ConocoPhillips
76 Broadway
Sacramento, California 95818

November 21, 2008

Barbara Jakub
Alameda County Health Agency
1131 Harbor Bay parkway, Suite250
Alameda, California 94502-577

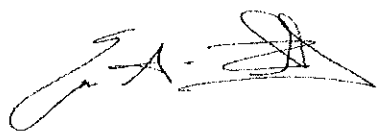
Re: ***Site Conceptual Model (SCM)***
76 Service Station # 5781 RO # 253
3535 Pierson Street
Oakland, CA

Dear Ms. Jakub:

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please call me at (916) 558-7666.

Sincerely,



Terry L. Grayson
Site Manager
Risk Management & Remediation

SITE CONCEPTUAL MODEL

76 SERVICE STATION NO. 5781

3535 PIERSON STREET

OAKLAND, CALIFORNIA

Prepared for:

ConocoPhillips Company
76 Broadway
Sacramento, CA 95818

Prepared by:

Delta Consultants, Inc.
312 Piercy Road
San Jose, California 95138

November 20, 2008

CERTIFICATION

The following report was prepared under the supervision and direction of the undersigned California Professional Geologist.

DELTA CONSULTANTS, INC.

D. Bryan

Debbie Bryan
California Professional Geologist # 7745

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1.0 INTRODUCTION

Delta Consultants, Inc. (Delta), on behalf of ConocoPhillips (COP) has prepared this Site Conceptual Model (SCM) for 76 Service Station No. 5781, located at 3535 Pierson Street in Oakland, California (site) (**Figure 1**). The SCM provides a working hypothesis regarding the current and future distribution of petroleum hydrocarbons detected in soil and groundwater beneath the site.
The key elements of the SCM are:

- Site history and description
- Regional hydrogeologic setting
- Nature and extent of the petroleum hydrocarbon source(s)
- Contaminant fate and transport characteristics
- Potential exposure pathways
- Potential receptors

2.0 SITE LOCATION AND DESCRIPTION

The following sections provide a description of the site and surrounding area.

2.1 Site Location

The site (Alameda County Assessor's Parcel # 48A-7070-70-1) is located on a triangular shaped property formed by the intersection of Pierson Street and Highway 580 freeway off-ramp in Oakland, California. (**Figures 1 and 2**).

2.2 Site Description

The site is currently an active Union 76 service station with two 12,000-gallon fuel underground storage tanks (USTs) (**Figure 2**). Other site features include a station building, a 520-gallon waste oil UST, and two gasoline dispenser islands under a single canopy. The station building consists of a vehicle service area with two hoists and a market and office area. A City of Oakland sewer easement crosses the west corner of the site.

The site is bounded to the west by a parking lot for a apartment complex, to the north by a freeway off-ramp to Highway 580, to the east by MacArthur Boulevard and Mills College, and to south by Pierson Street and a paved parking area (**Figure 2**). The site is located in a primarily residential area. The site elevation is approximately 150 feet above mean sea level (MSL). The site is located in a small valley with a surface slope to the east (**Figure 1**). The regional topography slopes to the west-southwest towards San Francisco Bay located approximately 3 miles to the west.

2.3 Site Owner

The service station is currently owned and operated by Jack Chi Chan, 3535 Pierson Street, Oakland, California.

3.0 SITE SETTING

The following sections provide a summary of the regional geologic and hydrogeologic setting.

3.1 Regional Geologic Setting

The site is located near the base of the Berkeley Hills (**Figure 3**). Gettler-Ryan Inc., in their report dated July 14, 2003, provided the following description of the regional geologic setting;

> Based on review of regional geologic maps, the site is underlain by undivided Quaternary deposits and is closely adjacent to a mapped geologic contact with the upper member of the Quaternary San Antonio Formation. In addition, the site is situated approximately 1,200 to 2,800 feet southwest of mapped splays of the active Hayward Fault Zone.

3.2 Regional Hydrogeologic Setting

The site is located at the eastern edge of the East Bay Plain Groundwater Subbasin (DWR Bulletin 118). The subbasin consists of a narrow area approximately 25 miles long and 2 to 7 miles wide along the eastern shore of San Francisco Bay. The East Bay Plain subbasin aquifer system consists of unconsolidated sediments of Quaternary age. Numerous creeks cross the subbasin capturing runoff from foothills east of the Hayward fault. The groundwater flow direction is east to west generally reflecting the local topography. Flow direction and velocity are influenced by buried stream channels that are typically oriented in an east-west direction (RWQCB, June 1999). The total depth of domestic wells within the subbasin reportedly ranges from 32 to 525 feet with an average of 206 feet. Total depth of municipal and irrigation wells range from 29 to 630 feet with an average of 191 feet (DWR Bulletin 118). The California Department of Water Resources Geotracker database, prior to removal of well information, indicated the presence of four active water wells nearby the site. The four active wells are reported to be located in East Bay Regional Park District land, located approximately 2,193 feet northeast of the site.

3.3 Hydrogeologic Conditions

The site is underlain by fine-grained silt and clay (see boring logs in **Appendix B**). The fine-grained soil contain scattered deposits of clayey sand and silty sand. The coarsest deposits were encountered in boring MW-2 located north of the fuel USTs, Boring MW-2 encountered two layers of silty gravel and gravel from 7 to 12 feet bgs and from 17.5 to 20.5 feet bgs. Geologic cross sections are presented as **Figure 4**.

Groundwater was encountered in some site borings at a depth of approximately 33 feet bgs. Other site borings drilled to the same depth were dry upon completion. Well MW-A, the only site well, was installed in 1990 with a total depth of 45 feet bgs and groundwater was first encountered at 33 feet bgs during drilling. One week after installation, the depth to water in well MW-A was 19.40 feet BTOC. The depth to groundwater reached a minimum of 11.24 feet BTOC in February 1999. In March 2008, the most recent monitoring event, the depth to water in well MW-A was 12.68 feet BTOC. Select measured groundwater depths for well MW-A are illustrated on **Figure 4**.

Shallow groundwater beneath the site is not well understood. Perched zones of groundwater atop impermeable clayey soil materials may exist across the site, as indicated by the sporadic encountering of groundwater at depths of approximately 33 feet bgs (EB-1, EB-2, SB-1, and SB-5). Groundwater may also be confined or semi-confined as indicated by conditions in well MW-A.

The direction of groundwater flow is not defined. Only a single well has been installed. The groundwater flow direction is anticipated to be to the southeast based on local topography.

4.0 NATURE AND EXTENT OF SOURCE

The following sections describe the source(s) of the petroleum hydrocarbons that have been detected in soil and groundwater beneath the site.

4.1 Removal of Former USTs (December 1989)

Two 10,000-gallon fuel USTs, one 280-gallon waste oil UST, and associated product piping were removed in December 1989. No holes or cracks were observed in the gasoline USTs. The waste oil UST contained one hole of approximately 1.25 square inches in size. A total of seven soil samples were collected from the fuel UST cavity (A1, A2, B1, SW1, and SW2) and the associated product piping (P1 and P2). One soil sample (WO1) was collected from beneath the waste oil UST. A map of sample locations and summary of soil analytical data are contained in **Appendix A**. Soil analytical data is also summarized on **Table 1**.

Total petroleum hydrocarbons as gasoline (TPH-G) was detected in sidewall samples from the UST pit at a depth of 10.5 feet below ground surface (bgs) at 15 milligrams per kilogram (mg/kg) and 46 mg/kg. Benzene was detected in one of the two samples at 0.65 mg/kg. TPH-G was detected in two of three soil samples from the base of the excavation (12.5 feet bgs) at 3.5 mg/kg and 5.8 mg/kg. Benzene was detected in one of three samples at 0.10 mg/kg. TPH-G and benzene were not detected in the two soil samples from beneath the product piping.

The soil sample from beneath the waste oil tank contained 8,300 mg/kg total petroleum hydrocarbons as diesel (TPH-D), 48,000 mg/kg total oil and grease (TOG), 670 mg/kg TPH-G, and 5.4 mg/kg benzene. The sample also contained 10 parts per billion (ppb) 1,2-dichlorobenzene, 77 ppb tetrachloroethene, and 15 ppb 1,1,1-trichloroethane. The sample contained 8.3 mg/kg chromium, 340 mg/kg lead, and 70 mg/kg zinc.

4.2 Waste Oil UST Pit Over-Excavation (February 1990)

In February 1990, the waste oil UST pit was over-excavated to 16 feet bgs and 35 feet to the east, 10 feet to the west, 15 feet to the south, and 2 feet to the north. Soil samples were collected from the base of the deepened excavation (W01-16) along with four sidewall samples (SWA through SWD). A map of area of excavation, sample locations, and summary of soil analytical data are contained in **Appendix A**. TOG was detected in samples SWA (adjacent to the site building) at 17,000 mg/kg, sample SWB at 4,100 mg/kg, and in sample SWD at 6,400 mg/kg. TOG was detected in sample WO-16 at 910 mg/kg. The highest concentrations of TPH-D, TPH-G, and benzene were detected in sample SWA at 1,400 mg/kg, 220 mg/kg, and 2.3 mg/kg, respectively. Further excavation was terminated due to the presence of underground sewer and gas lines to the south and west and the site building to the north side.

4.3 Soil Borings (1990)

Three soil borings (MW-1 through MW-3) were drilled to collect soil samples in April 1990. Boring MW-1 was located adjacent to the former waste oil UST and MW-2 and MW-3 were located adjacent to the gasoline USTs in the eastern portion of the site (**Figure 2**). Borings were drilled to depths of 50 feet, 39.5 feet, and 40 feet bgs, respectively. The borings had been intended to be converted to groundwater

monitoring wells but groundwater was not encountered and the boreholes backfilled with grout. A map showing the location of borings and a summary of analytical data are contained in **Appendix A** and shown on **Table 1**. Boring logs are contained in **Appendix B**. TPH-D, TPH-G, benzene, toluene, xylene, and ethylbenzene (BTEX compounds) were all below the laboratory detection limits.

In July 1990, two additional borings (EB1 and EB2) were drilled in the area of the former waste oil UST. Borings were drilled to depths of 34.5 feet and 38 feet bgs. A map showing the location of borings and a summary of analytical data are contained in **Appendix A** and shown on **Table 1**. Boring logs are contained in **Appendix B**. Groundwater was encountered at depths of 33.5 and 36.7 feet bgs. Water samples were collected from each boring. TPH-D and TOG were not detected in any soil samples. TPH-G and benzene were detected in only one sample at concentrations of 1.2 mg/kg and 0.009 mg/kg, respectively. 1,1,1-trichloroethane was detected in the 28.5-foot sample of boring EB1.

The groundwater sample from boring EB1 contained 6.7 micrograms per liter (ug/l) TPH-D. TPH-G and benzene were below the detection limit. TPH-G and TPH-D were below the detection limit in the sample from EB2. The sample contained 0.61 ug/l benzene. TOG was below the laboratory detection limit in both samples. Groundwater analytical data is shown on **Table 2**.

4.4 Monitoring Well Installation

On December 11, 1990, one two-inch diameter monitoring well (MW-A) was installed approximately 15 feet south of the former waste oil UST (see **Figure 2** and map in **Appendix A**). Groundwater was first encountered at a depth of approximately 33 feet bgs. The well was installed to a depth of 45 feet bgs and screened from 25 feet to 45 feet bgs. The boring log and well construction data are contained in **Appendix B**. Depth to groundwater in the well on December 13, 1990 was 24 feet bgs and 19.40 feet on December 18, 1990. A groundwater sample collected on December 18, 1990 contained 73 ug/l TPH-D. TPH-G , TOG, and BTEX compounds were below the laboratory detection limit.

4.5 Baseline Site Assessment

A baseline site assessment was performed in October 2003 as part of property transfer. Five borings (SB-1 through SB-5; **Figure 2**) were drilled adjacent to the site dispensers, fuel USTs, and new waste oil UST. Borings SB-1 through SB-3 were drilled to depths of 44 feet, 54 feet, and 54 feet bgs, respectively. Borings B-4 and B-5 were drilled to a depths of 24 feet and 29 feet, respectively. Boring logs are included in **Appendix B**. Total purgeable petroleum hydrocarbons (TPPH) was only detected in one soil sample (SB-3 @ 45') at 1,100 mg/kg. Boring SB-2 was located adjacent to the southern dispenser island. Benzene and fuel oxygenates were not detected in any soil sample. A summary of soil analytical data is found on **Table 1**.

Groundwater samples were collected from borings SB-1, SB-4, and SB-5. TPPH, BTEX compounds, and fuel oxygenates were below the laboratory detection limit in the samples from borings SB-1 and SB-4. The groundwater sample from boring SB-5 located adjacent to the waste oil UST was analyzed for lead and TOG. Lead was detected at 0.18 milligrams per liter (mg/l). TOG was below the laboratory detection limit. Groundwater analytical data is summarized on **Table 2**.

4.6 Removal of Waste Oil UST (April 2008)

The second generation waste oil tank (WOT) was removed in April 2008. A total of four soil samples were collected from the WOT cavity (WO1 – WO4). One base sample was collected from beneath the WOT at a depth of 9.0 feet bg, and three sidewall samples were collected at a depth of either 6.5 or 7.0 feet bg. A fourth sidewall sample, from the southeast wall of the pit, was unable to be collected due to proximity of the station building. A composite soil sample (Composite) was also collected from materials stockpiled during removal and sampling activities. A map of sample locations and the laboratory analytical report for soil data are both contained in **Appendix A**.

No petroleum hydrocarbons (including TPH-D) or fuel oxygenates, total oil and grease, VOCs, SVOCs, or PCBs were detected in any of the four soil samples, or the composite sample. Samples were also analyzed for CAM 17 metals, and each of the five samples contained arsenic at a concentration above the RWQCB ESL of 1.5 mg/kg (commercial). Concentrations ranged from 3.2 mg/kg to 6.2 mg/kg, and appear to represent background conditions at the site. All other CAM 17 metal detections were below the commercial ESLs set by the RWQCB.

No over-excavation activities were conducted, the WOT was not replaced, and the stockpiled materials were backfilled into the remaining cavity following receipt of laboratory results.

4.7 Groundwater Monitoring Data

Site groundwater monitoring has been performed since December 1990 using well MW-A. Samples are collected on an annual basis and analyzed for TPH-D, TPH-G, BTEX compound, and methyl tert butyl ether (MTBE). Since February 2003, groundwater samples have also been analyzed for ethanol, ethylene dibromide, 1,2-dichloroethane, TOG, bromo-dichloromethane, bromoform, bromomethane, and carbon tetrachloride. The following compounds have been included in the monitoring program since February 2004; chlorobenzene, chloroethane, chloroform, chloromethane, dibromochloromethane, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, dichloro-difluoromethane, 1,1-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and 1,2-dichloropropane.

All compounds have been below the laboratory detection limit with the exception of TPH-D and sporadic detections of toluene, xylene, and MTBE. TPH-D has been detected in seven of twenty-two samples at concentrations ranging from 60 ug/l to 131 ug/l. All volatile organic compounds were below the laboratory detection limit in the March 2008 sample including 1,1,1-trichloroethene (TCE) and tetrachloroethene (PCE).

4.8 Summary

A release occurred prior to 1990 from the former waste oil UST. There is no indication of a significant release from fuel USTs, dispenser islands, or product piping.

5.0 FATE AND TRANSPORT CHARACTERISTICS

The following sections describe potential contaminant migration pathways for petroleum hydrocarbons. Plume migration and contaminant concentration trends are discussed.

5.1 Underground Utility Conduits

The depth to groundwater below the site is approximately 33 feet bgs far below the depth of utility trenches. A City of Oakland sewer easement crosses the west corner of the site. Kaprealian Engineering, Inc. (KEI) in their report dated January 21, 1991, stated that City of Oakland Public Works utility maps show the sewer as a flow line at the northwest perimeter of the site of approximately 146.5 feet mean sea level (msl) (3.5 feet deep) with a flow line near the southwest perimeter of the site at approximately 142.5 feet msl (7.5 feet deep). The location of other on-site underground utilities are shown on maps in **Appendix A.**

5.2 Soil Migration Pathways

Soils beneath the site area are generally fine-grained and do not provide pathways for rapid spread of contaminants. Soil analytical data indicates that migration of petroleum hydrocarbons from the former waste oil UST has been limited due to surrounding clay soil. The mass of soil containing residual petroleum hydrocarbons appears small. Petroleum hydrocarbons were below the laboratory detection limit in soil samples from borings EB1, EB2, and SB-5 located in the area of the former waste oil UST (**Figure 2**). TOG was detected in the one soil sample from the boring for well MW-A at 36 mg/kg. The sample (32.5 feet bgs) was from near the top the saturation zone and is thus reflective of groundwater rather than soil conditions.

5.3 Hydrogeologic Pathways

Migration of dissolved contaminants through generally fine-grained soil appears to be limited. The flow gradient can not be determine using the one site monitoring well. Groundwater flow velocity through silt and clay typical of the site is on the order of 1-foot per year.

The groundwater flow rate beneath the site can be approximated based on the hydraulic conductivity of the soil, groundwater flow gradient and effective soil porosity. The linear groundwater flow rate or velocity (V) can be calculated from the formula:

$V = (K \times I)/N$

where K = soil coefficient of hydraulic conductivity
I = groundwater gradient
N = effective soil porosity

The predominant soil types beneath the site are silt and clay. The average K for a silt is 1×10^{-5} centimeters per second (cm/sec). The average K for clay is 1×10^{-7} cm/sec. (Freeze and Cherry, 1979). The effective porosity of a silt or clay is estimated at 20%. A typical hydraulic gradient is on the order of 0.01. Using the above estimated parameters, a groundwater velocity of less than one foot per year is

calculated. The flow rate for dissolved petroleum hydrocarbons is typically significantly slower than the groundwater due to physical and chemical interactions with the soil matrix and biological processes. The migration rate through scattered sand and gravel may be several orders higher. If the release from the waste oil UST occurred prior to 1990 (20 years), a migration distance of approximately 20 feet is estimated which is consistent with groundwater analytical data.

5.3 Contaminant Migration Model

It appears that a release occurred at some undetermined time from the former waste oil USTs removed in 1990. The distance from the bottom of the UST pit to the top of groundwater was approximately 25 feet. Petroleum hydrocarbons moved slowly downward by gravity through silt and clay soil until encountering the capillary fringe of saturated soils at a depth of approximately 30 feet bgs. Once contaminants entered the groundwater, they were dissolved and began migrating with the groundwater. Migration was very slow. Borings EB1 and EB2 were located within approximately 20 feet south of the former waste oil UST. Groundwater samples from borings EB1 collected in July 1990 contained only 6.7 ug/l TPH-D. TPH-G, TOG, and benzene were below the laboratory detection limit in both samples. Well MW-A is located approximately 25 feet south of the former waste oil USTs. The well is sampled annually. Historic groundwater monitoring data is contained in **Appendix C**. TPH-D has only sporadically been detected. TPH-D concentrations since 1990 have ranged from 60 ug/l to 131 ug/l with only two samples exceeding 100 ug/l (February 1996 and March 2001). The California Regional Water Quality Control Board San Francisco Bay Region (RWQCB) has established an Environmental Screening Level (ESL) for middle distillate petroleum hydrocarbons in groundwater of 210 ug/l.

5.4 Concentration Trends

As described above, petroleum hydrocarbons are only sporadically detected in the site monitoring well MW-A. Historic groundwater monitoring data is contained in **Appendix C**.

6.0 SITE REMEDIATION

In February 1990, the waste oil UST pit was over-excavated to 16 feet bgs and 35 feet to the east, 10 feet to the west, 15 feet to the south, and 2 feet to the north. Approximately 50 cubic yards of impacted soil were removed. Further soil excavation could not be performed due to underground utilities and the site building.

7.0 POTENTIAL SENSITIVE RECEPTORS

The following sections evaluate the various potential impacts to sensitive receptors from petroleum hydrocarbons detected in soil and groundwater.

7.1 Environmental Screening Levels

The RWQCB has published Environmental Screening Levels (ESLs) for chemicals commonly found in soil and groundwater at sites where releases of chemicals have occurred. The RWQCB notes "The ESLs are considered to be conservative." The tables below compare site specific soil and groundwater concentrations for TPH-G, TPH-D, benzene, and tetrachloroethene (PCE) with ESLs for various potential sensitive receptors. The ESL tables for various sensitive receptors as found in the November 2007 publication are referenced.

	ESL Table	TPH-G (mg/kg)	TPH-D (mg/kg)	Benzene (mg/kg)	PCE (mg/kg)
Maximum Concentration Detected in Soil Sample		**220 (SWA @9')**	**1,400 (SWA @ 9')**	**2.3 (SWA @9')**	**160 (SWA @ 9')**
Groundwater Protection (shallow soils <3 meters)*	A	83	83	0.044	0.34
Groundwater Protection (deep soils >3 meters)*	C	83	83	0.044	0.70
Direct Exposure - Residential	K-1	110	110	0.12	0.34
Direct Exposure – Commercial	K-2	450	150	0.27	0.85
Direct Exposure – Construction/Trench Workers	K-3	4,200	150	12	22

* Ingestion. Groundwater considered a current or potential source of drinking water.

	ESL Table	TPH-G (ug/L)	TPH-D (ug/l)	Benzene (ug/L)	PCE (ug/l)
Concentration Groundwater; 2007-2008; Well MW-A		**<50**	**92**	**<0.30**	**<0.5**
Potential Vapor Intrusion - Residential	E-1	NA	NA	540	120
Potential Vapor Intrusion - Commercial	E-1	NA	NA	1,800	1,800
California Maximum Contaminant Level (MCL)	F-3	210*	210*	1.0	5

* No MCL; determined as non-carcinogenic effects

The maximum soil concentrations for TPH-G, TPH-D, benzene, and PCE exceed the ESLs for leaching to groundwater considered as a current or potential source of drinking water and for direct exposure. Soil samples exceeding the ESLs were from the sidewalls of the excavation for the former waste oil UST. The site specific conditions are considered to mitigate these exceedances. The site is underlain by silt and clay that impede contaminant leaching to groundwater. PCE and 1,1,1-TCA were detected in soil samples from the sidewalls of the waste oil UST excavation (**Table 1**) but not detected in underlying groundwater.

Metals were detected in soil sample W01 from the initial base of the waste oil UST excavation (6 feet bgs). The following metals were detected; chromium at 8.3 mg/kg, lead at 340 mg/kg, and zinc at 70 mg/kg. The corresponding ESLs for soils at a depth of less than 10 feet overlying useable groundwater and residential land use are 750 mg/kg for chromium III, 8 mg/kg for chromium VI, 200 mg/kg for lead, and 600 mg/kg for zinc. The ESL is exceeded for lead, however, the excavation was later deepened to 16 feet bgs. Migration of residual lead would be limited by the clay soil underlying the area.

7.2 Indoor Air Inhalation - Soil

ESLs have not been established for protection of indoor air from impacted soil. The RWQCB recommends direct measurement of soil gas concentrations in soil. Impacted soil exceeding the TPH-D and TPH-G ESLs for indoor soil vapor inhalation may remain under the western portion of the site building. The upward migration of any petroleum hydrocarbons remaining in soil will be limited due to the silt/clay nature of site soils.

7.3 Impact to Drinking Water Supply Wells

The California Department of Water Resources Geotracker database indicates the presence of four active water wells nearby the site. The four active wells are reported to be located in East Bay Regional Park District land, located approximately 2,193 feet northeast of the site.

8.0 SUMMARY

Delta has prepared a SCM that describes the occurrence, migration, and fate of petroleum hydrocarbons previously identified beneath the site. The following are the key observations and conclusions;

- Site soils are generally fine-grained consisting of silt and clay. Deposits of silty sand and silty gravel are scattered within the finer grained soil.

- It appears that the shallow groundwater encountered on-site represents a perched zone, or possibly confined conditions.

- Groundwater was typically first encountered in some site borings at a depth of approximately 33 feet bgs. Stabilized levels in the single monitoring well have risen from a depth of approximately 20 feet below top of casing initially to approximately 13 feet BTOC in March 2008. The well screen has been drowned since installation by at least 5 feet.

- A release of chemicals from the site waste oil UST appears to have occurred prior to 1990. The UST was removed in December 1989. Soils in the excavation sidewalls contained TPH-D (1,400 mg/kg), TOG (17,000 mg/kg), PCE (160 mg/kg), and 1,1,1-TCA (5.8 mg/kg). Approximately 50 cubic yards were removed from the excavation. A confirmation soil sample from the base of the excavation contained only 74 mg/kg TPH-D, 910 mg/kg TOG. PCE and 1,1,1-TCA were not detected in the sample.

- Further soil excavation in the area of former waste oil UST could not be performed due to underground utilities to the south and the site building to the north.

- A comparison of TPH-G, TPH-D, benzene, and PCE concentrations in site soil in 1990 indicates that a limited amount of soil in 1990 exceeded the RWQCB ESLs for groundwater protection and direct contact. Soil with TPH-G, TPH-D, benzene, and PCE may exist under the western portion of the site building. Current soil concentrations are unknown.

- An area of residual impacted soil appears to exist in the immediate area beyond the excavation limits for the former waste oil UST.

- Impact to groundwater in the area of the former waste oil UST has been minimal. Groundwater samples from well MW-A, located within approximately 25 feet of the former waste oil UST, have only contained TPH-D at concentrations generally below 100 ug/l. TPH-G, BTEX compounds, fuel oxygenates, and volatile organic compounds have consistently been below the laboratory detection limit.

- A release of petroleum hydrocarbons from the second generation fuel USTs appears to have occurred since installation in 1990, and prior to 2003. A soil sample collected in October 2003 from boring SB3, located immediately adjacent and east of the fuel USTs, contained 1,100 mg/kg of TPH-G at a depth of 15 feet bgs. The extent of impacted soil in this area is undefined.

- Groundwater was not encountered in boring SB3.
- A grab groundwater sample collected in 2003 from boring SB5, located adjacent to the second generation WOT, contained 180 ug/l TOG.
- No soil impacts were observed during removal of the second generation WOT in April 2008.

9.0 RECOMMENDATIONS

Delta provides the following recommendations:

Advance a total of four boreholes on-site in order to:

- Collect soil samples adjacent to the former WOT over-excavation limits, both west of sidewall sample SWD and south of sidewall sample SWC, to evaluate the mass of residual impacted soils.

- Collect soil and groundwater samples to a depth of approximately 40 feet bgs adjacent to the former second generation WOT to evaluate the detection of TOG in groundwater from boring SB-5 in 2003.

- Collect soil and groundwater samples to a depth of approximately 40 feet bgs adjacent to the fuel UST complex to evaluate the detection of TPH-G in soil in boring SB-3 in 2003.

Review the site conditions for case closure based on limited remaining impacted soil, clay soils beneath the site, removal of the source of petroleum hydrocarbons, and minimal impact to underlying groundwater.

10.0 LIMITATIONS

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. Delta will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Delta makes no express or implied warranty as to the contents of this report.

11.0 REFERENCES

California Department of Water Resources, *Bulletin 118 Updated 2003, California's Groundwater*, October 2003.

Freeze, R.A. and Cherry, J.A., Groundwater, Prentice Hall, 1979.

Gettler-Ryan Inc., *Request for Closure at ConocoPhillips (76) Service Station No. 5781, 3535 Pierson Street, Oakland, California,* July 14, 2003.

Kaprealian Engineering Incorporated, *Preliminary Subsurface Investigation at Unocal Serrvice Station #5781, 3535 Pierson Street, Oakland, California,*, May 21, 1990.

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TRC, *Baseline Site Assessment Report, 76 Station #5781, 3535 Pierson Street, Oakland, California,* December 3, 2003.

TRC, *Quarterly Status Report and Request for Closure Review Status, Second Quarter 2007, 76 Service Station #5781, 3535 Pierson Street, Oakland, California, Alameda County,* July 31,2007..

TABLES

TABLE 1
SUMMARY OF SOIL ANALYTICAL DATA
ConocoPhillips Station No. 5781
3535 Pierson Street, Oakland, CA

Sample ID	Date	Sample Depth (feet)	TPH-D (mg/kg)	TPH-G (mg/kg)	TOG (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	Ethyl-Benzene (mg/kg)	Total Xylenes (mg/kg)	Oxygenates (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)	ETHANOL (mg/kg)	OTHER (mg/kg)
UST and product piping samples														
A1	12/14/1989	12.5	NA	**3.5**	NA	<0.05	<0.1	<0.1	<0.1	NA	NA	NA	NA	
B1	12/14/1989	12.5	NA	<1.0	NA	<0.05	<0.1	<0.1	<0.1	NA	NA	NA	NA	
A2/B2	12/14/1989	12.5	NA	**5.8**	NA	**0.1**	<0.1	<0.1	<0.1	NA	NA	NA	NA	
SW1	12/14/1989	10.5	NA	**15**	NA	<0.05	<0.1	<0.1	<0.1	NA	NA	NA	NA	
SW2	12/14/1989	10.5	NA	**46**	NA	**0.65**	<0.1	<0.1	<0.1	NA	NA	NA	NA	
P1	12/14/1989	5.5	NA	<1.0	NA	<0.05	<0.1	<0.1	<0.1	NA	NA	NA	NA	
P2	12/14/1989	6	NA	<1.0	NA	<0.05	<0.1	<0.1	<0.1	NA	NA	NA	NA	
WO1	12/14/1989	6	**8,300**	**670**	**48,000**	**5.4**	**15**	**2.3**	**17**	NA	NA	NA	NA	**1,2-DCB (10), PCE (77), 1,1,1-TCA (15)**
														Cr (8.3), Pb (340), Zn (70)
Over-excavation samples														
WO (16)	2/22/1990	16	**74**	**15**	**910**	**0.06**	<0.10	**0.10**	**2**	NA	NA	NA	NA	**All HVOCs below detection limit**
SWA	2/22/1990	9	**1,400**	**220**	**17,000**	**2.3**	**2.1**	**7.3**	**23**	NA	NA	NA	NA	**PCE (160)**
SWB	2/22/1990	10	<1	**2**	<50	<0.05	<0.10	<0.10	**0.1**	NA	NA	NA	NA	**PCE (56); 1,1,-TCA (5.8)**
SWC	2/22/1990	10	**460**	**63**	**4,100**	**0.31**	**0.33**	**1.3**	**2.2**	NA	NA	NA	NA	**PCE (56)**
SWD	2/22/1990	10	**360**	**40**	**6,400**	**0.32**	<0.10	**0.49**	**4**	NA	NA	NA	NA	**PCE (40), 1,1,1-TCA (5.8)**
Soil borings														
MW1	4/9/1990	5	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
MW1	4/9/1990	9.5	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
MW1	4/9/1990	15	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
MW1	4/9/1990	20	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
MW1	4/9/1990	25	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
MW1	4/9/1990	30	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
MW1	4/9/1990	35	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
MW1	4/9/1990	40	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
MW1	4/9/1990	45	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
MW1	4/9/1990	50	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
MW2	4/9/1990	5	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
MW2	4/9/1990	9.5	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
MW2	4/9/1990	15	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
MW2	4/9/1990	20	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
MW2	4/9/1990	25	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
MW2	4/9/1990	30	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
MW2	4/9/1990	35	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
MW2	4/9/1990	39.5	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
MW3	4/10/1990	5	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
MW3	4/10/1990	10	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
MW3	4/10/1990	15	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	

Sample ID	Date	Sample Depth (feet)	TPH-D (mg/kg)	TPH-G (mg/kg)	TOG (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	Ethyl-Benzene (mg/kg)	Total Xylenes (mg/kg)	Oxygenates (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)	ETHANOL (mg/kg)	OTHER (mg/kg)
MW3	4/10/1990	20	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
MW3	4/10/1990	25	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
MW3	4/10/1990	30	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
MW3	4/10/1990	35	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
MW3	4/10/1990	40	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
EB1	7/5/1990	8.5	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
EB1	7/5/1990	13.5	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
EB1	7/5/1990	18.5	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
EB1	7/5/1990	23.5	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
EB1	7/5/1990	28.5	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**1,1,1-TCA (6.2)**
EB2	7/6/1990	9.5	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
EB2	7/6/1990	12.5	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
EB2	7/6/1990	16.5	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
EB2	7/6/1990	22	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
EB2	7/6/1990	26.5	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
EB2	7/6/1990	32.0	<1.0	<1.0	ND	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	
MW-A	12/11/1990	32.5	<1.0	<1.0	**36**	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	**All HVOCs below detection limit**
SB-1	10/30/2003	35.0	<1.0	<1.0	NA	<0.005	<0.005	<0.005	<0.005	ND	<0.005	<0.005	<0.1	
SB-2	10/30/2003	15.0	<1.0	<1.0	NA	<0.005	<0.005	<0.005	<0.005	ND	<0.005	<0.005	<0.1	
SB-2	10/30/2003	50.0	<1.0	<1.0	NA	<0.005	<0.005	<0.005	<0.005	ND	<0.005	<0.005	<0.1	
SB-3	10/30/2003	15.0	**1,100**	<1.0	NA	<0.005	<0.005	**16**	**50**	ND	<0.005	<0.005	<0.1	
SB-3	10/30/2003	45.0	<1.0	<1.0	NA	<0.005	<0.005	<0.005	<0.005	ND	<0.005	<0.005	<0.1	
SB-4	10/30/2003	15.0	<1.0	<1.0	NA	<0.005	<0.005	<0.005	<0.005	ND	<0.005	<0.005	<0.1	
SB-5	10/30/2003	20.0	NA	NA	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	

TPH-G= Total petroleum hydrocarbons as Gasoline Range Organics-C6-C12
TPH-D = Total petroleum hydrocarbons as Diesel Range Organics
TOG= Total oil and grease
BTEX = Benzene, toluene, ethylbenzene, total xylenes by EPA Method 8260B
MTBE = Methyl tertiary butyl ether by EPA Method 8260B
TBA = Tertiary butyl alcohol by EPA Method 8260B
1,2,4 = 1,2,4- Trimethylbenzene
DIPE = Di-isopropyl ether by EPA Method 8260B
TAME = Tertiary amyl methyl ether by EPA Method 8260B
1,2-DCA = 1,2-dichloroethane (also known as ethylene dichloride) by EPA Method 8260B
EDB = Ethylene dibromide (also known as 1,2-dibromoethane) by EPA Method 8260B
1,1 DCB = 1,1-dichlorobromide
PCE= tetrachloroethene
1,1,1-TCE= 1,1,1-trichloroethene
HVOCs= Halogenated volatile organic compounds by EPA Method 8010

NA = Not analyzed
ND = Not detected (detection limit not given)

TABLE 2

SUMMARY OF GROUNDWATER ANALYTICAL DATA
ConocoPhillips Station No. 5781
3535 Pierson Street, Oakland, California

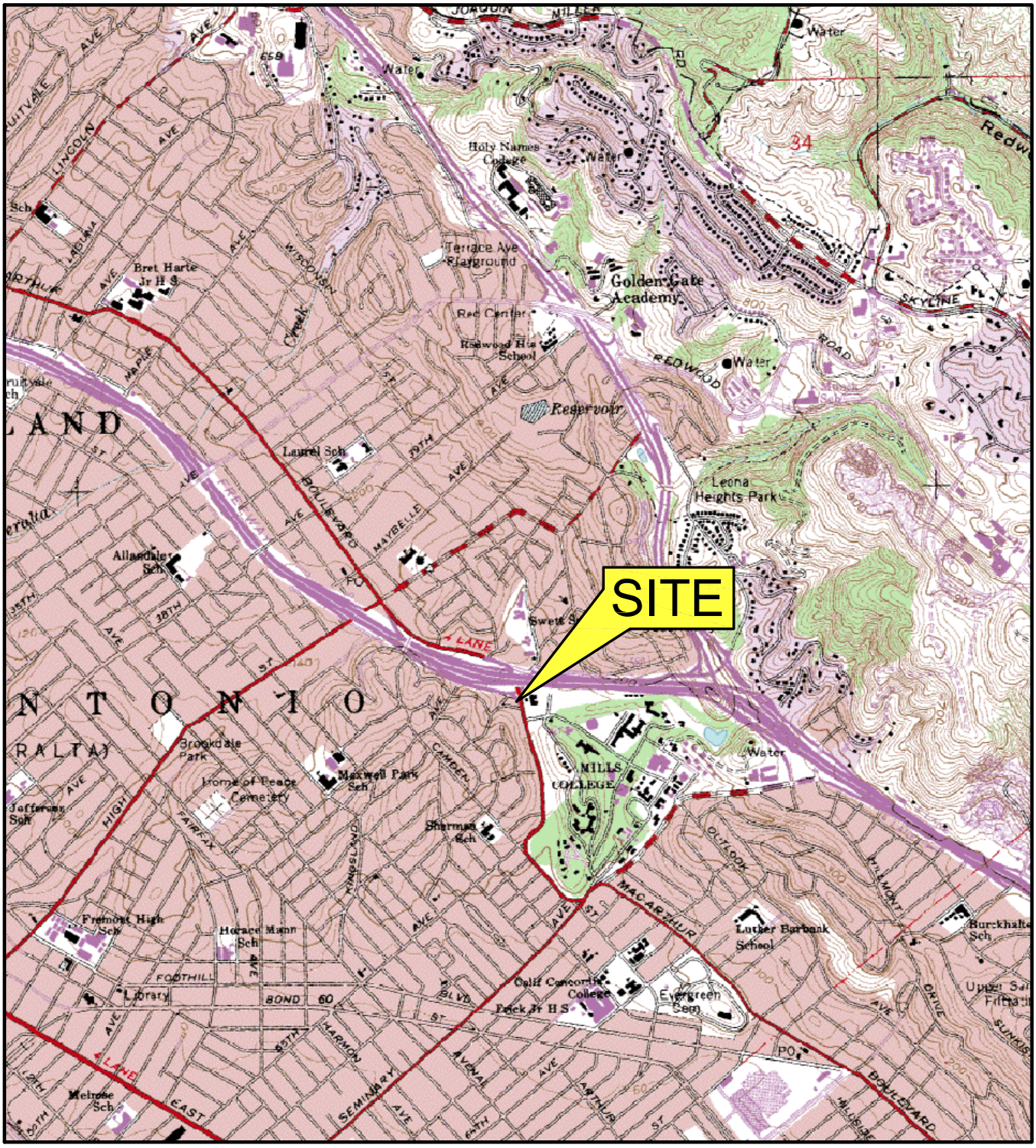
Sample ID	Date	TPPH (ug/l)	TPH-D (µg/l)	TPH-G (µg/l)	TOG (ug/l)	BENZENE (µg/l)	TOLUENE (µg/l)	Ethyl-Benzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)	TBA (µg/l)	ETBE (µg/l)	TAME (µg/l)	DIPE (µg/l)	1,2-DCA (µg/l)	EDB (µg/l)	ETHANOL (µg/l)
EB1	7/6/90	NA	**6.7**	<30	ND	<0.3	**1.5**	<0.3	**1.0**	NA	NA	NA	NA	NA	NA	NA	NA
EB2	7/6/90	NA	<50	<30	ND	**0.61**	**1.5**	<0.3	**1.0**	NA	NA	NA	NA	NA	NA	NA	NA
MW-A	12/18/90	NA	**73**	<30	ND	<0.3	<0.3	<0.3	<0.3	NA	NA	NA	NA	NA	NA	NA	NA
SB-1	10/30/03	<50	NA	NA	NA	<0.05	<0.05	<0.05	<1.0	<2	<100	<2	<2	<2	<2	<2	<500
SB-4	10/30/03	<50	NA	NA	NA	<0.05	<0.05	<0.05	<1.0	<2	<100	<2	<2	<2	<2	<2	<500
SB-5	10/30/03	<50	NA	NA	**180**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TPPH = Total purgeable petroleum hydrocarbons
TPH-D = Total petroleum hydrocarbons as Diesel Range Organics
TPH-G= Total petroleum hydrocarbons as Gasoline Range Organics-C6-C12
TOG = Total oil and grease by method 1664
BTEX = Benzene, toluene, ethylbenzene, total xylenes by EPA Method 8260B
MTBE = Methyl tertiary butyl ether by EPA Method 8260B
TBA = Tertiary butyl alcohol by EPA Method 8260B
DIPE = Di-isopropyl ether by EPA Method 8260B
TAME = Tertiary amyl methyl ether by EPA Method 8260B
1,2-DCA = 1,2-dichloroethane (also known as ethylene dichloride) by EPA Method 8260B
EDB = Ethylene dibromide (also known as 1,2-dibromoethane) by EPA Method 8260B
Ethanol analyzed by EPA Method 8260B

ug/l = micrograms per liter
ND = not detected above the laboratory detection limit
NA = not applicable / not analyzed
Bold = detected compound concentration

EPA = Environmental Protection Agency

FIGURES



OAKLAND EAST QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)

QUADRANGLE LOCATION

North

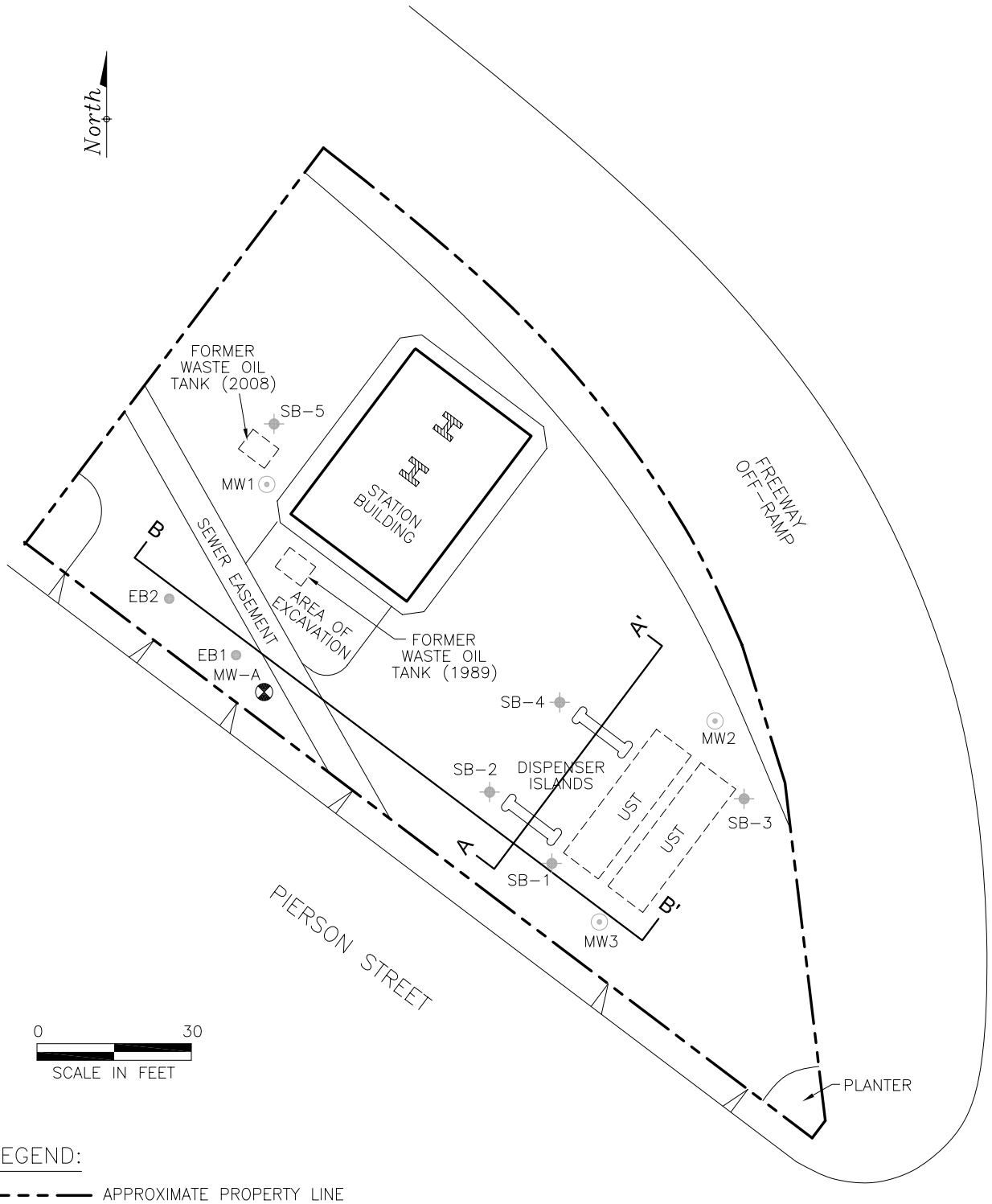
0 2000

SCALE IN FEET

FIGURE 1
SITE LOCATION MAP
CONOCOPHILLIPS SITE NO. 5781
3535 PIERSON STREET
OAKLAND, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
C105781	DB	DD
DATE	REVIEWED BY	FILE NAME
11/18/08		5781-SL

DELTA



LEGEND:

- APPROXIMATE PROPERTY LINE
- HYDRAULIC LIFT
- MONITORING WELL
- EXPLORATORY BORING (APRIL 1990) (NOT CONVERTED TO MONITORING WELL)
- EXPLORATORY BORING (JULY 1990)
- SOIL BORING (OCTOBER 2003)
- A — A' LOCATION OF SECTION LINE

FIGURE 2
SITE PLAN
CONOCOPHILLIPS STATION NO. 5781
3535 PIERSON STREET
OAKLAND, CALIFORNIA

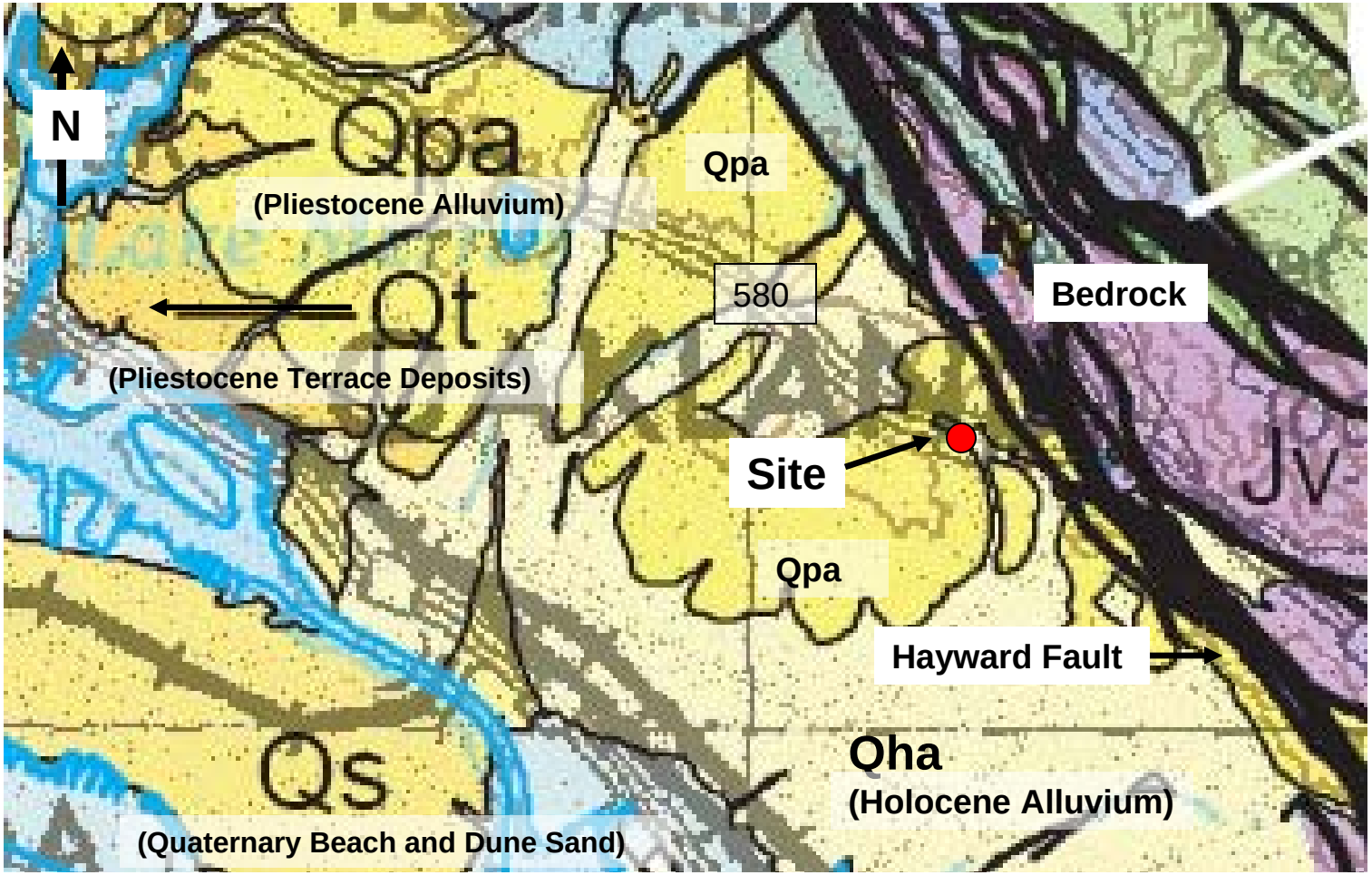
PROJECT NO.	PREPARED BY	DRAWN BY
C105781	MC	DD
DATE	REVIEWED BY	FILE NAME
10/1/08	DB	5781–Site

DELTA

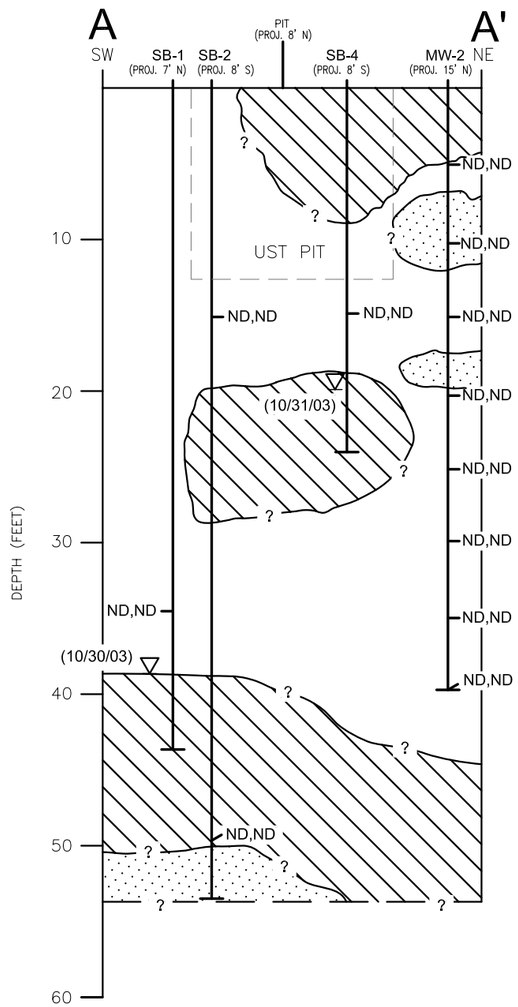
FIGURE 3 – REGIONAL GEOLOGIC MAP

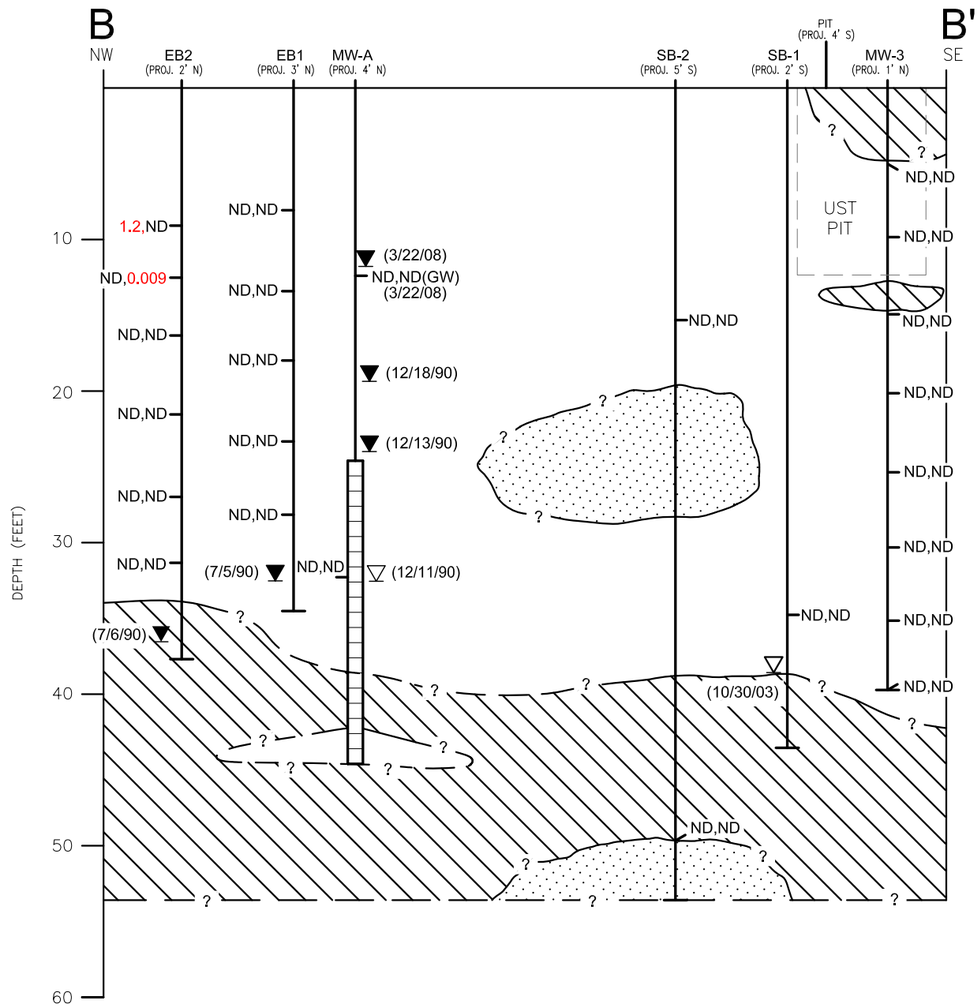
COP Station 5781

3535 Pierson Street, Oakland, CA



California Geological Survey
Scientific Investigation Map 2918





LEGEND:

BLANK SCREEN CASING 2" DIA.

SCREENED INTERVAL, 0.01" SLOT SIZE

1.2,ND = SOIL TPH–G/BENZENE CONCENTRATION (mg/kg)

ND,ND(GW) = GROUNDWATER TPH–G/BENZENE CONCENTRATION (ug/L) (DATE SAMPLED)

ND = NOT DETECTED ABOVE LABORATORY REPORTING LIMIT

▽ = DEPTH FIRST ENCOUNTERED GROUNDWATER (DATE MEASURED)

▼ = DEPTH OF STATIC GROUNDWATER (DATE MEASURED)

KEY:

LOW PERMEABILITY SOILS

MEDIUM PERMEABILITY SOILS

HIGH PERMEABILITY SOILS

VERTICAL SCALE (FEET) 10

HORIZONTAL SCALE (FEET) 20

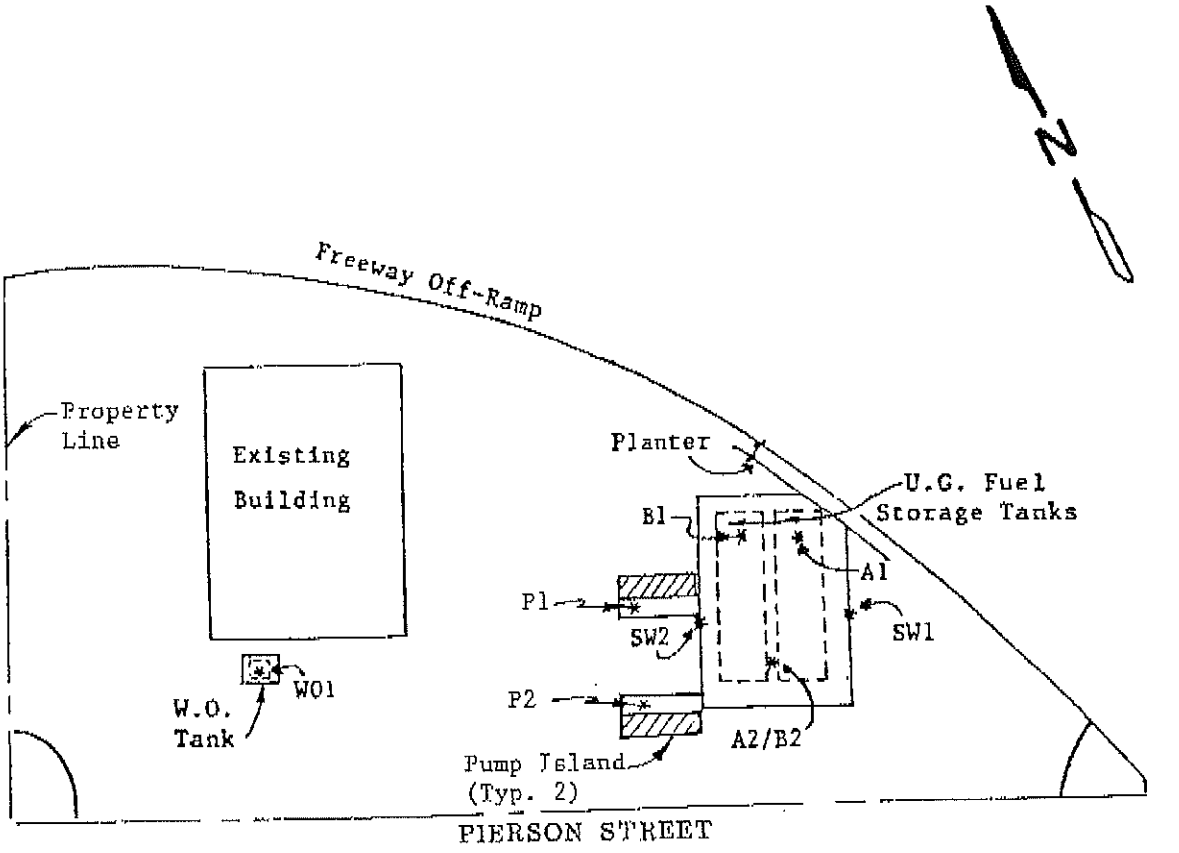
FIGURE 4
GEOLOGIC CROSS SECTIONS A–A' & B–B'
CONOCOPHILLIPS SITE NO. 5781
3535 PIERSON STREET
OAKLAND, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY	
C105781	MC	DD	DELTA
DATE	REVIEWED BY	FILE NAME	
11/14/08	DB	5781–AB	

APPENDIX A

Previous Site Maps and Historic Soil and Groundwater Analytical Data

KAPREALIAN ENGINEERING, INC.
Consulting Engineers
P.O. BOX 996 • BENICIA, CA 94510
(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581



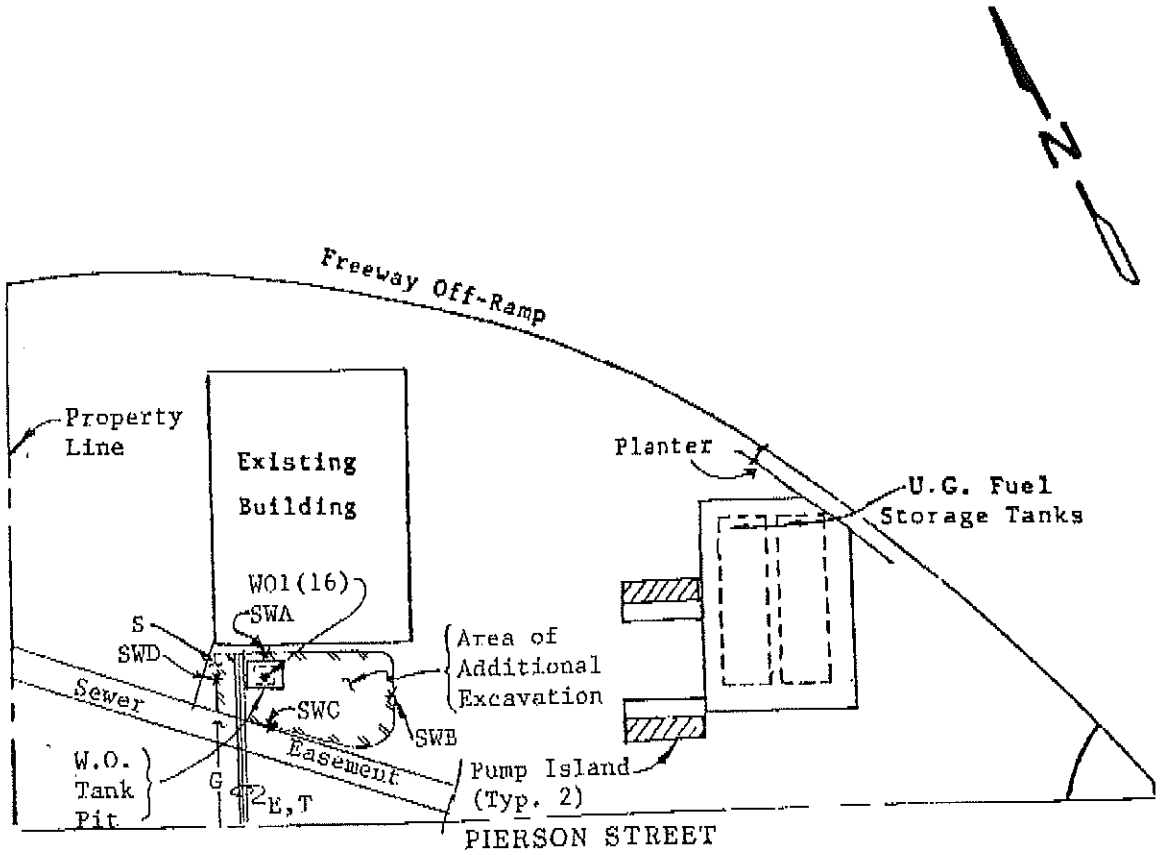
SITE PLAN
Figure 1

LEGEND

* Sample Point Location

Unocal S/S #5781
3535 Pierson Street
Oakland, CA

KAPREALIAN ENGINEERING, INC.
Consulting Engineers
P.O. BOX 996 • BENICIA, CA 94510
(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581



SITE PLAN
Figure 2

LEGEND

* Sample Point Location
E Electrical
T Telephone
G Natural Gas
S Sewer

Unocal S/S #5781
3535 Pierson Street
Oakland, CA

KAPREALIAN ENGINEERING, INC.
Consulting Engineers
P.O. BOX 996 • BENICIA, CA 94510
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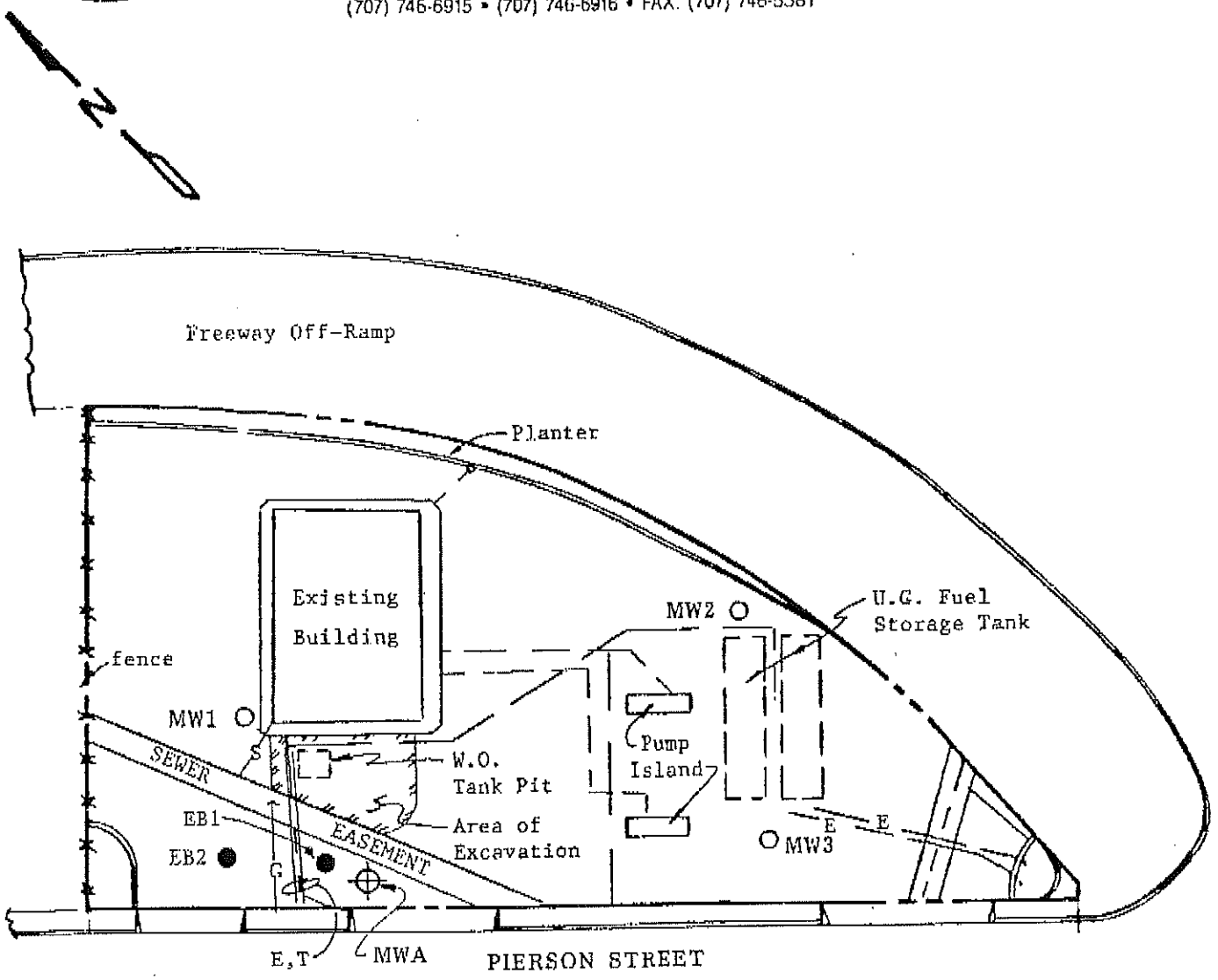


SITE PLAN
Figure 3

0 30 60
Approx. Scale feet

LEGEND

- ● Exploratory Boring (drilled 7/5 & 7/6/90)
- E U.G. Electrical Line
- T U.G. Telephone Line
- G U.G. Natural Gas Line
- S U.G. Sewer Line
- ○ Exploratory Boring (drilled 4/9 & 4/10/90)
- ⊕ Monitoring Well

Unocal Service Station #5781
3535 Pierson Street
Oakland, California

KEI-P89-1204.R8
January 21, 1991

TABLE 3

SUMMARY OF LABORATORY ANALYSES
SOIL

(Collected on December 11, 1990)

Sample Number	Depth (feet)	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene
MWA(32.5)*	32.5	ND	ND	ND	ND	ND	ND
Detection Limits		1.0	1.0	0.0050	0.0050	0.0050	0.0050

* TOG was 36 ppm and all halogenated volatile organics per EPA method 8010 were non-detectable.

ND = Non-detectable.

Results in parts per million (ppm), unless otherwise indicated.

KEI-P89-1204.R8
January 21, 1991

TABLE 4

SUMMARY OF LABORATORY ANALYSES
SOIL

(Collected on December 14, 1989 & January 17, 1990)

Sample	Depth (feet)	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethylbenzene
A1	12.5	3.5	ND	ND	ND	ND
B1	12.5	ND	ND	ND	ND	ND
A2/B2	12.5	5.8	0.10	ND	ND	ND
SW1	10.5	15	ND	ND	ND	ND
SW2	10.5	46	0.65	ND	ND	ND
P1	5.5	ND	ND	ND	ND	ND
P2	6.0	ND	ND	ND	ND	ND
WO1*	6	670	5.4	15	17	2.3
Detection Limits		1.0	0.05	0.1	0.1	0.1

* All EPA method 8010 compounds were non-detectable, except 1,2-dichlorobenzene at 10 ppb, tetrachloroethene at 77 ppb, and 1,1,1-trichloroethane at 15 ppb. Metals concentrations were as follows: cadmium non-detectable, chromium 8.3 ppm, lead 340 ppm, and zinc 70 ppm. TPH as diesel showed 8,300 ppm, and TOG showed 48,000 ppm.

ND = Non-detectable.

Results in parts per million (ppm), unless otherwise indicated.

KEI-P89-1204.R8
January 21, 1991

TABLE 5

SUMMARY OF LABORATORY ANALYSES
SOIL

(Collected on February 22, 1990)

Sample	Depth (feet)	TOG	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene
WO1(16)*	16.0	910	74	15	0.060	ND	2.0	0.10
SWA**	9.0	17,000	1,400	220	2.3	2.1	23	7.3
SWB*	10.0	ND	ND	2.0	ND	ND	ND	ND
SWC***	10.0	4,100	460	63	0.31	0.33	2.2	1.3
SWD+	10.0	6,400	360	40	0.32	ND	4.0	0.49
Detection Limits		50	1.0	1.0	0.05	0.10	0.10	0.10

* All EPA method 8010 compounds were non-detectable.

** All EPA method 8010 compounds were non-detectable, except tetrachloroethene at 160 ppb.

*** All EPA method 8010 compounds were non-detectable, except tetrachloroethene at 56 ppb.

\+ All EPA method 8010 compounds were non-detectable, except tetrachloroethene at 40 ppb and 1,1,1-trichloroethane at 5.8 ppb.

ND = Non-detectable.

Results in parts per million (ppm), unless otherwise indicated.

KEI-P 9-1204.R8
Janua y 21, 1991

TABLE 6

SUMMARY OF LABORATORY ANALYSES
SOIL

(Collected on April 9 & 10, 1990)

Samp e Numb r	Depth (feet)	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene
MW1( )*	5	ND	ND	ND	ND	ND	ND
MW1(.5)*	9.5	ND	ND	ND	ND	ND	ND
MW1(5)*	15	ND	ND	ND	ND	ND	ND
MW1(.0)*	20	ND	ND	ND	ND	ND	ND
MW1(.5)*	25	ND	ND	ND	ND	ND	ND
MW1(0)*	30	ND	ND	ND	ND	ND	ND
MW1(.5)*	35	ND	ND	ND	ND	ND	ND
MW1(0)*	40	ND	ND	ND	ND	ND	ND
MW1(5)*	45	ND	ND	ND	ND	ND	ND
MW1(.0)*	50	ND	ND	ND	ND	ND	ND
MW2( )	5	ND	ND	ND	ND	ND	ND
MW2(0)	9.5	ND	ND	ND	ND	ND	ND
MW2(2)	12	ND	ND	ND	ND	ND	ND
MW2(5)	15	ND	ND	ND	ND	ND	ND
MW2(0)	20	ND	ND	ND	ND	ND	ND
MW2(.5)	25	ND	ND	ND	ND	ND	ND
MW2(0)	30	ND	ND	ND	ND	ND	ND
MW2(.5)	35	ND	ND	ND	ND	ND	ND
MW2(.0)	39.5	ND	ND	ND	ND	ND	ND
MW3( )	5	ND	ND	ND	ND	ND	ND
MW3(0)	10	ND	ND	ND	ND	ND	ND
MW3(.5)	15	ND	ND	ND	ND	ND	ND
MW3(.0)	20	ND	ND	ND	ND	ND	ND
MW3(.5)	25	ND	ND	ND	ND	ND	ND
MW3(0)	30	ND	ND	ND	ND	ND	ND
MW3(.5)	35	ND	ND	ND	ND	ND	ND
MW3(0)	40	ND	ND	ND	ND	ND	ND
Dete tion Limi s		1.0	1.0	0.0050	0.0050	0.0050	0.0050

* T G and all EPA method 8010 compounds were all non-detectable.

ND = Non-detectable.

Resu ts in parts per million (ppm), unless otherwise indicated.

KEI-P89-1204.R8
January 21, 1991

TABLE 7

SUMMARY OF LABORATORY ANALYSES
SOIL

(Collected on July 5 & 6, 1990)

Sample Number	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene
EB1(8.5)*	ND	ND	ND	0.014	0.0056	ND
EB1(13.5)*	ND	ND	ND	0.015	ND	ND
EB1(18.5)*	ND	ND	ND	0.017	0.024	0.011
EB1(23.5)*	ND	ND	ND	0.011	ND	ND
EB1(28.5)*	ND	ND	ND	0.012	ND	ND
EB2(9.5)*	ND	1.2	ND	0.038	0.016	0.012
EB2(12.5)*	ND	ND	0.0090	0.025	0.0060	ND
EB2(16.5)*	ND	ND	ND	0.021	0.0050	ND
EB2(22)*	ND	ND	ND	0.020	ND	ND
EB2(26.5)*	ND	ND	ND	0.017	ND	ND
EB2(32)	ND	ND	ND	ND	ND	ND
Detection Limits	1.0	1.0	0.0050	0.0050	0.0050	0.0050

* TOG and all EPA 8010 compounds were non-detectable, except 1,1,1-trichloroethane at 6.2 ppb in EB1(28.5).

ND = Non-detectable.

Results in parts per million (ppm), unless otherwise indicated.

KEI-PB9-1204.R8
January 21, 1991

TABLE 8

SUMMARY OF LABORATORY ANALYSES
WATER

(Collected on July 6, 1990)

Sample Number	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethylbenzene
EB1*	6.7	ND	ND	1.5	1.0	ND
EB2*	ND	ND	0.61	1.5	1.0	ND
Detection Limits	50	30	0.3	0.3	0.3	0.3

* TOG and EPA 8010 compounds were non-detectable.

ND = Non-detectable.

Results in parts per billion (ppb), unless otherwise indicated.

KEI-P89-1204.R8
January 21, 1991

TABLE 1

SUMMARY OF GROUND WATER MONITORING AND PURGING DATA

Well #	Elevation of Surface of Well Cover	Depth to Water (feet)	Elevation of Water Table	Product Thickness	Sheen	Gallons Pumped
(Monitored and Developed on December 13, 1990)						
MWA	N/A	24.00	N/A	0	None	30
(Monitored and Sampled on December 18, 1990)						
MWA	N/A	19.40	N/A	0	None	15

N/A = Not applicable.

KEI-P89-1204.R8
January 21, 1991

TABLE 2

SUMMARY OF LABORATORY ANALYSES
WATER

(Collected on December 18, 1990)

Sample Number	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene
MWA*	73	ND	ND	ND	ND	ND
Detection Limits	50	30	0.3	0.3	0.3	0.3

* TOG and halogenated volatile organics (EPA method 8010) were non-detectable.

ND = Non-detectable.

Results in parts per billion (ppb), unless otherwise indicated.

Table 2

Groundwater Analytical Results - Oxygenate Compounds

Tosco (Unocal) Service Station #5781

3535 Pierson Street

Oakland, California

WELL ID	DATE	ETHANOL (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	1,2-DCA (ppb)	EDB (ppb)
MW-A	03/07/01	ND	ND	ND	ND	ND	ND	ND	ND
	02/22/03	<500	<100	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

EXPLANATIONS:

TBA = Tertiary butyl alcohol

MTBE = Methyl tertiary butyl ether

DIPE = Di-isopropyl ether

ETBE = Ethyl tertiary butyl ether

TAME = Tertiary amyl methyl ether

1,2-DCA = 1,2-Dichloroethane

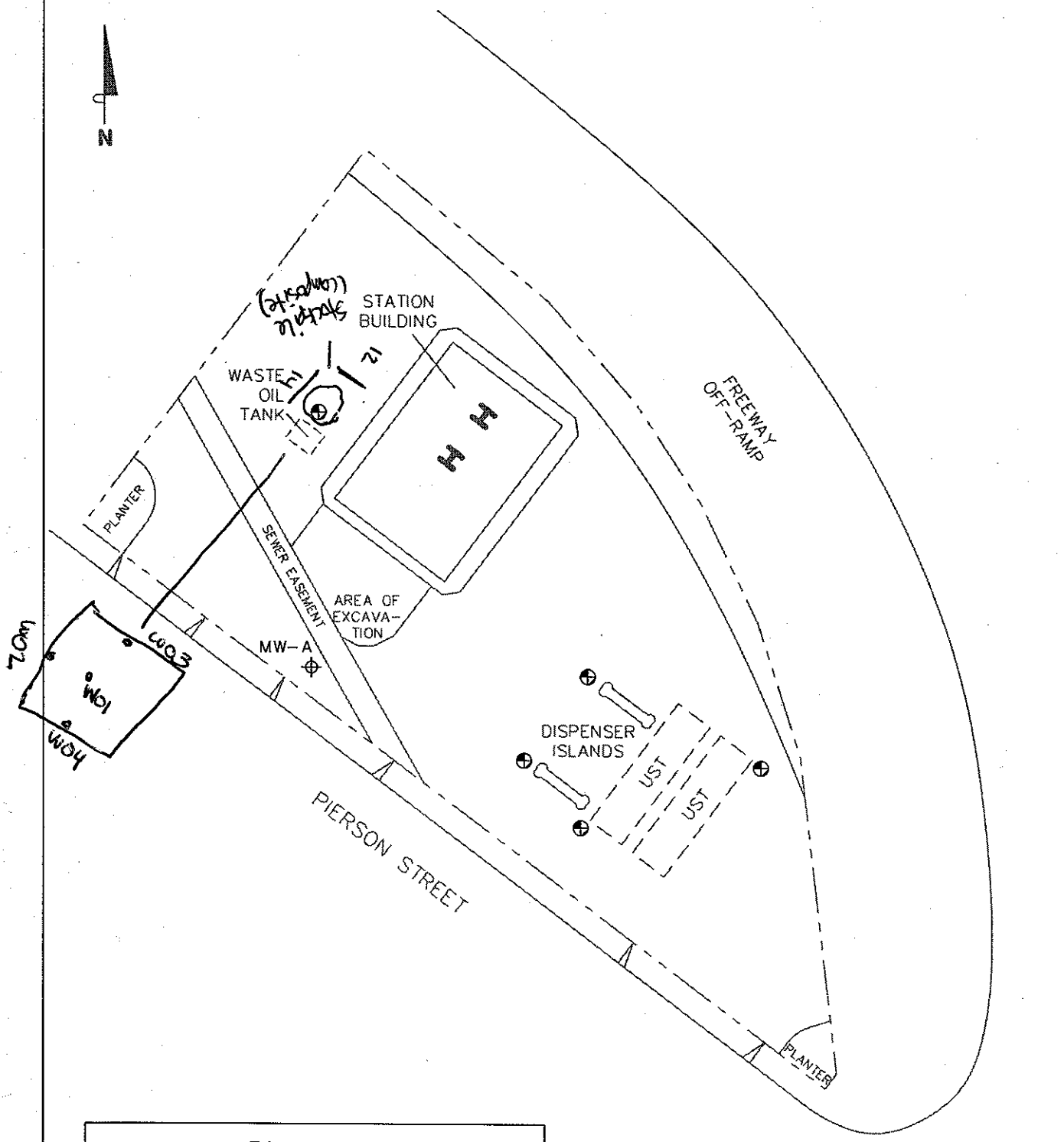
EDB = 1,2-Dibromoethane

(ppb) = Parts per billion

ND = Not Detected

ANALYTICAL METHOD:

EPA Method 8260 for Oxygenate Compounds



LEGEND

- Proposed soil boring
- Approximate property line
- Hydraulic lift
- MW-A Monitoring well

APPROXIMATE SCALE (FEET)

0 30 60

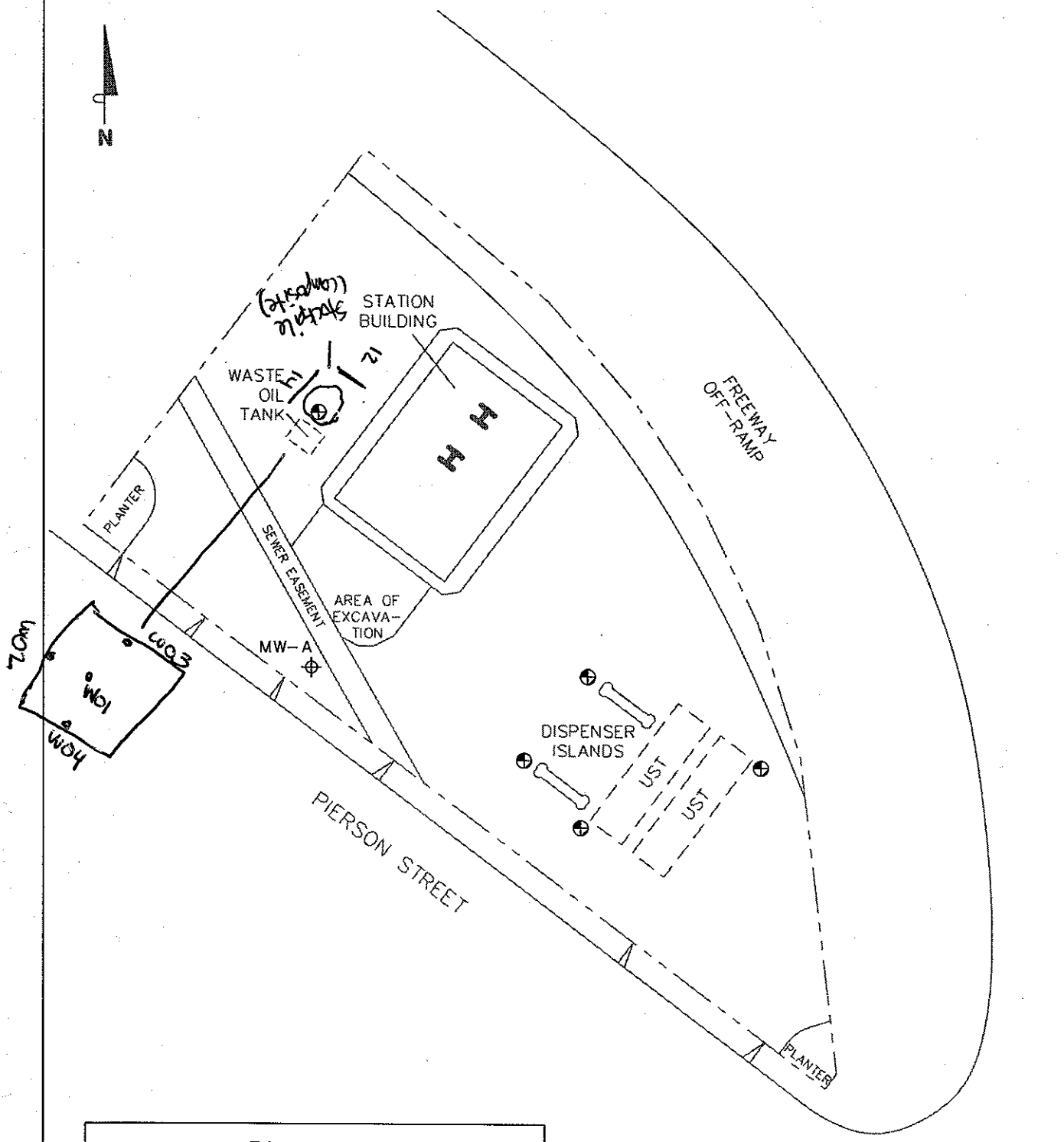
SOURCE: Site plan by Gettler-Ryan, April 2001.

SITE PLAN SHOWING PROPOSED BORINGS

76 Service Station #5781
3535 Pierson Street
Oakland, California

TRC

FIGURE 2



LEGEND

- Proposed soil boring
- Approximate property line
- Hydraulic lift
- MW-A Monitoring well

APPROXIMATE SCALE (FEET)

0 30 60

SOURCE: Site plan by Gettler-Ryan, April 2001.

SITE PLAN SHOWING PROPOSED BORINGS

76 Service Station #5781
3535 Pierson Street
Oakland, California

TRC

FIGURE 2

APPENDIX B

Boring Logs

BORING LOG

Project No. KEI-P89-1204	**Boring & Casing Diameter** 9" 2"	**Logged By** D.L.
Project Name Unocal Oakland - Pierson	**Well Head Elevation** N/A	**Date Drilled** 4/9/90
Boring No. MW1	**Drilling Method** Hollow-stem Auger	**Drilling Company** EGI

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		A. C. Pavement. Sand and Gravel
			CL/ CH	Clay with silt, 5-10% sand, soft, moist, olive brown.
	NOT ENCOUNTERED DURING DRILLING			
2/2/3		5	ML/ MH	Clayey silt, 30% clay, 5-10% coarse-grained sand, soft to firm, moist, very dark grayish brown.
5/7/8		10	CL/ CH	Clay, 5-10% sand, trace silt, stiff, moist, dark brown.
				Clay, as above, except with gravel to 1/2" diameter, 10-15% sand.
12/16/21				Clay, 5-10% sand, very stiff, slightly moist, dark brown, minor organic material
8/16/20		15		
				Clay, as above, trace to 5% silt, dark yellowish brown.
10/17/22				
7/14/22		20		

BORING LOG

Project No. KEI-P89-1204	Boring & Casing Diameter 9" 2"	Logged By D.L.
Project Name Unocal Oakland - Pierson	Well Head Elevation N/A	Date Drilled 4/9/90
Boring No. MW1	Drilling Method Hollow-stem Auger	Drilling Company EGI

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati-graphy USCS	Description
			CL/CH	Clay, trace silt, dark yellowish brown.
			GC	Clayey gravel, 5-10% sand, gravel to 3/8" diameter, dense, moist, dark yellowish brown.
10/16/21				
			CL/ CH	Clay, trace silt and sand, stiff, moist, olive brown, trace organic matter.
9/12/18		25		
9/12/19				
				Clay, as above, trace to 5% sand, trace silt, olive brown to dark brown
12/16/21		30		
				Clay with silt, 15-20% silt, 5% sand, stiff, moist, dark yellowish brown.
7/11/18				
7/14/16		35		
				Silty clay, 5-10% sand, stiff to very stiff, slightly moist, dark yellowish brown.
9/12/17				
9/15/23		40		

BORING LOG

Project No. KEI-P89-1204	**Boring & Casing Diameter** 9" 2"	**Logged By** D.L.
Project Name Unocal Oakland - Pierson	**Well Head Elevation** N/A	**Date Drilled** 4/9/90
Boring No. MW1	**Drilling Method** Hollow-stem Auger	**Drilling Company** EGI

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati-graphy USCS	Description
			CL/ CH	Silty clay, as above.
9/16/26				Sandy clay, 10-15% silt, 30% sand, sand is coarse to fine grained, very stiff, slightly moist, dark yellowish brown.
8/11/16		45		
				Clay, with silt, trace sand, very stiff, slightly moist, dark brown, stiffness increasing with depth.
12/16/18				
11/18/32		50		
		55		
		60		TOTAL DEPTH: 50'

BORING LOG

Project No. KEI-P89-1204	**Boring & Casing Diameter** 9" 2"	**Logged By** D.L.
Project Name Unocal Oakland - Pierson	**Well Head Elevation** N/A	**Date Drilled** 4/10/90
Boring No. MW2	**Drilling Method** Hollow-stem Auger	**Drilling Company** EGI

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		A. C. Pavement and base rock.
			SC	Clayey sand, 20-30% clay, 10-20% silt, sand is coarse-to fine-grained, medium dense, moist, yellowish brown to dark yellowish brown.
2/2/4	NOT ENCOUNTERED DURING DRILLING	5	CL/CH	Sandy clay, 5-10% silt, firm, moist, strong brown, pocketed with clayey sand and other soil, possible fill.
			GC	Clayey gravel with sand, gravel 1 1/2" to 4" diameter, gap graded, 10-15% sand, medium dense, moist, dark yellowish brown.
5/2/2		10	GM	Silty gravel with sand, trace clay, 15% silt, loose, moist, dark yellowish brown, voids in sample. base of fill?
2/2/5			MH	Clayey silt, 10-15% coarse sand, firm, moist, black.
3/4/9		15	CL/CH	Sandy clay, 5-10% gravel to 1/2" diameter, stiff, moist, dark olive gray, very dark grayish brown below 15.5 feet.
			GW-GM	Well graded gravel with silt and sand, trace to 5% clay, medium dense, moist, dakr yellowish brown.
5/7/10		20	GP	Poorly graded gravel below 19.5 feet. Clay below 20.3 feet - See page 2.

BORING LOG

Project No. KEI-P89-1204	**Boring & Casing Diameter** 9" 2"	**Logged By** D.L.
Project Name Unocal Oakland - Pierson	**Well Head Elevation** N/A	**Date Drilled** 4/10/90
Boring No. MW2	**Drilling Method** Hollow-stem Auger	**Drilling Company** EGI

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati-graphy USCS	Description
			CL/CH	Silty clay to clay with silt, 5-15% sand, very stiff, moist, dark yellowish brown to olive brown.
7/10/18		25		Clay, trace silt and sand, very stiff, moist, olive brown, trace organic matter.
9/16/23		30		Sandy clay, 5-10% gravel to 1/2" diameter, hard, moist, dark yellowish brown.
			CL/CH	
9/13/19		35		Sandy clay, trace gravel, less sand than above, moist, dark yellowish brown.
8/12/14		40		TOTAL DEPTH: 40'

BORING LOG

Project No. KEI-P89-1204	**Boring & Casing Diameter** 9" 2"	**Logged By** W.W.
Project Name Unocal Oakland - Pierson	**Well Head Elevation** N/A	**Date Drilled** 4/10/90
Boring No. MW3	**Drilling Method** Hollow-stem Auger	**Drilling Company** EGI

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati-graphy USCS	Description
	NOT ENCOUNTERED DURING DRILLING	0		A. C. Pavement Clay, sand and gravel fill.
			SC	Clayey sand, yellowish brown to olive brown, loose to very loose, moist.
2/2/3		5	CL/ CH	Silty clay, soft to firm, moist, yellowish brown.
2/2/2		10	MH	Clayey silt, 5-10% sand, trace to 5% gravel, soft to firm, moist, black.
			SC	Clayey sand, trace gravel to 1/4" diameter, medium dense, moist, dark yellowish brown.
4/8/13		15	CL/ CH	Sandy clay, 30-35% sand, very stiff, moist, dark yellowish brown.
				Trace of gravel to 5/8" diameter at 19 feet. Clay, trace sand and silt, stiff, moist, olive brown.
		20		

BORING LOG

Project No. KEI-P89-1204	**Boring & Casing Diameter** 9" 2"	**Logged By** W.W.
Project Name Unocal Oakland - Pierson	**Well Head Elevation** N/A	**Date Drilled** 4/10/90
Boring No. MW3	**Drilling Method** Hollow-stem Auger	**Drilling Company** EGI

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati-graphy USCS	Description
4/7/12		25	CL/ CH	Clay and silty clay, dark yellowish brown, very stiff, moist.
8/10/12		30		Clay, trace silt, very stiff, moist, olive brown, homogeneous.
9/12/17		35		Clay, trace of fine well rounded gravel and trace of silt, moist, olive brown, very stiff.
10/17/23		40		Sandy clay, trace to 5% fine gravel, trace to 5% sand, hard, moist, olive brown. TOTAL DEPTH: 40'

BORING LOG

Project No. KEI-P89-1204	**Boring & Casing Diameter** 9" 2"	**Logged By** W.W. DRB
Project Name Unocal 3535 Pierson St. Oakl	**Well Head Elevation** N/A	**Date Drilled** 12/11/90
Boring No. MWA	**Drilling Method** Hollow-stem Auger	**Drilling Company** Woodward Drilling Co.

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati-graphy USCS	Description
		0		Asphalt pavement over sand and gravel.
			CL/ CH	Clay with gravel, gravel to 2-1/2" diameter, 5% sand, moist, yellowish brown. Base of fill.
			ML/ MH	Clayey silt, trace sand, trace fine gravel to 3/8" diameter, moist, firm to stiff, olive brown to olive gray.
4/4/6		5	CL/ CH	Clay, with silt, fine- to medium-grained sand, moist, stiff, brown.
4/9/15		10		Clay, trace subangular gravel to 3/8" diameter, trace sand, moist, very stiff, olive brown.
7/13/21		15		Silty clay, trace organic matter, moist, hard, dark yellowish brown.
9/15		20	CL/ CH to ML/ MH	Silty clay to clayey silt, trace organic matter, moist, hard, light yellowish brown.

BORING LOG

Project No. KEI-P89-1204	Boring & Casing Diameter 9" 2"	Logged By W.W.
Project Name Unocal 3535 Pierson St. Oakl	Well Head Elevation N/A	Date Drilled 12/11/90
Boring No. MWA	Drilling Method Hollow-stem Auger	Drilling Company Woodward Drilling Co.

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati-graphy USCS	Description
/27			CL/ CH to ML/ MH	Silty clay to clayey silt, trace organic matter, moist, hard, light yellowish brown.
			ML/ MH	
		25		
11/18/29				Silt, with clay, trace organic matter, very moist, hard, light yellowish brown.
		30		
6/12/20				Silt with clay, trace organic matter, moist, very stiff to hard, light olive brown mottled with light yellowish brown.
11/24/28	▼			Free water encountered at 33'.
		35		
15/25/38				Silt, with clay, trace organic matter, trace fine- to medium-grained sand, moist to very moist, hard, light yellowish brown mottled with yellowish brown.
9/		40		

BORING LOG

Project No. KEI-P89-1204	Boring & Casing Diameter 9" 2"	Logged By W.W.
Project Name Unocal 3535 Pierson St. Oakl	Well Head Elevation N/A	Date Drilled 12/11/90
Boring No. MWA	Drilling Method Hollow-stem Auger	Drilling Company Woodward Drilling Co.

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
18/26			ML	Silt with clay, as above.
			SW	Sand, well graded, trace silt, saturated, dense, yellowish brown.
15/24/30			ML/MH	Silt with clay, trace organic matter, moist, hard, brown mottled with light yellowish brown.
		45		
		50		
		55		
		60		TOTAL DEPTH: 45'

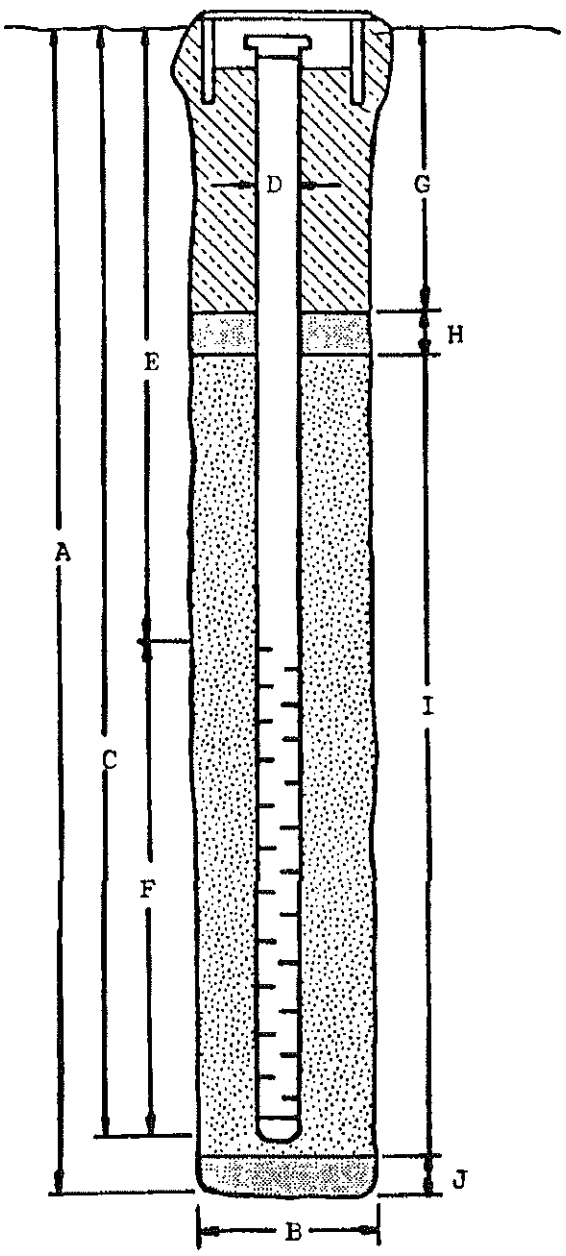
WELL COMPLETION DIAGRAM

PROJECT NAME: Unocal 3535 Pierson St. Oakland BORING/WELL NO. MWA

PROJECT NUMBER: KEI-P89-1204

WELL PERMIT NO.:

Flush-mounted Well Cover



A. Total Depth: 45'

B. Boring Diameter*: 9"

Drilling Method: Hollow Stem Auger

C. Casing Length: 45'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375" ID = 2.067"

E. Depth to Perforations: 25'

F. Perforated Length: 20'

Perforation Type: Machined Slot

Perforation Size: 0.010"

G. Surface Seal: 21'

Seal Material: Concrete

H. Seal: 2'

Seal Material: Bentonite

I. Gravel Pack: 22'

Pack Material: RMC Lonestar Sand

Size: #2/16

J. Bottom Seal: None

Seal Material: N/A

*Boring diameter can vary from 8-1/4" to 9" depending on bit wear.

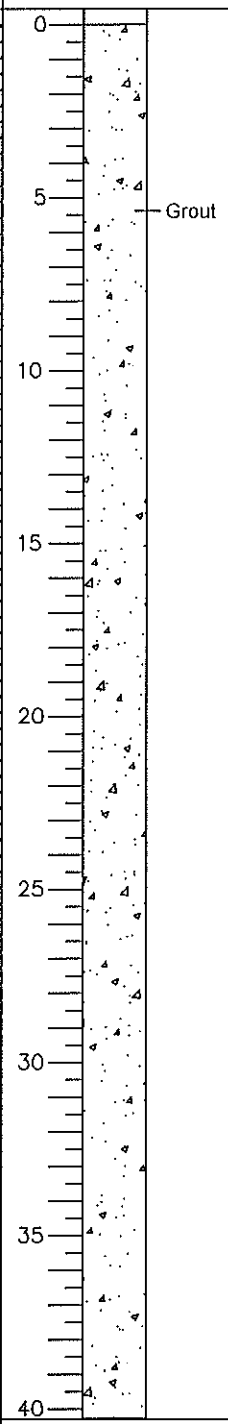
PROJECT NO.: 42-0102-01
CLIENT: ConocoPhillips
LOCATION: 76 Service Station #5781
3535 Pierson Street, Oakland, California

DATE DRILLED: 10/30/03
LOGGED BY: P. Kelleher
APPROVED BY: B.A. Moed, RG
DRILLING CO.: Cascade Drilling

DRILLING METHOD: 8-inch Hollow-Stem Auger
SAMPLER TYPE: 2-inch Split Spoon
TOTAL DEPTH: 44.0 feet
DEPTH TO WATER: 39.0 feet

PID/FID (ppm)	BLOWS PER 6 INCHES	RECOVERY	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
				0	Hand augered to 5'. CLAY (CL): Very dark gray (10YR 3/1), 90 % clay, 10% gravel, soft, damp.		
0	7 7 13	1.0/ 1.5		5			
0	17 20 22	1.5/ 1.5		10			
0	20 22 27	1.5/ 1.5		15	- @ 14': color change to brownish yellow (10YR 5/8), 90 % clay, 10% sand, trace gravel, soft, damp.		
0	21 23 20	1.5/ 1.5		20	- @ 20': no sand.	CL	
0	21 23 25	1.0/ 1.5		25			
0	24 25 27	1.5/ 1.5		30			
0	23 26 24	1.5/ 1.5		35	- @ 34': increased sand.		
0	20 18 22	1.0/ 1.5		40	SILTY SAND (SM): Yellowish brown (10YR 6/8), 10 % silt, 10 % clay, 80% sand, dense, wet.	SM	

BORING BACKFILL DETAIL



TRC

LOG OF EXPLORATORY BORING

SB-1

PROJECT NO.: 42-0102-01
CLIENT: ConocoPhillips
LOCATION: 76 Service Station #5781
3535 Pierson Street, Oakland, California

DATE DRILLED: 10/30/03
LOGGED BY: P. Kelleher
APPROVED BY: B.A. Moed, RG
DRILLING CO.: Cascade Drilling

DRILLING METHOD: 8-inch Hollow-Stem Auger
SAMPLER TYPE: 2-inch Split Spoon
TOTAL DEPTH: 44.0 feet
DEPTH TO WATER: 39.0 feet

PID/FID (ppm)	BLOWS PER 6 INCHES	RECOVERY	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY	BORING BACKFILL DETAIL
				40	SAND (SM) (continued).	SM		Grout
				45				
				50				
				55				
				60				
				65				
				70				
				75				
				80				

TRC

LOG OF EXPLORATORY BORING

SB-1
PAGE 2 OF 2

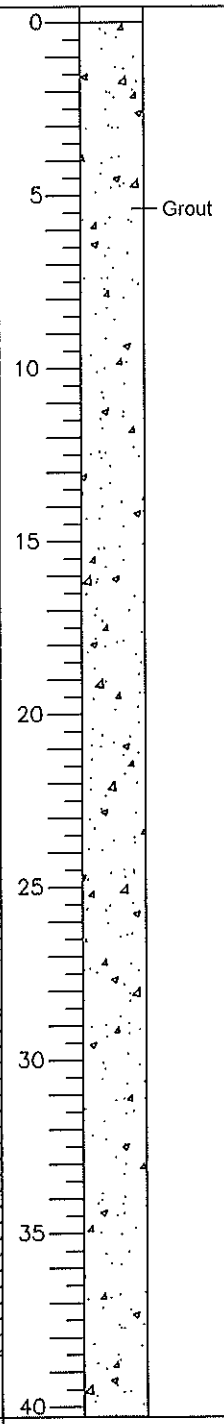
PROJECT NO.: 42-0102-01
CLIENT: ConocoPhillips
LOCATION: 76 Service Station #5781
3535 Pierson Street, Oakland, California

DATE DRILLED: 10/30/03
LOGGED BY: P. Kelleher
APPROVED BY: B.A. Moed, RG
DRILLING CO.: Cascade Drilling

DRILLING METHOD: 8-inch Hollow-Stem Auger
SAMPLER TYPE: 2-inch Split Spoon
TOTAL DEPTH: 54.0 feet
DEPTH TO WATER: Not applicable

PID/FID (ppm)	BLOWS PER 6 INCHES	RECOVERY	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
				0	Hand augered to 5'. CLAY (CL): Brownish yellow (10YR 5/4) with black mottles, 95% clay, 5% gravel, soft, damp.		
0	8 11 13	1.5/ 1.5		5		CL	
0	12 12 18	1.5/ 1.5		10	- @ 9': color change to black (10YR 2/1), 95 % clay, 5% sand, very soft.		
0	16 17 25	1.5/ 1.5		15			
0	14 14 19	1.5/ 1.5		20	GRAVELLY SAND (SW): Brownish yellow (10YR 5/6), 10 % clay, 60% sand, 30% gravel, soft, damp.	SW	
0	21 20 26	1.5/ 1.5		25			
0	22 24 26	1.5/ 1.5		30	CLAY WITH SAND (CL): Yellowish brown (10YR 4/4), 80 % clay, 15% sand, 5% gravel, soft, damp.	CL	
0	21 21 28	1.0/ 1.5		35			
0	23 27 22	0.5/ 1.5		40	SILTY SAND (SM): Yellowish brown (10YR 6/3), 20 % silt, 10% clay, 70% sand, hard, damp.	SM	

BORING BACKFILL DETAIL



TRC

LOG OF EXPLORATORY BORING

SB-2

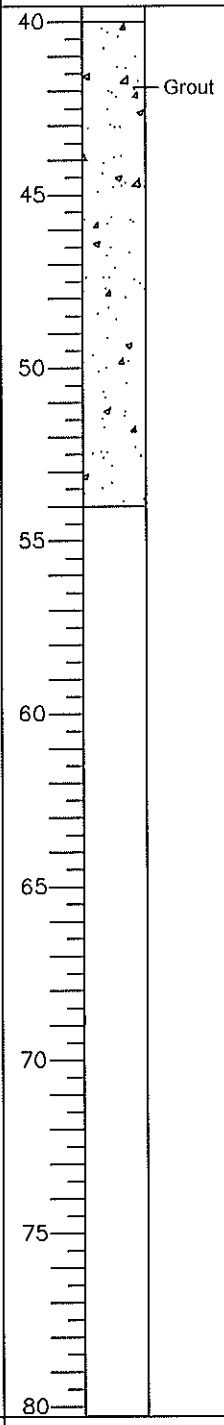
PROJECT NO.: 42-0102-01
CLIENT: ConocoPhillips
LOCATION: 76 Service Station #5781
3535 Pierson Street, Oakland, California

DATE DRILLED: 10/30/03
LOGGED BY: P. Kelleher
APPROVED BY: B.A. Moed, RG
DRILLING CO.: Cascade Drilling

DRILLING METHOD: 8-inch Hollow-Stem Auger
SAMPLER TYPE: 2-inch Split Spoon
TOTAL DEPTH: 54.0 feet
DEPTH TO WATER: Not applicable

PID/FID (ppm)	BLOWS PER 6 INCHES	RECOVERY	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
				40	SAND (SM) (continued).	SM	
0	25 22 27	1.5/ 1.5		45			
0	19 23 27	1.0/ 1.5		50	SILTY SAND WITH GRAVEL (SM): Yellowish brown (10YR 5/6), 20% silt, 5% clay, 60% sand, 15% gravel, hard, damp.		
				55			
				60			
				65			
				70			
				75			
				80			

BORING BACKFILL DETAIL



TRC

LOG OF EXPLORATORY BORING

SB-2
PAGE 2 OF 2

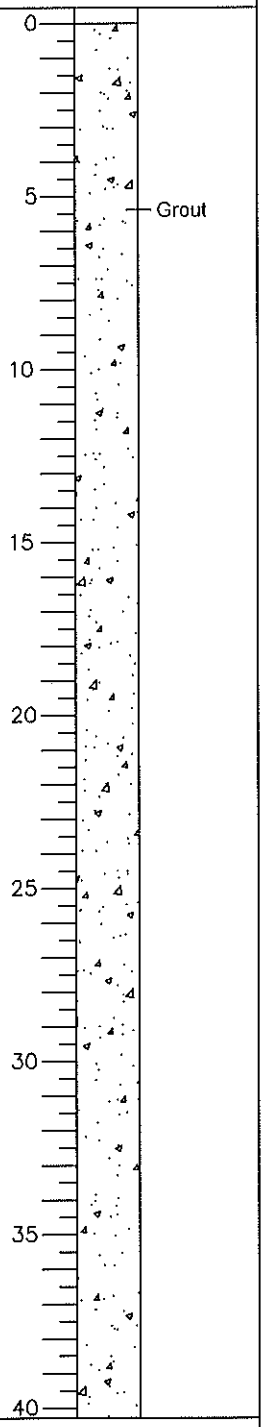
PROJECT NO.: 42-0102-01
CLIENT: ConocoPhillips
LOCATION: 76 Service Station #5781
3535 Pierson Street, Oakland, California

DATE DRILLED: 10/31/03
LOGGED BY: P. Kelleher
APPROVED BY: B.A. Moed, RG
DRILLING CO.: Cascade Drilling

DRILLING METHOD: 8-inch Hollow-Stem Auger
SAMPLER TYPE: 2-inch Split Spoon
TOTAL DEPTH: 54.0 feet
DEPTH TO WATER: Not applicable

PID/FID (ppm)	BLOWS PER 6 INCHES	RECOVERY	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
				0	Hand augered to 5'. SILTY SAND (SM): Yellowish brown (10YR 5/4), 20 % silt, 70 % sand, 10% gravel, soft, dry.	SM	
0	10 12 16	1.0/ 1.5		5			
0	7 11 16	1.5/ 1.5		10			
1.7	13 15 15	1.0/ 1.5		15	SANDY GRAVEL WITH SILT (GM): Greenish gray (GLEY1 4/5G), 20% silt, 30% sand, 50% gravel, soft, moist.	GM	
0	11 14 16	0.5/ 1.5		20	SILTY SAND WITH GRAVEL (SM): Greenish gray (GLEY1 4/5G), 20% silt, 60% sand, 20% gravel, soft, damp.	SM	
0	14 16 27	1.5/ 1.5		25	SILT (ML): Yellowish brown (10YR 5/4), 90 % silt, 10% clay, hard, damp.	ML	
0	12 12 15	1.5/ 1.5		30	SANDY SILT (ML): Yellowish brown (10YR 5/6), 60 % silt, 30% sand, 10% gravel, hard, damp.		
0	15 16 19	1.5/ 1.5		35	SILT WITH SAND (ML): Yellowish brown (10YR 5/4), 80 % silt, 20% sand.		
0	16 17 20	1.5/ 1.5		40			

BORING BACKFILL DETAIL



TRC

LOG OF EXPLORATORY BORING

SB-3

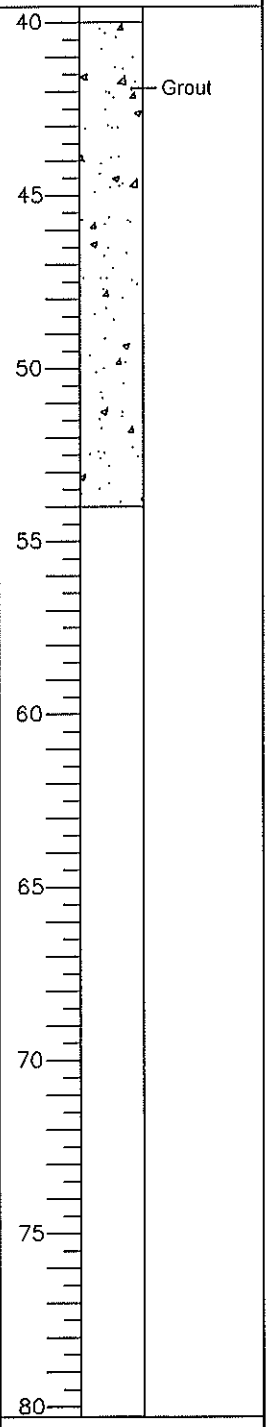
PROJECT NO.: 42-0102-01
CLIENT: ConocoPhillips
LOCATION: 76 Service Station #5781
3535 Pierson Street, Oakland, California

DATE DRILLED: 10/31/03
LOGGED BY: P. Kelleher
APPROVED BY: B.A. Moed, RG
DRILLING CO.: Cascade Drilling

DRILLING METHOD: 8-inch Hollow-Stem Auger
SAMPLER TYPE: 2-inch Split Spoon
TOTAL DEPTH: 54.0 feet
DEPTH TO WATER: Not applicable

PID/FID (ppm)	BLOWS PER 6 INCHES	RECOVERY	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
				40	SILT WITH SAND (ML) (continued).		
0	20 14 23	1.5/ 1.5		45		ML	
0	17 19 22	1.5/ 1.5		50	SILT (ML): Yellowish brown (10YR 6/4), 100 % silt.		
				55			
				60			
				65			
				70			
				75			
				80			

BORING BACKFILL DETAIL



TRC

LOG OF EXPLORATORY BORING

SB-3
PAGE 2 OF 2

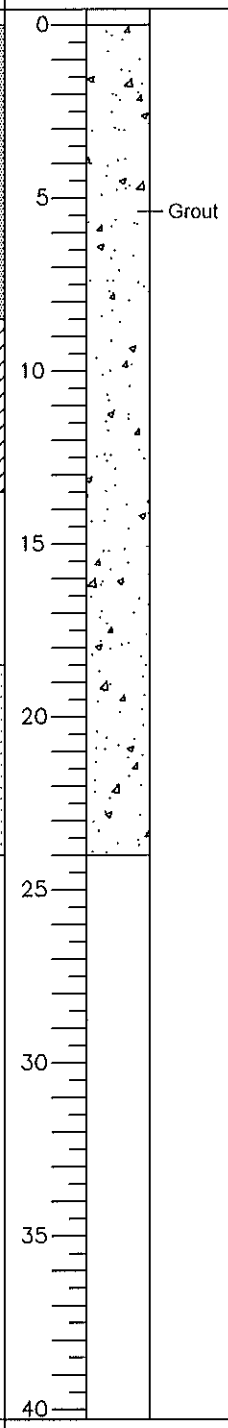
PROJECT NO.: 42-0102-01
CLIENT: ConocoPhillips
LOCATION: 76 Service Station #5781
3535 Pierson Street, Oakland, California

DATE DRILLED: 10/31/03
LOGGED BY: P. Kelleher
APPROVED BY: B.A. Moed, RG
DRILLING CO.: Cascade Drilling

DRILLING METHOD: 8-inch Hollow-Stem Auger
SAMPLER TYPE: 2-inch Split Spoon
TOTAL DEPTH: 24.0 feet
DEPTH TO WATER: 19.5 feet

PID/FID (ppm)	BLOWS PER 6 INCHES	RECOVERY	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
				0	Hand augered to 5'.		
0	12 12 15	1.0/ 1.5		5	SAND (SP): Yellowish brown (10YR 5/6), 90 % sand, 10% gravel, soft, damp.	SP	
0	5 4 9	1.0/ 1.5		10	CLAY (CL): Black (10YR 2/1), 90 % clay, 10% sand, soft, moist.	CL	
0	14 16 19	1.5/ 1.5		15	SILT WITH CLAY (ML): Yellowish brown (10YR 4/3), 70 % silt, 20% clay, 10% gravel, soft, moist.	ML	
0	14 16 21	1.0/ 1.5		20	SAND WITH GRAVEL (SW): Yellowish brown (10YR 4/4), 10% silt, 50% sand, 40% gravel, soft, moist.	SW	
				25			
				30			
				35			
				40			

BORING BACKFILL DETAIL



TRC

LOG OF EXPLORATORY BORING

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PAGE 1 OF 1

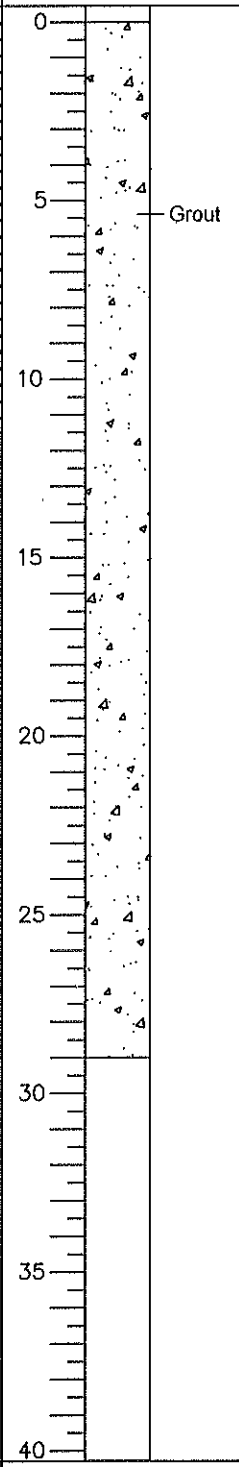
PROJECT NO.: 42-0102-01
CLIENT: ConocoPhillips
LOCATION: 76 Service Station #5781
3535 Pierson Street, Oakland, California

DATE DRILLED: 10/31/03
LOGGED BY: P. Kelleher
APPROVED BY: B.A. Moed, RG
DRILLING CO.: Cascade Drilling

DRILLING METHOD: 8-inch Hollow-Stem Auger
SAMPLER TYPE: 2-inch Split Spoon
TOTAL DEPTH: 29.0 feet
DEPTH TO WATER: 24.6 feet

PID/FID (ppm)	BLOWS PER 6 INCHES	RECOVERY	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	LITHOLOGY
				0	Hand augered to 5'.		
0	11 11 13	1.5/ 1.5		5	CLAY (CL): Very dark gray (10YR 2/1), 90 % clay, 10% gravel, soft, damp.	CL	
0	13 14 17	1.5/ 1.5		10	- @ 9': color change to dark gray (10YR 4/1), 95 % clay, 5% gravel.		
0	12 16 17	1.5/ 1.5		15	SAND (SP): Yellowish brown (10YR 5/6), 10 % silt, 90% sand, soft, moist.	SP	
0	15 15 19	1.5/ 1.5		20			
0	14 16 19	0.5/ 1.5		25			
				30			
				35			
				40			

BORING BACKFILL DETAIL



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LOG OF EXPLORATORY BORING

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PAGE 1 OF 1

APPENDIX C

Historic Groundwater Monitoring Data

Table 2

HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS

December 1990 Through March 2008

76 Station 5781

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
MW-A													
12/18/90	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	
05/03/91	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	
08/07/91	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	
11/08/91	--	--	--	--	--	ND	ND	ND	ND	ND	--	--	
02/06/92	151.80	19.88	0.00	131.92	--	ND	ND	ND	ND	ND	--	--	
08/04/92	151.80	18.95	0.00	132.85	0.93	ND	ND	ND	ND	0.51	--	--	
02/10/93	151.80	17.71	0.00	134.09	1.24	ND	ND	ND	ND	ND	--	--	
02/10/94	151.80	15.25	0.00	136.55	2.46	ND	ND	0.52	ND	0.92	--	--	
02/09/95	151.80	15.68	0.00	136.12	-0.43	ND	ND	ND	ND	ND	--	--	
02/06/96	151.80	12.52	0.00	139.28	3.16	ND	ND	ND	ND	2.1	--	--	
02/05/97	151.80	13.01	0.00	138.79	-0.49	ND	ND	ND	ND	ND	--	ND	
02/02/98	151.80	11.91	0.00	139.89	1.10	ND	ND	ND	ND	ND	--	ND	
02/22/99	151.80	11.24	0.00	140.56	0.67	ND	ND	ND	ND	ND	--	ND	
02/26/00	151.80	12.16	0.00	139.64	-0.92	ND	ND	1.01	ND	ND	--	ND	
03/07/01	151.80	11.91	0.00	139.89	0.25	ND	ND	ND	ND	ND	ND	ND	
02/22/02	151.80	14.08	0.00	137.72	-2.17	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<5.0	
02/22/03	151.80	14.41	0.00	137.39	-0.33	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<2.0	
02/03/04	151.80	14.32	0.00	137.48	0.09	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	ND<2.0	
02/18/05	151.80	14.21	0.00	137.59	0.11	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	ND<0.50	
03/29/06	151.80	12.72	0.00	139.08	1.49	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<1.0	0.54	
03/28/07	151.80	13.98	0.00	137.82	-1.26	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<1.0	ND<0.50	
03/22/08	151.80	12.68	0.00	139.12	1.30	ND<50	ND<0.30	ND<0.30	ND<0.30	ND<0.60	ND<1.0	ND<0.50	

Table 2 a
ADDITIONAL HISTORIC ANALYTICAL RESULTS
76 Station 5781

Date Sampled	TPH-D	TPH-G (GC/MS)	TBA	Ethanol (8260B)	Ethylene-dibromide (EDB)	1,2-DCA (EDC)	DIPE	ETBE	TAME	Total Oil and Grease	TRPH	Bromo-dichloro-methane	Bromo-form	Bromo-methane	Carbon Tertra-chloride
	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(mg/l)	(mg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
MW-A															
12/18/90	73	--	--	--	--	--	--	--	--	--	--	--	--	--	--
05/03/91	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
08/07/91	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/08/91	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
02/06/92	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
08/04/92	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
02/10/93	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
02/10/94	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
02/09/95	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
02/06/96	120		--	--	--	--	--	--	--	--	--	--	--	--	--
02/05/97	61		--	--	--	--	--	--	--	--	--	--	--	--	--
02/02/98	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
02/22/99	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
02/26/00	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
03/07/01	131		ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--
02/22/02	ND<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
02/22/03	93	--	ND<100	ND<500	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	--	--	--	--	--	--
02/03/04	60	--	ND<100	ND<500	ND<2.0	ND<0.50	ND<2.0	ND<2.0	ND<2.0	--	ND<1.0	ND<0.50	ND<2.0	ND<1.0	ND<0.50
02/18/05	ND<50	--	ND<5.0	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	--	ND<0.50	ND<2.0	ND<1.0	ND<0.50
03/29/06	ND<200	--	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	ND<0.50	ND<0.50	ND<1.0	ND<0.50
03/28/07	92	--	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	ND<0.50	ND<0.50	ND<1.0	ND<0.50
03/22/08	ND<50	--	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	ND<0.50	ND<0.50	ND<1.0	ND<0.50

Table 2 b

ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 5781

Date Sampled	Chloro-benzene	Chloro-ethane	2-Chloroethyl vinyl ether	Chloroform	Chloro-methane	Dibromo-chloro-methane	1,2-Dichloro-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	Dichloro-difluoro-methane	1,1-DCA	1,1-DCE	cis- 1,2-DCE	trans- 1,2-DCE	1,2-Dichloro-propane
	(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)	(µg/l)
MW-A															
02/03/04	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<2.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
02/18/05	ND<0.50	ND<1.0	--	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
03/29/06	ND<0.50	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
03/28/07	ND<0.50	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
03/22/08	ND<0.50	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50

Table 2 c

ADDITIONAL HISTORIC ANALYTICAL RESULTS

76 Station 5781

Date Sampled	cis-1,3-Dichloropropene (µg/l)	trans-1,3-Dichloropropene (µg/l)	Methylene chloride (µg/l)	1,1,2,2-Tetrachloroethane (µg/l)	Tetrachloroethene (PCE) (µg/l)	Trichlorotrifluoroethane (µg/l)	1,1,1-Trichloroethane (µg/l)	1,1,2-Trichloroethane (µg/l)	Trichloroethene (TCE) (µg/l)	Trichlorofluoromethane (µg/l)	Vinyl chloride (µg/l)
MW-A											
02/03/04	ND<0.50	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50
02/18/05	ND<0.50	ND<0.50	ND<5.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50
03/29/06	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
03/28/07	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
03/22/08	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50