direction and gradient observed at the site during the previous monitoring and sampling event on July 16, 2008. The current groundwater flow direction and gradient are different from historic values prior to 2007, and are considered to be the result of groundwater pumping at well EW1 in the former UST pit which began in February 2007.

Based on review of groundwater surface elevations in offsite groundwater monitoring wells MW5 through MW12, the groundwater flow direction in the vicinity of the site is southerly, ranging from the south-southeast with a gradient of 0.015 in the vicinity of Redwood Road to the south-southwest with a gradient of 0.013 in the vicinity of the west end of Redwood Court. These offsite groundwater flow directions and gradients are relatively consistent with groundwater flow directions and gradients are relatively consistent with groundwater flow directions and gradients and the previous monitoring and sampling episode. Groundwater surface elevations and contours and the approximate groundwater flow direction in the vicinity of the site based on October 22, 2008 water level measurements from the offsite wells are shown on Figure 3.

LABORATORY RESULTS

All of the groundwater samples collected on October 22 and 23, 2008 were analyzed for TPH Multirange (TPH-G, TPH-D, and TPH-MO) using EPA Methods 5030B and 3510C in conjunction with modified EPA Method 8015C; and for benzene, toluene, ethylbenzene, and total xylenes (BTEX), fuel oxygenates (MTBE, TAME, ETBE, TAME, and TBA) and lead scavengers EDB and 1,2-DCA/EDC using EPA Method 5030B in conjunction with EPA Method 8260B.

The laboratory analytical results for the samples collected from onsite wells MW1, MW3, and EW1 show that TPH-D was detected at concentrations of 3.8, 7.8, and 7.6 milligrams per Liter (mg/L), respectively; TPH-G was detected at concentrations of 18, 87, and 21 mg/L, respectively; benzene was detected at concentrations of 0.18, 26, and 4.5 mg/L, respectively; and MTBE was detected in the groundwater samples collected from wells MW3 and EW1 at concentrations of 4.7 and 7.7 mg/L, respectively. No fuel oxygenates or lead scavengers were detected in the groundwater samples collected from onsite wells MW1, MW3, and EW1, with the exception of MTBE mentioned above and TBA, which was detected in the samples collected from wells MW3 and EW1 at concentrations of 8.0 and 10 mg/L, respectively.

The laboratory analytical results for the samples collected from offsite wells MW5 through MW12 shows that no analytes were detected in the sample collected from well MW9, and that only MTBE was detected in the samples collected from wells MW5 and MW10 at concentrations of 0.0012 and

0.0016 mg/L, respectively. No analytes were detected in the sample collected from offsite well MW11, with the exceptions of MTBE and TBA at concentrations of 0.031 and 0.0031 mg/L, respectively. In the samples collected from the remaining offsite wells (MW6, MW7, MW8 and MW12) TPH-D was detected at concentrations of 4.1, 0.066, 0.91, and 0.054 mg/L, respectively; and TPH-G was detected at concentrations of 82, 0.17, 4.8, and 0.20 mg/L, respectively. Benzene was detected in the samples collected from offsite wells MW6, MW7, and MW8 at concentrations of 7.8, 0.067, and 0.032 mg/L, respectively, and was not detected in the sample collected from well MW12. MTBE was detected in the samples collected from offsite wells MW7, MW8, and MW12 at concentrations of 0.0083, 0.0052, and 0.011 mg/L, respectively, and was not detected in the sample collected in the samples collected from offsite wells MW7, MW8, and MW12 at concentrations of 0.0083, 0.0052, and 0.011 mg/L, respectively, and was not detected in the sample collected from offsite well MW6.

No other fuel oxygenates or lead scavengers were detected in any of the samples collected from any of offsite wells MW5 through MW12, except for TBA in the samples collected from wells MW8, MW11, and MW12 at concentrations of 0.0050, 0.0031, and 0.0023 mg/L, respectively.

Review of the laboratory analytical reports shows that the TPH-D results for the samples collected from wells MW3, EW1, and MW7 are described as consisting of both diesel- and gasoline-range compounds, and the TPH-D results for the samples collected from wells MW1, MW6, MW8, and MW12 are described as consisting of gasoline-range compounds.

The laboratory analytical results for the groundwater samples are summarized in Table 2. Copies of the laboratory analytical reports and chain of custody documentation are included with this report.

DISCUSSION AND RECOMMENDATIONS

Onsite wells MW1, MW3, MW4, and EW1, offsite observation wells OW1 and OW2, and offsite monitoring wells MW5 through MW12 were monitored on October 22, 2008 and wells MW1, MW3, EW1, and MW5 through MW12 were sampled on October 22 and 23, 2008. Separate phase hydrocarbons were measured in well MW4 at a thickness of 0.08 feet, and in observation well OW1 in Redwood Road at a thickness of approximately 0.33 feet. The passive hydrocarbon collection device in well MW4 was removed on November 2, 2006 by P&D personnel during pressure transducer installation associated with preparation for dewatering the former UST pit. Dewatering of the former UST pit began February 2007 in UST pit extraction well EW1. The increase in depth to water in EW1 relative to water level measurements prior to 2007 is associated with the dewatering of the UST pit, which began during the first quarter of 2007. Similarly, the change in the onsite groundwater flow direction from a historic southeasterly flow direction to a southerly flow direction with a higher gradient is attributed to the UST pit dewatering.

The groundwater surface elevations and associated groundwater flow direction were calculated using the January 7, 2008 survey elevations for all of the wells. Based on review of groundwater surface elevations in offsite groundwater monitoring wells MW5 through MW12, the groundwater flow direction in the vicinity of the site is southerly, ranging from the south-southeast with a gradient of 0.015 in the vicinity of Redwood Road to the south-southwest with a gradient of 0.013 in the vicinity of Redwood Court.

The UST pit dewatering pump is located in well EW1, and the increase in petroleum hydrocarbon concentrations in well EW1 when compared to water quality data prior to 2007 is attributed to groundwater with elevated concentrations of petroleum hydrocarbons moving into the UST pit as a result of the UST pit dewatering.

Review of changes in onsite water quality since the previous sampling event on July 16 and 17, 2008 shows that all analyte concentrations have either increased or remained the same with the exception of TPH-D and benzene in well MW1, TPH-D and MTBE in well MW3, and total xylenes and TBA in extraction well EW1.

Review of changes in offsite water quality since the previous sampling event on July 16 and 17, 2008 shows that all analytes have remained not detected in well MW9, all analyte concentrations have increased or remained not detected in wells MW10 and MW11, and decreased or remained not detected in wells MW6, MW7, MW8, and MW12, all analyte concentrations remained not detected or decreased, with the exceptions of benzene, toluene, and ethylbenzene in well MW6, MTBE, benzene, and ethylbenzene in well MW7, and MTBE and TBA in wells MW8 and MW12.

Based on the laboratory analytical results of the water samples collected from the monitoring wells, P&D recommends that groundwater monitoring and sampling be continued. In addition, P&D recommends that future monitoring and sampling efforts continue to be coordinated with the Former BP site located at 3519 Castro Valley Boulevard. In accordance with recent communications with ACDEH, although future monitoring and sampling events will be performed in conjunction with the consultant for the Former BP site located at 3519 Castro Valley Boulevard, the results obtained by the other consultant are not included in this current report and will not be included in future P&D reports because the information is readily available via the internet at both the county website and the GeoTracker website.

DISTRIBUTION

A copy of this report will be uploaded to the ACDEH website, in accordance with ACDEH requirements. In addition, a copy of this report will be uploaded to the GeoTracker database.

LIMITATIONS

This report was prepared solely for the use of Xtra Oil Company. The content and conclusions provided by P&D in this assessment are based on information collected during our investigation, which may include, but not be limited to, visual site inspections; interviews with the site owner, regulatory agencies and other pertinent individuals; review of available public documents; subsurface exploration and our professional judgment based on said information at the time of preparation of this document. Any subsurface sample results and observations presented herein are considered to be representative of the area of investigation; however, geological conditions may vary between borings and may not necessarily apply to the general site as a whole. If future subsurface or other conditions are revealed which vary from these findings, the newly revealed conditions must be evaluated and may invalidate the findings of this report.

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This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the owner to properly dispose of any hazardous materials or hazardous wastes left onsite, in accordance with existing laws and regulations.

This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. P&D is not responsible for the accuracy or completeness of information provided by other individuals or entities which is used in this report. This report presents our professional judgment based upon data and findings identified in this report and interpretation of such data based upon our experience and background, and no warranty, either express or implied, is made. The conclusions presented are based upon the current regulatory climate and may require revision if future regulatory changes occur.

Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental, Inc.

2 H. King

Paul H. King Professional Geologist #5901 Expires: 12/31/09



Attachments: Tables 1 & 2 Site Location Map (Figure 1) Site Plan (Figure 2) Site Vicinity Map (Figure 3) Well Monitoring and Purge Data Sheets Laboratory Analytical Reports and Chain of Custody Documentation

PHK/ sjc 0014.R72

TABLES

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Well	Date	Top of Casing	Depth to	Water Table	
No.	Monitored	Elev. (ft.)	Water (ft.)	Elev. (ft.)	
MW1	10/22/08	180.22++	8.80	171.42	
	07/16/08		8.40	171.82	
	04/15/08		8.41	171.81	
	01/17/08	177.37*	8.01	169.36	
	10/16/07		8.65	168.72	
	07/25/07		8.49	168.88	
	04/17/07		8.30	169.07	
	01/18/07		7.85	169.52	
	11/14/06		7.38	169.99	
	06/29/06		7.80	169.57	
	02/03/06		6.65	170.72	
	11/18/05		8.17	169.20	
	07/28/05		7.98	169.39	
	04/13/05		6.90	170.47	
	01/31/05		7.20	170.17	
	10/15/04		8.52	168.85	
	07/13/04		8.33	169.04	
	04/06/04		7.93	169.44	
	12/18/03		7.65	169.72	
	09/18/03		8.15	169.22	
	06/19/03		8.13	169.24	
	03/18/03		7.77	169.60	
	12/21/02		5.74	171.63	
	09/10/02		8.28	169.09	
	03/30/02		7.43	169.94	
	12/22/01		6.92	170.45	
	09/23/01		8.53	168.84	
	06/22/01		8.30	169.07	
	04/22/01		7.77	169.60	
	12/14/00		8.49	168.88	
	09/18/00		8.56	168.81	
	06/08/00		7.97	169.40	
	03/09/00		6.68	170.69	
	12/09/99		8.15	169.22	
	08/31/99		8.36	169.01	
	04/29/99		7 68	169 69	

NOTES:

* = Surveyed on August 20, 1997

++ = Surveyed on January 7, 2008

Well	Date	Top of Casing	Depth to	Water Table
No.	Monitored	Elev. (ft.)	Water (ft.)	Elev. (ft.)
M7371	01/20/00	177 37*	6.00	170.29
(Continued)	01/26/08	177.57	7.50	1/0.56
(Continueu)	04/20/98		7.50	109.07
	01/24/90		0.01	1/0./0
	11/00/97	177 27*	8.79	108.58
	08/20/97	1/7.3/*	8.51	168.86
	07/24/97		8.71	168.72
	04/25/97		7.98	169.45
	01/20/97		7.12	170.31
	07/26/96		8.39	169.04
	07/09/96		8.16	169.27
	04/23/96		7.47	169.96
	02/07/96		6.09	171.34
	01/29/96		6.17	171.26
	10/26/95		8.45	168.98
	07/28/95		8.27	169.16
	05/02/95		6.96	170.47
	02/23/95		7.72	169.71
	11/18/94		7.14	170.29
	08/22/94		8.67	168.76
	05/19/94	177.43**	8.05	169.38
*	02/28/94		7.44	169.99
	11/24/93		8.74	168 69
	08/30/93		8.78	168.65
	05/18/93		8.12	169 31
	02/23/93		7 34	170.09
	11/13/92	200 00***	9.13	190.87
	05/29/92	175 73	8 50	167.14
	01/14/92	175.75	8.57	167.14
	12/23/01		0.57	166.09
	11/25/01		9.05	166.22
	10/10/01		7.41 0.70	166.02
	00/17/01		9.70	100.03
	09/1//91		9.50	100.23
	08/19/91		9.31	166.42

NOTES:

* = Surveyed on August 20, 1997

** = Surveyed on March 24, 1993

*** = Surveyed on December 5, 1992

Well	Date	Top of Casing	Depth to	Water Table
No.	Monitored	Elev. (ft.)	Water (ft.)	Elev. (ft.)
MW2	NOT MEAS	URED (DESTROYI	ED ON FEBRUARY	7, 1996)
	02/07/96	176.04**	5.70	170.34
	01/29/96		5.16	170.88
	10/26/95		8.21	167.83
	07/28/95		7.99	168.05
	05/02/95		6.79	169.25
	02/23/95		7.51	168.53
	11/18/94		6.92	169.12
	08/22/94		8.59	167.45
	05/19/94		7.70	168.34
	02/28/94		6.99	169.05
	11/24/93		8.47	167.57
	08/30/93		8.64	167.40
	05/18/93		7.73	168.31
	02/23/93		6.39	169.65
	11/13/92	198.61***	8.70	189.91
	05/29/92	175.45	9.31	166.14
	01/14/92		8.97	166.48
	12/23/91		10.39	165.06
X	11/25/91		9.81	165.64
	10/10/91		10.39	165.06
	09/17/91		10.23	165.22
	08/19/91		9.60	165.85

NOTES:

* = Surveyed on August 20, 1997 ** = Surveyed on March 24, 1993

*** = Surveyed on December 5, 1992

Well	Date	Top of Casing	Depth to		Water Table
No.	Monitored	Elev. (ft.)	Water (ft.)		Elev. (ft.)
MW2	10/22/08	170 /6++	0.20		170 17
	07/16/08	179.4011	9.29		170.17
	04/15/08		9.05		170.45
	01/17/08	176 40*	8.00		167.50
	11/16/07	170.40	0.90		166.07
	07/25/07		0.35		167.05
	04/17/07		8.88		167.52
	01/18/07		7 2 2		160.08
	11/14/06		7.52		168.87
	06/29/06		7.55		168.87
	02/03/06		610		170.30
	11/18/05		7.63		168 77
	07/28/05		7.58		168.82
	04/13/05		635		170.05
	01/31/05		6.79		169.61
	10/15/04		8.28		168.12
	07/13/04		8.11		168.29
	04/06/04		7.41		168.99
	12/18/03		6.99		169.41
	09/18/03		7.91		168.49
	06/19/03		7.60		168.80
	03/18/03		7.35		169.05
	12/21/02		5.43	9	170.97
	09/10/02		7.97		168.43
	03/30/02		6.97		169.43
	12/22/01		6.44		169.96
	09/23/01		8.17		168.23
	06/22/01		8.06		168.34
	04/22/01		7.50		168.90
	12/14/00		8.13		168.27
	09/18/00		7.83		168.57
	09/26/00		7.77		168.63
	06/08/00		7.50		168.90
	03/09/00		6.08		170.32
	12/09/99		7.90		168.50

NOTES:

* = Surveyed on August 20, 1997

++ = Surveyed on January 7, 2008

TABLE 1 WELL MONITORING DATA

Well	Date	Top of Casing	Depth to		Water Table
No.	Monitored	Elev. (ft.)	Water (ft.)		Elev. (ft.)
MW3	08/31/99	176.41**	7.95		168.45
(Continued)	04/29/99		7.09		169.31
	01/29/99		6.42	š.,	169.98
	04/26/98		6.85		169.55
	01/24/98		5.90		170.50
	11/06/97		7.80		168.80
	08/26/97		7.67		168.93
	07/24/97	176.41**	7.90		168.51
	04/25/97		7.12		169.29
	01/20/97		6.35		170.06
	07/26/96		7.84		169.57
	07/09/96		7.61		168.80
	04/23/96		6.81		169.60
	02/07/96		5.05		170.36
	01/29/96		5.77		170.64
	10/26/95		7.72		168.69
	07/28/95		7.80		168.61
	05/02/95		6.50		169.91
	02/23/95		7.24		169.17
	11/18/94		6.05		170.36
	08/22/94	190.97***	7.65		168.76
	05/19/94		7.15		169.26
	02/24/94		6.68		169.73
	11/24/93		7.55		168.86
	08/30/93		7.64		168.77
	05/18/93		7.12		169.29
	02/23/93		8.01		168.40
	11/13/92		7.86		191.12
	05/29/92	175.00	8.45		166.55
	01/14/92		8.24		166.55
	12/23/91		9.37		165.63
	11/25/91		9.19		165.81
	10/10/91		9.43		165.57
	09/17/91		9.20		165.80
	08/19/91		8.95		166.05

NOTES:

 $\overline{*}$ = Surveyed on August 20, 1997

** = Surveyed on March 24, 1993

*** = Surveyed on December 5, 1992

Well	Date	Top of Casing	Depth to	Water Table
No.	Monitored	Elev. (ft.)	Water (ft.)	Elev. (ft.)
MW4	10/22/08	179.21++	8.46(0.08)#	170.81
	07/16/08		8.04(0.21)#	171.33
	04/15/08		8.00(0.25)#	171.40
	01/17/08	176.35*	7.50(0.17)#	168.98
	10/16/07		8.50(0.25)#	168.04
	07/25/07		8.04(0.17)#	168.44
	04/17/07		7.94(0.19)#	168.55
	01/18/07		7.38(0.21)#	169.13
	11/14/06		7.36(0.25)#	169.18
	06/29/06		Unknown	Unknown
	02/03/06		5.86	170.49
	11/18/05		7.99 (0.51)#	168.36
	07/28/05		7.59	168.76
	04/13/05		6.78 (0.01)#	169.58
	01/31/05		7.34 (0.19)#	169.15
	10/15/04		8.73 (0.15)#	167.73
	07/13/04		8.44 (0.03)#	167.93
	04/06/04		9.58 (2.83)#	168.89
	02/11/04		9.43 (2.70)#	168.95
	12/18/03		9.75 (1.51)#	167.73
	09/18/03		9.13 (1.80)#	168.57
	06/19/03		8.56 (0.31)#	168.02
	03/18/03		7.49 (0.06)#	168.91
	12/21/02		8.58 (4.39)#	171.06

NOTES:

* = Surveyed on August 20, 1997

= Indicates free product thickness in feet. The water table elevation has been corrected for the presence of free product by assuming a free product specific gravity of 0.75. ++ = Surveyed on January 7, 2008.

TABLE 1 WELL MONITORING DATA

Well	Date	Top of Casing	Depth to	Water Table
No.	Monitored	Elev. (ft.)	Water (ft.)	Elev. (ft.)
MW4				
(Continued)				
	09/10/02		9.09 (1.60)#	168.46
	03/30/02		9.86 (2.49)#	168.36
	12/22/01		7.79 (1.75)#	169.87
	09/23/01		8.97 (1.17)#	168.26
	06/22/01		7.79	168.56
	04/22/01		9.07 (2.20)#	168.93
	12/14/00		8.87 (0.72)#	168.02
	09/18/00		8.50 (0.45)#	168.19
	06/08/00		7.34	169.01
	03/09/00		6.61 (0.46)#	170.08
	12/09/99		8.80	167.55
	08/31/99		8.28	168.07
	04/29/99		7.14	169.21
	01/29/99		6.68	169.67
	04/26/98		6.87	169.48
	01/24/98		6.61	169.74
	11/06/97		9.16	167.19
	08/26/97		8.92	167.43
	08/20/97		7.66 (prior to develop	ment)
	1 1 1 1 1 1 2		u I	

NOTES:

* = Surveyed on August 20, 1997

= Indicates free product thickness in feet. The water table elevation has been corrected for the presence of free product by assuming a free product specific gravity of 0.75.

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW5	10/22/08	176.02++	6.55	169.47
	07/16/08		6.01	170.01
	04/15/08		5.90	170.12
	12/17/07		5.83	170.19
	12/13/07		5.83	170.19
	12/12/07		5.98\$	170.04

Notes:

++ = Surveyed on January 7, 2008. \$ = Prior to well development.

P&D ENVIRONMENTAL, INC.
Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW6	10/22/08 07/16/08	175.24++	6.36 5.88	168.88 169.36
	12/17/07		5.69	169.55
	12/13/07 12/11/07		5.63 6.17\$	169.07

Notes: ++ = Surveyed on January 7, 2008. \$ = Prior to well development.

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)		Water Table Elev. (ft.)
MW7	10/22/08	170.34++	4.24		166.10
	07/16/08		4.06		166.28
	04/15/08		3.60		166.74
	12/17/07		3.68	q	166.66
	12/13/07		4.74		165.60
	12/12/07		5.49		164.85
	12/11/07		5.98\$		164.36

<u>Notes:</u> ++ = Surveyed on January 7, 2008. \$ = Prior to well development.

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TABLE 1 WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)		Water Table Elev. (ft.)
MW8	10/22/08 07/16/08 04/15/08	176.00++	7.91 7.20 6.76	1	168.09 168.80 169.24
	12/17/07		6.73		169.27
	12/13/07		6.52		169.48
	12/12/07		6.56\$		169.44

Notes: ++ = Surveyed on January 7, 2008. \$ = Prior to well development.

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TABLE 1 WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW9	10/22/08	175.09++	6.96	168.13
	07/16/08		6.57	168.52
	04/15/08		6.44	168.65
	12/17/07		6.35	168.74
	12/13/07		6.31	168.78
	12/11/07		11.21\$	163.88

Notes:

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++= Surveyed on January 7, 2008.

\$ = Prior to well development.

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TABLE 1 WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	-16	Water Table Elev. (ft.)
MW10	10/22/08 07/16/08	176.03++	6.46 5.83		169.57 170.20
	4/15/08		5.64	0	170.39
	12/17/07		5.77		170.26
	12/13/07		5.55		170.48
	12/12/07		5.70\$		170.33

Notes:

+++ = Surveyed on January 7, 2008. \$ = Prior to well development.

Well	Date	Top of Casing	Depth to		Water Table
No.	Monitored	Elev. (ft.)	Water (ft.)		Elev. (ft.)
MW11	10/22/08 07/16/08 04/15/08 12/17/07 12/13/07 12/12/07	171.03++	4.87 4.38 3.70 10.19 12.72 12.99 11.04\$	<u>s.</u>	166.16 166.65 167.33 160.84 158.31 158.04 159.09

Notes:

++ = Surveyed on January 7, 2008.

= Prior to well development.

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TABLE 1 WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)		Water Table Elev. (ft.)
MW12	10/22/08 07/16/08 04/15/08 12/17/07	173.98++	9.02 8.47 7.77 7.71	1	164.96 165.51 166.21 166.27
	12/13/07 12/13/07 12/12/07		7.66 7.67\$		166.32 166.31

Notes:

++ = Surveyed on January 7, 2008. \$ = Prior to well development.

Well	Date	Top of Casing	Depth to		Water Table
No.	Monitored	Elev. (ft.)	Water (ft.)		Elev. (ft.)
173371	10/00/00	170 07	11.40		1 (7.97
EWI	10/22/08	1/9.2/++	11.40		167.87
	07/16/08		11.40		
	04/15/08		11.40	4.2	
	01/17/08	Not Surveyed	11.41		
	11/16/07		11.95		
	07/25/07		11.57		
	04/17/07		11.35		
	01/18/07		6.60		
	11/14/06		6.11		
	06/29/06		6.88		
	02/03/06		5.23		
	11/18/05		6.63		
	07/28/05		6.94		
	04/13/05		5.23		
	01/31/05		6.25		
	10/15/04		7.65		
	07/13/04		7.51		
	04/06/04		6.63		
	12/18/03		6.72		
	09/18/03		7.29		

NOTES:

++ = Surveyed on January 7, 2008.

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Well	Date	Top of Casing	Depth to	Total Well
No.	Monitored	Elev. (ft.)	Water (ft.)	Depth (ft.)
OW1	10/22/08	178.93++	No Water; (0.33)	7.17
	07/16/08		6.95	7.17
	04/15/08		7.11	7.17
	01/17/08	Not Surveyed	4.00 Not r	neasured
	11/16/07		No Water or Product	7.41
	07/25/07		No Water or Product	7.41
	04/17/07		No Water or Product	7.41
	01/18/07		No Water or Product	7.41
	11/14/06		No Water (sheen)	7.41
	06/29/06		7.13	7.42
	02/03/06		6.97	7.45
	11/18/05		7.43 (0.13)#	7.50
	07/28/05		7.06 (0.01)#	7.45
	04/13/05		6.99	7.44
	01/31/05		7.03	7.44
	10/15/04		7.19 (0.08)#	7.44
	07/14/04		7.02	7.44
	04/06/04		7.01	7.44
	02/11/04		7.01	7.44
	10/06/03		7.07 (0.01)#	7.44
	11/02/00		7.12,+	
	01/29/99		7.12	
	12/09/99		7.27	

NOTES:

= Indicates free product thickness in feet. The water table elevation has been corrected for the presence of free product by assuming a free product specific gravity of 0.75.

+ = Petroleum hydrocarbon odor reported on probe for water level indicator.

++ = Surveyed on January 7, 2008.

Well	Date	Top of Casing	Depth to	Total Well
No.	Monitored	Elev. (ft.)	Water (ft.)	Depth (ft.)
OW2	10/22/08	176.03++	No Water or Product	7.28
	07/16/08		No Water or Product	7.28
	04/15/08		No Water or Product	7.28
	01/17/08	Not Surveyed	No Water or Product	Not measured
	11/16/07		No Water or Product	7.28
	07/25/07		No Water or Product	7.28
	04/17/07		No Water or Product	7.28
	01/18/07		No Water or Product	7.28
	11/14/06		7.27	7.28
	06/29/06		7.30	7.33
	02/03/06		7.08	7.35
	11/18/05		7.33	7.35
	07/28/05		7.27	7.32
	04/13/05		7.06	7.35
	01/31/05		7.29	7.37
	10/15/04		No Water or Product	7.35
	07/14/04		No Water or Product	7.35
	04/06/04		7.27	7.33
	02/11/04		7.19	7.33
•	10/06/03		7.29	7.34
	11/02/00		7.19	
	01/29/99		7.19	
	12/09/99		7.17	

NOTES:

= Indicates free product thickness in feet. The water table elevation has been corrected for the presence of free product by assuming a free product specific gravity of 0.75.

+ = Petroleum hydrocarbon odor reported on probe for water level indicator.

++ = Surveyed on January 7, 2008.

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
10/23/08	3.8, c	18	ND<0.05	0.18	0.20	1.4	1.9	ND
07/17/08	4.3, c	16	ND<0.025	0.21	0.16	1.0	1.6	ND
04/16/08	3.2, c	13	0.029	0.15	0.11	0.87	1.2	ND
01/17/08	3.8, b	22	0.074	0.31	0.22	1.2	1.7	ND
10/16/07	2.5, a, b	23, a	0.13	0.48	0.23	1.1	1.7	ND
07/25/07	3.9, b	15, f	0.13	0.25	0.023	ND<0.01	1.5	ND
04/17/07	6.2, b	23	0.26	0.78	0.32	1.1	2.0	ND<0.025, except TBA ND<0.25

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

c = Laboratory analytical report note: TPH-D results consist of gasoline-range compounds.

d= Laboratory analytical report note: TPH-D results consist of both oil-range and gasoline-range compounds.

e = Laboratory analytical report note: TPH-D results consist of oil-, gas, and diesel-range compounds.

f = Laboratory analytical report note: TPH-G results have no recognizable pattern.

+ = Analyzed by EPA Method 8260.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Date	TPH-D	ТРН-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
01/18/07	6.4, b	29	ND<1.0	1.8	0.87	1.6	3.3	ND<0.05, except TBA ND<0.5
11/14/06	7.2, b	30	0.44	2.2	0.60	1.8	2.9	ND<0.05, except TBA ND<0.5, Ethanol ND<5.0, Methanol ND<50.0
06/29/06	22,b	45	1.2	3.1	0.94	2.0	3.9	ND<0.05, TBA ND<0.5
02/03/06	9.7 , c	37	0.62	2.2	1.2	2.0	3.5	ND<0.05, TBA ND<0.5
11/18/05	4.3,b	25	0.14	1.6	0.43	1.8	2.7	ND<0.05, TBA ND<0.5
07/28/05	16,a,b	30,a	0.26,+	2.5	0.76	2.1	4.8	ND<0.05, TBA ND<0.5
04/13/05	9.3,b	30	0.3	1.9	0.6	1.7	3	ND<0.05, TBA ND<0.5

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

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e = Laboratory analytical report note: TPH-D results consist of oil-, gas, and diesel-range compounds.

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DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC). Results in milligrams per liter (mg/L), unless otherwise indicated.

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P&D ENVIRONMENTAL, INC.

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
01/31/05	14,b	29	0.27	2.2	1.2	1.9	5.0	ND<0.05, TBA ND<0.5
10/15/04	16,a,b	36,a	ND<0.05	1.5	1.0	2.1	5.1	ND<0.05, TBA ND<0.5
07/13/04	22a,b	34,a	0.053	2,1	0.59	2.1	4.4	ND<0.5, TBA ND<0.5
04/6/04	18,a,b	28,a	0.11	2.3	0.8	0.99	4.5	ND<0.1 TBA ND<1
12/18/03	13,b	33	0.038	2.1	0.77	1.8	4.4	ND<0.005 TBA ND<0.05
09/18/03	15,a,b	32	0.052	2.2	0.62	1.8	3.8	ND<0.017 , TBA

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

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d= Laboratory analytical report note: TPH-D results consist of both oil-range and gasoline-range compounds.

e = Laboratory analytical report note: TPH-D results consist of oil-, gas, and diesel-range compounds.

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* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME,

DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives
								by 8260*
06/26/03	67,a,b	45	ND<0.05	2.1	0.72	2.3	5.5	ND
03/18/03	7.3,a,b	33	ND<0.05	2.4	0.9	1.6	1.0	ND
12/21/02	11,a,b	32	ND<0.1	2.6	0.98	2.2	5.5	ND
09/10/02	18,c	31	ND<0.25	2.2	0.65	1.7	4.8	
03/30/02	12,a,b	99	ND	4.1	1.2	2.5	6.4	
12/22/01	22,a,b	60	ND	3.2	1.9	2	6.2	
09/23/01	16,a,c	49	ND	4	1.4	2.2	6.2	
06/22/01	85,a,b	35	ND	3.1	0.75	1.2	4.0	
04/22/01	16,a	43	ND	3.6	1.2	1.6	5.8	
12/14/00	11,a,d	49	ND	5.8	1.6	2	6.9	
09/18/00	15,a,b	86	ND	7.2	2	3.2	13	
06/8/00	6.5,a,c	50	ND	5.7	1.5	1.8	7	
03/9/00	7.4,a,b	48	ND	5.3	3.1	1.6	8.1	
12/9/99	12,a,b	65	ND	9.3	2.9	2.2	8.8	
08/31/99	22,b	66	0.71	8.7	2.7	2.4	10	
04/29/99	22,b	48	ND	8.4	2.8	2.0	8.1	
01/29/99	9.1,b	47	ND	9.0	2.9	1.9	8.0	
04/26/98	7.8,c	60	ND	9.3	5.7	2.1	9.1	
01/24/98	24,b	57	ND	6.9	5.5	2.0	8.7	
11/6/97	17,c	63	ND	7.4	6.7	2.3	9.9	
07/27/97	28,c	66	1.8	8.6	8.1	2.2	10	
04/25/97	170,b	77	ND	7.4	7.9	2.1	9.8	
01/21/97	57,c	80	0.25	7.8	8.3	1.9	8.9	
07/26/96	11,c	76	ND	11	13	2.4	10	
04/23/96	5.7,c	73	ND	8.6	12	2.2	9.8	

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

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DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
01/29/96	6.6,c	81	0.25	7.6	13	1.9	8.9	
10/26/95	62,c	89	ND	7.8	12	2.4	11	
07/28/95	2.0,c	35		3.8	8.7	1.1	6.5	
05/2/95	6.5,c	86		8.9	14	2.3	11	
02/24/95	9.1	90		7.5	12	1.5	11	
11/18/94	10	96		9.3	14	2.5	11	
08/22/94	8.3	100		9.0	11	2.1	9.4	
05/19/94	30	100		12	14	3.5	17	
02/28/94	110	90		11	9.6	2.1	9.9	
11/24/93	8.2	66		8.3	8.9	2.0	121	
08/30/93	9.4	77		6.4	11	2.2	12	
05/18/93	30	92		4.0	11	2.5	15	
02/23/93	14	100		4.5	11	2.1	12	
11/13/92	4.4	120		5.8	10	2.1	13	
05/27/92	11	120		8.8	16	2.3	15	
01/24/92	19	39		7.3	8.7	1.3	8.9	
12/23/91	34	78		9.3	7.3	0.54	13	

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

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d= Laboratory analytical report note: TPH-D results consist of both oil-range and gasoline-range compounds.

e = Laboratory analytical report note: TPH-D results consist of oil-, gas, and diesel-range compounds.

+ = Analyzed by EPA Method 8260.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Date	TPH-D	ТРН-С	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
11/25/91	36	170		5.5	5.6	1.6	8.4	
10/10/91	19	28		4.1	4.7	1.0	4.8	
09/17/91	19	39		4.9	4.1	1.2	5.9	
08/19/91	47	48		13	8.4	0.99	29	
07/20/91	49	100		11	14	2.3	17	
06/20/91	42	76		4.7	7.1	1.5	9.8	
05/17/91	26	72		7.7	9.9	ND	11	
04/15/91		56		6.5	8.5	0.41	9.9	
03/21/91		36		4.5	5.7	0.087	7.3	
02/15/91		120		7.4	6.6	ND	13	
01/15/91		33		3.9	2.9	0.21	5.3	
09/27/90		28		3.7	3.5	0.01	6.5	
08/23/90		40		5.1	4.9	0.35	6.0	
07/20/90	44			5.1	4.2	ND	9.1	
03/19/90		40		3.7	1.1	ND	3.3	
02/20/90* *		7.6		1.6	ND	ND	1.3	

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

c = Laboratory analytical report note: TPH-D results consist of gasoline-range compounds.

d= Laboratory analytical report note: TPH-D results consist of both oil-range and gasoline-range compounds.

e = Laboratory analytical report note: TPH-D results consist of oil-, gas, and diesel-range compounds.

+ = Analyzed by EPA Method 8260.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

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TABLE 2
SUMMARY OF LABORATORY ANALYTICAL RESULTS
Well MW2

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
2/7/96				MW2 D	estroyed			
1/29/96	4.6.c	38	0.0071	1.9	5.7	1.0	5.9	
10/26/95	900	74	ND	2.9	5.9	2.0	10	
7/28/95	2.0,c	15		1.4	2.3	0.62	3.2	
5/2/95	6.6,b	55		3.3	10	1.8	10	
2/24/95	22	67		4.9	11	1.8	11	<u></u>
11/18/94	5.0	86		11	17	1.8	12	
8/22/94	4.1	91		10	13	1.5	9.0	
5/19/94	5.8	62		92	13	1.3	8.4	
2/28/94	13	91		13	16	1.5	9.0	
11/24/93	79	12		13	17	2.5	17	
8/30/93	110	110		11	14	1.8	11	
5/18/93	44	67		9.2	12	1.4	9.3	
2/23/93	7.0	76		12	17	1.6	9.6	202
11/13/92	8.2	79		10	13	1.4	8.6	-
5/27/92	130	89	1000	18	19	1.7	14	
1/14/92	1600	59		17	14	1.8	15	2712
12/23/91	700	2100		36	130	79	560	
11/25/91	130	230		11	9.7	1.4	9.7	
10/10/91	360	85		21	25	2.1	14	
9/17/91	56	74		10	11	1.4	8.1	
8/19/91	19	69		26	22	2.1	18	
7/20/91	100	51		9.9	7.7	1.2	7.5	
6/20/91	69	87		8.1	8.4	1.1	8.9	
5/17/91	33	62		5.9	6.3	1.2	9.0	
4/15/91		82		5.3	7.4	1.0	9.4	
3/21/91		62	-	9.3	11	0.35	9.7	
2/15/91	1	200	1000	12	12	1.7	14	
1/14/91		78	3 <u>00000</u>	11	8.7	0.58	8.0	
9/27/90	1 <u>444</u>	59	2000	8.4	12	0.88	9.0	
8/23/90		96	1000	8.1	8.4	1.5	8.6	
7/20/90	86			9.1	14	0.94	13	
3/19/90		50	1000	7.7	8.7	0.075	5.6	
2/20/90**		38		7.3	3.1	0.075	6.8	

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

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b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

c = Laboratory analytical report note: TPH-D results consist of gasoline-range compounds.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME,

DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

** Inorganic lead not detected in sample.

Results in milligrams per liter (mg/L), unless otherwise indicated.

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P&D ENVIRONMENTAL, INC.

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
10/23/08	7.8, b	87	4.7	26	ND<0.5	ND<0.5	8.2	ND, except TBA= 8.0
07/17/08	19, a, b	63, a	5.1	24	ND<1.0	ND<1.0	4,1	ND, except TBA= 6.1
04/16/08	14, a, b	52, a	6.7	24	ND<0.5	ND<0.5	5.1	ND, except TBA= 6.7
01/17/08	9.9, a, b	110, a	9.3	34	ND<0.5	2.5	9.5	ND, except TBA= 8.0
10/16/07	13, a, b	69, a	13	18	ND<0.5	ND<0.5	5.0	ND, except TBA= 10
07/25/07	6.7, a, e	52, a	12	23	ND<0.25	ND<0.25	6.0	ND, except TBA= 8.6
04/17/07	7.9, a, b	92, a	14	23	ND<0.5	1.5	5.9	ND<0.5, except TBA = 8.0
01/18/07	6.4, b	94	22	29	1.3	2.1	9.6	ND< 0.5 , except TBA = 12
11/14/06	21, a, b	100, a	23	37	1.0	2.2	11	ND<0.5 except, TBA= 16, Ethanol ND<5.0, Methanol ND<50.0

NOTES:

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d= Laboratory analytical report note: TPH-D results consist of both oil-range and gasoline-range compounds.

e = Laboratory analytical report note: TPH-D results consist of oil-, gas, and diesel-range compounds with no recognizable pattern.

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* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Date	TPH-D	ТРН-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
06/29/06	12,b	36	27	14	ND<0.5	ND<0.5	ND<0.5	ND< 0.5 , except TBA = 11
02/03/06	22,b	86	24	26	ND<0.5	1.7	6	ND<0.5, except TBA = 11
11/18/05	32,a,b	87,a	22	35	ND<1	2	11	ND<1.0, except TBA ND<10
07/28/05	77,a,b	100,a	32,+	30	1.1	2.3	12	ND<0.5, except TBA = 13
04/13/05	19,a,b	96,a	28	31	4	2.3	12	ND< 0.5 , except TBA = 12
01/31/05	13,a,b	93,a	31	36	1.5	2.5	11	ND<1, except TBA = 24
10/15/04	13,a,b	76,a	24	28	ND<0.5	1.1	3.6	ND< 0.5 , except TBA = 18
07/13/04	57,a,b	98,a	15	28	2.9	1.7	8.9	ND< 0.5 , except TBA = 11
04/6/04	32,a,b	81,a	17	34	5.9	1.5	9.9	ND< 0.5 , except TBA = 8.8
12/18/03	32,a,b	130,a	32	33	5.4	0.72	11	ND< 0.5 , except

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

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* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME,

DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

***Review of laboratory analytical reports indicate that oxygenated volatile organic compounds (including TAME, DIPE, ETBE, methanol, ethanol, EDB, and 1,2-DCA) were not detected except MTBE at 21 ppm and tert-butanol at 19 ppm.

Date	TPH-D	ТРН-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives
09/18/03	140,a,b	130	23	34	11	2.5	14	by 8260* ND<0.5, except
								TBA = 10
06/26/03	27,a,b	96	21	29	5.2	2.0	10	ND, except TBA = 8.9
03/18/03	11,a,b	120	16	36	12	1.8	2.4	ND, except $TBA = 5.1$
12/21/02	21,a,b	110	33	34	9.3	2.0	13	ND, except $TBA = 14$
09/10/02	43,b	70	19	21	2.2	1.6	7.6	
03/30/02	8.5,a,b	170	26	40	17	2.6	16	
12/22/01	9.2,a,b	140	27	37	20	2.6	15	
09/23/01	47,a,b	130	26	32	9.1	2.4	12	
06/22/01	33,a,b	110	25	31	7.2	1.9	11	
04/22/01	61,a	140	24	25	5.4	1.7	11	
12/14/00	120,a,b	140	35	37	16	2.4	15	
09/18/00	43,a,b	130	33	39	91	2.3	14	
07/26/00			21	1 				ND***,
								except tert- butanol = 19
06/8/00	74.a.b	130	23	41	16	1.9	13	
03/9/00	14.a.b	180	24	39	22	2.5	16	
12/9/99	17.a.b	120	16	35	6.7	2.4	12	
08/31/99	22.b	120	4.7	35	3.7	2.4	14	
04/29/99	48,b	100	2.5	33	8.0	2.1	14	
01/29/99	240,b	84	1.3	31	2.8	1.8	12	
04/26/98	380,b	100	9.7	29	7.1	1.8	14	
01/24/98	77.b	97	ND	28	7.1	1.8	11	
11/6/97	120,b	140	ND	37	19	2.4	14	
07/24/97	91,c	120	1.4	33	17	2.2	12	
04/25/97	760,b	240	1.6	24	18	4.1	24	
01/21/97	34,c	150	1.3	40	14	2.6	12	
07/26/96	24.c	130	0.89	40	22	2.4	12	

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

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** Inorganic lead not detected in sample.

Results in milligrams per liter (mg/L), unless otherwise indicated.

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P&D ENVIRONMENTAL, INC.

January 9, 2009 Report 0014.R72

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
04/23/96	280.c	170	0.72	34	22	2.2	14	
01/29/96	45.c	150	0.54	32	21	1.9	12	
10/26/95	33	130	0.69	37	21	0.21	11	
07/28/95	1.9.b	86		1.4	2.3	0.62	3.2	
05/2/95	9.7.b	170		43	30	2.5	14	
02/24/95	9.2	130		31	19	1.8	10	
11/18/94	23	140		38	22	2.0	11	
07/22/94	5.3	170		35	20	1.8	10	
05/19/94	30	150		38	25	2.4	14	
02/28/94	210	110		36	21	1.9	11	1000
11/24/93	24	160	2 44	48	26	2.2	12	
07/30/93	32	130		36	21	1.9	8.2	
05/18/93	7.2	130		36	21	2.1	12	
02/23/93	8.1	110	<u></u>	31	18	1.9	11	
11/13/92	4.7	140		38	24	2.0	12	
05/27/92	27	370	10000	91	57	3.0	21	
07/14/92	270	130		76	30	3.4	21	
12/23/91	540	740		30	61	31	180	
11/25/91	74	150		65	31	3.4	18	
10/10/91	39	140		57	31	2.2	14	
09/17/91	140	180		47	25	2.6	15	
08/19/91	150	170		82	31	4.4	22	
07/20/91	270	450	0 <u></u>	46	29	3.5	21	
06/20/91	210	920		39	49	13	69	
05/17/91	70	170		32	22	2.2	18	
04/15/91		110	5. <u></u>	31	15	0.88	7.4	
03/21/91		87		30	14	0.69	5.4	
02/15/91		230		44	40	ND	31	
01/14/91		160		48	25	1.0	16	
09/27/90		25	122	7.2	6.4	0.42	3.4	
08/23/90		220		67	46	27	18	
07/20/90	86			9.1	14	0.94	13	
03/19/90		210	1200	38	28	1.8	12	
02/20/90*		46	1 444	20	15	1.8	9.7	

TABLE 2 SUMMARY OF LABORATORY ANALYTICAL RESULTS Well MW3 (Continued)

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

c = Laboratory analytical report note: TPH-D results consist of gasoline-range compounds.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME,

DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

** Inorganic lead not detected in sample.

Results in milligrams per liter (mg/L), unless otherwise indicated.

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Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
10/22/08			Not Sa	ampled (Free l	Product Prese	ent in Well)		
07/16/08			Not Sa	ampled (Free l	Product Prese	ent in Well)		
04/16/08			Not Sa	ampled (Free l	Product Prese	ent in Well)		
01/17/08			Not Sa	ampled (Free l	Product Prese	ent in Well)		
10/16/07			Not S	ampled (Free	Product Pres	sent in Well)		
07/25/07			Not S	Sampled (Free	Product Pres	sent in Well)		
04/17/07			Not S	Sampled (Free	Product Pres	sent in Well)		
01/18/07			Not S	Sampled (Free	Product Pres	sent in Well)		
11/14/06			Not S	Sampled (Free	Product Pres	sent in Well)		
06/29/06	83,a,b	140,a	31	44	13	2.6	19	ND<1.0, except TBA = ND<10
02/3/06	83,a,b	150,a	22	35	12	3.2	14	ND < 0.5, except TBA = 7
11/18/05			Not Sa	ampled (Free I	Product Press	ent in Well)		12.1
			1101 51	impred (Free F	Todaot I Tob			ND<0.5, except
07/28/05	94,a,b	130,a	27,+	32	8.9	2.9	14	TBA = 8.4

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

+ = Analyzed by EPA Method 8260.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME,

DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives
								by 8260*
04/13/05			Not Sa	ampled (Free l	Product Prese	ent in Well)		
01/31/05			Not Sa	ampled (Free I	Product Prese	ent in Well)		
10/15/04			Not Sa	impled (Free l	Product Press	ent in Well)		
07/13/04			Not Sa	ampled (Free l	Product Prese	ent in Well)		
02/11/04	Free Pr	roduct samp	led. Laborate	ory fuel finger	print notes a	pattern resen	nbling diesel,	with a less
			S	ignificant gase	oline-range p	attern.	1.000	
12/18/03			Not Sa	ampled (Free l	Product Prese	ent in Well)		
09/18/03			Not Sa	ampled (Free I	Product Press	ent in Well)		
06/26/03			Not Sa	ampled (Free I	Product Prese	ent in Well)		
03/18/03			Not Sa	impled (Free l	Product Prese	ent in Well)		
12/21/02			Not Sa	impled (Free l	Product Prese	ent in Well)		
09/10/02			Not Sa	impled (Free I	Product Prese	ent in Well)		
03/30/02			Not Sa	mpled (Free I	Product Prese	ent in Well)		
12/22/01			Not Sa	impled (Free l	Product Prese	ent in Well)		
09/23/01			Not Sa	ampled (Free I	Product Prese	ent in Well)		
06/22/01	440,a,b	140	15	35	19	2.0	10	
04/22/01			Not Sa	ampled (Free 1	Product Prese	ent in Well)		
12/14/00			Not Sa	impled (Free l	Product Prese	ent in Well)		
09/18/00			Not Sa	ampled (Free l	Product Press	ent in Well)		
06/8/00			Not Sa	ampled (Free l	Product Prese	ent in Well)		
03/9/00	2,100,a,b	130	6.9	35	13	2.1	11	122
12/9/99	9,000,a,b	120	8.1	33	6	2.4	12	
08/31/99	9.4,b	190	4.4	46	30	2.8	15	
04/29/99	9.4,b	210	3.2	42	35	2.8	15	
01/29/99	7.3,b	190	2.4	44	40	3.1	17	<u></u>
04/26/98	13,b	190	ND	49	37	3.2	18	21 2211
01/24/98	20,b	200	ND	50	40	3.1	17	
11/6/97	110,b	160	ND	48	30	2.8	16	
08/26/97	5.5,b	210	1.7	48	42	3.4	19	
08/15/97				MW4	Installed			

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

+ = Analyzed by EPA Method 8260.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME,

DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
10/23/08	ND<0.05	ND<0.05	0.0012	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND
07/17/08	ND<0.05	ND<0.05	0.0022	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND
04/16/08	ND<0.05	ND<0.05	0.0039	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005
12/13/07	ND<0.05	0.11	0.004	0.0053	0.0005	ND<0.0005	0.0051	ND

NOTES:

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TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

+ = Analyzed by EPA Method 8260.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME,

DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

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Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
10/23/08	4.1, c	82	ND<0.12	7.8	4.2	3.4	16.0	ND
07/17/08	5.7, c	88	ND<0.25	6.1	3.4	2.5	16.0	ND
04/16/08	6.5, c	51	ND<0.17	4.8	3.3	2.4	16.0	ND
12/13/07	6.2, c	66	ND<0.12	7.9	3.6	2.6	16.0	ND

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

c = Laboratory analytical report note: TPH-D results contain significant gasoline-range compounds.

+ = Analyzed by EPA Method 8260.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
10/22/08	0.066, b	0.17	0.0083	0.067	ND<0.0017	0.020	ND<0.0017	ND
07/16/08	0.078, b	0.28	0.0070	0.059	ND<0.001	0.0083	0.0013	ND
04/15/08	0.077, b	0.17	0.0048	0.048	0.0015	0.013	0.0050	ND
12/13/07	ND<0.050	ND<0.050	0.0093	ND<0.0005	ND<0.0005	ND<0.0005	0.00083	ND, except TBA = 0.014

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

c = Laboratory analytical report note: TPH-D results contain significant gasoline-range compounds.

+ = Analyzed by EPA Method 8260.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

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Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
10/22/08	0.91, c	4.8	0.0052	0.032	ND<0.001	0.041	0.0026	ND, except; TBA = 0.0050
07/16/08	1.5, c	7.0	ND<0.005	0.053	ND<0.005	0.14	0.0071	ND
04/15/08	2.0, c	4.3	0.0065	0.063	ND<0.0025	0.11	0.0091	ND
12/13/07	1.5, c	6.2	0.011	0.057	ND<0.005	0.16	0.018	ND

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

c = Laboratory analytical report note: TPH-D results contain significant gasoline-range compounds.

+ = Analyzed by EPA Method 8260.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME,

DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
10/22/08	ND<0.050	ND<0.050	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND
07/17/08	ND<0.050	ND<0.050	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND
04/16/08	ND<0.050	ND<0.050	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND
12/13/07	ND<0.050	ND<0.050	ND<0.0005	0.001	ND<0.0005	ND<0.0005	0.0045	ND
<u>NOTES:</u> TPH-G = T TPH-D = T	otal Petroleum otal Petroleum	Hydrocarbons Hydrocarbons	as Gasoline. as Diesel.					

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

+ = Analyzed by EPA Method 8260.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Additives by 8260*
10/23/08	ND<0.050	ND<0.050	0.0016	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND
07/17/08	ND<0.050	ND<0.050	0.0015	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND
04/16/08	ND<0.050	ND<0.050	0.0017	ND<0.0005	ND<0.0005	0.00060	0.00056	ND
12/13/07	ND<0.050	ND<0.050	0.0019	ND<0.0005	ND<0.0005	0.0015	0.0018	ND

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

+ = Analyzed by EPA Method 8260.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME,

DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
10/22/08	ND<0.050	ND<0.050	0.031	ND<0.0005	ND<0.0005	ND<0.000 5	ND<0.0005	ND, except; TBA = 0.0031
07/16/08	ND<0.050	ND<0.050	0.023	ND<0.0005	ND<0.0005	ND<0.000 5	ND<0.0005	ND
04/15/08	ND<0.050	ND<0.050	0.026	ND<0.0005	ND<0.0005	ND<0.000 5	ND<0.0005	ND
12/14/07	ND<0.050	ND<0.050	0.021	ND<0.0005	ND<0.0005	ND<0.000 5	ND<0.0005	ND

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

+ = Analyzed by EPA Method 8260.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

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Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
10/22/08	0.054, c	0.20, f	0.011	ND<0.0005	ND<0.0005	ND<0. 0005	ND<0.0005	ND, except; TBA = 0.0023
07/16/08	0.089, b	0.44, f	0.0082	ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND
04/15/08	0.076, b	0.18, f	0.0091	ND<0.0005	ND<0.0005	ND<0. 0005	ND<0.0005	ND
12/13/07	0.200, c	0.320, f	0.011	ND<0.0005	ND<0.0005	ND<0. 0005	ND<0.0005	ND

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

c = Laboratory analytical report note: TPH-D results contain significant gasoline-range compounds.

d= Laboratory analytical report note: TPH-D results consist of both oil-range and gasoline-range compounds.

e = Laboratory analytical report note: TPH-D results consist of oil-, gas, and diesel-range compounds.

f = Laboratory analytical report note: TPH-G results have no recognizable pattern.

+ = Analyzed by EPA Method 8260.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME,

DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

TABLE 2
SUMMARY OF LABORATORY ANALYTICAL RESULTS
Well EW1

Date	TPH-D	ТРН-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
10/23/08	7.6, b	21	7.7	4.5	ND<0.12	0.82	0.39	ND, except TBA = 10
07/17/08	6.9, b	16	7.6	4.1	ND<0.10	ND<0.10	0.65	ND, except TBA = 15
04/16/08	7.7, a, b	17, a	9.3	4.5	0.26	0.65	2.2	ND, except TBA = 15
01/17/08	13, b	24	16	4.6	1.2	0.52	3.7	ND, except TBA = 19
10/16/07	12, a, b	14, a	8.3	2.6	0.31	0.27	3.0	ND, except TBA = 15
07/25/07	7.7, a, e	11, a	14	3.2	ND<0.025	ND<0.025	2.6	ND, except TBA = 17
04/17/07	5.8, b	21	9.6	3.7	1.4	0.49	1.6	ND<0.1, except TBA = 18
01/18/07	0.93, b	0.93, d	0.60	0.0034	0.0050	ND< 0.0005	0.0041	ND< 0.050, except TBA= 6.8

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

c = Laboratory analytical report note: TPH-D results consist of gasoline-range compounds.

d= Laboratory analytical report note: TPH-D results consist of both oil-range and gasoline-range compounds.

e = Laboratory analytical report note: TPH-D results consist of oil-, gas, and diesel-range compounds with no recognizable pattern.

+ = Analyzed by EPA Method 8260.

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Date	TPH-D	ТРН-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
11/14/06	1.8, b	0.87, d	0.17	ND<0.025	ND<0.025	ND<0.025	ND<0.025	ND<0.025, except TBA= 5.9, Ethanol ND<2.5, Methanol ND<25.0
06/29/06	0.71,b	0.29	0.021	ND<0.01	ND<0.01	ND<0.01	ND<0.01	ND<0.01, Except
02/3/06	1.2,b	0.79	3.1	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05, Except
11/18/05	1.2,a	0.9	2	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND<0.05, Except
07/28/05	1.8,b	1.2	17,+	0.033	0.0051	0.00056	0.0059	1BA = 18 ND<0.25, except
04/13/05	2.2,b	0.38	2.7	ND<0.05	ND<0.05	ND<0.05	ND<0.05	nBA = 22 ND<0.05, except TBA = 1.6

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

+ = Analyzed by EPA Method 8260.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

e = Laboratory analytical report note: reporting limit raised due to high MTBE content

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME,

DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

TABLE 2
SUMMARY OF LABORATORY ANALYTICAL RESULTS
Well EW1 (Continued)

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
01/31/05	3.4,b	1.9	38	ND<1	ND<1	ND<1	ND<1	ND<1, except
10/15/04	4.1,a,b	ND<5.0,a,e	96	ND<1.7	ND<1.7	ND<1.7	ND<1.7	TBA = 32 ND<1.7, except
07/13/04	3.3,a,b	2.6,a	73	ND<1.2	ND<1.2	ND<1.2	ND<1.2	TBA = 97 ND<1.2, except
04/6/04	3.4,a,b	2.6,a	72	ND<1	ND<1	ND<1	ND<1	TBA = 40 ND<1, except
12/18/03	3.0,b	ND<5.0,e	160	0.22	ND<50	ND<50	0.073	TBA = 34 ND<5, except
09/18/03	8.2,a,b	7.5	220	0.33	ND<0.05	ND<0.05	ND<0.05	TBA = 64 ND<2.5, except
02/22/02	0.6	66		14	95	14	0.8	TBA = 51
02/23/93	9.0	00		14	0.5	1.4	9.0	
11/13/92	13	62		11	9.2	1.1	9.6	
08/92	EW1 Installed							

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

+ = Analyzed by EPA Method 8260.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

e = Laboratory analytical report note: reporting limit raised due to high MTBE content

* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Date	TPH-D	TPH-G	ТРН-МО	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260, including MTBE**
10/22/08				No samp	le recovered	3		
07/16/08				No samp	le recovered			
04/15/08				No sample recovered				
01/17/08	29, a,b	6.9, a, i	8.8	0.48	ND<0.01	0.041	0.023	ND, except TBA = 0.097
10/16/07				No samp	le recovered			
07/25/07				No sample	e recovered			
04/17/07				No sample	e recovered			
01/18/07		No sample recovered						
11/14/06				No sample	e recovered			
06/29/06	290,b	24				-	<u> </u>	
02/3/06	710a,g	31,a	210		÷			
11/18/05	820,b	370		0.13	ND<0.025	0.4	0.29	ND<0.025 TBA<0.25
07/28/05	230,a,b	10,a		1.3	0.03	0.19	0.072	ND<0.05,
04/13/05	590a,b,d	35,a		2	ND<0.05	0.46	0.14	ND<0.05, TBA ND<0.5

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

d = Laboratory analytical report note: TPH-D results consist of both oil-range and gasoline-range compounds.

f = Laboratory analytical report note: unmodified or weakly modified gasoline is significant.

g = Fuel oil.

** = This column summarizes results for analysis using EPA Method 8260 for fuel oxygenates (MTBE, TAME, DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Date	TPH-D	TPH-G	ТРН-МО	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260, including MTBE**	
01/31/05			No sample recovered						
10/15/04				No sampl	e recovered				
07/14/04	240,a,b	66,a	ND<0.05	1.8	ND<0.05	1.8	0.056	ND<0.05, TBA ND<0.5	
04/6/04	74,a,b	50,a		3.1	ND<0.1	0.21	0.14	ND<0.1, TBA ND<1	
02/11/04	450,a,b	15,a	130	2.2	0.031	0.16	0.054	ND<0.025,	
11/21/03	1,900,a,b	38,f	570	2.0	0.059	0.19	0.095	TBA ND<0.25 ND<0.05, TBA ND<0.5	
06/10/98	OW1 Installed								

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

--= Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

d = Laboratory analytical report note: TPH-D results consist of both oil-range and gasoline-range compounds.

f = Laboratory analytical report note: unmodified or weakly modified gasoline is significant.

g = Fuel oil.

** = This column summarizes results for analysis using EPA Method 8260 for fuel oxygenates (MTBE, TAME, DIPE, ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).
TABLE 2 SUMMARY OF LABORATORY ANALYTICAL RESULTS Well OW2

Date	TPH-D	ТРН-G	ТРН-МО	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260, incl. MTBE**
10/22/08				No s	ample recover	ed 👘		
07/16/08				No s	ample recovered	ed		
04/15/08				No s	ample recovered	ed		
01/17/08		0.14		ND<0.0005	ND<0.0005	ND<0.0005	ND<0.0005	ND, Except MTBE = 0.0022 TBA = 0.011
10/16/07				No s	ample recovered	ed		
07/25/07				No s	ample recovered	ed		
04/17/07				No s	ample recover	ed		
01/18/07				No s	ample recovere	ed		
11/14/06				No s	ample recover	ed		
06/29/06				No s	ample recovered	ed		
02/3/06	0.37,b	0.14,h	ND<0.25					
11/18/05				No s	ample recovered	ed		
07/28/05				No s	ample recovered	ed		
04/13/05	0.22,b	0.065		ND <0.0005	ND <0.0005	ND <0.0005	ND <0.0005	ND<0.0005, except MTBE = 0.0097

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-= Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

h = Laboratory analytical report note: heavier gasoline range compounds are significant (aged gasoline?).

* = This column summarizes results for analysis using EPA Method 8260 for fuel oxygenates (MTBE, TAME, DIPE,

ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

TABLE 2 SUMMARY OF LABORATORY ANALYTICAL RESULTS Well OW2 (Continued)

Date	TPH-D	TPH-G	ТРН-МО	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260, incl. MTBE**
01/31/05				No sa	mple recover	ed		
10/15/04				No sa	mple recover	ed		
07/14/04				No sa	mple recover	ed		
04/6/04		0.069,a		ND <0.00062	ND	ND	ND <0.00062	
02/11/04		0.21		ND <0.0005	ND <0.0005	ND <0.0005	ND <0.0005	ND<0.0005, except MTBE = 0.0064 TBA = 0.0070
11/21/03				No sa	mple recovere	ed.		0.0070
06/10/98				0'	W2 Installed			
NOTES:	. 1 1							

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected. -- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

h = Laboratory analytical report note: heavier gasoline range compounds are significant (aged gasoline?).

* = This column summarizes results for analysis using EPA Method 8260 for fuel oxygenates (MTBE, TAME, DIPE,

ETBE, and TBA) or lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

WEGE WELL CONSTRUCTION LOG

PROJECT NAME XTRA GAS-CASTRO ____ MONITOR WELL NUMBER MW1

PROJECT NUMBER

VALLEY, CALIFORNIA TOP OF CASING ELEVATION 175.73 DATE COMPLETED 2-14-90

WELL TYPE MONITORING WELL (water)

REMARKS: 10' of 4" diameter sch. F480 slotted PVC casing; 9 feet of 4" diameter sch. F480 blank PVC casing; 5 bags #3 clean Monterey sand; 1 bag #2/12 clean Monterey sand; 2 bags neat cement; 1 water tight locking well cap

TYPICAL MONITORING WELL



WELL CONSTRUCTION

- 1. Total Depth of hole 20'
- 2. Diameter of boring 10"
- 3. Casing length 19'
- 4. Diameter of casing_4"
- 5. Depth to top of screen 9'
- 6. Length of screen 10' screen interval 9'-19' screen type_machine cut screen size_0.02"
- 7. Surface seal seal material
- 8. Backfill material 1.5'-5' seal material neat cement
- 9. Upper seal seal material
- 10. Lower seal 5'-7.5' seal material#2/12 Monterey sand
- 11. Annulus 7.5'-19' material #3 clean Monterey sand

NOTE: Each well constructed with poly-vinyl chloride (PVC) casing with threaded bottom caps and threaded top caps. Also, PVC steam cleaned before constructing each well. Traffic boxes are water tight and locked for security.

WEGE WELL CONSTRUCTION LOG

PROJECT NAME XTRA GAS-CASTRO MONITOR WELL NUMBER MW2

VALLEY, CALIFORNIA TOP OF CASING ELEVATION 175.45' DATE COMPLETED 2-14-90

PROJECT NUMBER

WELL TYPE MONITORING WELL (water)

REMARKS: 10' of 4" diameter sch. F480 slotted PVC casing; 8 feet of 4" diameter sch. F480 blank PVC casing; 5 bags #3 clean Monterey sand; 1 bag #2/12 clean Monterey sand; 2 bags neat cement; 1 water tight locking well cap

TYPICAL MONITORING WELL



WELL CONSTRUCTION

- 1. Total Depth of hole 18'
- 2. Diameter of boring _10"
- 3. Casing length 18'
- 4. Diameter of casing 4"
- 5. Depth to top of screen B'
- 6. Length of screen 10' screen interval 8'-19' screen type machine cut screen size 0.02"
- 7. Surface seal seal material
- 8. Backfill material 1.5'-4' seal material neat cement
- 9. Upper seal seal material
- 10. Lower seal 4'-5' seal material#2/12 Monterey sand
- 11. Annulus 5'-18' material#3 clean Monterey sand

NOTE: Each well constructed with poly-vinyl chloride (PVC) casing with threaded bottom caps and threaded top caps. Also, PVC steam cleaned before constructing each well. Traffic boxes are water tight and locked for security.

WEGE WELL CONSTRUCTION LOG

PROJECT NAME XTRA GAS-CASTRO ___ MONITOR WELL NUMBER MW3

VALLEY, CALIFORNIA TOP OF CASING ELEVATION 175.00' DATE COMPLETED 2-15-90

PROJECT NUMBER

WELL TYPE MONITORING WELL (water)

REMARKS: 10' of 4" diameter sch. F480 slotted PVC casing; 8 feet of 4" diameter sch. F480 blank PVC casing; 4 bags #3 clean Monterey sand; 2 bags #2/12 clean Monterey sand; 2 bags neat cement; 1 water tight locking well cap

TYPICAL MONITORING WELL



WELL CONSTRUCTION

- 1. Total Depth of hole 18'
- 2. Diameter of boring 10"
- 3. Casing length 18'
- 4. Diameter of casing 4"
- 5. Depth to top of screen 8'
- 6. Length of screen 10' screen interval 8'-19' screen type machine cut screen size 0.02"
- 7. Surface seal seal material
- 8. Backfill material 1.5'-4.5' seal material neat cement
- 9. Upper seal seal material
- 10. Lower seal 4.5'-9.5' seal material#2/12 Monterey sand
- 11. Annulus 9.5'-18.5' material#3 clean Monterey sand

NOTE: Each well constructed with poly-vinyl chloride (PVC) casing with threaded bottom caps and threaded top caps. Also, PVC steam cleaned before constructing each well. Traffic boxes are water tight and locked for security.



BORING: MW1 DATE DRILLED: 2/14/90 SAMPLE INTERVAL

WATER

BORE HOLE LOG

						State Martine		
PROJE	CT: A GA	S-CA	STRO	ALLEY	GEOLOGIST: M. Thomas	TOP ELE	OF CASING /ATION: 175.73'	
LOCAT	FION:	3495 oad, (Casiro Casiro \	Valley Boulevard/ /alley, California	DRILLER: B. Hogate Jr.	тоти	AL DEPTH: 20'	
DRILL		ONTE	RACTOR	R: N DRILLING	DEPTH TO WATER: Approx. 16	** CASI	NG: o 19'	
	REMARKS: 10" hole drilled with continuous flight of 10" hollow stem augers powered by a B40 Mobile drill rig. Soil samples collected w/ 2" CA standard sampler connected to a 140b.							
LSUTIACI L H H	PLE No.	WS/FT.	ND VAPOR	SOIL D	ESCRIPITION	HIC LOG	REMARKS	
OEP	SAM	BLO	T MHH	UNIFIED SOILS C	ASSIFICATION SYSTE	GRAP WE		
				4" asphalt surface	9			
5'T	MW1 5	19	60-70 PPM	Clay: dark black, dry, mede re	with minor silt, firm, ate odor (CL)			
^{10'} T	MW1 10	16	600- 500 PPM	Silt: brown, with strong gasol	moderate clay, firm, d ine odor (ML)	ry,		
^{15′} ▼1	MW1 15'	19	10-20 PPM	Clay: brown, with tirm, dry, n	n moderate silt, semi- o odor (CL)			
^{20'} 1	MW1 20'	30	10-20 PPM	Clay: brown, dec wet, no od	reasing clay, with sill, or (CL-ML)			
-						· -		
-				** indicates wate during drilling	er encountered process	-		
				PID calibrated w standard	ith 50 ppm gasoline	L		
-						-		
-						-		
_	_							



BORING: MW2 DATE DRILLED: 2/14/90 SAMPLE INTERVAL

WATER

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				LE LOG	D 4 6		
	OT.					TOP	
XTF	A GA	S-CA	STRO	VALLEY	GEOLOGIST: M. Thomas	ELE	VATION: 175.45'
LOCA.	FION:	3495	Castro	Valley Boulevard/	DRILLER:	TOT	AL DEPTH:
Redw	Redwood Road, Castro Valley, Californi				B. Hogate Jr.		18'
DRILL HOG	ING C		RACTO	R: IN DRILLING	DEPTH TO WATER: Approx. 15'**	CASI 4" 1	NG: 0 18'
REMA Mobile surface	REMARKS: 10" hole drilled with continuous flight of 10" hollow stem augers powered by a B Mobile drill rig. Soil samples collected w/ 2" CA standard sampler connected to a 140b. surface drop hammer.						s powered by a B40 ited to a 140lb.
E	Å.	L L	ROH			90	
L H	Щ	121	N N	SOIL DI	ESCRIPITION	IC L	REMARKS
Ê	Ц	0	TVC	UNIFIED SOILS CI	ASSIFICATION SYSTEM	H.H.	
UE I	SAI	Ы	Mdd			GRF	
				4" concrete surfa	ce		
		-					
5'	MW2		2-3 PPM	Clay: dark brown	, with silt, firm, dry,	H1111	
				no odor (C	L)		
10'	MW2	26	900+	Silt: brown, sand	y, with clay,, firm, dry,		
				strong gasoli	ne odor (ML)		
- 15'-	MW2	25	300+	Silt: brown cand	with clay comi-firm		
	15		PPM	dry, strong g	asoline odor (ML)		
20'-	MW2	26		O ¹ 11			
201	20			silt: brown, with i sand. wet.im	oderate odor (ML)		
-						-	
				** indicates wate	er encountered		
-				auring arilling	process	-	
				PID calibrated w	ith 50 ppm gasoline		
- 1	<u>.</u>			Standard			
					<i>1</i> 7		
						_	
					9		
-						- A .	
-						- 1	
-						-	
L							



BORING: MW3 DATE DRILLED: 2/15/90 SAMPLE INTERVAL

WATER

BORE HOLE LOG

PROJE	CT:		******		GEOLOGIST:	TOP	OF CASING		
XTR	A GA	S-CA	STRO	VALLEY	M. Thomas	ELE	A HUN: 175.00		
Redwo	od R	oad, (Castro '	Valley, California	B. Hogate Jr.		18'		
DRILLI	NG C	ONT	ACTO	R:	DEPTH TO	CASI	NG:		
HOGA	TEE	XPLC		N DRILLING	WAIER: Approx. 10	4" t	o 18' s nowered by a B40		
Mobile	Mobile drill rig. Soil samples collected w/ 2" CA standard sampler connected to a 140lb.								
Ê	9		망. 방		2	90			
<u></u> Ш	Щ	S/F	VAP	SOIL DI	ESCRIPITION	L C	BEMARKS		
	Ę.	MO	TVO	UNIFIED SOILS C	ASSIFICATION SYSTEM	H			
Ш Ш	SPL	Ш	Mdo			GRA			
				4" asphalt surface	3				
5'1	MW3	15	700-	Clay: dark brown drv. strong	, with minor sill, soll, assoline odor (CL)				
			PPM						
1 ⁰¹	MW3 10'	20	1800+ PPM	Silt: brown, sand strong gasoli	y, with clay,, soit, dry, ne odor (ML)				
	MW3 15'	20	200+ PPM	Silt: brown, decre	ease in sand with clay,				
	мwэ	24	2-5	Clay: brown with	silt less sand firm				
20'4	18'		PPM	wet, faint g	asoline odor, (CL)	ЩШЩ			
			2						
						-			
				** indicates wate	er encountered				
					ith 50 ppm casoling				
				siandard	nin ou ppin gasonne				
						-			
=									
-				-		-			



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BORING:

WATER

BORE HOLE LOG

PROJE XTF	ECT: NA GA	S-CA	STRO	VALLEY	GEOLOGIST: M. Thomas	SUR	FACE VATION:
LOCA Redw	FION: ood Fi	3495 load, (Castro Castro	Valley Boulevard/ Valley, California	DRILLER: B. Hogate Jr.	тот	AL DEPTH: 12'
DRILL HOG/	NG CATE E		RACTO	R: DN DRILLING	DEPTH TO Not WATER: encountered	CASI	NG: NE
REMA drill rig hamme	RKS: I. Soil I.	samp	le drille bles col	d with 5" continuou lected w/ 2" CA sta	us flight of solid augers andard sampler connec	ted to 14	d by B40 Mobile 40lb. surface drop
ОЕРТН (FT)	SAMPLE No.	BLOWS/FT.	PPM TVO VRPOR	SOIL DI	ESCRIPITION	GRAPHIC LOG	REMARKS
2'-				4" asphalt surface Silt: brown, soft,	e sandy, dry, no odor		
4'				Clay: dark brown moderate c	, with silt, solt, dry, dor		
6' -							
8' 10'	5B1	22	1700	Silt: brown_sands	with clay soft dry		
	10		РРМ	strong gasoli	ne odor (ML)		
12'1	SB1 12'	25	450 FFM	Silt: brown, less s dry, moderate	and, with clay,, soft, a gasoline odor (ML)		
-				PID calibrated w standard	ith 50 ppm gasoline		
_				hole back filled w base of boring up completion of las 12'	vith neat cement from to surface upon it sample collected at	-	
-						-	
-	-					-	
	1						



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BORING: SB2 DATE DRILLED: 2/15/90 SAMPLE INTERVAL

WATER

BORE HOLE LOG

PROJECT: XTRA GAS-	CASTRO	VALLEY	GEOLOGIST: M. Thomas	SURF	FACE ATION:			
LOCATION: 34 Redwood Roa	95 Castro	Valley Boulevard/ /alley, California	DRILLER: B. Hogate Jr.	TOTA	L DEPTH: 12'			
DRILLING CON HOGATE EXP	NTRACTOR	R: N DRILLING	DEPTH TO WATER: approx 12***	CASIN	NG: NE			
REMARKS: 6" drill rig. Soil sa	REMARKS: 6" hole drilled with 6" continuous flight of solid augers powered by B40 Mobile drill rig. Soil samples collected w/ 2" CA standard sampler connected to 140lb. surface drop							
DEPTH (FT) SAMPLE No.	PPM TVO VAPOR	SOIL DI	ESCRIPITION	GRAPHIC LOG	REMARKS			
2'-		4" asphalt surface Silt: brown, soft,	e sandy, dry, no odor					
4' -		Clay: dark brown moderate o	, with silt, sofi, dry, odor	-				
6' ~								
8' -				+	4			
10' SB2 2 10'	20 800 PPM	Silt: brown, sand moderate gas	y, with clay,, soft, dry, soline odor (ML)					
▼ ^{12'} SB2 1	18 2000+ PPM	Silt: brown, less s dry, strong ga	sand, with clay,, soft, asoline odor (ML)					
-		** water encound drilling proces	tered during the is	-				
-		PID calibrated w standard	ith 50 ppm gasoline					
-		nole back filled y base of boring u completion of las 12'	with neat cement from p to surface upon st sample collected at	-				
-				-				
-				-				
				_				

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-WEGEwestern geo-engineers

BORING: SB3 DATE DRILLED: 2/15/90 SAMPLE INTERVAL

WATER

BORE HOLE LOG

No. of the second se	and the second	Contraction of the second s	and the state of the				
PROJECT: XTRA GAS-CA	STRO VALLEY	GEOLOGIST: M. Thomas	SURFACE ELEVATION:				
LOCATION: 3495 Redwood Road, 0	Castro Valley Boulevar Castro Valley, Californi	d/ DRILLER: B. Hogate Jr.	TOTAL DEPTH: 12'				
DRILLING CONTR HOGATE EXPLO	ACTOR: PRATION DRILLING	DEPTH TO not WATER: encountered	CASING: NONE				
REMARKS: 6" hol drill rig. Soil samp bammer	REMARKS: 6" hole drilled with 6" continuous flight of solid augers powered by B40 Mobile drill rig. Soil samples collected w/ 2" CA standard sampler connected to 140lb. surface drop bammer						
EPTH (FT) AMPLE No.	NOLUNIFIED SOILS	DESCRIPITION CLASSIFICATION SYSTEM	DOT DIHAHA				
	4" asphalt surfi	ace	<u>.</u>				
2'	Silt: brown, so	li, sandy, dry, no odor					
4'	Clay: dark brow moderat	wn, with silt, soft, dry, e odor					
6'							
8'	BD0 Silt: brown, sa	ndy, with clay,, soft, dry,					
10.	moderale	gasoline odor (ML)					
12'1 SB2 18 12'	2000+ Silt: brown, les PPM dry, strong	s sand, with clay,, soft, I gasoline od or (ML)					
-	PID calibrated standard	l with 50 ppm gasoline	-				
- ,	hole back fille base of boring completion of 12'	d with neat cement from g up to surface upon last sample collected at					
_			-				

P	Ċ	&c	D ENVIRONMENTAL					F	PAGEOF
BO	RING	NO	.: MW4 PROJECT NO .: 0014 PROJECT N	AME:	KIRA OIL COMPANY	- (ASTR	O VALLEY	
80	RING	100	CATION: NEXT TO PLANTER ON REDWOOD ROAD		ELEVATION AND	DAT		N/A	DATE & TIME FANISHED.
DR	LLIN	G AC	SENCY: EXPLORATION GASERVICES, INC. DRILLER: DAVE	Y. &	DAVE N	-		/15/97	8/15/97
DR	LLIN	G EC	DUIPMENT: 8" OD HOLLOW STEM AUGER						OUTOVED DY.
co	VPLE	TION	DEPTH: 20 FEET BEDROCK DEPTH: 1	ONE E	NCOUNTERED		LOG	ADG	PHK
FIR	ST V	ATE	R DEPTH: 15.5 FEET NO. OF SAMPLES:	SOIL		-	1	, h	
l	(il				NOL	IN	1		
1	TH		DESCRIPTION	DHIC	STRUC	8.	mad	R	EMARKS
	DEF			85	P	PERO	6		
E	1	-	Dark brown SILTY CLAY (CL): with minor fine to	- CL	See attached Wel: Construction			Samples co OD Catiforni	lected using 3 1/2" a Modified Split
E	2		medium sond, stiff, moist. Moderate Petroleum Hydrocarbon (PHC) odor.	-	Detoil Diagram			Spoon samp 140∦ homm	her failing 30°.
E	3	_				ł		(
E	4	-							
E	5			-					
F	5	7		-		45	16.5		
E	2	7]]	-	9			
F	'	7	tight green SILTY CLAY (CL); with obundant fine to medium sand, very stiff, moist.	CL					
F	8	7	Strong PHC odor.	1	1				
E	9			1					
	:0	1		-		.7	60		
E	11	1		1 -	1	9	50		
E	12	-	Red-brown S'LTY CLAY (CL); with some gray	CL					
-	13	-	moting, mind the to median said, very moting still to hard.	-					
-	14	7		-					
-	15	7			7	13		Constant sha	Fort and intered
E	16	4	-	1	¥	19 18	3.0	at 15.5 fee	t ct 8:17 AM
E	17	コ	Brown SiLTY CLAY (CL) with minor gray mattling.		1			01 0/ 10/ 9	
E	18	1	saturated, hard. Modercte PHC odor.						
E	19	+]	1		1.3	24		
-	20	1		-					الشيداري ويستجري ويستجر المستري
E	21	L						Borehole te	rminoted at 20
_	27	-	-					Green delow	grode.
F	**							constructed	on 8/15/97.
F	23	Ξ							
E	24	Ξ							
F	25	-	-	1					
-	26	7	-	1					
F	27		-	1					
E	28	-		1					
-	29	1							
-	30	-		1					
								9	10/97 1001HW4.DVG

P & D ENVIRONMENTAL

4020 Panama Court Oakland, CA 94611 Telephone (510) 658-6916

WELL CONSTRUCTION DETAILS

PROJECT	NUVBER	0014	BORING/WELL NO.	MW4
PROJECT	NAME Xiro Oil	Company, Castro Valley	TOP OF CASING ELEV.	176.35
COUNTY _		Alcmeao	GROUND SURFACE ELEV	UNKNOWN
WELL PER	RVIT NO	97WR049	DATUM BOLT CN TRAFFI	C SIGNAL FOLE



EXPLORATORY BORING

c.	"oto deptr		()	20.0	-
t	Dometer		-	8.0	ih
	Drilling method	Holicw	5:e-	Auger	- 9364

WELL CONSTRUCTION

e.	Costa length				20.0		
	Noter c'	_	Sched	ue 40	PVC		
d	Diometer				2	. Ite	
e	Depth to top perforctions				5.0	. FT	
t.	Ferforated ength				15		
	Perforated interval from	5	10	_	20		
	Perforction type			fastory	Slot		
	Perforction size			0.010	nch	_	
c .	Surfeen senilory seo!			_	0.5		
	Seal motorici			Con	creta		
п.	Sonitory sec			-	1.5	. ศ	
	Seal materia	Nect Cement					
i,	Filter pock sea:			-	1.0	~	
	Seor materia		Bent	onite F	a et		
5	Filter pack length				17.C	-	
	Filter peck interval from	3.0	10		20.0	. FT	
	Pock material	#2/16	Lonestor	Sec	Sare		
k.	Bottom seal				0	. п	
					None		
1.	Sluff in bottom of boreho	le			٥	. FT.	

P & D ENVIRONMENTAL

PAGE ____ OF ____

вс	BORING NO.: OW1 PROJECT NO.: 0014 PROJECT NAME: XTRA OIL - CASTRO VALLEY									
BC	BORING LOCATION: SEE MAP ELEVATION AND DATUM:									
DRILLING AGENCY: MILLER PIPELINE/VIRONEX DRILLER:							DA	TE & T	IME STARTED:	DATE & TIME FINISHED:
DR	DRILLING EQUIPMENT: BOREHOLE SOIL REMOVED BY VACUUM 6/10/98								6/10/98	
co	MPLE	TION	DEPTH: 7 FEET, 7 INCHES (91 INCHES) BEDROCK DEPT	H: NO	NE ENCO	UNTERED		LOG	GED BY:	CHECKED BY:
FIF	IST W	ATEF	DEPTH: NONE NO. OF SAMPLE	S: NOI	1E			ł	энк	
	оертн (гт.)		DESCRIPTION		GRAPHIC	CONSTRUCTION WELL	BLOW COUNT PER 6-	ala	I	REMARKS
		111111	6 in. Asphalt Brown silty clay (CL), moist, stiff, no petroleum hydrocarbon (PHC) odo		CL	See Piezometer Construction diagram.			Borehole d rig by Mille Piezomete VIRONEX.	rilled with vacuum r Pipeline. r constructed by
EEE	5	11111	PHC odor (diesel) begins at 4.5 feet.	11111				87	Sanitary se tered in sic between 83 below grou	wer pipe encoun- le of borehole wall 3 and 89 inches nd surface
	10								Borehole te 7 inches (9 grade.	erminated at 7 feet, 1 inches) below
	15			1111111						
	20			1111111						
	25									
	30	1111111								

P & D ENVIRONMENTAL

PAGE _____ OF ____

BC	BORING NO.: 0W2 PROJECT NO.: 0014 PROJECT NAME: XTRA OIL - CASTRO VALLEY										
ВС	BORING LOCATION: SEE MAP ELEVATION AND DATUM:										
DI	DRILLING AGENCY: MILLER FIPELINE/VIRONEX DRILLER:							DA	TE & T	IME STARTED:	DATE & TIME FINISHED:
DF	RILLIN	IG EQ	UIPMENT: BOREHOLE SOIL REMOVED BY VA	CUUM					6/	10/98	6/10/98
co	MPLE	TION	I DEPTH: 7 FEET, 7 INCHES (91 INCHES)	BEDROCK DEPTH:	NONE EN	1COL	UNTERED		LOG	GED BY:	CHECKED BY:
FI	rst W	ATE	DEPTH: NONE	NO. OF SAMPLES:	NONE				ļ	РНК	-
	ОЕРТН (ГТ.)		DESCRIPTION		GRAPHIC		CONSTRUCTION LOG	BLOT COUNT PER 6"	QIA	ſ	REMARKS
	5		6 in. Asphalt Brown silty clay (CL), moist, stiff, no petroleum hydrocarb PHC odor (diesel) begins at 4.5 feet	on (PHC) odor.		-	See Piezometer Construction diagram.		3	Borehole d rig by Mille Piezometer VIRONEX.	rilled with vacuum r Pipeline. r constructed by
		IIII							4	tered in sid between 83 below grou	le of borehole wall 3 and 89 inches nd surface
	10			÷						Borehole te 7 inches (9 grade	erminated at 7 feet, 1 inches) below
	20 25										
	30										

PIEZOMETER CONSTRUCTION DETAILS

PROJECT NUMBER	0014
PROJECT NAME	XTRA OIL - Castro Valley
COUNTY	ALAMEDA
WELL PERMIT NO.	96WR125

BORING/WELL NO.	OW1
TOP OF CASING ELEVATION	TBD
GROUND SURFACE ELEVATION	TBD
DATUM	TBD



EXPLORATORY BORING

8.	Total Depth	<u>7.5</u> ft.
h.	Diameter	8 in

Drilling Method _____Borehole Soil Removal by Vacuum

WELL CONSTRUCTION

C.	Casing Length Material	Schedule 40 PVC		_ ft.
đ.	Diameter		_1_	_ in.
e.	Depth to top perforations		4.5	_ft.
f.	Perforated length Perforated interval Perforation type Perforation size	from <u>4.5</u> to Factory Slot 0.010 inch	<u>3.0</u> 7.5	ft. ft.
g.	Surface sanitary seal Seal material	Neat cement grout	_0.5	_ft.
h.	Sanitary seal Seal material	Neat cement grout	2.0	_ ft.
i.	Filter pack seal Seal material	Bentonite pellets	<u> 1.0</u>	_ ft.
j.	Filter pack length Filter pack interval Pack material	from <u>3.5</u> to #3 Lonestar sand	<u>4.0</u> 7.5	_ ft. _ ft.
k.	Bottom seal Seal material			_ ft.
I.	Slough in bottom of boreh	nole	0	_ft.

P & D ENVIRONMENTAL A Division of Paul H. King, Inc. 4020 Panama Court Oakland, CA 94611 (510) 658-6916

PIEZOMETER CONSTRUCTION DETAILS

PROJECT NUMBER	0014			
PROJECT NAME	XTRA OIL - Castro Valley.			
COUNTY	ALAMEDA			
WELL PERMIT NO.	98WR125			

•.• *



BORING/WELL NO.	OW2
TOP OF CASING ELEVATI	ON TBD
GROUND SURFACE ELEV	ATION TBD
DATUM	TBD

EXPLORATORY BORING

а.	Total Depth	<u>7.5</u> f	ħ.
b.	Diameter	<u>8_</u> ir	n.
	Drilling Method	Borehole Soil Removal by Vacuum	

WELL CONSTRUCTION

C.	Casing Length Material	Schedule 40 PVC	7.5	_ ft.
d.	Diameter		1_	in.
e,	Depth to top perforations		4.5	_ ft.
f.	Perforated length Perforated interval Perforation type Perforation size	from <u>4.5</u> to Factory Slot 0.010 inch	3.0 7.5	_ ft. _ ft.
g.	Surface sanitary seal Seal material	Neat cement grout	0.5	_ ft.
h.	Sanitary seal Seal material	Neat cement grout	2.0	_ ft.
i.	Filter pack seal Seal material	Bentonite pellets	1.0	_ ft.
].	Filter pack length Filter pack interval Pack material	from <u>3.5</u> to #3 Lonestar sand	4.0	_ ft. _ ft.
K .	Bottom seal Seal material		0	_ ft.
I.	Slough in bottom of borel	hole	0	_ ft.

APPENDIX C

Well Survey Data

Site Conceptual Model and Workplan to Address Data Gaps

TABLE OF ELEVATIONS & COORDINATES ON MONITORING WELLS

SOMA ENVIRONMENTAL 3519 CASTRO VALLEY BLVD., CASTRO VALLEY

WELL ID	NORTHING (FT.) /	EASTING (FT.) /		
#	LATITUDE (D.M.S.)	LONGITUDE (D.M.S.)	ELEVATION (FT.)	DESCRIPTION
ESE-1	2079361.15	6106465.13	180.24	2" PVC, NOTVH N. SIDE
	N 37 41' 42.07112"	W 122 04' 24.07899"	180.71	SET PUNCH NORTH SIDE RIM
			180.69	PAVEMENT NORTH SIDE
ESE-2	2079361.30	6106501.97	180.79	2" PVC, NOTVH N. SIDE
	N 37 41' 42.07873"	W 122 04' 23.62071"	181.16	SET PUNCH NORTH SIDE RIM
			181.14	CONC. NORTH SIDE
ESE-5	2079381.46	6106387.63	178.80	2" PVC, NOTVH N. SIDE
	N 37 41' 42.25902"	W 122 04' 25.04739"	179.07	FELT X ON NORTH SIDE RIM
			179.10	CONC. NORTH SIDE
MW-6	2079451.94	6106492.77	181.80	2" PVC, NOTVH N. SIDE
	N 37 41' 42.97323"	W 122 04' 23.75412"	181.97	SET PUNCH NORTH SIDE RIM
			181.88	GROUND NORTH SIDE
MW-7	2079337.18	6106516.12	179.11	2" PVC, NOTVH N. SIDE
	N 37 41' 41.84264"	W 122 04' 23.43963"	179.55	SET PUNCH NORTH SIDE RIM
			179.49	CONC. NORTH SIDE
SOMA-1	2079370.39	6106506.79	180.95	2" PVC, NOTVH N. SIDE
	N 37 41' 42.16939"	W 122 04' 23.56265"	181.25	SET PUNCH NORTH SIDE RIM
			181.22	CONC. NORTH SIDE
SOMA-2	2079297.44	6106567.02	178.99	2" PVC, NOTVH N. SIDE
	N 37 41' 41.45825"	W 122 04' 22.79809"	179.29	SET PUNCH NORTH SIDE RIM
			179.28	CONC. NORTH SIDE
SOMA-3	2079130.83	6106567.48	176.81	2" PVC, NOTVH N. SIDE
	N 37 41' 39.81129"	W 122 04' 22.75752"	177.18	SET PUNCH NORTH SIDE RIM
			177.12	PAVEMENT NORTH SIDE
SOMA-4	2079141.57	6106464.22	176.94	2" PVC, NOTVH N. SIDE
	N 37 41' 39.9003"	W 122 04' 24.04438"	177.43	SET PUNCH NORTH SIDE RIM
			177.44	PAVEMENT NORTH SIDE
				8

TABLE OF ELEVATIONS & COORDINATES ON MONITORING WELLS

SOMA ENVIRONMENTAL 3519 CASTRO VALLEY BLVD., CASTRO VALLEY

ADDITIONAL POINTS

PT#	NORTHING (FT.)	EASTING (FT.)	ELEVATION (FT.)	DESCRIPTION
320	2079386.87	6106408.85	N/A	BL. INTX
321	2079387.18	6106455.22	N/A	BL. INTX
331	2079351.06	6106409.27	N/A	BL<
318	2079384.55	6106369.10	N/A	DWY
329	2079106.74	6106368.58	N/A	DWY
330	2079148.74	6106368.66	N/A	DWY
317	2079424.72	6106369.39	N/A	DWY E-C
315	2079481.34	6106432.38	N/A	DWY PCC
310	2079415.57	6106624.48	N/A	DWY POC
311	2079423.23	6106606.56	N/A	DWY POC
312	2079447.91	6106542.76	N/A	DWY POC
313	2079461.36	6106504.01	N/A	DWY POC
314	2079472.67	6106468.07	N/A	DWY POC
316	2079466.76	6106389.18	N/A	HCRMP POC
319	2079237.38	6106368.78	N/A	TC

BENCH MARK: NGS Bench mark No.PID# HT0223

THE STATION IS LOCATED IN THE CITY OF HAYWARD AT THE RAILROAD CROSSING OF THE SOUTHERN PACIFIC RAIL-ROAD AND BLOSSOM WAY, IN THE TOP OF THE NORTHWEST CURB OF BLOSSOM WAY.

TO REACH THE STATION FROM THE JUNCTION OF U S HIGHWAY 880 ON WEST A STREET, GO SOUTHEAST ON WEST A STREET FOR 0.2 MILES TO A CROSSROAD, HATHAWAY AVE ON THE LEFT, SANTA CLARA STREET ON THE RIGHT. TURN LEFT, NORTH, ON HATHAWAY AVENUE AND CONTINUE FOR 0.7 MILES TO WEST BLOSSOM WAY. TURN RIGHT, NORTH, ON WEST BLOSSSOM WAY AND CONTINUE FOR 0.25 MILES TO THE STATION ON THE LEFT, JUST PAST THE RAIL-ROAD TRACKS.

THE STATION IS 48.95 M (160.6 FT) NORTHEAST OF THE NORTHEAST RAIL, 7.01 M NORTHWEST OF THE CENTER OF BLOSSOM WAY, 0.24 M (0.8 FT) NORTH OF THE NORTH CORNER OF A STEEL GRATE IN THE STREET, 5.6 M (18.5 FT) SOUTHWEST OF A POWER POLE AND 0.12 M (0.4 FT) HIGHER THAN THE STREET.

Elevation =56.33 FEET NAVD88 Datum ADJUSTED

HORIZONTAL CONTROL:

PID - HT0223 NORTHING =2,072,670.26 , EASTING = 6,095,650.79 FEET; EPOCH DATE = 1998.50

PID - HT 2583

Kier & Wright Engineers Surveyors, Inc. 1233 Quarry Lane, Suite 145, Pleasanton, CA 94566 Phone (925) 249-6555, Fax (925) 249-6563

TABLE OF ELEVATIONS & COORDINATES ON MONITORING WELLS

SOMA ENVIRONMENTAL 3519 CASTRO VALLEY BLVD., CASTRO VALLEY

NORTHING =2,082,510.30 , EASTING = 6,116,892.13 FEET; EPOCH DATE = 1991.35

Coordinate values are based on the California Coordinate System, Zone III NAD 83 Datum.

APPENDIX D

Boring Logs

Site Conceptual Model and Workplan to Address Data Gaps

S	EE S	SITE PLAN	ALISTO PROJECT NO: 10-138-03 DATE DRILLED: 07/19/95 CLIENT: BP Oil Company LOCATION: 3519 Castro Valley Boulevard, Castro Valley, CA. DRILLING METHOD: Hollow-stem auger (8"); 2" split-spaon sampler DRILLING COMPANY: Solis Exploration Srvs. CASING ELEVATION: N/A LOGGED BY: C. Ladd							
BLOWS/B IN.	PID VALUES	WELL DIAGRAM	DEPTH	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION			
8,10,10 0,8,14 12,10,16 9,14,20 8,14,21 10,16,20 10,19,23 15,19,21	008 998 113 34.2 217 296 10.3 8.4	Neat Cement	6- - - - - - - - - - - - - - - - - - -			ML CL	B" Concrete sity: 53. When the state of the			

		4	ALTET	0 0		<u>от</u> к	10: 10-178-03 DATE DBULED: 07/19/95					
					AP O							
			LOCAT	ULIENT: Br UII Company								
SEE SITE PLAN			DRILL	STILLING METHOD: Hollow-stem auger (8"); 2" split-spoon sampler								
			DRILL	RILLING COMPANY: Sails Exploration Srys. CASING ELEVATION: N/A								
			LOGGE	LOGGED BY: C. Ladd APPROVED BY: AI Sevilla								
BLOWS/B IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION					
				İΤ			B" Concrete					
15,18,21	Э.З]		CL	all fills black, damp, very still; < 1% Fe oxide stain; low plasticity.					
15,15,23	10.0		-		Í	ML	classicity: approximately 5%; minor fines; root traces present.					
12,18,21	285.6	ent	-0				Same: gray with white calcium voids and red/brown, damp, hard; Fe oxide stain; root traces; minor ilnes.					
18,14,20	222.1	at Cem	-			ML	service the service of the service o					
13,15,1B	Э.4	Ve Ve	10-	┨╪			chine的 Table 7: brown mottled gray, damp, hard; root traces to 4%; Fe oxide stain; some very fine-grained sand.					
14,18,20	13		-				Same: at 11.5 teet.					
19,21,21	0.3]	1	CL	新好化之外了Brown mottled gray, damp, hard; root traces to 1%; minor fines.					
14,18,20	٥		- -	┨┷	1		Same: at 15.5 feet.					
							Soil boring terminated at 18 feet.					
			-									
			20-	1								
			1									
			25				- A.					
			20-									
			30-									
			Ĩ.			1						

ž

Π

1				SITE		0	10	112
Drillin	ig S	start	ed: 08/28/2008			8	1	
Drillin	ng C	om	oleted: 08/28/2008	203124516		20	51	SUN S
Drilling	n Me	thod	and Diameter: Direct Push: 2" diameter	a ser a	SHI MAP REA		((134
Deillin	9 mc		and planeter, prover and, a diameter	E Caren Yada	Hest		5	1.3
Drillin	ig c	omt	dany: Cascade Drilling		4	200	11	6
Drille	d By	Y:			-		Course	1
Logge	ed E	By: S	Steve Harquail	目的な主要任何				and a
Borin	a: E	3-6		Patheatt	a	2	11	
	5				head planning and	Cart	Ø	100
les	ery	(12200	hic	4
B et l	AOO	A	LITHOLOGIC DESC	RIPTIC	N	S	6 6	pti
Sa (fe	a R B	I d			_	n	23	(fe
_			No Recovery - Air Knifed to 5 feet below ground	surface (bgs)				_
2								
4		-			5.00			-
			Clayey Silt: Dark brown/black, firm.			ML	Π	_6
								_
			Dark brown, hard, damp, with 5% sand.					
°								- 0
	95	86.0						10
10								10
			Tan, brown/light tan mix, hard.					- 10
12-								-12
			Damp				1111	·
14-	40	0.0	With 5-10% sand		15.00			-14
ALC: NO			Boring Terminated at 15 feet bgs.					
	*							
				1 F	DIRECT	PUSH	١.	
			Y Initial Water Level (No	of Encountered)	Laborate	Colle	Anal	for sis
8 ⁻¹		-					T.	
Star Protes			CASHL-BADW-A SHELL FACILITY NO. 1714	445	Dente I		ľ	IGURE
1		1	10-03-2008 \$10-10-2008 3519 Castro Valley B	vd.	Boring Log	J		
DEI	LSE	A	ECALIFORNIA CRF A.D. Castro Valley Californ	nia	B-6			
			SH1445-B6					

Drilli Drilli Drilli Drilli Drilli Logg Bori	ing ing M ing M ing ed E ged ng:	Start Comp ethod Comp ly: By: S B-5	ed: 08/28/2008 bleted: 08/28/2008 and Diameter: Direct Push; 2"diameter bany: Cascade Drilling Steve Harquail	SITE	ab view for		
Depth (feet) Semplee	Recovery	PID (ppm)	LITHOLOGIC DESC	CRIPTI	ON	USCS	Graphic Log Depth (feet)
2 - 4			No Recovery – Air Knifed to 5 feet below ground	d surface (bgs))	5.00'	-2 -4
6- 6- 8-			Clayey Silt: Dark brown, with 10% sand. Hard, dry. Brown/tan/rust color mix.			ML	- 6
10— 12—	80	0.0	Dark brown, very hard. Brown, dry.				
14- - 16- - 18-	80	0.0	Brown, very hard, dry, with 10% sand.				- 14 - 16 - 16 - 18
- 20 — -	70	0.0	Silly Sands Brown damp		21	1.00'	-20
22 — V			Sand: Brown homogenous wet		22	2.00' SM	22
1 2	-	<u> </u>	Silty Clay: Brown/light tan, soft, dry.		23	5.00 ⁷ CL	77
24	80	0.0			25	5.00'	-24
-			Boring Terminated at 25 feet bgs.				
			♥ Initial Water Level (22' bgs)	DIREC Samp Labor	T PUS le Colle atory	H acted for Analysis
DÉ	-		CASHL-BADW-A 10-03-2008 \$10-10-2008SHELL FACILITY NO. 17\$2008 \$10-10-20083519Castro Valley B\$2008 \$2008	'1445 So Blvd. rnia	oil Boring L B-5	.og	FIGURE



Dri Dri Dri Dri Dri Log Bor	llir Ilir Ilir Ile gge rin	ng (g Me ng (d B ed I g: 1	Start Comp thod Comp y: 3y: S B-3	ed: 08/28/2008 bleted: 08/28/2008 and Diameter: Direct Push; 2" diameter bany: Cascade Drilling Steve Harquail		and the Vertex form			
Depth (feet)	Sample	Recover (%)	PID (ppm)	LITHOLOGIC DESC	RIPTI	ION	USCS	Graphi	Depth (feet)
- 2— - 4—				No Recovery — Air Knifed to 5 feet below ground	surface (bgs		5 001		-2 - -4
6-				Sandy Silt: Dark brown/black mix, hard.			6.50' MI		6
8-				Clayey Silt: Brown, with 3% sand.			MI		-8
10-		100	0.0	With 20% greenish color. Greenish-brown, hard, dry.					-10
12			83.0	Medium to low plasticity.					- 12
14-		100	6.3	Sandy Silly Tan light tan Inddick band de			15.00'		-14
16— - 18—				Sanay Sin: Tany ligni Tany readish, hara, ary.			ML		
1-		85	0.0	Tan, homogenous, firm, dry.			20.00'		4
20-				Boring terminated at 20 feet bgs.			*0.00		⊔_20
				♥ Initial Water Level (N	lot Encountere	ad) DIRE Sam Labo	CT PUS iple Coll oratory	H ecte Ana	d for lysis
DB	/ E		A	CASHL-BADW-A SHELL FACILITY NO. 171 10-03-2008 10-10-2008 519 Castro Valley B California CRF CRF A.D. SH1445-B3 Castro Valley, California	1445 So Ivd. mia	oil Boring B-3	Log		FIGURE

W	Ell COMPLETION mpletion Depth: 30 Feet			Project Nam Location: B	ne: BP Oil Com IP Station #1110 519 Castro Vall	pany 15 By Boul	Project No: 6-92-5428	Page 10
Ca Sc Fil Sc W	Size/Type From ssing: 2" Diam. Sched. 40 PVC 10 Feet reen: 2" Diam. Sched. 40 Slotted (0.02") PVC 30 Feet ter: #3 Sand 30 Feet Bentonite 9 Feet Grout 7.5 Feet ell Cap or Box: Flush Mounted Well Box	To 0 F 10 I 9 F 7.5 0 F	eet Feet eel Feet eet	Driller: Soli Method: HS Hole Diame Ref. Elevati Logged By:	astro Valley, C/ s Exploration Se SA hter: 8" ons: Chris Valcheff	A Irvices, Total	Inc. Depth: 30 Feet	Dates: Start: 9-29 Finish: 9-2
Depth (ft)	Lithologic Description	usc	Sample/ Blows	Graphic Log Linology	Well Installation	Vapor	Remark Water, drilling/completion,	S summary, sample (
	Asphalt EILI GRAVEL NATIVE					6	SAMPLE @ 5 FEET SAMPLE @ 10.5 FEET SAMPLE @ 15 FEET SAMPLE @ 20 FEET	ET

WE	Science & Engineering, Inc.			WEI Project Na	DG AND ON SUMMARY Project No: 6-82-5428			
Cor	npiction Depth: 30 Feet Size/Type From	To		Location:	BP Station #1110 3519 Castro Valle Castro Valley, C/	15 By Boul	evard	Page 1 of
Scr Filte Sea We	en: 2" Diam, Sched, 40 Siptied (0.02") PVC 30 Feet en: 43 Sand 30 Feet al: Bentonite 9 Feet Grout 7.5 Feet	10 9 F 7 E 0 F	Feet Feet Feet Feet	Driller: So Method: H Hole Diam Ref. Eleva Logged By	Is Exploration Se ISA eter: 8* tions: :: Chris Valcheff	Total	Inc. Depth: 31 Feet	Dates: Start: 9-28-9 Finish: 9-29-
Depth (ft)	Linologic Description	USC	Sample/ Biows	Graphic Loc Lithology	Weil Installation	Vepor	Remarks Weter, driting/completion, sur	nmary, sample iyş
	Asphalt 티니 GRAVEL	GP GP					-	
5 1	NATIVE Milliw, miack, stiff, damp, no odor.		3 3 6			20	SAMPLE @ 4.5 FEET	
	odor.		5			25	-	
	As above, heavy hydrocarbon odor.		9				SAMPLE @ 10.5 FEET	
15	Trydrocarbon odor.		8 13 16			15	SAMPLE @ 14.5 FEET	
	sand, stiff, damp, no odor.	┶╼ ┙ ╢	B 14 14				- Sample @ 20 Feet	
	coarse grained sand, dense		9 15 13			10		
30	Char Hild Herey, stiff, Coo odor.	┿ ┿ ┿ ┿ ┿	3 6 3 5 6				- STANDARD PEN. TOTAL DRILLED DEPTH	- 30 FEET
1111	(* (**********************************	+					TOTAL DEPTH = 31 FEET	g



ESE-4

Science & Engineering, Inc.		WELL.	S. Service			
WELL COMPLETION Completion Depth: 25 Feet Size/Type From Casing: 2* Diam. Sched. 40 PVC 7 Feet Scheel: 2* Diam. Sched 40 Statud (0.02*) PVC 75 Feet	To 0 Feet 7 Feet	Location: BP 351 Car	Page 1 of			
Filter: #3 Sand 25 Feet Seal: Bentonite 6 Feet Grout 4 Faet Well Cap or Box: Flush Mounted Well Box	Method: HSA Hole Diamete Ref. Elevation Logged By: M	Driller: Solis Exploration Services, Inc. Method: HSA Hole Diameter: 8" Total Depth: 25 Feet Ref. Elevations: Logged By: Mike Edmonson				
E Lithologic Description	Semple/ Blows	Graphic Log Lithology V	Vel Installation	Vapor	Remarks Water, drilling/completion, sumr	nery, sample ty
 Asphait <u>PLLI-GRAVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NELVEL</u> <u>NE</u>				0	SAMPLE @ 5-8.5 FEET SAMPLE @ 10-11.5 FEET SAMPLE @ 15-16.5 FEET SAMPLE @ 20-21.5 FEET SAMPLE @ 21.5-23 FEET SAMPLE @ 23-24.5 FEET TOTAL DEPTH = 25 FEET	

Addicerr Company Engineering, Inc. WELL COMPLETION Completion Depth: 24 Feet Siza/Type From Casing: 2" Diam. Sched. 40 PVC 9 Feet Screen: 2" Diam. Sched. 40 Sicited (0.02") PVC 24 Feet Streen: 3" Diam. Sched. 40 Sicited (0.02") PVC 24 Feet Seal: Bentonite 8 Feet Grout 5.5 Feet Well Cap or Box: Flush Mounted Well Box	Project Name: BP Oli Com Location: BP Station #1110 3519 Castro Valley, C/ Driller: Solls Exploration Se Method: HSA Hole Diameter: 8" Raf. Elevations: Logged By: Chris Valcheff	Page 1 of 1 Dates: Start: 9-26-92 Finish: 9-28-92		
E Lithologic Description	C) Sample/ Blows	Graphic Log Lithology Well Installation	Remarks Water, drilling/completion, surr	mary, sample type
 Asphalt MATIVE Statistic black-grey, 20-30% medium to coase grained sand, stiff, damp, slight hydrocarbon odor. Coarse grained sand, stiff, damp, slight hydrocarbon odor. Statistic black extra black decrease in sand content, stiff, damp, slight hydrocarbon odor. Statistic black extra black decrease in sand content, stiff, damp, slight hydrocarbon odor. Statistic black extra black decrease in sand content, stiff, damp, slight hydrocarbon odor. Statistic black extra black decrease in sand content, stiff, damp, slight hydrocarbon odor. Statistic black extra black decrease in sand content, stiff, damp, slight hydrocarbon odor. Statistic black extra black extra black decrease in sand content. Coarse grained sand, stiff, damp, no odor. As above, orange-brown, dry. As above, damp. Statistic black extra black ext			40 SAMPLE @ 5 FEET SAMPLE @ 10 FEET SAMPLE @ 14 FEET STANDARD PEN.	24 FEET



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Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/5/94
Munsell Color Scale	100	B9-2		0 2	Concrete/Baserock: sandy gravel Brown mottled olive grey sandy clay (CL), with15% fine grain sand (interperted as fill material)
(Glev 5G - 4/1)	15	(B9-4)		<u> </u>	plastic, stiff, moist, hydrocarbon odor. Dark olive grey mottled olive brown, clay (CL) with 5% fine grain sand.
	50	В9-6	11	— 6 —	slight mottling, stiff, plastic, moist. Dark olive grey mottled brown, sandy
(7.5YR - 4/4)	5	B9-8		8	clay (CL), with 15% fine grain sand, medium stiff, plastic, moist. Brown sandy clay (CL) with 30%
(2.5Y - 4/3)	5	B9-10		<u> </u>	fine grain sand, med. stiff, plastic, moist.
					BOTTOM OF BORING @ 10 feet
Х П.					
				20	
				— 22 _, —	
				24	
	n.			26	
				- 28 -	
ACC ENVIRONMENTAL	CONSI	JLTANTS		JOB NO: 6	6163-1 LOG OF BORING=B9 Redwood Road Expansion
ALAMEDA, C	A 945	01 01		DATE: 1	2/22/94 Phase II Site Assessment Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/6/94	
<u>Munsell Color Scale</u> (Gley 5G - 4/1)	10 50	В10-2 В10-4		2 4 6	Concrete/Baserock: sandy gravel. Black sandy clay (CL), with 30% fine grain sand, very plastic, stiff, moist. Black silty to sandy clay (CL) with 10% sand, plastic, med. stiff, moist Poor recovery, sand, interperted as fill material, no sample collected.	
		2		8 10		
·				— 12 — — 14 — — 16 —		
				18		
				— 22 _, — 24 —		
×				— 26 <i>—</i> — 28 —		
ACC ENVIRONMENTAL 1000 ATLANTIC AVEU ALAMEDA, CA	, NUE, S A 945	JLTANTS DUITE 110 01		JOB NO: 6 DATE: 1	6163-1 LOG OF BORING B10 Redwood Road Expansion Phase II Site Assessment Castro Valley, CA	
Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample	Depth (feet)	EQUIPMENT LOGGED BY PROJECT: START DAT	T: Pneumatic Sampler Y: M. Kaltreider Redwood Road TE: 12/6/94
--	--------------	--------------------	--------	---------------------	---	--
<u>Munsell Color Scale</u> (10YR - 2/2)	0	<u> B11-2</u>)		2 4	Very c 10% f and ro Poor r	alt/Baserock: sandy gravel. lark brown silty clay (CL) with ine grain sand, slight mottling ots, plastic, med. stiff, moist. recovery, no sample collected. reenish grey mottled brown,
(Gley 5GY - 4/1)	0	B11-6	11	6 —	sandy	clay (CL) with 30% fine grain stiff, plastic, moist.
	200	B11-8		- 8 -	Same to app hydro	as above, sand content increases proximately 40% with depth, carbon odor
(2.5Y - 4/3)	300	B11-10		— 10 —	Brown	n clayey sand (SC) with 50% rain sand, med. dense, moist.
					BO	TTOM OF BORING @ 10 feet
				— 14 —		
T c				— 16 —		
j.				— 18 —		
				<u> </u>	-	
		5		— 22 _, —		
				- 24 -		
				26		1
				- 28 -		÷-
					i.	
ACC ENVIRONMENTAL (CONSU	LTANTS UITE 110		JOB NO: 6	163-1	LOG OF BORING B11 Redwood Road Expansion
ALAMEDA, CA	9450	21	T	DATE: 12	2/22/94	Phase II Site Assessment Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/6/94
Munsell Color Scale				0	Asphalt/Baserock: sandy gravel.
(10YR - 2/2)	0 [B12-4)		2 4	Poor recovery, no sample collected. Brown sandy clay (CL) with 15% fine grain sand, slight mottling, plastic, soft, very moist.
(Gley 5GY - 4/1)	0	B12-6			sandy clay (CL) with 40% fine grain sand, stiff, plastic, moist.
(2.5Y - 4/3)	200	B12-8		8	Brown clayey sand (SC) with 50% fine grain sand, med. dense, moist.
				10	BOTTOM OF BORING @ 8 feet
				- 14 -	
1					
					-
				<u> </u>	
				- 22 -	
	4			24	
				<u> </u>	
				0.0	
				28	
ACC ENVIRONMENTAL		ILTANTS	T	JOB NO: 6	6163-1 LOG OF BORING B12 Redwood Road Expansion
ALAMEDA, C	NUE, 5 1 945	01		DATE: 12	2/22/94 Phase II Site Assessment Castro Valley, CA



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				GEO	DLO	GIC	LEGEND
			OR		GW	Well—gr no fine	aded gravels, gravel—sand mixtures, little or s
	GR	AVELS	NO FI	••••	GP	Poorly-	-graded gravels, gravel—sand mixtures
S	ma of >	ore than 1/2 coarse fraction No. 4 Sieve	CIABLE		GM	Silty gr	avels, gravel—sand—silt mixtures
D SOI			APPRE(GC	Clayey	gravels, gravel—sand—clay mixtures
RAINE			E OR FINES	0 0 0 0 0 0 0 0 0	SW	Well-gr	aded sands, gravelly sands, little or no fines
SE-0	SA	NDS	Ēs		SP	Poorly-	-graded sands, gravelly sands, little or no fine
COAF	mo of	nore than 1/2 of coarse fraction			SM	Silty so	ands, sand—silt mixtures
			APPRE NO F		SC	Clayey	sands, sand—clay mixtures
S					ML	Inorgan clayey	ic silts and very fine sands, rock flour, silty of fine sands or clayey silts with slight plasticity
llos (SILTS AND CLA Liquid limit <	YS 50		CL	lnorgan clays, s	ic clays of low to medium plasticity, gravelly sandy clays, silty clays, lean clays
VAINED					OL	Organic	silts and organic silty clays of low plasticity
NE-G	*	SILTS AND CLA	YS		мн	Inorgan or silty	ic silts, micaceous or diatomoceous fine sand soils, elastic silts
Ē		Liquid limit >	50		СН	Inorgan	ic clays of high plasticity, fat clays
					он	Organic silts	clays of medium to high plasticity, organic
ł	ligh	ILY ORGANIC SOI	_S		Pt	Peat a	nd other highly organic soils
SYMB	OL	LEGEND:					
011,	3 (Cement					1
·····] :	Sand					
	3	Bentonite					LEGEND TO BORING LOGS
		Driven Interval of Soil Sample					BP OIL SERVICE STATION NO. 11105 3519 CASTRO VALLEY BOULEVARD
		Sample preserved fo	r pos	sible			PROJECT NO 10-138
		analysis					
		analysis No sample recovered					

	ALIST(WALN) ENGINEERING GROUP ut creek, california			LC	G	OF BORING
			ALIS	то р	ROJE	CT N	10: 10-138-03 DATE DRILLED: 07/18/95
			CLIE	NT:	Impany		
			LOCA	TIO	N: 3	519 (Castro Valley Boulevard, Castro Valley, CA.
1	SEE	SITE PLAN	DRIL	LING	MET	HOD:	Hollow-stem auger (8"); 2" split-spoon sampler
			DRIL	LING	COM	PAN	1: Soils Exploration Srvs. CASING ELEVATION: 179.24 MS
			LOGO	SED 6	add APPROVED BY: Al Sevilla		
BLOWS/B IN.	PID VALUES	WELL DIAGRAM	HLLD	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
		TUTUT]	निर	SM	Planter
							eandy GILT: brown, dry. Observed from cuttings.
12,18,18	1.4	PVC	5			ML	clayey SILTS brown, damp, very stiff; minor tines; Fe oxide stain to approximately 3%.
20,43,24	l.7	2" Sch.40	ite Seal D				Same: medium brown mottled with Fe oxide stain to 25%, damp, hard; root traces to aproximately 15%; minor fines.
18,19,22	1.1		- L-Benton				Same: at 15 feet.
12,15,17	1.0	Screen	20			CL	At 22 feet, observed water on auger.
10,8,7	٥	010" Slatted PVI	25				sity SAND multi-color browns, saturated, medium dense; fine- to medium-grained sand.
		0 <u>11</u>		-	17	ML	Mayey SILT: Drown, wet; minor files.
11,10,13	o		30				silty-CLAY: brown, moist, very stiff; minor fines.
				-			Stabilized groundwater measured on July 28, 1995.

	ALIST WALN	O ENGINEERING GROUP UT CREEK, CALIFORNIA	>			LC)G	OF BORING				
			AL	IST	O PI	ROJE	CT I	NO: 10-138-03 DATE DRILLED: 07/18/95				
			CL	IEN	T:	BP	oil C	ompany				
		OTTE DI ANI	LO	CAT	ION	I: 3	3519	Castro Yalley Boulevard, Castro Yalley, CA.				
3	SEE	SITE PLAN	DF	RILLI	ING	MET	нор	: Hollow-stem auger (8"); 2" split-spoon sampler				
			DF	RILLI	ILLING COMPANY: Soils Exploration Srvs. CASING ELEVATION:							
			LC	GGE	DB	Y:	C. L	add APPROVED BY: AI Sevilla				
'NI 9/SMOTH	PID VALUES	WELL DIAGRAM		DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION				
		TET T	î	_			MI	10" Cancrete				
15,18,14	10.0	рис 	eat Cement	5 1 1 1	Ŧ			sugey 311.7: da rk brown, damp, very stiff; Fe oxide stain to approximately 5%.				
		ch. 4	ž	1		1	CL	etity:CLAY: brown/gray, damp, hard; Fe oxide stain to				
14,23,17	10.0	S		10-	Ŧ		1	approximately 10%; rootlets to 10%; very fine-grained minor fines.				
	, -A _		mite Seal	, i			ML	rootlets; some fine-grained sand; occasional subrounded gravel to 1/4"-diameter.				
15,20,24	9.7		Pt-A	- 15 - -	Ŧ		CL	subrounded gravel to 1/4"-diameter; minor fines.				
17,17,19	6.1	PVC Screen	ar Sand	- 20 - - -			CL	CLAY: brown/gray, wet, hard; rootlets to 5%; Fe oxide stain to approximately 3%; minor fines.				
11,11,15	٥	0" Statted	2/12 Lones	- 25—	Ŧ	· [·]·	SM	silty SAND: brown, wet, medium dense; fine-grained sand.				
		2. 0.0		-			SC	clayey. GANIEs brown/gray, wet to saturated, medium dense; fine- to medium-grained sand; minor fines.				
9,10,13	0			30- -	Ŧ		CL	silty.CLAX; brown/gray, moist, very stift; some very line-grained sand.				
				-				Stabilized groundwater measured on July 28, 1995.				

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		O ENGINEE	RING GROUP CALIFORNIA			L	DG	OF BORING MW-8 Page 1 of 1
z	SEE	SITE PL	AN	ALIS CLIEI LOCA DRILL DRILL LOGG	TO F NT: TIO ING ED F	PROJE BP N: 3 ME1 CON BY: 9	CT 0// C 8519 HOI 1P AN C. L C. L	NO: 10–138–03 DATE DRILLED: 07/19/95 Company Castro Valley Boulevard, Castro Valley, CA. D: Hollow-stem auger (8"); 2" split-spoon sampler IY: Soils Exploration Srvs. CASING ELEVATION: 176.34 'MSL add APPROVED BY: AI Sevilla
I 9/SMOTH	PID VALUE	WELL	DIAGRAN	DEPTH	SAMPLES	GRAPHIC LO	SOIL CLAS	GEOLOGIC DESCRIPTION
9,11,10 7,9,11 13,15,10 20,24,28 15,21,22 20,17,23 18,18,23 12,18,22 15,15,19 10,14,12 18,21,20	8.8 8.0 329 310 51 4.8 4.4 4.0 4.0 4.1 3.5 4.0		Neat Cement #2/I2 Lonestar Sand *** Neat Cement	10				Planter silty CLAY: black, damp, very stiff; Fe axide stain to 3%; rootlets to 5%. clayey SILT: brown, damp, very stiff; Fe axide stain and root traces. Same: gray, damp, very stiff; minor fines. Same: red/brown mottled gray, damp, hard; root traces present; minor fines. Same: at 9.5 feet. silty CLAY: brown mottled gray, damp, hard. silty SAND (lense): red/brown, damp to slightly molst, dense; fine- to medium-grained sand; <1% rootlets. clayey SILT: at 13.5 feet, light brown to brown, damp, hard; rootlets present; minor fines. Same: at 15.5 feet, mottled light brown and red. Same: at 17.5 feet. silty SAND: red/brown, wet to saturated, medium dense; fine- to medium-grained sand; <1% root traces. clayey SILT: brown, damp, hard; rootlets to approximately 40%; minor fines. clayey SILT: brown, damp, hard; rootlets to approximately 40%; minor fines. clayey SILT: brown, damp, hard; some fine- to medium-grained sand. Stabilized groundwater measured on July 28, 1995.

	ENVIRONM	MIENTAL ENGL	NEERING, INC.	GEOLOGIC LOG OF BOREHOLE TWB-1					Page 1 of 2			
	Borin See	ng Loca e Site N	tion: Map.	Project: 2762Date DrilSite Location: 5516 Castro Valley Blvd Castro Valley CACasing EDrilling Method: DPTDepth to GroundwDriller: VironexApprove			t y:)ec ion 20 M	:. 2, 2003 : NA)-23 ft I Sepehr			
PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION		COTE SAMPLED	spirt spoon	GW LEVEL	WELL DIAGRAM			
			CL	4" concrete over 6" base rock. Hand augered cutting.								
	5— - - -		CL	SILTY CLAY: dark brown; soft; non plastic to slightly plastic; low to permeability (LEK-MEK). No petroleum hydrocarbon (PHC) odor. As above becoming light grayish brown w/ some reddish brown staini to medium stiff. LEK.	medium ng; soft				LL CASING INSTALLED			
	10— - -	-	CL	2 to 4" stringer of fine sand and gravelly silt clay lense at 10.5'. SILTY CLAY w/ some Fine Sand: light grayish brown to reddish brow medium stiff; damp; <30% fine sand. LEK-MEK. No PHC odor.	vn; soft to				NO TEMPORARY WE			
	- 15 — - -			As above becoming moist with depth.								
	- 20- -	-	ML-SM	SANDY SILT/SILTY SAND w/ some Clay: reddish brown; medium de 40-60% fines sand. MEK. No PHC odor.	ense; moist;			▼				
	- 25 —		CL/ ML-SM	SILTY CLAY interbedded w/ Sandy Silt/Silty Sand: reddish brown an grayish brown; moist to wet; w/ trace gravel fragments	d light							

	ENVIRONM	IENTAL ENGL	AA NEERING, INC.	GEOLOGIC LOG OF BOREHOLE TV		Page 2 of 2				
	Borin See	ig Loca	ition: Map.	Project: 2552 Site Location: 5519 Castro Valley Blvd Castro Valley CA Drilling Method: DPT Driller: Vironex Logged By: E Jennings	Date Drille Casing Ele Depth to 1 Groundwa Approved	ed: Dec. 2, 2003 evation: NA st ater: 20-23 ft By: M Sepehr				
PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION	core	split spoon	GW LEVEL	WELL DIAGRAM		
	-			No recovery						
	30 — - -									
	 40 									
	- 45 - - -			Total Depth: 30 ft bgs. First encountered groundwater: 20-23 ft bgs.						
	50 —			Hand augered to 5 ft bgs to clear utilities.						

	ENVIRON	MENTAL ENGL	NEERING, INC	GEOLOGIC LOG OF BOREHOLE TWB	8-2			F	Page 1 of 2
	Borir Se	ng Loca ⊧e Site N	tion: ⁄Iap.	Project: 2762Date DrillSite Location: 5516 Castro Valley Blvd Castro Valley CACasing ElDrilling Method: DPTDepth to GroundwDriller: VironexApproved			l: E vat st er: 3y:	Dec ior : 2 [,] : N	c. 2, 2003 n: NA 1-23 ft // Sepehr
PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION		core SAMPLED	split spoon	GW LEVEL	WELL DIAGRAM
			CL	4" concrete over 6" base rock. Hand augered cutting.					
	5 - - - -		CL	SILTY CLAY w/ some Fine Sand: dark brown to reddish brown; soft to stiff; damp; non plastic; <15% fine sand; low to medium estimated pe (LEK-MEK). No petroleum hydrocarbon (PHC) odor.	o medium rmeability				ELL CASING INSTALLED
	10- - -	-		As above becoming stiff to very stiff; slighty plastic.					NO TEMPORARY W
	- 15 - - -	-		As above becoming very stiff to hard; moist with depth.					
	- 20- -	-	CL	SILTY CLAY: brown; soft to stiff; moist; slightly plastic to plastic. LEK No PHC odor.	K-MEK.				
	- - 25 –	-	ML-SM	SANDY SILT/SILTY SAND w/ some Clay: brown to reddish brown; r dense; 40-60% fine sand. MEK. No PHC odor.	nedium				

ENVIRONMENTAL ENGINEERING, IN	GEOLOGIC LOG OF BOREHOLE TWB-2 Page 2 of 2
Boring Location: See Site Map.	Project: 2552Date Drilled: Dec. 2, 2003Site Location: 5519 Castro Valley Blvd Castro Valley CACasing Elevation: NADrilling Method: DPTDepth to 1st Groundwater: 20-23 ft Approved By: M SepehrLogged By: E JenningsApproved By: M Sepehr
PID PPM DEPTH GRAPHIC LOG LOG SOIL CLASS.	GEOLOGIC DESCRIPTION
	SILTY CLAY w/ some Fine Sand: brown; soft to medium stiff; moist; plastic; <30% fine sand. MEK. No PHC odor. <p>Total Depth: 30 ft bgs. First encountered groundwater: 21-23 ft bgs. Hand augered to 5 ft bgs to clear utilities.</p>

	ENVIRONM	MENTAL ENGIN	NEERING, INC	GEOLOGIC LOG OF BOREHOLE TWB-3					Page 1 of 2				
	Borin See	ng Loca e Site N	tion: /lap.	Project: 2762 Site Location: 5516 Castro Valley Blvd Castro Valley CA Drilling Method: DPT Driller: Vironex Logged By: E. Jennings	Date Drille Casing El Depth to Groundw Approved	ec ev 1s at	l: E /at st er: 3y:	Dec ion : 23 : N	c. 2, 2003 n: NA 3 ft / Sepehr				
mdd Old	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION		core SAMPLED	split spoon	GW LEVEL	WELL DIAGRAM				
				4" concrete over 6" base rock.									
	 		CL	Hand augered cutting.					ED				
	5— — — —		CL	SILTY CLAY w/ some Fine Sand: brown to reddish brown; soft to me damp; non plastic to slightly plastic; <30% fine sand. Low to medium permeability (LEK-MEK). No petroleum hydrocarbon (PHC) odor.	edium stiff; estimated				WELL CASING INSTALL				
	10— - - -			As above becoming moist with depth; plastic.					NO TEMPORARY				
	15 — _	-		As above becoming soft and moist with depth.									
	_			2" stringer of fine sand and gravelly, silty clay lense at 17.5'.									
	- 20- -		CL	SILTY CLAY: reddish brown; stiff to very stiff; moist; plastic. LEK. No As above becoming dark reddish brown to reddish brown; soft to med plastic. LEK-MEK. No PHC odor.	9 PHC odor.								
	- - 25 —			As above becoming reddish brown to brown.				V					

		IENTAL ENGIN	THE REFERENCE	GEOLOGIC LOG OF BOREHOLE TWB		Page 2 of 2			
	Borin	g Loca e Site N	tion: ⁄Iap.	Project: 2552 Site Location: 5519 Castro Valley Blvd Castro Valley CA Drilling Method: DPT Driller: Vironex Logged By: E Jennings	Date Drille Casing El Depth to Groundwa Approved	ed: I evat 1st ater d By	Dec tion : 23 : N	c. 2, 2003 i: NA 3 ft 1 Sepehr	
PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION		split spoon	GW LEVEL	WELL DIAGRAM	
			CL F	SILTY CLAY: reddish brown to brown; very soft to soft; moist to satur HEK. No PHC odor.	ated; MEK-				
	35— - - -								
	40								
	45— - - -			Total Depth: 30 ft bgs. First encountered groundwater: 23 ft bgs. Hand augered to 5 ft bgs to clear utilities.					
	50 —			יומות מעשבובת נס ס זו טעס נס סובמו ענווונובס.					

Boring Location: Project: 2762 Date Drilled: Site Location: 5516 Castro Valley Blvd Casing Eleva	De itioi	n: NA
Casing Eleva	ICIOI	n: NA
See Site Map.Drilling Method: DPTDepth to 1stDriller: VironexGroundwate	r: 2	5-28 ft
Logged By: E. Jennings Approved By	/: 1	V Sepehr
PID ppm DEPTH GEOFOGIC DESCRIDION Soll CLASS. Core Soll CLASS. Core Soll SAMPLED	GW LEVEL	WELL DIAGRAM
4" concrete over 6" base rock.		
Hand augured cutting.		
CLAYEY SILT/SILTY CLAY w/ some Sand: brown; medium stiff; damp; slightly plastic. Low to medium estimated permeability (LEK-MEK). No petroleum hydro- CL CL CL CL CL CL CLAYEY CLAY w/ some Sand: brown; medium stiff; damp; slightly plastic. Low to medium estimated permeability (LEK-MEK). No petroleum hydro- carbon (PHC) odor.		ELL CASING INSTALLEE
 10 As above becoming brown to grayish brown; medium stiff to very stiff. LEK. Moderate PHC odor. 10 15 - 		NO TEMPORARY W
4 – CL SILTY CLAY: brown; stiff; damp; plastic. LEK. No PHC odor.		
6" stringer of fine sand and gravelly, silty clay lense at 18'.		
0 20 		
As above becoming soft to medium stiff; increasing moisture with depth.		

ENVIRONMENTAL ENGINEERING, INC				GEOLOGIC LOG OF BOREHOLE TW		Page 2 of 2					
	Borir Se	ng Loca e Site N	tion: ⁄Iap.	Project: 2552 Site Location: 5519 Castro Valley Blvd Castro Valley CA Drilling Method: DPT Driller: Vironex Logged By: E Jennings	Date Drille Casing Ele Depth to 1 Groundwa Approved	ed: Dec. 2, 2003 evation: NA 1st ater: 25-28 ft I By: M Sepehr					
PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION	core	split spoon	GW LEVEL	WELL DIAGRAM			
			CL	SILTY CLAY: brown; soft; moist; plastic. LEK-MEK. No PHC odor.							

	ENVIRONM	MENTAL ENGI	NEERING, INC	GEOLOGIC LOG OF BOREHOLE TWE	TWB-5 Page 1 of 2					
	Borir Se	ng Loca e Site N	ition: Map.	Project: 2762 Site Location: 5516 Castro Valley Blvd Castro Valley CA Drilling Method: DPT Driller: Vironex Logged By: E. Jennings	Date Drilled: Dec. 2, 2003 Casing Elevation: NA Depth to 1st Groundwater: 17 ft Approved By: M Sepehr					
mdq Olq	РЕРТН	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION			split spoon	GW LEVEL	WELL DIAGRAM	
	_			4" concrete over 6" base rock.						
	- - -	-	CL	Hand augured cutting.						
0	5	-	CL	CLAYEY SILT/SILTY CLAY: grayish brown; medium stiff; damp; slig low estimated permeability (LEK). No petroleum hydrocarbon (PHC)	htly plastic; odor.				L CASING INSTALLED	
191	10- -	-		As above w/ strong PHC odor.					ORARY WEL	
	-			As above becoming reddish brown; stiff to very stiff. Strong PHC odo	r. — — — -				TEMP0	
0	- 15 —			As above becoming grayish brown; soft to medium stiff; moist. Slight	PHC odor.				2 Z	
	-	-	CL	SILTY CLAY w/ some Fine Sand: reddish brown; soft to medium stiff to wet; <20% fine sand. LEK. Slight PHC odor.	; moist					
	-	-		2-4" stringer of fine sand and gravelly, silty clay lense; well sorted and graded.	d poorly					
0	20-	-		As above becoming medium stiff to very stiff.						
0	- - 25 –			As above becoming soft; saturated. MEK-HEK.						

ENVIRONMENTAL ENGINEERING, INC.				GEOLOGIC LOG OF BOREHOLE TWB-5				Page 2 of 2					
Boring Location: See Site Map.				Project: 2552 Site Location: 5519 Castro Valley Blvd Castro Valley CA Drilling Method: DPT Driller: Vironex Logged By: E Jennings	Date Drille Casing Ele Depth to 1 Groundwa Approved	d: I svat st iter By	Dec tion : 25 : N	5. 2, 2003 I: NA 5-28 ft 1 Sepehr					
PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION	core	split spoon	GW LEVEL	WELL DIAGRAM					
			CL	SILTY CLAYW/ some Fine Sand: reddish brown; soft to medium stiff aturated; <30% fine sand. MEK-HEK. No PHC odor.	; wet to								
	50 —												

		MENTAL ENGIN	NEERING, INC.	GEOLOGIC LOG OF BOREHOLE SOMA-1			F	PAG	E 1 OF	- 2			
				PROJECT: 2762	DATE DRI	LLED	: Ju	ne	10, 200)4			
	DOINI			SITE LOCATION: 3519 Castro Valley Blvd Castro Valley, CA	CASING E	LEVA	EVATION:						
	SE	E SITE N	ΛAΡ	DRILLING METHOD: Hollow Stem Auger.	DEPTH TO	D 1ST	۲G۱	N: 2	2'				
				DRILLER: Gregg Drilling & Testing	APPROVE	ED BN	/: M	Se	pehr				
				LOGGED BY: E Jennings									
PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION		split spoon SAMPLED	GW LEVEL	BLOWCOUNTS	\ DIA	VEL \GR	L RAM		
				4" concrete over 4-6" base rock		05				\square			
	- - 5- - - -		CL	SILTY CLAY: dark brown, very soft, moist to very moist, high plasticit to high estimated permeability (MEK-HEK). No petroleum hydrocarbo odor.	y; Medium on (PHC)	HAND AUGERED TO	-	3 7 9		Casing		/Bentonite Grout	
	10 - - 15-		CL/ML	SILTY CLAY/ CLAYEY SILT: gray mottled orange brown, med. stiff to slight plasticity; Low estimated permeability (LEK). No PHC odor.	o stiff, damp,			7 11 13 13		2" Schedule 40 PVC		Cement	
	- - - 20-		ML/SM	SANDY SILT/SILTY SAND with some Clay: gray brown and slight ora	inge brown,			18 20 6 11			←	Bentonite	
	- - - 25-	-		med. dense and med. stiff, moist; 40-60% fine to med. sand; LĒK-ME odor.	K. No PHC		V	16 8 10 10 5 6 10	2/12 Sand Pack			0.01 Slotted Screen	

	ENVIRONN	AIENTAL ENGI		GEOLOGIC LOG OF BOREHOLE SOMA-1				F	PAG	E 2 OF	- 2	
				PROJECT: 2762	DATE DR	ILLI	ΞD	: Ju	ine	10, 200)4	
				SITE LOCATION: 3519 Castro Valley Blvd Castro Valley, CA	CASING E	ELE	VA	TIC	DN:			
	SE	E SITE N	MAP	DRILLING METHOD: Hollow Stem Auger.	DEPTH T	O 1	ST	G\	N: 2	22'		
				DRILLER: Gregg Drilling & Testing	APPROVI	ED	ΒY	': M	Se	pehr		
				LOGGED BY: E Jennings						•		
PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION		split spoon SAMPLED	core Corre	GW LEVEL	BLOWCOUNTS	\ DIA	VELL \GRAM	
	_	-	SP/SM	SAND and SILTY SAND: gray brown and light orange brown, med. do saturated; 40-70% fine to med. sand; HEK. No PHC odor.	ense,					S		reen
	_	-	ML/CL	CLAYEY SILT/ SILTY CLAY: dark brown, wet to saturated; HEK. No F	PHC odor.					and Pa		ted Sc
	_			SILTY CLAY: gray brown slightly mottled orange brown, med stiff, mo moist; LEK-MEK. No PHC odor.	oist to very					2/12 S		0.01 Slot
	30—	-		TOTAL DEPTH 30'								
	_	-										
	_	-		Groundwater first encountered at 22° and stabilized at 11.56°								
	_	-										
	_	-										
	35—	-										
	_											
	_											
	-											
	40—											
	_	-										
		-										
	_	-										
	-	-										
	50—	-										
	_	-										
	_	-										
	_	-										
	_	-										
	55—											

		MENTAL ENGIN	AA EERING, INC.	GEOLOGIC LOG OF BOREHOLE SOMA-2			F	PAG	E 1 OF 1	
				PROJECT: 2762	DATE DRILLED: June 10, 2004				10, 2004	
				SITE LOCATION: 3519 Castro Valley Blvd Castro Valley, CA	CASING E	ELEVA	TIC	DN:		
	SE	E SITE M	1AP	DRILLING METHOD: Hollow Stem Auger.	DEPTH T	0 1S	۲G	W: A	Approx 12'	
				DRILLER: Gregg Drilling & Testing	APPROV	ED B	/: M	l Se	pehr	
				LOGGED BY: E Jennings						
PID ppm	DЕРТН	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION		split spoon SAMPLED	GW LEVEL	BLOWCOUNTS	WELL DIAGRAM	
			CL	4" concrete over 4-6" base rock		0.5				
	- - 5- - - - - 10- - -		CL	SILTY CLAY with some FINE SAND: dark brown and gray brown slig orange brown, soft and med. stiff, moist, med. to high plasticity; <30 Low to medium estimated permeability (LEK-MEK). No petroleum hy (PHC) odor. As above. Light gray and light gray brown and reddish orange brown	ghtly mottled % fine sand; drocarbon	HAND AUGERED TO		2 7 8 10 13 26	2 Sand Pack	1 Slotted Screen Bentonite Plug Cement/Bentonite Grout
	- - 15—	-	SM	FINE SILTY SAND: reddish brown and light gray brown, med. dense 40-60% fine sand; MEK to high estimated permeability (HEK). No PI	e, very moist; HC odor.			7 6 7	2.4	0.0
	_									
	- 20- - - 25-			Groundwater first encountered at 12' and stabilized at 10).60'					

	ENVIRON	MENTAL ENGIN	AA EERING, INC.	GEOLOGIC LOG OF BOREHOLE SOMA-3				PAG	GE 1 OF 1
				PROJECT: 2762	DATE DRI	LLE	D: J	une	10, 2004
				SITE LOCATION: 3519 Castro Valley Blvd Castro Valley, CA	CASING E	LEV	ΑΤΙΟ	SN:	
	SEE SITE MAP DRILLING METHOD: Hollow Stem Auger. DEPTH								Approx 12'
				DRILLER: Gregg Drilling & Testing	APPROVE	ED B	Y: N	/I Se	pehr
				LOGGED BY: E Jennings					F -
PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION		split spoon SAMPLED	GW LEVEL	BLOWCOUNTS	WELL DIAGRAM
			CL	4" concrete over 4-6" base rock		0.5			
	- - 5- - - 10- -		CL	SILTY CLAY with some FINE SAND: gray brown mottled orange brow dense, moist slightly plastic; <30% fine sand; Low estimated permeab No petroleum hydrocarbon (PHC) odor. As above. Reddish brown and moist with depth.	n, med. stiff ility (LEK).	HAND AUGERED TO		778899	1/2" Sand Pack 1/2" Sand Pack 2" Schedule 40 PVC Casing 2" Schedule 40 PVC Casing 11/1111111111111111111111111111111111
	- - 15—		SM	FINE SILTY SAND: reddish brown slightly mottled gray, med. dense, to wet; 40-60% wery fine to fine sand; High estimated permeability (H No PHC odor. TOTAL DEPTH 15' Groundwater first encountered at 12' and stabilized at 9.	very moist IEK). 90'			5 5 6	2 2 0.01 S
	- 20- - - 25-								

BORING LOCATION PROJECT: 2762 DATE DRILLED: June 10, 2004 SITE LOCATION: 3519 Castro Valley, CA CASING ELEVATION: SEE SITE MAP DRILLING METHOD: Hollow Stem Auger. DEPTH TO 1ST GW: Approx 16'-17' DRILLER: Gregg Drilling & Testing APPROVED BY: M Sepehr LOGGED BY: E Jennings UGGED BY: E Jennings Image: Stress of the			ATENTAL ENGI		GEOLOGIC LOG OF BOREHOLE SOMA-4			F	PAG	E 1 O	F 1		
SITE LOCATION: 3519 Castro Valley Bivd Castro Valley, CA CASING ELEVATION: Castro Valley, CA CASING ELEVATION: SEE SITE MAP DRILLING METHOD: Hollow Stem Auger. DEPTH TO 1ST GW: Approx 16'-17' DRILLING METHOD: Hollow Stem Auger. DEPTH TO 1ST GW: Approx 16'-17' DRILLER: Gregg Drilling & Testing APPROVED BY: M Sepehr LOGGED BY: E Jennings GEOLOGIC DESCRIPTION UB 4" concrete over 4-6" base rock 0 Gene dense, damp to moist; 40-60% fine sand; Low to med. estimated permeability 10 SMM SMMCL SILTY SAND/ SILTY CLAY: reddish brown, dense and med. stiff, damp; LEK. 11 Signt PHC odor. 15 CL 0 SILTY SAND/ SILTY CLAY: reddish brown, dense and med. stiff, damp; LEK. 16 Signt PHC odor. 17 Signt PHC odor. 18 SILTY SAND/ SILTY GANDY SILT; gray brown slightly motted orange, med. dense, wety PHC odor. 19 Signt PHC odor. 10 Sim Min SiLTY SAND/ SILT; gray brown slightly motted orange, med. dense, wety PHC odor.					PROJECT: 2762 DATE DA	RILL	.ED	: Ju	ine	10, 20	04		
SEE SITE MAP DRILLING METHOD: Hollow Stem Auger. DEPTH TO 1ST GW: Approx 16-17' DRILLER: Gregg Drilling & Testing APPROVED BY: M Sepehr LOGGED BY: E Jennings					SITE LOCATION: 3519 Castro Valley Blvd Castro Valley, CA CASING	ELE	EVA	TIC	DN:				
DRILLER: Gregg Drilling & Testing APPROVED BY: M Sepehr LOGGED BY: E Jennings UNELL uid 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 5 SM FINE SILTY SAND with some CLAY: gray to graysh brown motiled orange brown, med. estimated permeability 0<		SE	E SITE N	MAP	DRILLING METHOD: Hollow Stem Auger. DEPTH	ГО	1ST	٦G	N: A	Appro>	(16	'-17'	
UBGED BY: E Jennings UEY: SAND with some CLAY: gray to graysh brown motiled orange brown, med. stiff, damp; LEK. UBGED BY: E Jennings UEY: SAND/ SALTY CLAY: reddish brown, dense and med. stiff, damp; LEK. UBGED BY: E Jennings <td></td> <td></td> <td></td> <td></td> <td>DRILLER: Gregg Drilling & Testing APPRO</td> <td>/ED</td> <td>BY</td> <td>′: M</td> <td>Se</td> <td>pehr</td> <td></td> <td></td> <td></td>					DRILLER: Gregg Drilling & Testing APPRO	/ED	BY	′: M	Se	pehr			
uild 01 or 00				_									
5 SM FINE SILTY SAND with some CLAY: gray to grayish brown mottled orange brown, med. dense, damp to moist, 40-60% fine sand; Low to med. estimated permeability (LEK). No petroleum hydrocarbon (PHC) odor. 26 10 SM/CL SILTY SAND/ SILTY CLAY: reddish brown, dense and med. stiff, damp; LEK. 11 11 SM/CL SILTY CLAY: brown, med. stiff to stiff, damp to moist, slightly plastic; LEK. 9 15 CL SILTY CLAY: brown, med. stiff to stiff, damp to moist, slightly plastic; LEK. 9 15 SILTY SAND/ SILTY CLAY: reddish brown, dense and med. stiff, damp; LEK. 9 16 SILTY SAND/ SILTY CLAY: reddish brown, dense, and med. stiff, damp; LEK. 9 17 SILTY SAND with some CLAY: gray and slight yellow brown, med. dense, very moist to vet; +60% fine sand; MEK to high estimated permeability (HEK). No 9 20 SM/ML SILTY SAND/ SILT: gray brown slightly mottled orange, med. dense, wet to saturated; 40-60% fine sand; MEK-HEK. No PHC odor. 7, 11	PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION	split spoon	core SAMPLED	GW LEVEL	BLOWCOUNTS	D	WEL AGF	L RAM	
5 SM FINE SILTY SAND with some CLAY: gray to grayish brown mottled orange brown, med. dense, damp to moist, 40-60% fine sand; Low to med. estimated permeability (LEK). No petroleum hydrocarbon (PHC) odor. 26 10 SM/CL SILTY SAND/ SILTY CLAY: reddish brown, dense and med. stiff, damp; LEK. Slight PHC odor. 11 15 CL SILTY CLAY: brown, med. stiff to stiff, damp to moist, slightly plastic; LEK. No PHC odor. 9 15 CL SILTY SAND/ SILTY CLAY: brown, med. stiff to stiff, damp to moist, slightly plastic; LEK. No PHC odor. 9 20 SM SILTY SAND/ SILTY CLAY: brown, med. stiff to stiff, damp to moist, slightly plastic; LEK. No PHC odor. 9 20 SM/ML SILTY SAND/ SILTY CLAY: brown, med. stiff to stiff, damp to moist, slightly plastic; LEK. No PHC odor. 7 20 SM/ML SILTY SAND/ SANDY SILT: gray brown slightly mottled orange, med. dense, wet to saturated; 40-60% fine sand; MEK-HEK. No PHC odor. 7					4" concrete over 4-6" base rock		05						. <u> </u>
15 CL SILTY CLAY: brown, med. stiff to stiff, damp to moist, slightly plastic; LEK. No PHC odor. SILTY SAND with some CLAY: gray and slight yellow brown, med. dense, very moist to wet; <60% fine sand; MEK to high estimated permeability (HEK). No PHC odor.		- - 5- - - - - 10- - - - -		SM SM/CL	FINE SILTY SAND with some CLAY: gray to grayish brown mottled orange browr med. dense, damp to moist; 40-60% fine sand; Low to med. estimated permeabili (LEK). No petroleum hydrocarbon (PHC) odor. SILTY SAND/ SILTY CLAY: reddish brown, dense and med. stiff, damp; LEK. Slight PHC odor.	, y			26 50 11 14 23		2" Schedule 40 PVC Casing	•	Cement/Bentonite Grout
SM SILTY SAND with some CLAY: gray and slight yellow brown, med. dense, very moist to wet; <60% fine sand; MEK to high estimated permeability (HEK). No PHC odor.		15—		CL	SILTY CLAY: brown, med. stiff to stiff, damp to moist, slightly plastic; LEK. No PHC odor.	-			9 9				
20		-	-	SM	SILTY SAND with some CLAY: gray and slight yellow brown, med. dense, very moist to wet; <60% fine sand; MEK to high estimated permeability (HEK). No PHC odor.			V	5	Pack			
		20—	-	SM/ML	SILTY SAND/ SANDY SILT: gray brown slightly mottled orange, med. dense, we to saturated; 40-60% fine sand; MEK-HEK. No PHC odor.				7 11 6 8 8	2 1/2" Sand			0.01 Slotted Screen
CL SILTY CLAY with some SAND: gray brown slightly mottled orange brown, med. stiff;		_	-	CL	SILTY CLAY with some SAND: gray brown slightly mottled orange brown, med. si moist; LEK-MEK. No PHC odor.	ff;						. D'	
25 I I I I Bentonite Plug Groundwater first encountered at 16-17' and stabilized at 0.32'		25—	J	l	IUTAL DEPTH 24.5 Groundwater first encountered at 16.17' and stabilized at 0.22'					Bei	itonite	Plug	

APPENDIX E

General Field Procedures

Site Conceptual Model and Workplan to Address Data Gaps

FIELD AND LABORATORY PROCEDURES Single-Wall 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-ofcustody 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 (PI D), or an equivalent tool. Soil cuttings generated are stored in Department of Transportation (DOT) approved 55-gallon steel drums, or an equivalent storage container.

Grab 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 of the water table), and retracted to expose the Hydropunch screen. Grab groundwater samples are collected by lowering a pre-cleaned, single-sample

Site Conceptual Model and Workplan to Address Data Gaps

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. Alternatively, groundwater samples are collected by lowering a disposable bailer through the sampler rod or into the borehole.

Collected water samples are discharged directly into laboratory provided, precleaned, 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. 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.

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.