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Environmental/Geotechnical/Engineering Services

Alameda County
OCT 0 3 2003
Environmental Health

10437

Corrective Action Completion Report and Ground Water Monitoring Work Plan

2901 Glascock Street

Oakland, California

This report has been prepared for:

Signature Properties

4670 Willow Road, Suite 200, Pleasanton, California 94588

October 6, 2003

Project No. 1731-2G

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October 6, 2003
1731-2G

Mr. Amir Gholami
ALAMEDA COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH
1131 Harbor Bay Parkway
Alameda, California 94502

**RE: CORRECTIVE ACTION COMPLETION REPORT AND GROUND WATER MONITORING WORK PLAN
2901 GLASCOCK STREET
OAKLAND, CALIFORNIA**

Dear Mr. Gholami:

As requested, we have prepared this Site summary report for 2901 Glascock Street located in Oakland, California.

We refer you to the text of the report for details regarding this study. Thank you for choosing us to assist you. If you have any questions, please call and we will be glad to discuss them with you.

Very truly yours,

LOWNEY ASSOCIATES

Peter M. Langtry, R.G., C.HG.
Principal Environmental Geologist

RLH:PML

Copies: Addressee (2)
Signature Properties (2)
Attn: Ms. Mary Grace Houlihan
California Regional Water Quality Control Board (1)
Attn: Ms. Betty Graham

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CORRECTIVE ACTION COMPLETION REPORT AND GROUND WATER MONITORING WORK PLAN 2901 GLASCOCK STREET OAKLAND, CALIFORNIA

1.0 INTRODUCTION

1.1 Purpose

This report presents the results of the removal actions performed at 2901 Glascock Street in Oakland, California (Figure 1). The removal was performed in accordance with the scope of work presented in the March 6, 2003 Site Summary Report (Lowney 2002). This work was performed for Signature Properties who is in the process of developing the site with condominiums, discussed in Section 1.3.

1.2 Site Description

The approximately 2-acre property (Site) is bounded by Glascock Street to the northeast, Oakland Estuary to the southwest, 2909 Glascock Street (formerly occupied by the University of California, Berkeley boat house), and a residential development to the northwest (Figures 1 and 2).

The Site was formerly occupied almost entirely by an approximately 72,000-square-foot warehouse. The warehouse, which was demolished during September 2003, was constructed of wood and steel frame with corrugated metal paneling. A private apartment was located inside the southwest corner of the warehouse. On the exterior of the northwest side of the warehouse, an approximately 30-foot wide fenced strip extending from Glascock Street to the estuary was present. The Site, adjacent to the estuary, was bordered by a concrete foundation/seawall.

1.3 Planned Redevelopment

The Site will be combined with 2909 Glascock Street and 303/315 Derby Avenue. Signature Properties is planning to construct 100-condominiums on the approximately 4-acre combined parcels. As approved by Alameda County Department of Environmental Health, construction has begun on the model building pad (Lot 4). Construction of the remaining pads will occur from October 2003 to April 2004. The condominiums will include garages and living rooms on the first level with a walk-up entrance to second and third floor living areas. A public access promenade is planned along the waterfront that will include a pedestrian path and landscaping. The Site will be remediated to concentrations that will be protective of human health in a residential setting. Although significant concentrations of volatile compounds have not been detected beneath 2901 Glascock Street, the town homes will be built with crawl spaces between the slab and living areas to reduce the potential for migration of soil vapors into living spaces.

1.4 Scope of Work

The scope of work for this study was outlined in our agreement dated May 7, 2003, and our fee increase dated September 26, 2003 and included the following tasks.

- Contractor guidance, verification sampling, and laboratory analyses for the excavation and off-site disposal of soil from two areas identified in the March 6, 2003 work plan;
- Contractor guidance, verification sampling, and laboratory analyses for the over-excavation and off-site disposal of petroleum-impacted soil from the former underground storage tank (UST) pit adjacent to Glascock Street;
- Contractor guidance, verification sampling, and laboratory analyses for the over-excavation and off-site disposal of petroleum-impacted soil adjacent to the estuary;
- Collection and analysis of soil and ground water samples required by ACDEH staff.

1.5 Project Personnel

Pacific States Environmental (PSE), a licensed hazardous waste contractor operating out of Dublin, California, performed soil excavation and transportation. Removal actions were performed under the supervision of Principal Geologist Peter Langtry, C.E.G., and Staff Environmental Geologist Charles Mettler performed field sampling.

2.0 SITE BACKGROUND

2.1 Geology and Hydrogeology

2.1.1 Subsurface Materials

Based on subsurface exploration performed on-Site, fills of varying thickness were observed beneath the Site to depths of approximately 1 to 2 feet below existing grade. The fills have been encountered either directly beneath the former floor of the warehouse or at the surface in the unpaved area. The fills can generally be characterized as medium dense to very dense gravelly sands with varying amounts of fines (either silts or clays) and silty clays.

Directly below the fill is a layer of stiff to very stiff interbedded clay to depths of approximately 10 to 12 feet. Below this layer is a predominantly dense silty sandy layer. Significant quantities of silt and clay appear to be present in the sandy matrix.

2.1.2 Hydrogeology

During previous investigations, ground water has been encountered in the silty sand layer at a depth of approximately 10 to 12 feet. Exploratory pits have encountered the top of the capillary fringe at a depth of approximately 8 to 9 feet. Static ground

water levels measured in on-Site wells range from approximately 4 to 8 feet, indicating that the ground water is under confined conditions. Ground water flow has been measured toward the southwest, toward the estuary. The ground water depths, flow direction, and gradient are consistent with those measured at 303 and 315 Derby Avenue.

2.2 Sensitive Receptors

Ground water flow beneath 2901 Glascock Street has consistently been measured toward the southwest, toward the Oakland Estuary. Therefore, the Oakland Estuary is a sensitive receptor for the Site. There are no active on-Site water supply wells. Based on historical information reviewed for 2901 Glascock Street, there do not appear to have been water supply wells on-Site. In addition, no well casings were encountered during site remedial and demolition activities. In addition, no records were reviewed indicating that water supply wells are or have been located on adjacent properties. Because ground water flows from the Site into the estuary, there are no down-gradient properties that could potentially have water supply wells.

2.3 Site History

Site history information was obtained from documents provided by ICONCO, aerial photographs, and fire insurance maps. In 1911, the Site appeared to be developed with Gorham Engineering Company's manufacturing facility for gasoline engines and boats. A wharf that extended into the Oakland Estuary, a lumber storage shed, boat shed, a lumber storage building, and two structures (boat building facility and marine engine manufacturer) with wood plank floors on concrete foundations were present on the west side of the Site. A ship-way (ramp) was present running north-south from the boat building facility to the estuary. The eastern portion of the Site was occupied by the California Launch Works building (Lowney Associates, 2001).

The former warehouse was constructed in approximately 1927. Between 1927 and 1992, occupants of the Site reportedly included Oliver United Filters and Dorr-Oliver, Inc. (filter manufacturers), Barker Machinery Company, and American Building Components. Mr. John Barker of Barker Brothers reportedly was the original purchaser of the property. Mr. Gust Nichandros reportedly purchased the property approximately 5 years later and owned the property for approximately 30 years. Dorr-Oliver Inc. (formerly Oliver United Filters) reportedly performed milling at the Site from World War I to approximately 1964. In 1992, American Building Components foreclosed on the Site (Lowney Associates, 2001).

The John and Charlene Weber Trust owned the property from approximately 1996 until July 2003, when the property was purchased by Signature Properties. An inventory list in a Hazardous Materials Management Plan for ICONCO in June 2001 revealed a daily average of approximately 271 cubic feet of argon; 2,810 cubic feet of oxygen; 114 cubic feet of nitrogen; 140 cubic feet of acetylene; 250 pounds of dimethyl methane (propane); 210 gallons of highly refined base oils; 16 gallons of anti-freeze; 20 gallons of petroleum-based solvents; 20 gallons of used anti-freeze; and 300 gallons of waste oil were stored on-Site. The hazardous materials appeared appropriately stored; no indications of leakage or spillage were observed (Lowney Associates, 2001).

3.0 PREVIOUS ENVIRONMENTAL ACTIVITIES

The following section summarizes previous on-Site investigations and remedial activities performed at 2901 Glascock Street. Tables summarizing soil analytical results from previous investigations are included in Appendix A. Historic ground water monitoring analytical results are included in Appendix B.

3.1 Underground Storage Tanks

In February 1993, one approximately 4,000-gallon fuel oil and one approximately 20,000-gallon bunker oil underground storage tanks (USTs) were removed from the Site by Pacific Rim Services, Inc. The 4,000-gallon UST was located in the central portion of the warehouse and the 20,000 gallon UST was located in the southeast corner of the warehouse (Figure 2). Two confirmation soil samples were collected from the first UST (4,000-gallon) excavation. Laboratory analyses detected 1,400 ppm total petroleum hydrocarbons in the diesel range (TPHd) at a depth of approximately 9 feet (Pacific Rim Services, 1993). As presented in Section 9.1, this soil was over-excavated on September 10, 2003. Verification soil samples collected from native soil beneath the former UST pit backfill did not detect petroleum fuel hydrocarbons.

Four confirmation soil samples were collected from the second UST (20,000-gallon) excavation. Laboratory analyses detected up to 1,900 parts per million (ppm) total oil and grease and 3,800 ppm TPHd in the soil at a depth of approximately 12 feet (Pacific Rim Services, 1993). These concentrations were below the Site-specific cleanup goals approved by the California Regional Water Quality Control Board (CRWQCB) and ACDEH for the Site (Section 4.0). On September 24 and 25, 2003, soil was over-excavated from the former UST location. Analytical results are summarized in Section 9.2.

3.2 Soil Quality

3.2.1 1993 through 1995 Investigations

In January 1993, five soil samples (#1 through #5) were collected to evaluate on-Site soil quality. The soil samples were analyzed for total petroleum hydrocarbons in the gasoline range (TPHg), TPHd, and benzene, toluene, ethylbenzene, and xylene (BTEX). Detectable concentrations of BTEX (0.05 ppm or less) and total purgeable hydrocarbons (190 ppm) were detected in one sample (#4) collected from a depth of approximately 1½ feet near the location of the approximately 20,000-gallon fuel oil UST. Concentrations of total purgeable hydrocarbons (12 ppm) were detected in another sample (#1) collected from a depth of approximately 6 feet near the approximately 4,000-gallon fuel oil UST; no BTEX compounds were detected in this sample (Pacific Rim Services, 1993). These concentrations were below the Site-specific cleanup goals approved for the site (see Section 4.0). Analytical results are summarized in Appendix A.

In September 1994, as discussed in Section 3.3, monitoring wells MW-1 through MW-4 were installed on-site. Laboratory analyses of soil samples collected during well installation did not detect petroleum hydrocarbons above the Site-specific cleanup

goals. The highest concentrations (greater than 1,000 ppm) were detected in a soil sample collected from a depth of approximately 14 feet from the MW-2 boring, located in the southeast corner of the Site approximately 5 feet from the former 20,000-gallon fuel oil UST. Petroleum hydrocarbons were generally non-detect in soil samples collected from the MW-4 boring, located approximately 10 feet from the former 4,000-gallon fuel oil UST. Well locations are shown on Figure 2 and analytical results are summarized in Appendix A.

In March 1995, to help evaluate soil and ground water quality beneath the site, eight soil borings (SB-1 through SB-4 and SB-7 through SB-10) were advanced on Site to depths of up to approximately 17 feet. No petroleum fuel hydrocarbons were detected in soil above the Site-specific cleanup goals (see Section 4.0) in the 19 soil samples analyzed. TPHg and TPHd were detected above 1,000 ppm in four soil samples collected from the capillary fringe at depths of approximately 8 to 12 feet (980 ppm TPHd in boring SB-2, 1,700 ppm TPHg in SB-7, and 5,700 ppm and 2,300 ppm total petroleum hydrocarbons in the motor oil range (TPHmo) in SB-9) (Craig, 1995). Petroleum hydrocarbons generally were less than approximately 300 ppm in other samples analyzed. In addition, BTEX compounds generally were not detected. Analytical results for the soil samples are presented in the summary tables included in Appendix B. During September 2003, TPHg and BTEX were generally non-detect in four soil samples collected from boring GB-13, located approximately 10 feet from 1995 boring SB-7 (see Section 6.2).

In April 1995, two trenches (EP-1 and EP-2; Figure 2) were excavated to depths of approximately 4 feet and 13 borings (EB-1 through EB-10, MW-5, MW-6, and MW-7) were drilled to depths ranging from 5½ to 15 feet below ground surface to further evaluate soil and ground water quality. Exploratory boring MW-7 (subsequently converted to a monitoring well) was located off-Site on Glascock Street; the other borings were located on-Site. Twenty-one selected soil samples collected from the trenches and borings were analyzed for TPHd, TPHg, oil and grease (O&G), BTEX, metals, and/or polychlorinated biphenyls (PCBs). In general, concentrations of contaminants were either non-detect or below Site-specific cleanup goals (see Section 4.0). TPHd was detected at a concentration of 9,600 ppm in the surface sample collected from trench EP-2; an elevated concentration of O&G (11,000 ppm) was detected in EB-10 at a depth of approximately 1 foot. In addition, up to 1,800 ppm TPHd was detected in a soil sample collected from a depth of approximately 3 feet in boring MW-5 (Craig, 1995). Soil from the EP-2, EB-10, and MW-5 locations was subsequently over-excavated (Section 3.5).

During the April 1995 investigation, PCBs were detected in trench EP-2 above the federal EPA's residential preliminary remedial goal (PRG) of 0.22 ppm. PCBs also were detected in a sample collected from an approximate depth of 1 foot in boring EB-10 above the PRG. The excavation and off-Site disposal of the PCB-impacted soil is discussed in Section 3.5. A soil sample also was collected from the metal shavings encountered beneath the floor in the northwest corner of the building; lead was detected at a concentration (5,300 ppm), which exceeds the total threshold limit concentration (TTLC) for lead (1,000 ppm), California's hazardous waste criteria. Removal of this soil is discussed in Section 7. Analytical results for the soil samples are presented in the summary tables included in Appendix A.

In November 1995, 14 additional borings were drilled (B-2 through B-15; Figure 2) on-Site to evaluate soil quality. Ten soil samples collected from eight of the 14 borings were analyzed for petroleum hydrocarbons. TPHd (1,700 ppm) was detected in a soil sample collected from a depth of approximately 5 feet from boring B-13; this sample location was subsequently over-excavated (Section 3.5). Petroleum hydrocarbon concentrations were either not detected or detected below cleanup goals (see Section 4.0) in the other nine soil samples. Soil samples from nine of the 14 borings were analyzed for metals. Three of the nine samples contained lead concentrations greater than 200 ppm (298 ppm to 520 ppm); these samples were collected from borings in the northwest corner of the Site where metal filings were encountered. As discussed below, MW-8 was installed during the November 1995 investigation. One soil sample collected from an approximate depth of 1 foot during well installation contained an elevated lead concentration of 803 ppm. Monitoring well MW-8 also was located in the northwest corner of the Site in the area where metal filings were encountered; removal of the metal-filings is discussed in Section 7. Soil samples from nine locations also were analyzed for PCBs. PCBs were detected in a soil sample collected from boring B-12 at a concentration of 130 ppm (W.A. Craig, 1995). Boring B-12 was located in the area of former trench EP-1 on the north side of the site; this soil was removed during September 2003, as discussed in Section 8. Soil analytical results are presented in the summary tables included in Appendix A.

The 1996 report by PEG, addressed to the Alameda County Health Care Services Agency (ACHCSA), recommended excavation and off-Site disposal of metals impacted soil in the northwest corner of the building, and PCB-impacted soil north of the building. PEG recommended the use of oxygen releasing compounds (ORC) to enhance the natural biodegradation of petroleum hydrocarbons in the ground water. The approach was approved by the ACHCSA; performance of the remedial actions is discussed in Section 3.7.

3.2.2 2001 Investigation

In October 2001, 12 borings (EB-9 through EB-20) were drilled by Lowney Associates to approximate depths of 4 to 8 feet. Borings EB-9 through EB-11, EB-13, and EB-17 were drilled at randomly selected locations in former manufacturing or maintenance areas; borings EB-18 through EB-20 were drilled on the northwest side of the warehouse to evaluate for the presence of PCBs; borings EB-15 and EB-16 were drilled to evaluate the lateral extent of metal-impacted soil/metal shavings previously encountered in the northwest corner of the warehouse; and borings EB-12 and EB-14 were drilled within approximately 20 feet of southern property boundary to evaluate the presence of fill along the edge of the estuary. Fourteen soil samples were collected from the on-Site fill and native soil and were analyzed for total arsenic, lead, and chromium (EPA Test Method 6010), polyaromatic hydrocarbons (PAHs) (EPA Test Method 8310), and PCBs (EPA Test Method 8082). Six of these 14 samples also were analyzed for the remaining 17 California Assessment Manual (CAM) metals (EPA Test Method 6010/7000). Laboratory analytical results are presented in Appendix A.

Metal concentrations detected in on-Site fill appeared to be consistent with typical background concentrations and/or below the residential risk based screening levels (RBSLs), with the exception of lead and copper in boring EB-14 and arsenic in boring EB-20. The concentration of lead (600 ppm) and copper (5,600 ppm) detected in the sample collected from EB-14 exceeded the CRWQCB's residential RBSLs (200 ppm

and 225 ppm, respectively). EB-14 was drilled in the area of the metal filings. The removal of the metal filings/metal-impacted soil is discussed in Section 7. The RBSLs, renamed environmental screening levels (ESLs) in July 2003, are risk-based concentrations developed by San Francisco Regional Water Quality Control Board (SFRWQCB). RBSLs/ESLs are for use as screening levels in determining if further evaluation is warranted, in prioritizing areas of concern, in establishing initial cleanup goals, and in estimation of potential health and ecologic risks.

Elevated arsenic concentrations (33 ppm to 100 ppm) were detected in three soil samples collected from borings EB-18, EB-19, and EB-20, located the outdoor storage area on the north side of the building. Based on a study by Lawrence Berkeley National Laboratory (LBNL), background arsenic in similar soil types range up to 14 ppm. Two soil samples collected from borings EB-18 and EB-19 contained PCBs (0.37 ppm and 0.39 ppm, respectively), which exceed the residential ESL (0.22 ppm). The removal of this soil is discussed in Section 8.

PAHs were detected in fill samples but at concentrations below residential ESLs. Analytical results are presented in the summary tables included in Appendix A.

3.3 Ground Water Grab Sampling - 1995

Laboratory analyses of ground water grab samples collected in March 1995 from borings SB-1 through SB-4 and SB-7 through SB-10 detected elevated concentrations (17,000 ppb to 210,000 ppb) TPHd in four of eight samples analyzed. TPHg exceeded 1,000 ppb in three samples, and benzene ranged from non-detect (less than 0.5 ppb) to 16 ppb (Craig, 1995).

To further evaluate ground water quality, ground water grab samples were collected from borings EB-1 through EB-4 in April 1995 and analyzed for TPHg, TPHd, and BTEX; no petroleum hydrocarbons were detected above laboratory reporting limits, except total xylenes were detected at a concentration of 1.1 ppb in the sample collected from EB-2. Borings B-1 through B-4 were located in the northern portion of the Site (Figure 2) (Craig, 1995).

3.4 Ground Water Monitoring Well Installation and Monitoring

In September 1994, four monitoring wells (MW-1 through MW-4) were installed on-Site. Monitoring well construction details are summarized in Table B-2 in Appendix B. Monitoring wells MW-2 and MW-4 were installed in the assumed down-gradient direction of the former 20,000-gallon and 4,000-gallon USTs, respectively; MW-1 was installed in the anticipated down-gradient direction between the two USTs and MW-3 was installed outside the warehouse in the anticipated up-gradient direction of the USTs. Ground water samples from MW-3 and MW-4 were submitted for laboratory analysis; TPHd was detected at a concentration of 320 ppb in the samples collected from MW-3. TPHg and BTEX were not detected above laboratory reporting limits; the samples were not analyzed for MTBE (Craig, 1995).

In April 1995, three additional monitoring wells (MW-5 through MW-7) were installed on-Site. In November 1995, MW-8 was installed at the down-gradient Site boundary to evaluate the impact of hydrocarbons in shallow ground water adjacent to the estuary. In September 1996, monitoring well MW-5 was destroyed (Craig, 1996).

Ground water monitoring analytical results are summarized in Appendix B. In general, petroleum hydrocarbon concentrations have been decreasing at the Site with time. Based on concentrations observed in well MW-7 and general non-detect of MTBE in on-Site wells, the presence of MTBE in on-Site wells appears to be from an off-site source. In addition, no volatile organic compounds (VOCs) were detected in ground water samples collected from on-Site monitoring wells from 1995 through February 2003, with the exception of sporadic low concentrations (below drinking water standards) of 1,1-dichloroethene, 1,2-dichloroethane, and chloromethane. In addition, TCE was detected at 1.3 ppb in well MW-8 in 1995; subsequent analyses through 2001 did not detect TCE. TPHg, benzene, and MTBE have been below approved residential and ecological cleanup goals for the Site (see Section 4.0) during the previous six quarters; TPHd slightly exceeded the ecological cleanup goal in well MW-2 during November 2002.

Concentrations of TPHd have increased, or spiked, periodically in monitoring wells MW-1, MW-2, and MW-3, with the most recent spike during August 2002. The cause of the spikes appears to have been petroleum product in the capillary fringe in a limited area adjacent to the former 20,000 gallon UST and in a limited area adjacent to the estuary. Removal of soil/free product from these two locations is discussed in Section 9.

3.5 Soil Remediation - 1995 and 1996

In May 1995, soil containing elevated concentrations of PCBs (greater than 50 ppm) was excavated from the area around EP-2. Approximately 30 cubic yards of material was over-excavated from an approximately 220-square-foot area and removed from the Site for disposal (Craig, 1995).

In the third and fourth quarter of 1996, over-excavation of soil near boring B-13, MW-15, an EB-10 (Figure 2) containing TPHd concentrations above 1,000 ppm was performed to a depth of approximately 3 to 5 feet. The area around EP-2 was additionally over-excavated to remove soil with PCBs. Laboratory analyses of 20 confirmation soil samples collected after the soil excavation did not detect petroleum hydrocarbons above cleanup goals. PCB concentrations were below the Site-specific cleanup goal (0.22 ppm), with the exception of 35 ppm PCBs detected in a soil sample (EP-2-W-2) collected from the northwest property line. Because excavation beyond the property line was not possible, the location of sample EP-2-W-2 was left in-place. Analytical results for the confirmation samples are presented in the summary tables included in Appendix A.

3.6 Ground Water Remediation – 1997 to present

Oxygen release compound (ORC) was placed into monitoring MW-1, MW-2, and MW-6 in the second quarter of 1997. ORC is a mixture of magnesium peroxide that is designed to produce a slow and sustained release of molecular oxygen when in contact with soil moisture and ground water. The released oxygen stimulates the natural biological metabolism of the contaminants in the ground water. In August 1999, 15 borings were drilled on the Site and backfilled with 10 feet of ORC slurry in accordance with the ACHCSA approved work plan for additional remediation. The

locations of the borings are presented in Figure 2. ORC was again placed into wells MW-1, MW-2, and MW-6 in September 1999 (IT, 2002).

Ground water samples have been collected quarterly and analyzed for petroleum fuel hydrocarbons and VOCs. In addition, ground water samples also are analyzed for biodegradation indicators, included ferrous iron, nitrate, and sulfate. Before and after purging, field measurement of dissolved oxygen and oxidation-reduction potential are collected. The concentrations of petroleum fuel hydrocarbons have decreased significantly since 1997.

4.0 CLEANUP GOALS

A corrective action plan (CAP) (Lowney Associates, October 31, 2002) was submitted to CRWQCB for 303/315 Derby Avenue and 2909 Glascock Street to remediate to residential and ecological cleanup goals. The Derby Avenue property is located adjacent to the Site and is also adjacent to the Oakland Estuary. Geology and hydrogeology conditions at the Derby Avenue property are consistent with subsurface conditions at the Site.

The residential occupancy objectives and ecological cleanup goals presented in the CAP have been approved by the CRWQCB and ACDEH. The cleanup goals for contaminants of concern (COCs) detected in soil and ground water beneath the Derby property include TPHg, TPHd, BTEX compounds, and MTBE. Ecological cleanup goals will be applied to a 50-foot wide buffer (from top of estuary bank) along the estuary. The residential occupancy objectives will be applied to the remainder of the property. The CRWQCB staff agreed that they will not object to residential occupancy of the Derby property when the residential occupancy objectives are met.

The residential occupancy goals and ecological cleanup goals are presented in Table 1 below. Table 1 also includes arsenic, copper, and polychlorinated biphenyls (PCBs), which were not included in the CAP for 303 and 315 Derby Avenue but which were detected on 2901 Glascock Street. The cleanup goal for arsenic (8 ppm) is from the CRWQCB's 2001 RBSL document, which considered arsenic below 8 ppm to be background. The residential RBSLs for copper and PCBs also were used for the cleanup goals in Table 1.

Table 1. Ground Water Residential Occupancy Objectives and Soil and Ground Water Cleanup Goals

Compound	Site-Wide Ground Water Residential Occupancy Objectives (ppb)	Ecological Buffer Zone Ground Water Cleanup Goals (ppb)	Soil Cleanup Goals (ppm)	
TPHg	97,500	3,700	0 to 3 feet	500 ppm total gasoline/diesel/residual fuels
TPHd	Removal of free product*	640	3 to 7 feet	1,000 ppm total gasoline/diesel/residual fuels, with 500 ppm maximum gasoline
			7 feet to top of capillary fringe	5,000 ppm total gasoline/diesel/residual fuels (plus removal of gross free product)
Benzene	5,800	71	0 to 7 feet	2.4 ppm
			7 feet to top of capillary fringe	4.7 ppm
Toluene	530,000	130		8.4
Ethyl-benzene	170,000	290		24
Xylenes	160,000	130		10
MTBE	2.7E+07	1,800		10
Lead	NE	NE		200
Arsenic	NE	NE		8.0
Copper	NE	NE		225
PCBs	NE	NE		0.22

* If TPHd concentrations are above 5,000 ppb TPHd, ground water at the sampling point needs to be evaluated for presence of free product (greater than 1/10-inch thick floating on ground water).

NE No ground water cleanup goal established.

5.0 PRE-REMEDIAL ACTIVITIES

5.1 Monitoring Well Destruction

On July 1, 2003, on-Site monitoring wells and off-Site well MW-7 were destroyed in accordance with a permit from the Alameda County Public Works Department.

5.2 Facility Demolition

During September 2003, the on-site warehouse was demolished by Iconco. An appropriately licensed contractor performed asbestos abatement prior to demolition.

Demolition activities were observed part-time by Lowney Associates staff in order to note the presence of adverse environmental conditions. No oil staining or suspect

odors were observed beneath the floor. In addition, no underground tanks or sumps were observed beneath the warehouse floor.

A boiler was observed beneath the concrete floor adjacent to the estuary at the location shown on Figure 7. The boiler, which contained heat exchanger tubes, did not appear to contain petroleum product. Underlying soil, however, was found to be discolored. Subsequent excavation in this area encountered free product in soil. Removal of the soil and free product is presented in Section 9.

Metal filings were encountered beneath the northwest corner of the warehouse at the location shown on Figure 4. The filings, mixed with soil, reportedly had been used to backfill a former boat launch ramp. The filings also extended behind the concrete foundation (Figure 4). The removal of the metal-impacted soil is presented in Section 7.

6.0 ADDITIONAL SOIL AND GROUND WATER QUALITY EVALUATION REQUIRED BY ACDEH

ACDEH required additional soil and ground water quality evaluation at the Site, as discussed below.

6.1 Subsurface Investigation

On September 2 and 9, 2003 and in the presence of ACDEH inspector Amir Gholami, soil samples GSS-1 through GSS-7 were collected from exploratory pits excavated with a backhoe. Soil samples were collected from the pits at depths ranging from approximately 3 to 8 ½ feet, as requested by Mr. Gholami. The soil samples were submitted for laboratory analyses, as discussed in Section 6.2.

Under the supervision of Principal Geologist Peter Langtry , environmental geologist Charles Mettler directed a subsurface exploration program on September 12 and 16, 2003 and logged 11 borings (GB-1 through BG-4, and GB-8 through GB-14) to approximate depths of 16 feet. Exploratory boring GB-1 was drilled approximately 5 feet from former monitoring well MW-2 to evaluate the presence of petroleum product encountered in soil when the well was drilled in 1995. Boring BG-2 was located near former exploratory boring SB-2 to evaluate the current presence of product encountered in soil when that boring was drilled in 1995. In addition, borings GB-8 and GB-12 were drilled approximately 10 feet from 1995 borings SB-9 and SB-4, respectively, to evaluate the presence of product previously encountered. Free product was encountered in soil in borings GB-1 and GB-8; excavation of soil and removal of free product from these two areas is summarized in Section 9. Free petroleum product was not encountered in the other borings.

Soil samples were obtained from the borings continuously. Ground water was encountered at an approximate depth of 10 to 12 feet. Soil sampling protocol, boring logs, and permits are presented in Appendix C.

6.2 Soil Sample Collection and Analyses

To evaluate soil quality, soil samples were analyzed for TPHg, BTEX, and MTBE (EPA Test Method 8015/8020); TPHd and TPHmo (EPA Test Method 8015M). In addition,

near-surface soil samples were additionally analyzed for arsenic, lead, cadmium, and copper (EPA Test Method 6010), PCBs (EPA Test Method 8082), and PAHs (EPA Test Method 8310).

Analytical results are presented in Tables 2 and 3. Copies of the analytical reports and chain of custody documentation are presented in Appendix D.

Table 2. Analytical Results of Selected Soil Samples
(concentrations in parts per million)

Boring Number	Depth (feet)	TPHd	TPHo	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE
GSS-1	2 ½	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GSS-2	2 ½	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GSS-3	7 ½	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GSS-4	2 ½	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GSS-4	8 ½	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GSS-5	2 ½	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GSS-6	2 ½	<2.3	<120	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GSS-7	2 ½	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-1	1 ½ - 2	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-1	11 – 11 ½	210	<50	61	<0.62	<0.62	<0.62	<0.62	<0.62
GB-1	13 ½ - 14	6,500	<5,000	740	<6.2	<6.2	<6.2	<6.2	<6.2
GB-2	3 – 3 ½	1.4	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-2	8 – 8 ½	2,500	<2,500	150	<0.62	<0.62	<0.62	<0.62	<0.62
GB-2	14 – 14 ½	2,100	<2,500	95	<0.62	<0.62	<0.62	<0.62	<0.62
GB-2	15 ½ - 16	120	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-3	3 – 3 ½	12	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-3	7 – 7 ½	110	120	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-3	12 ½ - 13	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-3	15 ½ - 16	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-4	2 – 2 ½	1.7	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-4	7 – 7 ½	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-4	12 ½ - 13	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-4	15 ½ - 16	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-8	2 – 2 ½	1.6	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-8	7 – 7 ½	7.9	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005

Continued.

Table 2, continued.

Boring Number	Depth (feet)	TPHd	TPHo	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE
GB-9	11 ½ - 12	1.2	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-10	12 – 12 ½	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-11	14 – 14 ½	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-12	2 – 2 ½	100	250	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-12	7 – 7 ½	480	120	<1.0	<0.005	<0.005	<0.005	0.025	<0.005
GB-12	15 ½ - 16	11	<50	<4.8	<0.024	<0.024	<0.024	<0.024	<0.024
GB-13	2 – 2 ½	3.4	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-13	7 – 7 ½	64	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-13	11 ½ - 12	2.3	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-13	14 – 14 ½	520	<50	23	<0.005	<0.005	<0.005	<0.005	<0.005
GB-14	2 – 2 ½	<1.0	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-14	7 – 7 ½	4.9	<50	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
GB-14	13 – 13 ½	490	94	70	0.62	0.62	0.62	0.62	0.62

< Indicates that the compound was not detected at or above the stated laboratory reporting limit

Table 3. Analytical Results of Selected Soil Samples
(concentrations in parts per million)

Boring Number	Depth (feet)	PCBs	PNAs	Arsenic	Copper	Lead	Cadmium
GSS-1	2 ½	ND	ND	2.1	12	2.7	<0.50
GSS-2	2 ½	ND	ND	2.1	9.8	2.8	<0.50
GSS-3	7 ½	ND	ND	7.7	20	5.5	<0.50
GSS-4	2 ½	ND	ND	1.6	19	3.9	<0.50
GSS-4	8 ½	ND	ND	3.0	25	4.0	<0.50
GSS-5	2 ½	ND	ND	1.83	20.5	4.98	<0.25
GSS-6	2 ½	ND	ND	13	52	5.6	1.5
GSS-7	2 ½	ND	ND	5.6	28	5.6	1.6
GB-2	2 – 2 ½	ND	ND	<1.0	15	4.8	<0.5
GB-4	2 – 2 ½	0.062	ND	<1.0	14	6	<0.5
GB-8	2 – 2 ½	ND	ND	1.9	18	4	<0.5
GB-12	2 - 4	ND	ND	<1.0	26	75	<0.5
GB-13	2 – 2 ½	--	--	<1.0	16	8	<1.0
GB-14	2 – 2 ½	ND	ND	<1.0	12	4.3	<1.0
Cleanup Goals		0.22	--	8	225	200	1.7

< Indicates that the compound was not detected at or above the stated laboratory reporting limit

6.3 Ground Water Sample Collection and Analyses

To evaluate ground water quality at the Site, ground water grab samples were collected from each boring. The ground water samples were analyzed for TPHg, BTEX, and MTBE (EPA Test Method 8015/8020), and TPHd and TPHmo (EPA Test Method 8015). These analyses were selected to help evaluate the concentrations of petroleum hydrocarbons in ground water. Analytical results are shown in Table 4 and on Figure 3. Copies of the laboratory reports are attached in Appendix D.

Table 4. Analytical Results of Selected Ground Water Samples
(concentrations in parts per billion)

Boring Number	Date	TPHd	TPHo	TPHg	Benzene	Toluene	Ethyl-benzene	Xylene	MTBE
GB-1	9/12/2003	250,000*	<50,000	3,700	<25	<25	<25	<25	<250
GB-2	9/12/2003	630	<500	110	<0.50	<0.50	<0.50	1.1	<5.0
GB-3	9/12/2003	70	<500	70	<0.50	<0.50	<0.50	<0.50	6.4
GB-4	9/12/2003	1,400	460	<50	<0.50	<0.50	<0.50	<0.50	5.1
GB-8	9/16/2003	230	ND	69	<0.50	<0.50	<0.50	<0.50	25
GB-9	9/16/2003	330	ND	52	<0.50	<0.50	<0.50	<0.50	15
GB-10	9/16/2003	120	<500	<50	<0.50	<0.50	<0.50	<0.50	<5.0
GB-11	9/16/2003	110	<500	64	<0.50	<0.50	<0.50	<0.50	18
GB-12	9/16/2003	130	<500	56	<0.50	<0.50	<0.50	<0.50	18
GB-13	9/16/2003	70	<500	<50	<0.50	<0.50	<0.50	<0.50	<5.0
GB-14	9/16/2003	260	<500	81	<0.50	<0.50	<0.50	<0.50	<5.0
Residential Goal		FPR	FPR	97,500	5,800	530,000	170,000	160,000	2.7+07
Ecological Goal		640	640	3,700	71	130	290	130	1,800

< Indicates that the compound was not detected at or above the stated laboratory reporting limit
* The GB-1 ground water sample contained free product introduced from the capillary fringe.
FPR Removal of free product (greater than 1/10 inch floating on ground water)

6.4 Silica Gel Filter

The ground water samples were passed through a silica gel column prior to the TPHd analysis (EPA Test method 8015) to help remove non-fuel hydrocarbons. The silica gel removes oxygenated organic compounds produced by biologic degradation of organic materials. Studies have shown that the silica gel filter does not significantly remove extractable range petroleum hydrocarbons, including diesel, because the petroleum hydrocarbons are composed of non-polar substances (Zemo 1997). Performing the silica gel filtration prior to analysis is important where the samples are collected from organic rich environments common to the shallow ground water-bearing zones in the San Francisco Bay Area; these environments contain significant concentrations of naturally-occurring hydrocarbons that can be detected in the EPA 8015 analysis and falsely quantified by the laboratory as diesel.

7.0 OVER-EXCAVATION AND OFF-SITE DISPOSAL – METAL FILING AREA

7.1 Over-Excavation, Transportation, and Disposal of Metal Impacted Soil

On September 16 and 17, 2003, PSE over-excavated approximately 1,800 tons of metal-filing impacted soil. The impacted soil was over-excavated to depths ranging from approximately 2 to 7 feet. Based on visual observation, over-excavation continued into underlying native soil that appeared free of the metal-filings. The soil was transported to Kettleman Hills Class I landfill for disposal. The excavation area and sample locations are shown on Figure 4.

7.2 Verification Sampling – Metal Filing Area

To confirm the removal of the metal filing impacted soil, 15 verification soil samples were collected from sidewalls and the base of the excavation in the presence of Mr. Amir Gholami of ACDEH. Four additional soil samples were collected in the absence of Mr. Gholami, with his approval. The confirmation soil samples were analyzed for arsenic, cadmium, copper, and lead (EPA Test Method 6010), which were the identified metals of concern. Soil sampling protocol is presented in Appendix C. Analytical results are summarized in Table 5. The complete analytical results are presented in Appendix D. Disposal manifests will be forwarded to ACDEH when received. All final verification soil samples were below the cleanup goals.

Table 5. Analytical Results of Final Verification Soil Samples
Metal Filing Area

(concentrations in parts per million)

Boring Number	Depth (feet)	Arsenic	Copper	Lead	Cadmium
SV-12	4	<1.0	21	4.5	1.4
SV-13	4 ½	14	21	6.8	1.5
SV-14	4 ½	8.7	15	5	1.4
SV-20	8	<1.0	15	1.3	<0.5
SV-21	7	<1.0	26	2.3	<0.5
SV-22	5	<1.0	15	1.8	<0.5
SV-23	3 ½	<1.0	34	3.8	<0.5
SV-24	3	<1.0	17	3	<0.5
SV-25	3	<1.0	31	5	<0.5
SV-26	2 ½	<1.0	20	3.4	<0.5
SV-27	2 ½	<1.0	21	3.6	<0.5
SV-28	4	<1.0	36	18	<0.5
SV-29	3	<1.0	19	2.9	<0.5
SV-30	2	<1.0	20	3.9	<0.5
SV-32	4	<1.0	21	5.1	<0.5
SV-33	7 ½	<1.0	18	2.1	<0.5
SV-34	2 ½	<1.0	16	4.9	<0.5
SV-37	2 ½	<1.0	20	<10	0.61
Cleanup Goals		8	225	200	1.7

< Indicates that the compound was not detected at or above the stated laboratory reporting limit
-- Sample SV-37 was collected after over-excavation of additional soil from the location of sample SV-31. Arsenic and cadmium results are for sample SV-31.

8.0 OVER-EXCAVATION AND OFF-SITE DISPOSAL – PCB IMPACTED SOIL

8.1 Over-Excavation and Disposal

On September 9 and 12, 2003, PSE over-excavated approximately 100 tons of soil from the PCB-impacted soil location shown on Figure 2. The soil was transported to a Class I landfill by an appropriately licensed hazardous waste hauler. Disposal manifests will be forwarded to ACDEH when received.

8.1.1 Final Verification Sampling

The sidewall and base verification soil samples were collected on September 9 in the presence of Mr. Gholami of ACDEH. Three of the initial verification soil samples exceeded cleanup goals. After additional soil was over-excavated from these areas on September 16, three additional verification soil samples were collected. Verification sample locations are shown on Figure 5. The verification soil samples were analyzed for PCBs (EPA Method 3550B/8082). Because arsenic had previously been detected at this location at elevated concentrations, the verification soil samples were additionally analyzed for arsenic (EPA Test Method 6010). Analytical results are presented in Table 6; the complete analytical results and chain of custody documentation are presented in Appendix D. With the exception of verification soil samples collected from the property line, PCBs were below the cleanup goal. In addition, arsenic was consistent with typical background concentrations (see Section 10.3).

Table 6. Analytical Results of Final Verification Soil Samples
PCB Impacted Soil

(concentrations in parts per million)

Boring Number	Depth (feet)	Location	PCBs	Arsenic
SV-1	3.0	Base	ND	12
SV-2	3.0	Base	0.10	10
SV-4	3.0	Base	ND	12
SV-5	2.5	Side wall	0.16	12
SV-9	2.5	Side wall – Property line	0.063	360
SV-10	2.5	Side wall – property line	0.71	20
SV-16	2.5	Side wall	ND*	6.9
SV-18	4.0	Base	0.065	<1.0
SV-35	2.5	Sidewall	ND**	<1.0
Cleanup Goals			0.22	8

< Indicates that the compound was not detected at or above the stated laboratory reporting limit
* PCB result for SV-6
** PCB result for SV-8

9.0 OVER-EXCAVATION AND OFF-SITE DISPOSAL – PETROLEUM IMPACTED SOILS

9.1 Former 4,000 Gallon UST

On September 10, 2003, the backfill of the former 4,000-gallon fuel oil UST was over-excavated. Soil at the base of the excavation appeared discolored. The discolored soil was removed to underlying native soil, to a depth of approximately 9 feet. The underlying soil did not have significant odors or discoloration. Two soil samples, TP-1 and TP-2, were collected from the base of the excavation and were analyzed for TPHd, TPHo, TPHg, and BTEX (EPA Test Method 8015/8020). No petroleum hydrocarbons were detected. The complete analytical results are presented in Appendix D.

Approximately 20 tons of the excavated backfill were removed for appropriate disposal at a Class II facility. Disposal manifests will be forwarded to ACDEH when received.

9.2 Former 20,000 Gallon UST

As noted in Section 6.1, free petroleum product was encountered in exploratory boring GB-1 at a depth of approximately 12 feet. Boring GB-1 was located approximately 5 feet from former monitoring well MW-2 and approximately 10 feet from the former 20,000 gallon UST. The product appeared to be present in the capillary fringe above the ground water.

On September 24 and 25, 2003, the UST excavation was over-excavated. The excavation was extended to the southwest, to the area of former well MW-2 and boring GB-1. The excavation extended to a depth of approximately 12 ½ feet. During excavation, product was observed in soil at a depth of approximately 11 ½ to 12 ½ feet. The excavation continued until the product in the capillary fringe appeared to have been removed. Ground water did not pond in the excavation.

Five verification soil samples were collected from the excavation sidewalls from a depth or approximately 8 to 9 feet. In addition, three verification soil samples were collected from the excavation base. Sample location and the excavation are shown on Figure 6. The verification samples were analyzed for TPHd and TPHo (EPA Test Method 8015/8020), TPHg, BTEX, and MTBE (EPA Test Method 8020). Analytical results are summarized in Table 7. The complete analytical results and chain of custody documentation are presented in Appendix D. Verification sample analytical results were below the cleanup goals.

Table 7. Analytical Results of Verification Soil Samples
Former 20,000 Gallon UST
(concentrations in parts per million)

Sample Number	Depth (feet)	Location	TPHd	TPHo	TPHg	Ethyl benzene*	Xylene*	MTBE
TP2-1	12	Base	2,800	<1,300	160	1.2	1.1	<0.62
TP2-2	8	Side wall	230	<50	130	<0.62	8.1	<0.62
TP2-3	8	Side wall	630	<500	41	<0.62	<0.62	<0.62
TP2-4	9	Side wall	2,300	<2,500	370	1.3	1.6	<0.62
TP2-5	12	Base	2,500	<2,500	160	<0.62	<0.62	<0.62
TP2-6	9	Side wall	610	<250	42	<0.62	<0.62	<0.62
TP2-7	12	Base	2,500	<2,500	120	<0.62	<0.62	<0.62
TP2-8	9	Side wall	1,400	<1,000	83	<0.62	<0.62	<0.62

* Benzene and toluene were not detected
< Indicates that the compound was not detected at or above the stated laboratory reporting limit

Approximately 1,000 tons of soil from the excavation were removed for appropriate disposal at a Class II landfill. Disposal manifests will be forwarded to ACDEH when received. With the approval of Mr. Gholami of ACDEH, the excavation was backfilled with on-Site clayey soil on September 26 and 29, 2003. The soil backfill was excavated from areas of the site that had previously been characterized as having no COCs above cleanup goals.

9.3 Former Boiler Excavation

As noted in Section 6.1, free petroleum product was encountered in exploratory boring GB-8 at a depth of approximately 11 ½ feet. Boring GB-8 was located approximately 5 feet from the former boiler and approximately 15 feet from the seawall of the former warehouse. The product appeared to be present in the capillary fringe above the ground water. Prior to demolition of the seawall, the soil containing the free product was removed. On September 22 and 23, 2003, PSE excavated soil at the location shown on Figure 7. Soil was over-excavated to a depth of approximately 12 feet at the location of boring GB-8. Petroleum product was present in a thin (approximately 2 inch thick) layer at the top of the ground water. The impacted soil was excavated up to approximately 30 feet from the seawall; excavation continued until the free product appeared removed. The free product appeared to have been confined behind the seawall.

Eight verification soil samples were collected from the excavation sidewalls from a depth or approximately 10 feet. In addition, four verification soil samples were collected from the excavation base. The verification samples were analyzed for TPHd and TPHo (EPA Test Method 8015/8020), TPHg, BTEX, and MTBE (EPA Test Method 8020). Soil samples SV-43, 45, 46, and 47 were analyzed for PCBs (EPA Test Method 8082); because PCBs were not detected, subsequent samples were not analyzed for

PCBs. Analytical results are summarized in Table 8. The complete analytical results and chain of custody documentation are presented in Appendix D. The verification soil sample analytical results were below cleanup goals.

Table 8. Analytical Results of Final Verification Soil Samples
Former Boiler Excavation
(concentrations in parts per million)

Sample Number	Depth (feet)	Location	PCBs	TPHd	TPHo	TPHg	BTEX	MTBE
SV-43	10	Sidewall	ND	1,800	450	130	<0.62	<0.62
SV-45	11 ½ - 12	Base	ND	620	<250	110	<0.62	<0.62
SV-46	11 ½ - 12	Base	ND	1,700	440	75	<0.62	<0.62
SV-47	10	Sidewall	ND	2,200	540	140	<0.62	<0.62
SV-48	10	Sidewall	NA	590	<100	130	<0.62	<0.62
SV-49	10	Sidewall	NA	830	<250	57	<0.62	<0.62
SV-50	10	Sidewall	NA	1,600	<500	130	<0.62	<0.62
SV-51	10	Sidewall	NA	94	<50	43	<0.62	<0.62
SV-52	11 ½ - 12	Base	NA	<1.0	<50	<1.0	<0.0050	<0.0050
SV-53	11 ½ - 12	Base	NA	<1.0	<50	<1.0	<0.0050	<0.0050
SV-54	10	Sidewall	NA	270	<250	64	<0.62	<0.62

< Indicates that the compound was not detected at or above the stated laboratory reporting limit
NA Not

Approximately 1,300 tons of soil from the excavation were removed for appropriate disposal at a Class II landfill. Disposal manifests will be forwarded to ACDEH when received. With the approval of Mr. Gholami of ACDEH, the excavation was backfilled with on-site clayey soil on September 23, 2003. The soil backfill was excavated from areas of the site that had previously been characterized as having no COCs above cleanup goals.

10.0 CONCLUSIONS

10.1 Ground Water

Petroleum hydrocarbon concentrations in ground water at the Site have been decreasing over time, as shown on the plots of TPHd concentrations over time presented Appendix E. During the ground water sampling required by ACDEH staff, free product was encountered in two of eleven borings; boring GB-1 at the former 20,000 gallon UST location and boring GB-8 at the location of the former boiler adjacent to the estuary. Borings GB-2, GB-9, and GB-12 were drilled at locations where free product was reported in soil in 1995; no free product was observed. Based on our observations and laboratory analytical results, the extent of free product appears to have decreased significantly over the past eight years. Because the free product appears to have been significantly removed during site cleanup activities, we anticipate that petroleum hydrocarbon concentrations in ground water will continue to decrease with time.

The free product encountered in boring GB-1 was present in the capillary fringe at a depth of approximately 12 feet. The elevated concentration of TPHd detected in the GB-1 ground water grab sample appears to be a result of free product that was introduced from the capillary fringe. Because sample GB-1 was located approximately 5 feet from former well MW-2, the MW-2 monitoring results are likely more representative of ground water quality at this location. The most recent sampling of MW-2 in February 2003 detected 2,000 ppb TPHg and 800 ppb TPHd; benzene was not detected (less than 0.5 ppb).

Concentrations of petroleum hydrocarbons in ground water are shown on Figure 3, including the most recent ground water monitoring results. No petroleum hydrocarbons were detected in ground water above the ecological cleanup goals within 50 feet of the estuary. TPHd was detected in the GB-4 ground water sample above the ecological cleanup goal. Boring GB-4 was located approximately 100 feet from the estuary. Based on the results of this investigation, the extent of TPHd exceeding the ecological cleanup goal appears limited. No petroleum hydrocarbons were detected above the residential cleanup objectives.

10.2 Soil – Petroleum Hydrocarbons

Analytical results from previous investigations and this investigation are summarized on Figures 8, 9, and 10. No petroleum hydrocarbons were detected above the approved cleanup goals for the Site in verification soil samples and soil samples collected from exploratory pits and borings. Therefore, we recommend requesting no further action from the ACDEH for soils. The protocol presented in the February 3, 2003 risk management plan will need to be followed in the event that soil with residual petroleum hydrocarbons is encountered during Site development or maintenance activities.

10.3 Soil – Metals, PCBs, and PAHs

Laboratory analyses of final verification soil samples did not detect metals or PCBs above cleanup goals or background levels. Up to 13 ppm arsenic was detected in

several soil samples. Based on correspondence with Mr. Roger Brewer of the California Regional Water Quality Control Board, these concentrations are within background levels and are acceptable to remain in-place.

Laboratory analyses of 27 soil samples collected during this and previous investigations did not detect PAHs above residential ESLs. In addition, laboratory analyses of 34 soil samples (not including soil samples in soil removal area) did not detect PCBs above residential ESLs or metals above background levels/ESLs. Based on the results, further soil sampling for metals, PCBs, and PAHs is not required; we recommend requesting no further action from the ACDEH for soils. Laboratory results are summarized in Figure 11.

Laboratory analyses of soil samples SV-9 and SV-10 detected PCBs and arsenic above the cleanup goals. These two soil samples were collected from the property line; further excavation, therefore, was not possible.

11.0 GROUND WATER MONITORING WORK PLAN

To monitor ground water quality, three new ground-water monitoring-wells will be installed on-site. The approximate locations of new wells are shown on Figure 2. Two of the well locations were selected within the ecologic buffer. The three well locations are down-gradient of the former 20,000-gallon UST. In addition, one of the monitoring wells is within the area excavated adjacent to the estuary.

Petroleum hydrocarbons have generally been non-detect in former well MW-4, located approximately 10 feet down-gradient of the former UST. In addition, soil with residual petroleum hydrocarbons was removed from the former UST excavation during September 2003; no petroleum hydrocarbons were detected in soil samples collected from the base of the UST over-excavation. Therefore, further monitoring at the former 4,000-gallon UST is not recommended at this time.

The general well construction details are shown on Figure 12. New wells will be developed by pumping in order to remove fine-grained materials from the well casing and sand pack. The wells will be sampled in general accordance with state and EPA approved sampling techniques. The samples will be collected in the appropriate containers, packed on ice, and transported to a state-certified analytical laboratory with chain of custody documentation. The samples will be analyzed for TPHg and TPHd (EPA Test Method 8015M); BTEX and MTBE (EPA Test Method 8020). MTBE will be confirmed by EPA Test Method 8250. All analyses will be performed on a standard one-week laboratory response time. Purged ground water will be stored on-Site in EPA approved drums. Disposal alternatives of the purged water will be evaluated after receiving the analytical results.

A Teflon™ bailer or submersible pump will be used to purge a minimum of three well casing volumes of water from each well. After purging each well volume, pH, temperature, and conductivity measurements will be recorded. In general, these measurements stabilize (consecutive readings within 10 percent) after three to four well volumes. If, after the third well volume, the pH and conductivity have not stabilized, additional well volumes will be removed until these measurements do stabilize. If the yield is low and the well pumped dry, the well will be allowed to recharge to the 80 percent level before sampling. Ground water samples will be

placed in appropriate sample bottles labeled with a unique identification number. The samples then will be placed in an ice-chilled cooler and transported to a state-certified analytical laboratory with chain of custody documentation.

A quarterly ground water quality monitoring report will be prepared following completion of each quarterly monitoring event. The reports will present the field and laboratory data as well as our conclusions and recommendations.

The ground water monitoring wells will be installed after the streets have been graded, likely in December 2003. After concentrations are consistently near or below ecological cleanup goals in the ecological buffer for two years, we will request case closure for ground water.

12.0 LIMITATIONS

This report was prepared for the sole use of Signature Properties. We make no warranty, expressed or implied, except that our services have been performed in accordance with environmental principles generally accepted at this time and location. The chemical and other data presented in this report can change over time and are applicable only to the time this study was performed. We are not responsible for the data presented by others.

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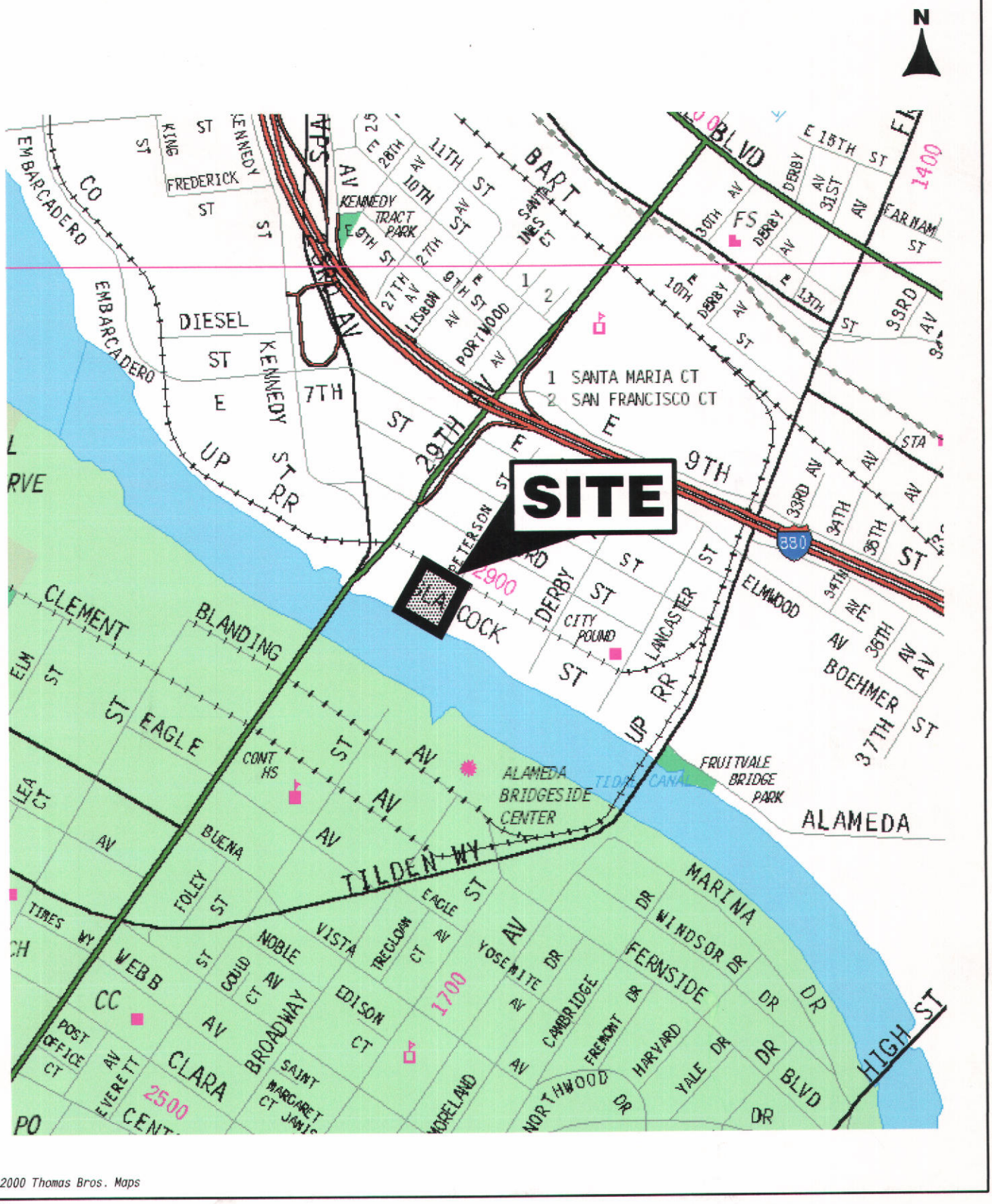


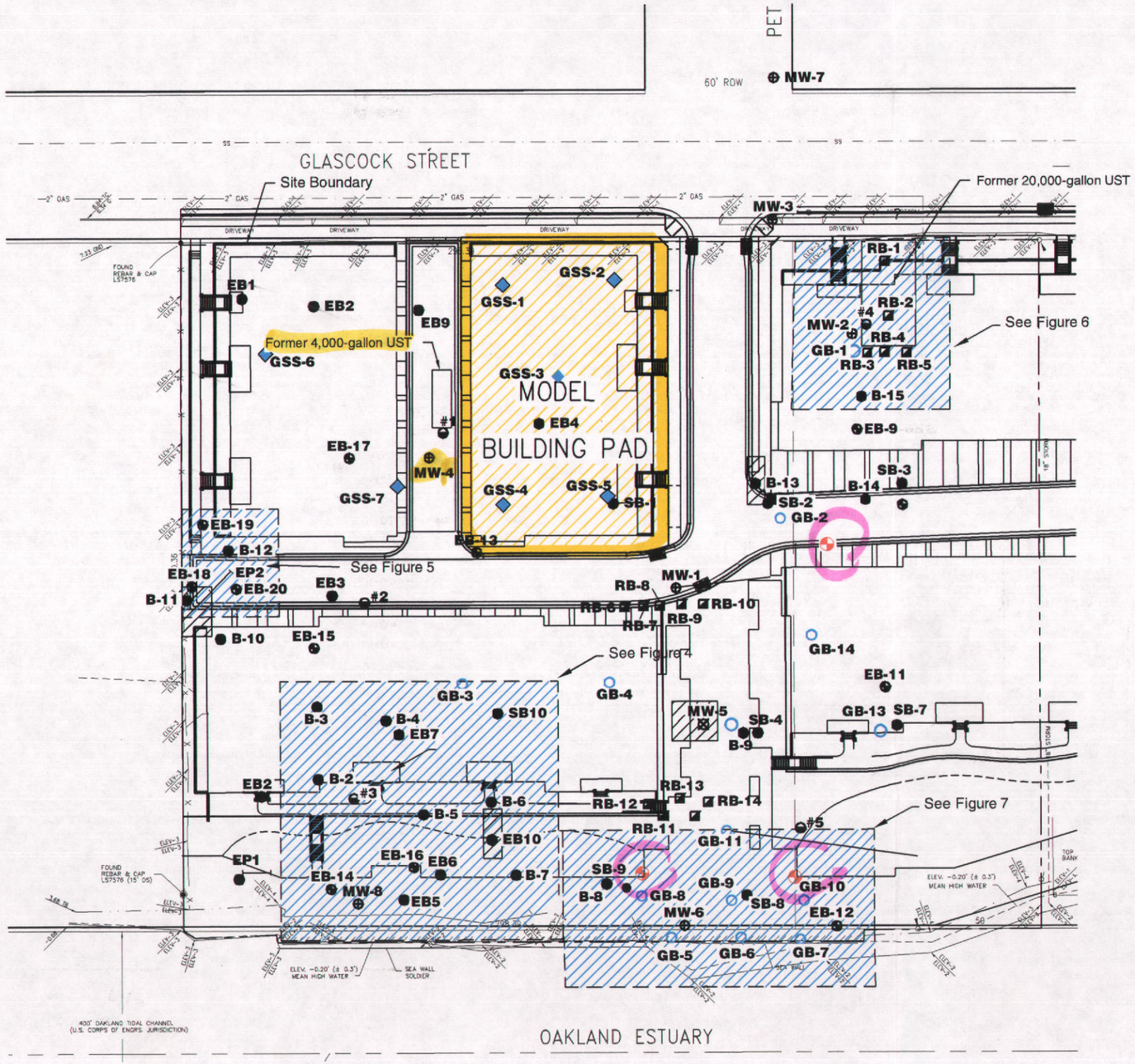
9/03*EB

VICINITY MAP

2901 GLASCOCK STREET
Oakland, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIGURE 1
1731-2G



APPROXIMATE RANGE OF GROUND WATER FLOW

LEGEND

- Approximate location of proposed ground water monitoring well
- Approximate location of soil sample requested by the ACDEH
- Approximate location of ground water and soil boring (Lowney Sept., 2003)
- Approximate location of exploratory boring (Lowney 2002)
- Approximate location of exploratory boring (Lowney 2001)
- Approximate location of extraction/monitoring well
- Approximate location of soil vapor boring
- Approximate location of remediation boring (1999)
- Approximate location of soil sample (1995)
- Approximate location of test pit (1995)
- Approximate location of soil sample (1993)
- Approximate location of destroyed ground water monitoring well
- Soil excavation areas (1996)

0 50
Scale feet

Base by KCA Engineers.

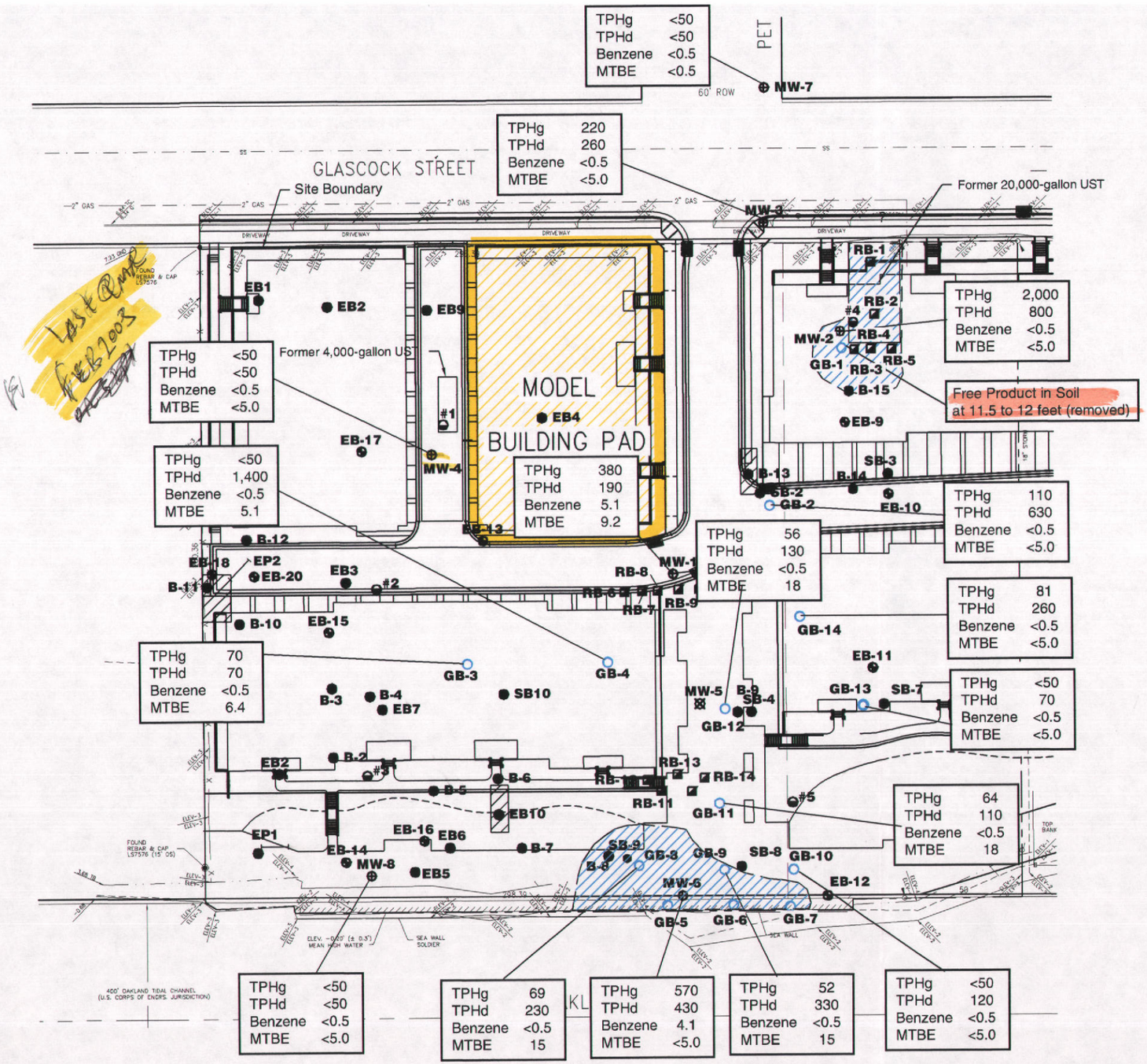
SITE PLAN

2901 GLASCOCK STREET
Oakland, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIGURE 2
1731-2G

3/03*EB



APPROXIMATE RANGE OF GROUND WATER FLOW

N

LEGEND

- ○ - Approximate location of exploratory boring (Lowney Sept., 2003)
- ◐ - Approximate location of exploratory boring (Lowney 2002)
- ◒ - Approximate location of exploratory boring (Lowney 2001)
- ⊕ - Approximate location of extraction/monitoring well
- △ - Approximate location of soil vapor boring
- ◪ - Approximate location of remediation boring (1999)
- ● - Approximate location of soil sample (1995)
- ⊢ - Approximate location of test pit (1995)
- ◒ - Approximate location of soil sample (1993)
- ⊠ - Approximate location of destroyed ground water monitoring well
- ▨ - Approximate extent of tph-impacted soil removal areas

Note:
Analytical results in parts per billion
Ground water results from February 2003 ground water monitoring event and from borings completed in September, 2003

Scale 0 50 feet

Base by KCA Engineers.

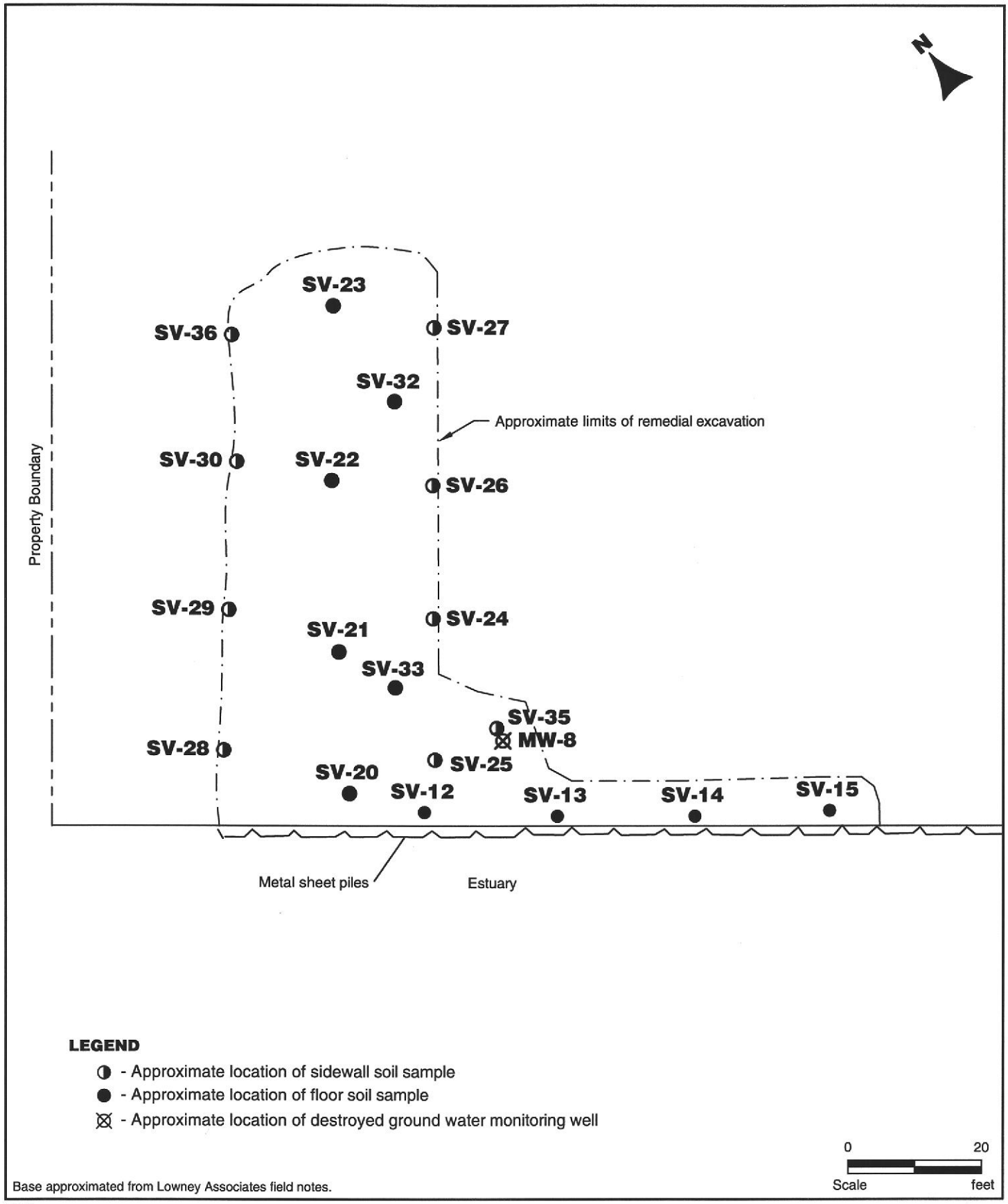
GROUND WATER RESULTS

2901 GLASCOCK STREET
Oakland, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIGURE 3
1731-2G

3/03*EB



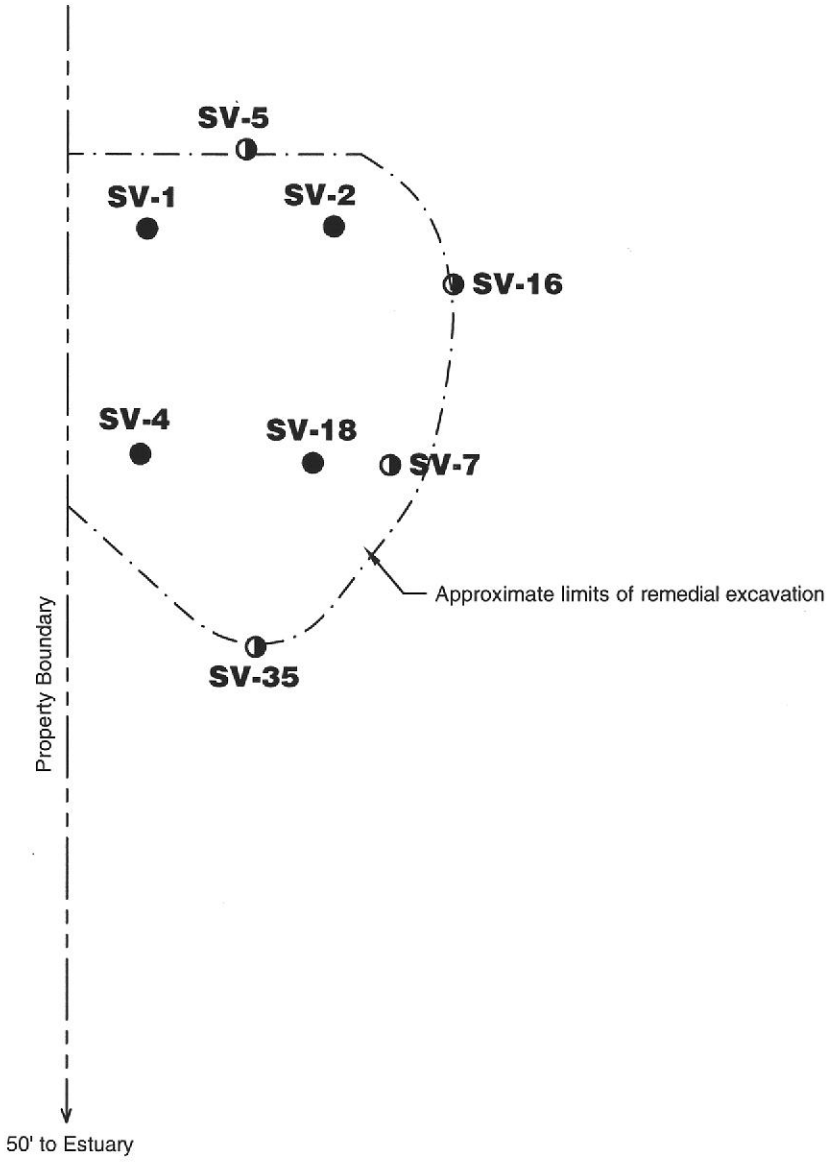
9/03*EB

REMEDIAL EXCAVATION FOR LEAD AND COPPER

2901 GLASCLOCK STREET
Oakland, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIGURE 4
1731-2G



LEGEND

◑ - Approximate location of sidewall soil sample

● - Approximate location of floor soil sample

0 20

Scale feet

Base approximated from Lowney Associates field notes.

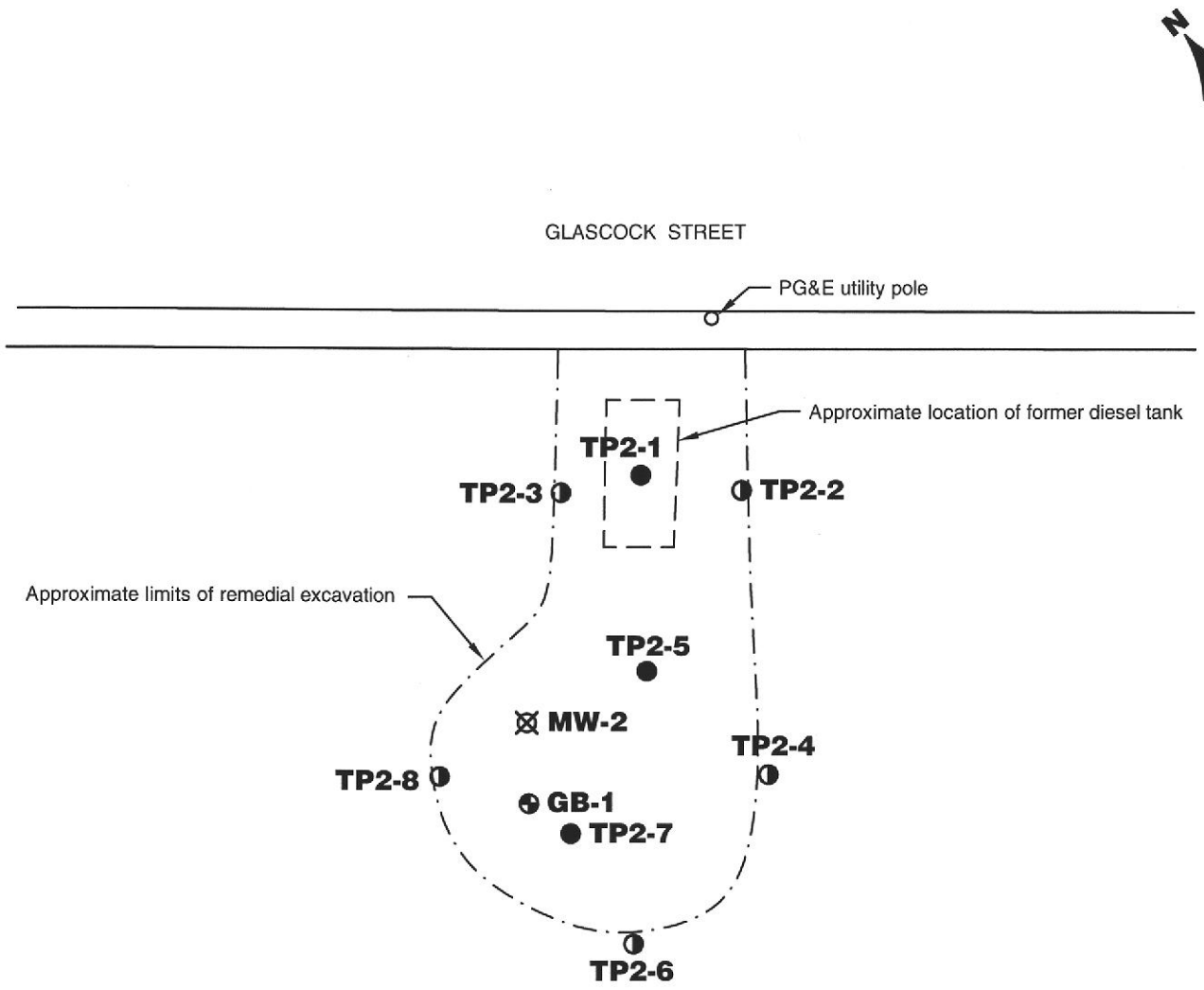
9/03*EB

PCB REMEDIAL EXCAVATION

2901 GLASCLOCK STREET
Oakland, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIGURE 5
1731-2G



LEGEND

- ◑ - Approximate location of sidewall soil sample
- ● - Approximate location of floor soil sample
- ◓ - Approximate location of exploratory boring (Lowney 9/03)
- ⊠ - Approximate location of destroyed ground water monitoring well

0 20

Scale feet

Base approximated from Lowney Associates field notes.

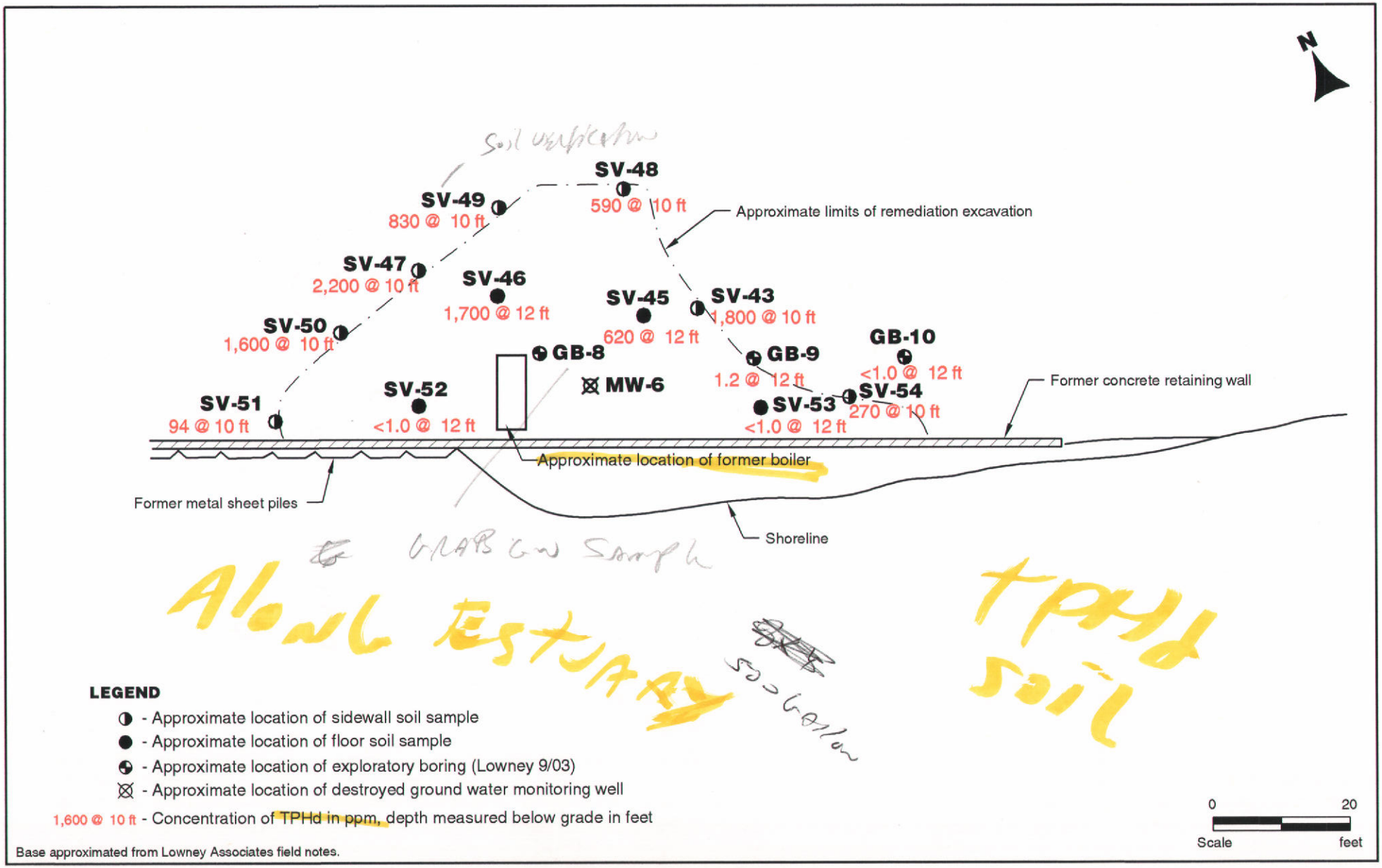
9/03*EB

OVER EXCAVATION - FORMER 20,000 GALLON UST

2901 GLASCLOCK STREET
Oakland, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIGURE 6
1731-2G



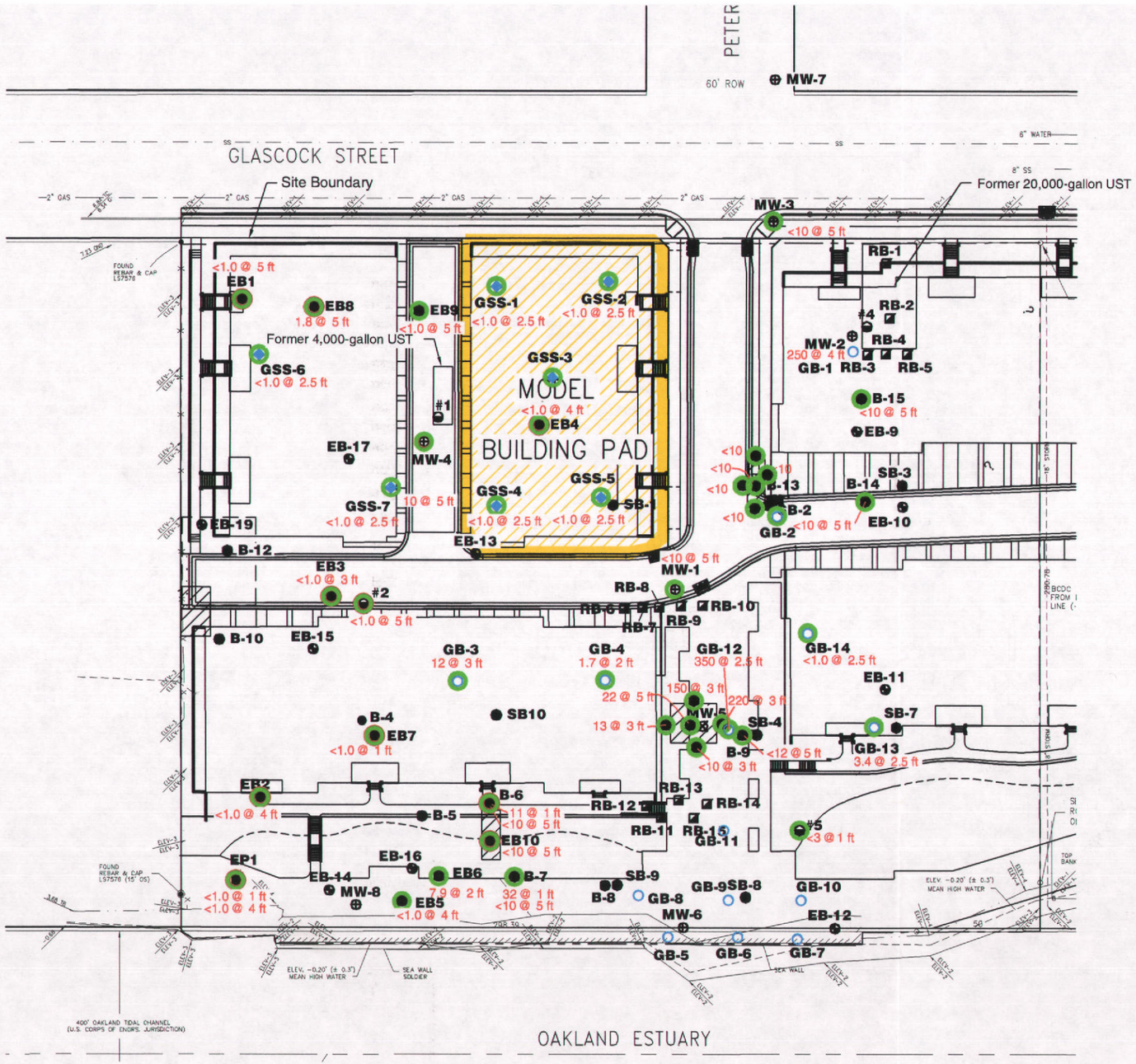
9/03*EB

EXCAVATION FORMER BOILER

2901 GLASCOCK STREET
Oakland, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIGURE 7
1731-2G



LEGEND

- ◆ - Approximate location of soil sample requested by the ACDEH
- ○ - Approximate location of ground water and soil boring (Lowney Sept., 2003)
- ◐ - Approximate location of exploratory boring (Lowney 2002)
- ◔ - Approximate location of exploratory boring (Lowney 2001)
- ⊕ - Approximate location of extraction/monitoring well
- △ - Approximate location of soil vapor boring
- ◪ - Approximate location of remediation boring (1999)
- ● - Approximate location of soil sample (1995)
- ⊢ - Approximate location of test pit (1995)
- ◒ - Approximate location of soil sample (1993)
- ⊠ - Approximate location of destroyed ground water monitoring well
- ▨ - Soil excavation areas (1996)
- ○ - TPHD and TPHG, 0 to 7 feet, ND to 500 ppm
- ○ - TPHDand TPHG, 0 to 7 feet, 500 to 1,000 ppm

Note:
Analytical results in parts per million

Scale 0 50 feet

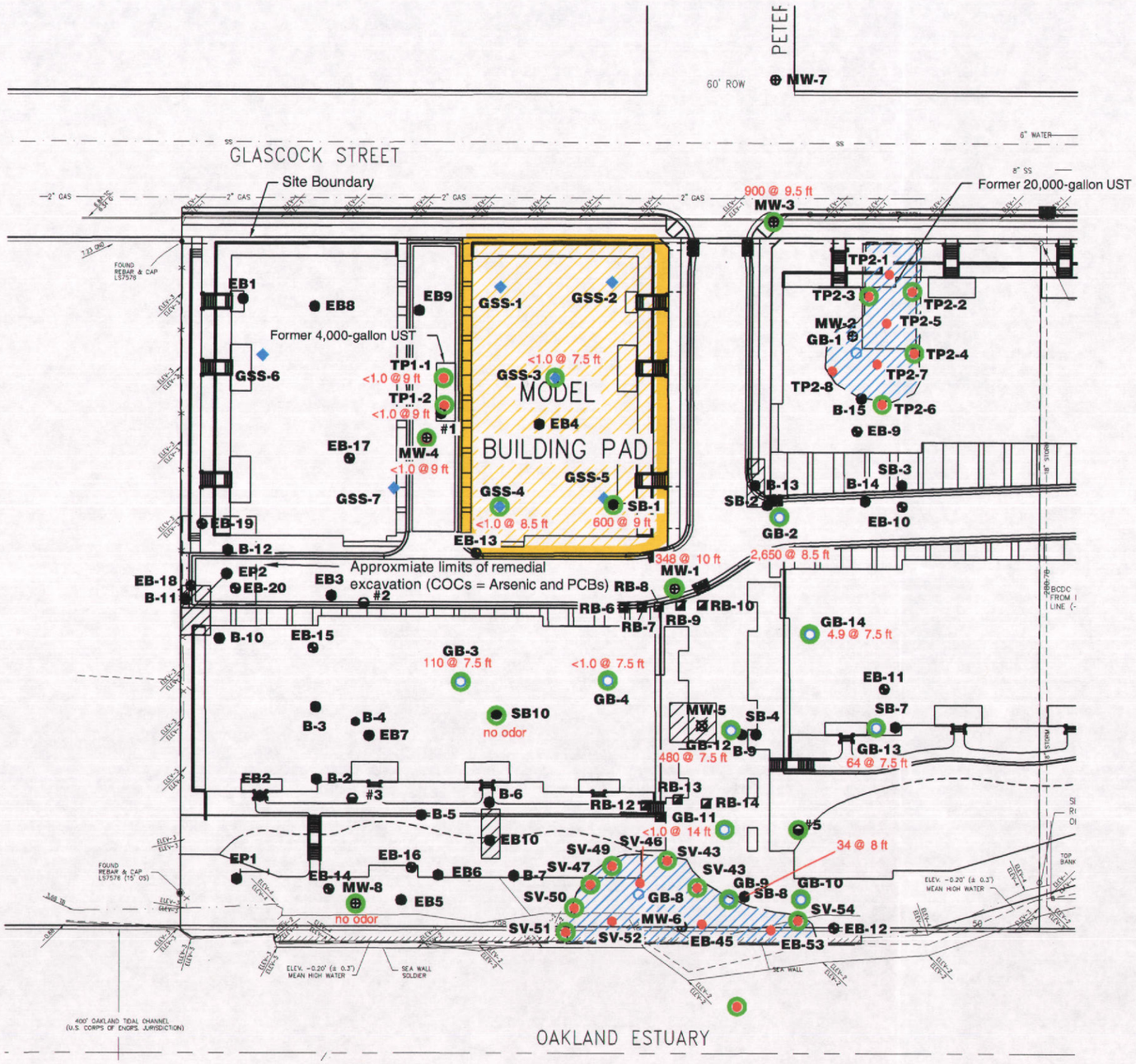
Base by KCA Engineers.

TOTAL TPHD AND TPHG RESULTS IN SOIL
0 TO 7 FEET
2901 GLASCOCK STREET
Oakland, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIGURE 8
1731-2G

3/03*EB



LEGEND

- - Approximate location of soil verification sample (Lowney Sept., 2003)
- - Approximate location of soil sample requested by the ACDEH
- - Approximate location of ground water and soil boring (Lowney Sept., 2003)
- - Approximate location of exploratory boring (Lowney 2002)
- - Approximate location of exploratory boring (Lowney 2001)
- - Approximate location of extraction/monitoring well
- - Approximate location of soil vapor boring
- - Approximate location of remediation boring (1999)
- - Approximate location of soil sample (1995)
- - Approximate location of test pit (1995)
- - Approximate location of soil sample (1993)
- - Approximate location of destroyed ground water monitoring well
- - Soil excavation areas (1996)
- - TPHd and TPHg, 7 to 10 feet, ND to 5,000 ppm
- - TPHd and TPHg, 7 to 10 feet, >5,000 ppm

0 50
Scale feet

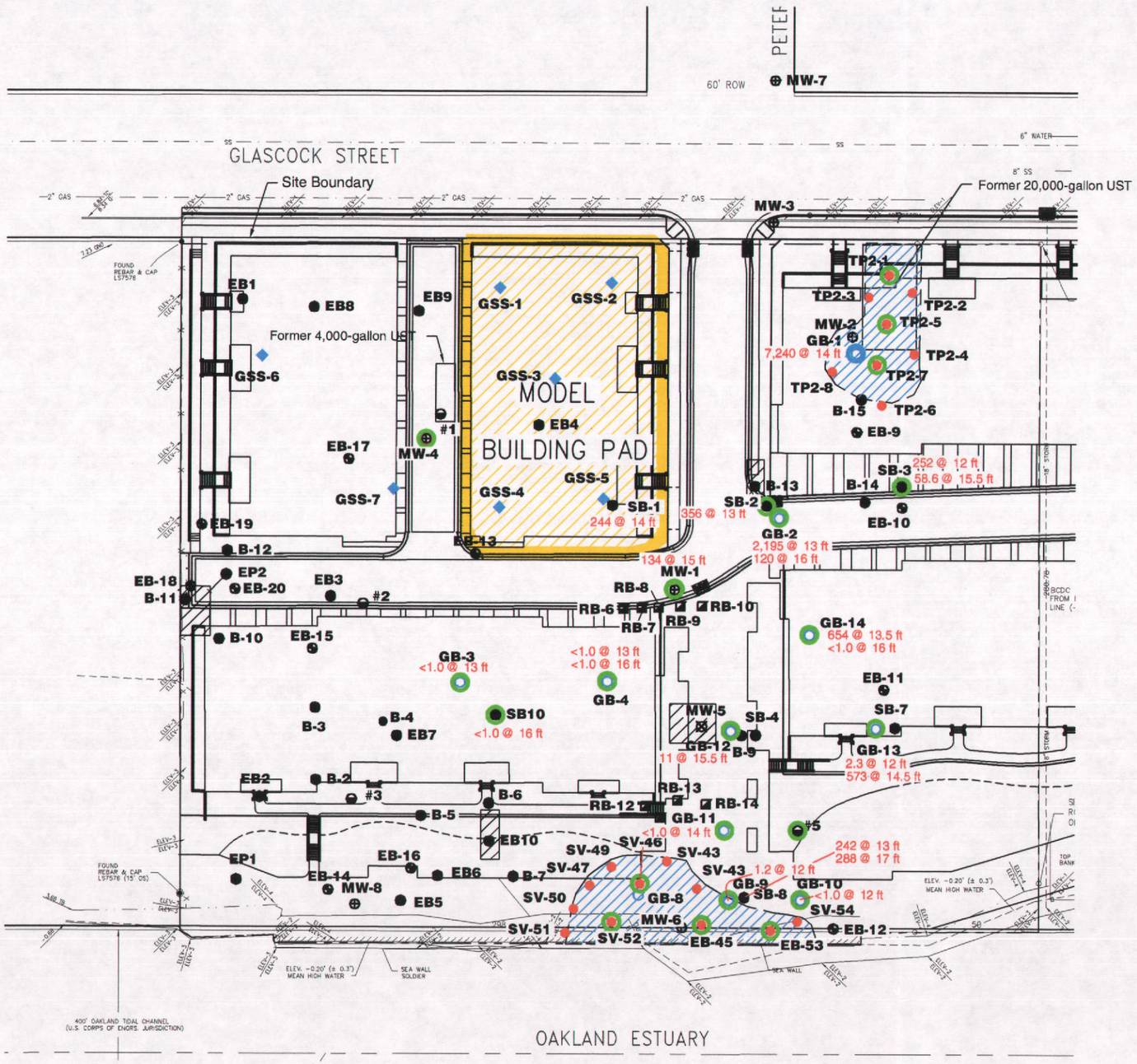
Base by KCA Engineers.

TOTAL TPHG AND TPHD SOIL RESULTS
7 TO 10 FEET
2901 GLASCOCK STREET
Oakland, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIG. 9
1731-2G

3/03*EB



LEGEND

- - Approximate location of soil verification sample (Lowney Sept., 2003)
- - Approximate location of soil sample requested by the ACDEH
- - Approximate location of ground water and soil boring (Lowney Sept., 2003)
- - Approximate location of exploratory boring (Lowney 2002)
- - Approximate location of exploratory boring (Lowney 2001)
- - Approximate location of extraction/monitoring well
- - Approximate location of soil vapor boring
- - Approximate location of remediation boring (1999)
- - Approximate location of soil sample (1995)
- - Approximate location of test pit (1995)
- - Approximate location of soil sample (1993)
- - Approximate location of destroyed ground water monitoring well
- - Soil excavation areas (1996)
- - TPHd and TPHg, 10 to 16 feet, ND to 5,000 ppm
- - TPHd and TPHg, 10 to 16 feet, >5,000 ppm

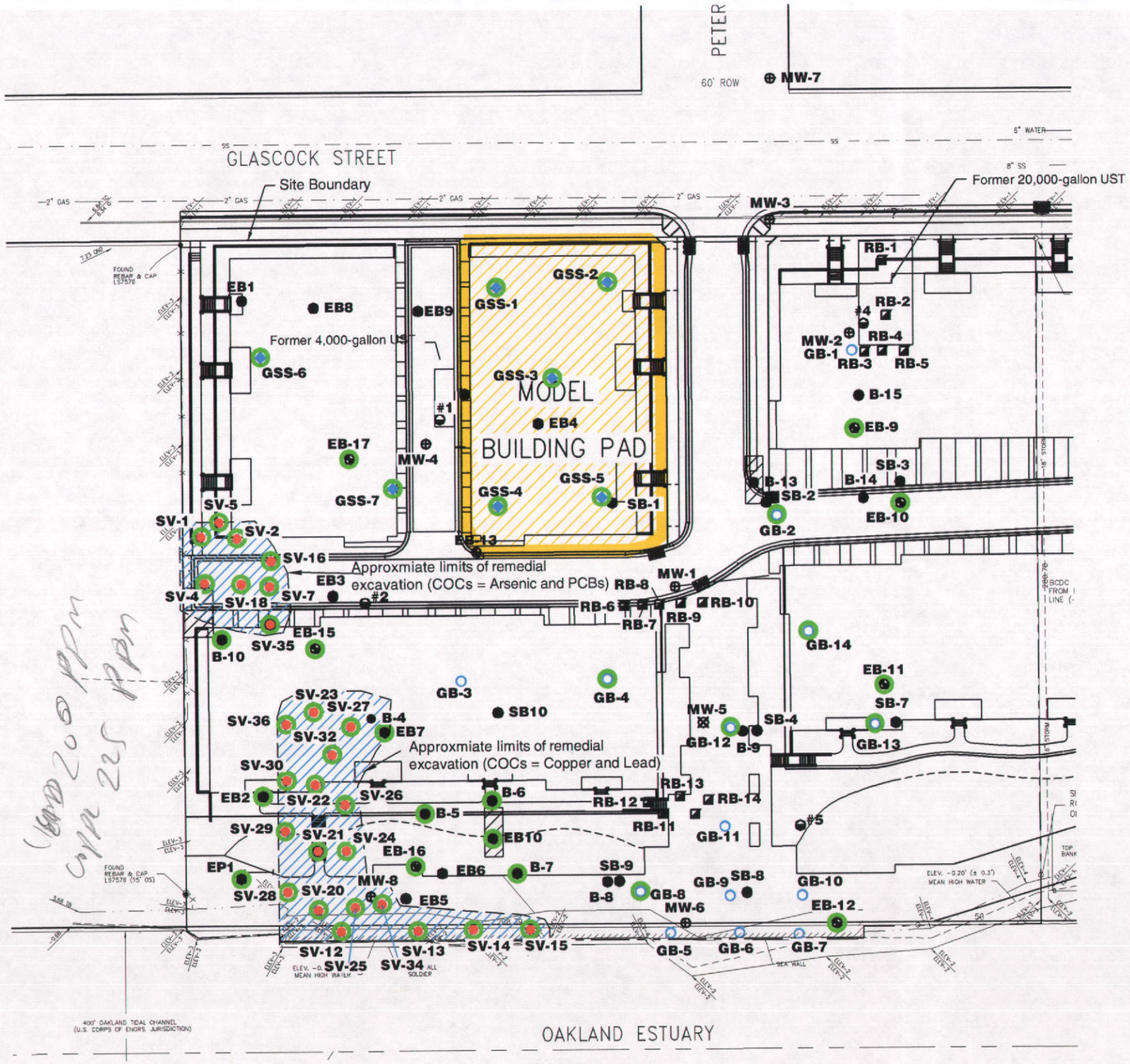
Base by KCA Engineers.

TOTAL TPHG AND TPHD SOIL RESULTS
10 TO 17 FEET
2901 GLASCOCK STREET
Oakland, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIG. 10
1731-2G

3/03*EB



LEGEND

- Approximate location of soil verification sample (Lowney Sept., 2003)
- Approximate location of soil sample requested by the ACDEH
- Approximate location of ground water and soil boring (Lowney Sept., 2003)
- Approximate location of exploratory boring (Lowney 2002)
- Approximate location of exploratory boring (Lowney 2001)
- Approximate location of extraction/monitoring well
- Approximate location of soil vapor boring
- Approximate location of remediation boring (1999)
- Approximate location of soil sample (1995)
- Approximate location of test pit (1995)
- Approximate location of soil sample (1993)
- Approximate location of destroyed ground water monitoring well
- Soil sample location with background concentrations of metals or below cleanup goals and/or PCB concentrations below cleanup goals

Base by KCA Engineers.

METAL AND PCB RESULTS IN SOILS

2901 GLASCOCK STREET
Oakland, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIG. 11

1731-2G

3/03*EB

APPENDIX A

HISTORICAL SOIL SAMPLING ANALYTICAL RESULTS

Table A-1:
Total Petroleum Hydrocarbons, PAHs, and PCBs in Soil (ppm)
2901 Glascock Street

Boring/ Sample ID	Depth (feet)	Date Sampled	TPHg	TPHd	TPHmo	TPH o&g	TRPH	Benzene	Toluene	Ethyl-benzene	Xylene	MTBE	PCBs	PAHs	Consultant	Cleanup Goals Exceeded (Y/N)	Description
# 1	6	1/27/1993	<0.2	<1	--	--	--	<0.001	<0.005	<0.001	<0.001	--	--	--	PRE	N	
# 2	5	1/27/1993	<0.2	<1	--	--	--	<0.001	<0.005	<0.001	<0.005	--	--	--	PRE	N	
# 3	1.5	1/27/1993	<0.2	<1	--	--	--	<0.001	<0.001	<0.001	<0.01	--	--	--	PRE	N	
# 4	1.5	1/27/1993	<5	<25	--	--	--	<0.03	0.03	0.05	1.3	--	--	--	PRE	N	
# 5	1.5	1/27/1993	<0.5	<3	--	--	--	<0.003	<0.003	<0.003	<0.003	--	--	--	PRE	N	
1	9	2/23/1993	<1	<1	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	PRE	N	Confirmation samples from 4,000-gallon UST removal
2	9	2/23/1993	1	1,400	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	PRE	N	Confirmation samples from 4,000-gallon UST removal
1 soil	12	2/26/1993	--	2,800	--	1,400	--	<0.030	<0.030	0.49	0.09	--	--	--	PRE	N	Confirmation samples from 20,000-gallon UST removal
2 soil	12	2/26/1993	--	3,800	--	1,900	--	<0.030	<0.030	0.09	<0.030	--	--	--	PRE	N	Confirmation samples from 20,000-gallon UST removal
3 soil	12	2/26/1993	--	1,200	--	390	--	<0.030	<0.030	<0.030	<0.030	--	--	--	PRE	N	Confirmation samples from 20,000-gallon UST removal
4 soil	12	2/26/1993	--	1,300	--	520	--	<0.030	<0.030	<0.030	<0.030	--	--	--	PRE	N	Confirmation samples from 20,000-gallon UST removal
MW-1	5	9/23/1994	<1.0	<10	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
MW-1	10	9/23/1994	48	300	--	--	--	<0.005	0.005	<0.005	0.086	--	--	--	W. A. Craig Inc.	N	
MW-1	15	9/23/1994	4.3	130	46	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
MW-2	4.5	9/23/1994	26	250	--	--	--	<0.005	<0.005	0.017	0.021	--	--	--	W. A. Craig Inc.	N	
MW-2	9	9/23/1994	52	830	--	--	--	<0.005	0.018	<0.005	0.190	--	--	--	W. A. Craig Inc.	N	
MW-2	14.5	9/23/1994	50	7,900	3,900	--	--	0.039	0.022	0.61	0.84	--	--	--	W. A. Craig Inc.	N	
MW-3	5	9/23/1994	<1.0	<10	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
MW-3	9.5	9/23/1994	110	780	--	--	--	<0.04	<0.04	<0.04	0.30	--	--	--	W. A. Craig Inc.	N	
MW-3	15	9/23/1994	<1.0	<10	<40	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
MW-4	5	9/23/1994	<1.0	<10	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
MW-4	9	9/23/1994	<1.0	<10	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
MW-4	14	9/23/1994	1.9	<10	<40	--	--	<0.005	<0.005	<0.005	0.007	--	--	--	W. A. Craig Inc.	N	
SB-1	9	3/29/1995	100	500	230	--	--	<0.01	<0.01	<0.01	0.15	--	--	--	W. A. Craig Inc.	N	
SB-1	14	3/29/1995	24	220	99	--	--	<0.005	0.006	<0.005	0.043	--	--	--	W. A. Craig Inc.	N	
SB-2	8	3/29/1995	130	980	410	--	--	<0.005	0.020	<0.005	0.15	--	--	--	W. A. Craig Inc.	N	
SB-2	13	3/29/1995	56	300	120	--	--	<0.005	0.006	<0.005	0.098	--	--	--	W. A. Craig Inc.	N	
SB-3	7	3/29/1995	79	540	220	--	--	<0.05	<0.05	<0.05	<0.05	--	--	--	W. A. Craig Inc.	N	
SB-3	12	3/29/1995	42	210	81	--	--	<0.005	0.007	<0.005	0.076	--	--	--	W. A. Craig Inc.	N	
SB-3	15.5	3/29/1995	1.6	57	22	--	--	<0.005	<0.005	<0.005	0.008	--	--	--	W. A. Craig Inc.	N	
SB-4	8	3/29/1995	4.1	320	420	--	--	<0.005	<0.005	<0.005	0.008	--	--	--	W. A. Craig Inc.	N	
SB-4	13	3/29/1995	3.7	66	83	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
SB-4	18	3/30/1995	1.4	1.5	<10	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
SB-7	8	3/30/1995	1,700	1,100	280	--	--	3	9.9	19	81	--	--	--	W. A. Craig Inc.	N	
SB-7	11.5	3/30/1995	170	230	54	--	--	0.42	0.78	1.7	5.9	--	--	--	W. A. Craig Inc.	N	
SB-7	16.5	3/30/1995	5.4	21	<10	--	--	<0.005	0.021	0.030	0.077	--	--	--	W. A. Craig Inc.	N	
SB-8	8	3/30/1995	<1.0	10	34	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
SB-8	13	3/30/1995	12	230	220	--	--	<0.005	0.008	0.005	0.022	--	--	--	W. A. Craig Inc.	N	
SB-8	17	3/30/1995	18	270	180	--	--	0.009	0.020	0.007	0.040	--	--	--	W. A. Craig Inc.	N	
SB-9	8	3/30/1995	56	960	570	--	--	<0.005	<0.005	0.010	0.035	--	--	--	W. A. Craig Inc.	N	
SB-9	12.5	3/30/1995	590	5700	2,300	--	--	<0.1	0.15	0.33	2.4	--	--	--	W. A. Craig Inc.	N	
SB-10	16.5	3/30/1995	<1.0	<1.0	<10	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
EB-1	5	4/17/1995	<1.0	<1.0	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
EB-2	4	4/17/1995	<1.0	<1.0	--	--	--	<0.005	<0.005	<0.005	<0.005	--	<0.1	--	W. A. Craig Inc.	N	
EB-3	3	4/17/1995	<1.0	<1.0	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
EB-3	4	4/17/1995	<1.0	<1.0	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
EB-5	4	4/17/1995	<1.0	<1.0	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
EB-6	2	4/18/1995	<1.0	7.9	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
EB-8	5.5	4/18/1995	<1.0	1.8	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
EB-9	5.5	4/18/1995	<1.0	<1.0	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
EP-1	1	4/17/1995	<1.0	<1.0	--	--	--	<0.005	<0.005	<0.005	<0.005	--	<0.1	--	W. A. Craig Inc.	N	
EP-1	4	4/17/1995	<1.0	<1.0	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
EP-2	4	4/17/1995	<1.0	<1.0	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
Sand Blast	0	4/18/1995	--	<1.0	--	--	--	0.029	0.017	0.030	0.014	--	--	--	W. A. Craig Inc.	N	
Shavings	2	4/18/1995	--	20	--	--	--	0.86	1.4	1.9	4.7	--	--	--	W. A. Craig Inc.	N	
MW-5	8	4/27/1995	<1.0	<1.0	<10	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
MW-5	12	4/27/1995	99	1,800	730	--	--	<0.005	0.017	0.023	0.20	--	--	--	W. A. Craig Inc.	N	
MW-6	8	4/27/1995	8.7	620	390	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	

Table A-1:
Total Petroleum Hydrocarbons, PAHs, and PCBs in Soil (ppm)
2901 Glascock Street

Boring/ Sample ID	Depth (feet)	Date Sampled	TPHg	TPHd	TPHmo	TPH o&g	TRPH	Benzene	Toluene	Ethyl-benzene	Xylene	MTBE	PCBs	PAHs	Consultant	Cleanup Goals Exceeded (Y/N)	Description
MW-6	12	4/27/1995	4.7	46	21	--	--	<0.005	<0.005	<0.005	0.005	--	--	--	W. A. Craig Inc.	N	
MW-7	10	4/27/1995	<1.0	<1.0	<10	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	W. A. Craig Inc.	N	
B-3	6	11/10/1995	--	<200	720	--	--	--	--	--	--	--	--	--	PEG	N	
B-4	1	11/10/1995	--	--	--	--	--	--	--	--	--	--	0.03	--	PEG	N	
B-5	1	11/10/1995	--	--	--	--	--	--	--	--	--	--	<0.017	--	PEG	N	
B-6	1	11/10/1995	--	11	22	--	--	--	--	--	--	--	<0.017	--	PEG	N	
B-6	5	11/10/1995	--	<10	<10	--	--	--	--	--	--	--	--	--	PEG	N	
B-7	1	11/10/1995	--	32	45	--	--	--	--	--	--	--	0.019	--	PEG	N	
B-7	5	11/10/1995	--	<10	<10	--	--	--	--	--	--	--	--	--	PEG	N	
B-8	5	11/10/1995	--	<10	<10	--	--	--	--	--	--	--	--	--	PEG	N	
B-9	5	11/10/1995	--	12	<10	--	--	--	--	--	--	--	--	--	PEG	N	
B-10	1	11/10/1995	--	--	--	--	--	--	--	--	--	--	0.044	--	PEG	N	
B-11	1	11/10/1995	--	--	--	--	--	--	--	--	--	--	0.21	--	PEG	N	
B-14	5	11/10/1995	--	<10	<10	--	--	--	--	--	--	--	--	--	PEG	N	
B-15	5	11/10/1995	--	<10	<10	--	--	--	--	--	--	--	--	--	PEG	N	
B-13-N	3	10/1/1996	--	<10	<10	--	--	--	--	--	--	--	--	--	PEG	N	
B-13-S	3	10/1/1996	--	26	48	--	--	--	--	--	--	--	--	--	PEG	N	Confirmation sample
B-13-E	3	10/1/1996	--	<10	<10	--	--	--	--	--	--	--	--	--	PEG	N	Confirmation sample
B-13-BT	5	10/1/1996	--	<10	<10	--	--	--	--	--	--	--	--	--	PEG	N	Confirmation sample
EB-10-N	3	10/1/1996	--	<10	<10	--	--	--	--	--	--	--	--	--	PEG	N	Confirmation sample
EB-10-S	3	10/1/1996	--	<10	<10	--	--	--	--	--	--	--	--	--	PEG	N	Confirmation sample
EB-10-E	3	10/1/1996	--	23	83	--	--	--	--	--	--	--	--	--	PEG	N	Confirmation sample
EB-10-W	3	10/1/1996	--	32	110	--	--	--	--	--	--	--	--	--	PEG	N	Confirmation sample
EB-10-BT	5	10/1/1996	--	<10	12	--	--	--	--	--	--	--	--	--	PEG	N	Confirmation sample
MW-5-N	3	10/1/1996	--	150	100	--	--	--	--	--	--	--	--	--	PEG	N	Confirmation sample
MW-5-S	3	10/1/1996	--	<10	<10	--	--	--	--	--	--	--	--	--	PEG	N	Confirmation sample
MW-5-E	3	10/1/1996	--	220	230	--	--	--	--	--	--	--	--	--	PEG	N	Confirmation sample
MW-5-W	3	10/1/1996	--	13	29	--	--	--	--	--	--	--	--	--	PEG	N	Confirmation sample
MW-5-BT	5	10/1/1996	--	22	15	--	--	--	--	--	--	--	--	--	PEG	N	Confirmation sample
EP2-N	1.5	10/1/1996	--	<10	<10	--	--	--	--	--	--	--	0.16	--	PEG	N	Confirmation sample
EP2-S	1.5	10/1/1996	--	<10	11	--	--	--	--	--	--	--	<0.033	--	PEG	N	Confirmation sample
EP2-E	1.5	10/1/1996	--	<10	<10	--	--	--	--	--	--	--	0.1	--	PEG	N	Confirmation sample
EP2-W-2	1.5	12/5/1996	--	--	--	--	--	--	--	--	--	--	35	--	PEG	Y	Confirmation sample. Collected from property line.
EP2-BT	3	10/1/1996	--	<10	<10	--	--	--	--	--	--	--	<0.033	--	PEG	N	Confirmation sample
EB-9	2-2½	10/1-2/01	--	--	--	--	--	--	--	--	--	--	<0.05	<RBSL	Lowney Associates	N	
EB-10	4-4½	10/1-2/01	--	--	--	--	--	--	--	--	--	--	<0.05	ND	Lowney Associates	N	
EB-11	4½-5	10/1-2/01	--	--	--	--	--	--	--	--	--	--	<0.05	ND	Lowney Associates	N	
EB-11	5½-6	10/1-2/01	--	--	--	--	--	--	--	--	--	--	<0.05	<RBSL	Lowney Associates	N	
EB-12	3-3½	10/1-2/01	--	--	--	--	--	--	--	--	--	--	<0.05	<RBSL	Lowney Associates	N	
EB-12	4-4½	10/1-2/01	--	--	--	--	--	--	--	--	--	--	<0.05	ND	Lowney Associates	N	
EB-14	4-4½	10/1-2/01	--	--	--	--	--	--	--	--	--	--	<0.05	ND	Lowney Associates	N	
EB-15	3-3½	10/1-2/01	--	--	--	--	--	--	--	--	--	--	0.062	<RBSL	Lowney Associates	N	
EB-16	3½-4	10/1-2/01	--	--	--	--	--	--	--	--	--	--	0.21	<RBSL	Lowney Associates	N	
EB-16	4½-5	10/1-2/01	--	--	--	--	--	--	--	--	--	--	0.11	<RBSL	Lowney Associates	N	
EB-17	2½-3	10/1-2/01	--	--	--	--	--	--	--	--	--	--	<0.05	ND	Lowney Associates	N	
EB-20	2½-3	10/1-2/01	--	--	--	--	--	--	--	--	--	--	0.12	<RBSL	Lowney Associates	N	

<RBSL - PAH concentrations are below respective residential PRG, City of Oakland RBSL, and CRWQCB RBSL concentrations

PRE - Pacific Rim Environmental
PEG - Pacific Environmental Group
Note: Table does not show samples excavated/ removed from the site, with the exception of UST confirmation samples.

Table A-2:
Total Metal Results in Soil (ppm)
2901 Glascock Street

Boring/ Sample ID	Sample Depth	Date Sampled	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	pH	Consultant	Cleanup Goals Exceeded (Y/N)
EB-2	4	4/17/1995	--	<0.5	45	--	7.9	--	46	52	--	W. A. Craig Inc.	N
EP-1	1	4/17/1995	--	<0.5	22	--	8.1	--	39	25	--	W. A. Craig Inc.	N
EB-6	2	4/18/1995	--	1.2	41	--	39	--	64	150	--	W. A. Craig Inc.	N
EB-7	5.5	4/18/1995	--	<0.5	41	--	7.3	--	73	37	--	W. A. Craig Inc.	N
EB-10	1	4/18/1995	--	<0.5	40	--	13	--	60	51	--	W. A. Craig Inc.	N
Sand Blast	--	4/18/1995	--	6.1	13	--	40	--	60	51	--	W. A. Craig Inc.	N
B-5	1	11/10/1995	--	<0.5	27.3	--	32.4	--	23.4	79.2	9.0	PEG	N
B-6	1	11/10/1995	--	<0.5	30.0	--	26.5	--	29.8	86.4	8.4	PEG	N
B-6	5	11/10/1995	--	NA	NA	--	NA	--	NA	NA	--	PEG	na
B-7	1	11/10/1995	--	<0.5	52.4	--	87.8	--	64.1	168	8.5	PEG	N
B-7	5	11/10/1995	--	NA	NA	--	NA	--	NA	NA	--	PEG	N
B-8	5	11/10/1995	--	NA	NA	--	NA	--	NA	NA	--	PEG	na
B-9	5	11/10/1995	--	NA	NA	--	NA	--	NA	NA	--	PEG	na
B-10	1	11/10/1995	--	<0.5	40.1	--	16.9	--	50.5	95.8	7.5	PEG	N
B-11	1	11/10/1995	--	2.3	42.3	--	39.7	--	51.1	164	7.4	PEG	N
B-12	1	11/10/1995	--	1.9	42.1	--	33	--	55.4	135	7.5	PEG	N
B-13	5	11/10/1995	--	NA	NA	--	NA	--	NA	NA	--	PEG	na
B-14	5	11/10/1995	--	NA	NA	--	NA	--	NA	NA	--	PEG	na
B-15	5	11/10/1995	--	NA	NA	--	NA	--	NA	NA	--	PEG	na
EB-9	2-2½	10/1-2/01	2.3	--	30	--	6.3	--	--	--	--	Lowney Associates	N
EB-10	4-4½	10/1-2/01	4.2	--	28	--	7.5	--	--	--	--	Lowney Associates	N
EB-11	4½-5	10/1-2/01	2.5	<0.5	29	21	43	0.51	36	30	--	Lowney Associates	N
EB-12	4-4½	10/1-2/01	<1.0	<0.5	23	18	5	<0.05	55	27	--	Lowney Associates	N
EB-15	3-3½	10/1-2/01	3.3	<0.5	30	29	18	0.077	52	62	--	Lowney Associates	N
EB-16	3½-4	10/1-2/01	3	<0.5	31	40	24	0.1	44	37	--	Lowney Associates	N
EB-16	4½-5	10/1-2/01	<1.0	--	27	--	6.1	--	--	--	--	Lowney Associates	N
EB-17	2½-3	10/1-2/01	1.4	--	25	--	58	--	--	--	--	Lowney Associates	N

Note: Table does not show samples excavated/ removed from the site.

APPENDIX B

HISTORICAL GROUND WATER MONITORING

ANALYTICAL RESULTS

Table B-2. Well Construction Details

Well #	Status	Boring Depth (feet)	Boring Diameter (inches)	Casing Depth (feet)	Casing Diameter (inches)	Screen Interval (feet bgs)	Screen Size (inches)	Annulus Interval (feet bgs)	Annulus Material	Bentonite Interval (feet bgs)	Upper Seal Interval (feet bgs)	Upper Seal Material	Installed by	Installation Date
MW-1	Destroyed	19.5	8	19.5	2	19.5-5.0	0.02	19.5-4.0	#3 Sand	4.0-3.0	3.0-0.0	Cement Grout	W.A.Craig	09/23/94
MW-2	Destroyed	20.0	8	20.0	2	20.0-5.0	0.02	20.0-4.0	#3 Sand	4.0-3.0	3.0-0.0	Cement Grout	W.A.Craig	09/23/94
MW-3	Destroyed	20.0	8	20.0	2	20.0-5.0	0.02	20.0-4.0	#3 Sand	4.0-3.0	3.0-0.0	Cement Grout	W.A.Craig	09/23/94
MW-4	Destroyed	20.0	8	20.0	2	20.0-5.0	0.02	20.0-4.0	#3 Sand	4.0-3.0	3.0-0.0	Cement Grout	W.A.Craig	09/23/94
MW-5	Destroyed	20.0	8	20.0	2	20.0-10.0	0.02	20.0-9.0	2/12 sand	9.0-8.0	8.0-0.0	Cement Grout	W.A.Craig	04/27/95
MW-6	Destroyed	20.0	8	20.0	2	20.0-10.0	0.02	20.0-9.0	2/12 sand	9.0-8.0	8.0-0.0	Cement Grout	W.A.Craig	04/27/95
MW-7	Destroyed	18.0	8	18.0	2	18.0-8.0	0.02	18.0-7.0	2/12 sand	7.0-6.0	6.0-0.0	Cement Grout	W.A.Craig	04/27/95
MW-8	Destroyed	19.0	8	19.0	2	19.0-4.0	0.02	19.0-3.5	2/12 sand	3.5-2.5	2.5-0.0	Cement Grout	W.A.Craig	11/16/95

ALL DESTROYED JULY 2003

MW5 DESTROYED IN 1995 or 1996

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

Table 2
Groundwater Analytical Data
TPPH as Gasoline, BTEX Compounds, TEPH as Diesel and Motor Oil, and MtBE

2901 Glascock Street
Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (µg/L)		Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	TEPH as Diesel (µg/L)		TEPH as Motor Oil (µg/L)		MTBE (µg/L)
MW-1	10/06/94	NS		NS	NS	NS	NS	NS		NS		NS
	01/20/95	670		5.3	ND	ND	1.1	1,900		NA		NA
	05/15/95	290		7.9	ND	ND	1.4	3,400		NA		NA
	08/28/95	250		5.4	ND	ND	1.1	1,800		NA		NA
	11/29/95	NA		NA	NA	NA	NA	ND		ND		NA
	12/06/95	770		4.8	ND	ND	1.3	39,000		NA		NA
	01/18/96	NA		NA	NA	NA	NA	23,000		NA		NA
	03/08/96	360		2,600	ND	ND	1.9	16,000		NA		24
	07/02/96	5,300	a	ND	ND	ND	ND	6,600		ND		ND
	12/17/96	540	b	3.4	ND	ND	0.83	2,800	c	1,600	d	60
	03/21/97	590		5.5	0.66	ND	ND	5,500	e	5,000	d	71
	05/16/97	NA		NA	NA	NA	NA	NA		NA		NA
	06/25/97	470	h	ND	ND	ND	ND	39,000	e	26,000	d	45
	09/29/97	510	h	2.2	ND	ND	ND	5,000	e	4,000	d	37
	12/11/97	ND		ND	ND	ND	ND	1,900	e	1,300	d	ND
	03/27/98	280	k	5.0	0.60	ND	ND	4,600	e	3,900	d	890
	06/26/98	450	f	2.6	ND	ND	ND	1,700	e	1,300	d	41
	09/11/98	230	l	2.8	ND	ND	1.8	3,000	m	ND		8.7
	09/11/98	NA		NA	NA	NA	NA	620	g	520	d	NA
	12/24/98	380	b	5.0	ND	ND	ND	2,100	g	1,600	d	ND
	03/31/99	190	b	3.0	ND	ND	1.4	10,000	e	6,600	d	55
	06/17/99	133		3.27	ND	ND	ND	1,920	g	2,770	d	11.9
	09/13/99	523		2.70	ND	ND	ND	493		ND		ND
	12/28/99	574		3.2	ND	ND	1.2	429		ND		55.9
	03/02/00	209		1.99	ND	ND	1.24	4,620		ND		9.36
	06/30/00	920	b	3.59	1.59	0.64	2.92	530	g	ND		ND
	09/29/00	5,520	b	ND	ND	ND	11.8	956	e	662	d	ND
	12/28/00	1,270	b	5.34	ND	ND	ND	4,920	g	3,330	d	34.1
	03/26/01	492	b	3.58	ND	ND	ND	614	g	ND		20.1
	06/28/01	430		1.8	ND	ND	1.4	11,000		7,100	d	6
	09/18/01	210	b	6.3	ND	ND	1.1	NA		NA		20
	11/01/01	130	b	3.4	ND	ND	ND	120	g	ND		ND
	02/12/02	250	b	2.3	ND	ND	ND	120	t	ND		ND
	05/31/02	310	u	3.4	ND	ND	ND	130	t	ND		ND
	08/29/02	420	u	1.8	ND	ND	ND	8,700	t	2,400		ND
	11/25/02	320	u	1.7	ND	ND	ND	220	t	ND		ND
	02/27/03	380	u	5.1	ND	ND	ND	190	t	ND		9.2
MW-2	10/06/94	NS		NS	NS	NS	NS	NS		NS		NS
	01/20/95	520		2.2	1.9	ND	1.3	4,000		NA		NA
	05/15/95	310		2.3	1.9	ND	1.4	5,100		NA		NA
	08/28/95	320		2.9	2.9	ND	2.6	4,100		NA		NA
	11/29/95	NS		NS	NS	NS	NS	NS		NS		NS
	12/06/95	210		2.0	2.2	ND	0.57	17,000		NA		NA
	01/18/96	NA		NA	NA	NA	NA	22,000		NA		NA
	03/08/96	310		2.4	1.9	ND	1.4	56,000		NA		ND
	07/02/96	9,300	a	ND	ND	ND	ND	19,000		ND		ND
	12/17/96	140	b	1.1	2.0	ND	1.4	10,000	e	5,400	d	ND
	03/21/97	230		2.1	1.9	ND	ND	17,000	e	16,000	d	ND
	05/16/97	NA		NA	NA	NA	NA	NA		NA		NA
	06/25/97	630	h	ND	ND	ND	ND	16,000	e	13,000	d	ND
	09/29/97	300	h	1.3	0.66	ND	ND	32,000	e	20,000	d	ND
	12/11/97	ND		ND	ND	ND	ND	4,800	e	4,000	d	ND
	03/27/98	94	k	1.3	1.30	ND	ND	15,000	e	11,000	d	18
	06/26/98	490	b	ND	ND	ND	ND	11,000	e	5,900	d	ND
	09/11/98	550	l	ND	ND	ND	ND	11,000	n	ND		ND
	09/11/98	NA		NA	NA	NA	NA	6,100	g	ND		NA

Table 2
Groundwater Analytical Data
TPPH as Gasoline, BTEX Compounds, TEPH as Diesel and Motor Oil, and MtBE

2901 Glascock Street
Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (µg/L)		Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	TEPH as Diesel (µg/L)		TEPH as Motor Oil (µg/L)		MTBE (µg/L)
MW-2	12/24/98	990	b	ND	6.8	9.1	17	2,000	g	1,200	d	ND
(cont'd)	3/3/1/99	580	p	1.3	2.2	ND	0.99	21,000	g	14,000	d	ND
	06/17/99	525		ND	ND	ND	ND	ND		ND		ND
	09/13/99	392		1.28	3.98	ND	1.22	1,380		617		ND
	12/28/99	2,950		ND	ND	ND	ND	963		627		ND
	03/02/00	528		1.2	1.85	ND	0.78	9,100		0.612		ND
	06/30/00	1,020	b	1.71	1.59	0.544	2.47	1,480	e	ND		ND
	09/29/00	1,710	b	2.92	ND	ND	ND	2,030	g	1,200	d	ND
	12/28/00	6,010	b	ND	ND	ND	ND	7,130	e	ND		ND
	03/26/01	2,070	b	ND	ND	ND	ND	2,090	c	1,220	d	ND
	06/28/01	4,100		ND	ND	ND	ND	30,000		19,000	d	ND
	09/18/01	980	b	1.0	1.4	ND	0.88	NA		NA		2.6
	11/01/01	490	b	ND	0.92	ND	ND	640	g	ND		ND
	02/12/02	3,500	b	ND	ND	ND	ND	970	t	ND		ND
	05/31/02	270	u	ND	2.6	ND	ND	820	t	ND		ND
	08/29/02	130	u	ND	ND	ND	ND	14,000	t	3,800		ND
	11/25/02	210	u	ND	1.7	ND	ND	830	t	ND		ND
	02/27/03	2,000	u	ND	2.5	ND	ND	800	t	ND		ND
MW-3	10/06/94	NA		ND	ND	ND	ND	320		NA		NA
	01/20/95	86		ND	ND	ND	ND	460		NA		NA
	05/15/95	60		ND	ND	ND	ND	310		NA		NA
	08/28/95	ND		ND	ND	ND	ND	310		NA		NA
	11/29/95	NS		NS	NS	NS	NS	NS		NS		NS
	12/06/95	120		ND	ND	ND	ND	1,000		NA		NA
	01/18/96	NA		NA	NA	NA	NA	210		NA		NA
	03/08/96	67		ND	ND	ND	ND	1,000		NA		7.2
	07/02/96	230	a	ND	ND	ND	ND	640		ND		ND
	12/17/96	240	f	ND	ND	ND	ND	560	e	ND		ND
	03/21/97	760	h	ND	ND	ND	0.94	2,100	e	1900	d	5.6
	05/16/97	NA		NA	NA	NA	NA	NA		NA		NA
	06/25/97	180	h	ND	ND	ND	0.58	610	g	ND		5.3
	09/29/97	84	i	ND	ND	ND	ND	470	g	ND		ND
	12/11/97	ND		ND	ND	ND	ND	380	e	ND		ND
	03/27/98	ND		ND	ND	ND	ND	220	g	ND		ND
	06/26/98	68	b	ND	ND	ND	ND	210	g	ND		ND
	09/11/98	110	l	ND	ND	ND	ND	320	o	ND		ND
	09/11/98	NA		NA	NA	NA	NA	210	g	ND		NA
	12/24/98	ND		ND	ND	ND	ND	220	g	ND		ND
	03/31/99	73	q	ND	ND	ND	ND	680	r	580	r	ND
	06/17/99	72		ND	ND	ND	0.696	325	g	516	d	ND
	09/13/99	80		ND	ND	ND	ND	203		ND		12.7
	12/28/99	331		ND	ND	ND	1.16	314		ND		6.92
	03/02/00	84		ND	ND	ND	ND	1,370		ND		ND
	06/30/00	87.5	b	ND	ND	ND	0.599	100		ND		ND
	09/29/00	85.0	b	ND	ND	ND	0.849	495	g	ND		8.45
	12/28/00	1,530	b	ND	ND	ND	ND	667	g	ND		ND
	03/26/01	585	b	ND	ND	ND	ND	587	c	ND		ND
	06/28/01	610		0.66	ND	ND	ND	8,800		5,200	d	ND
	09/18/01	870	b	1.3	ND	ND	1.6	NA		NA		ND
	11/01/01	700	b	ND	ND	ND	ND	400	g	ND		ND
	02/12/02	420	b	ND	ND	ND	ND	350	t	ND		ND
	05/31/02	160	u	ND	ND	ND	ND	240	t	ND		ND
	08/29/02	170	u	ND	ND	ND	ND	790	t	ND		ND
	11/25/02	1,400	u	ND	ND	ND	ND	290	t	ND		ND
	02/27/03	220	u	ND	ND	ND	ND	260	t	ND		ND

Table 2
Groundwater Analytical Data
TPPH as Gasoline, BTEX Compounds, TEPH as Diesel and Motor Oil, and MtBE

2901 Glascock Street
Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (µg/L)		Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	TEPH as Diesel (µg/L)		TEPH as Motor Oil (µg/L)		MTBE (µg/L)
MW-4	10/06/94	NA		ND	ND	ND	ND	ND		NA		NA
	01/20/95	ND		ND	ND	ND	ND	ND		NA		NA
	05/15/95	ND		ND	ND	ND	ND	ND		NA		NA
	08/28/95	ND		ND	ND	ND	ND	ND		NA		NA
	11/29/95	NA		NA	NA	NA	NA	NA		NA		NA
	12/06/95	ND		ND	ND	ND	ND	57		NA		NA
	01/18/96	NA		NA	NA	NA	NA	ND		NA		NA
	03/08/96	ND		ND	ND	ND	ND	100		NA		ND
	07/02/96	ND		ND	ND	ND	ND	ND		ND		ND
	12/17/96	ND		ND	ND	ND	ND	310	g	530	d	ND
	03/21/97	ND		ND	ND	ND	ND	180	g	500	d	ND
	06/25/97	ND		ND	ND	ND	ND	120	g	ND		ND
	09/29/97	ND		ND	ND	ND	ND	130	g	ND		ND
	12/11/97	ND		ND	ND	ND	ND	57	g	ND		ND
	03/27/98	ND		ND	ND	ND	ND	ND		ND		ND
	06/26/98	ND		ND	ND	ND	ND	ND		ND		ND
	09/11/98	ND		ND	ND	ND	ND	ND		ND		ND
	09/11/98	NA		NA	NA	NA	NA	230	g	ND		NA
	12/24/98	ND		ND	ND	ND	ND	65	g	ND		ND
	03/31/99	ND		ND	ND	ND	ND	140	r	ND		ND
	06/17/99	ND		ND	ND	ND	ND	ND		ND		ND
	09/13/99	ND		ND	ND	ND	ND	ND		ND		ND
	12/28/99	ND		ND	ND	ND	ND	ND		ND		4.14
	03/02/00	ND		ND	ND	ND	ND	247		ND		ND
	06/30/00	ND		ND	ND	ND	ND	112	g	ND		ND
	09/29/00	ND		ND	ND	ND	ND	68.3	g	ND		ND
	12/28/00	ND		ND	ND	ND	ND	80.9	g	ND		ND
	03/26/01	ND		ND	ND	ND	ND	96.2	g	ND		ND
	06/28/01	ND		ND	ND	ND	ND	ND		ND		ND
	09/18/01	ND		ND	ND	ND	ND	NA		NA		ND
	11/01/01	ND		ND	ND	ND	ND	ND		ND		ND
	02/12/02	92	b	ND	ND	ND	ND	ND		ND		ND
	05/31/02	ND		ND	ND	ND	ND	ND		ND		ND
	08/29/02	ND		ND	ND	ND	ND	ND		ND		ND
	11/25/02	ND		ND	ND	ND	ND	ND		ND		ND
	02/27/03	ND		ND	ND	ND	ND	ND		ND		ND
MW-5	05/15/95	ND		ND	ND	ND	ND	490		NA		NA
	08/28/95	ND		ND	ND	ND	ND	170		NA		NA
	11/29/95	NS		NS	NS	NS	NS	NS		NS		NS
	12/06/95	ND		ND	ND	ND	ND	250		NA		NA
	01/18/96	NA		NA	NA	NA	NA	49		NA		NA
	03/08/96	ND		ND	ND	ND	ND	210		ND		12
	07/02/96	200	a	ND	ND	ND	ND	110		ND		ND
		-- Well Destroyed in September 1996 --										
MW-6	05/15/95	120		5.6	0.88	ND	2.1	1,100		NA		NA
	08/28/95	140		6.1	0.77	ND	2.3	2,100		NA		NA
	11/29/95	NA		NA	NA	NA	NA	35,000		5,400		NA
	12/06/95	140		4.6	0.89	ND	1.7	38,000		NA		NA
	01/18/96	NA		NA	NA	NA	NA	59,000		NA		NA
	03/08/96	160		3.4	0.57	ND	1.9	14,000		NA		ND
	07/02/96	3,300	a	3.1	ND	ND	ND	2,300		1,300		ND
	12/17/96	150	b	3.4	0.93	ND	1.7	15,000	e	14,000	d	14
	03/21/97	300		3.5	0.91	ND	0.79	18,000	e	17,000	d	19
	05/16/97	NA		NA	NA	NA	NA	NA		NA		NA
	06/25/97	590	h	3.2	ND	ND	ND	9,300	e	7,900	d	15
	09/29/97	490	h	2.6	0.83	ND	1.5	7,900	e	7,900	d	13

Table 2
Groundwater Analytical Data
TPPH as Gasoline, BTEX Compounds, TEPH as Diesel and Motor Oil, and MtBE

2901 Glascock Street
Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (µg/L)		Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	TEPH as Diesel (µg/L)		TEPH as Motor Oil (µg/L)		MTBE (µg/L)
MW-6	12/11/97	ND		ND	ND	ND	ND	5,600	e	5,100	j	ND
(cont'd)	03/27/98	ND		ND	ND	ND	ND	1,500	e	1,400	d	ND
	06/26/98	290	f	5.3	ND	ND	1.1	9,200	e	6,400	d	11
	09/11/98	660	l	500	ND	ND	ND	4,200	m	ND		6.5
	09/11/98	NA		NA	NA	NA	NA	1,600	g	1,300	d	NA
	12/24/98	ND		ND	ND	ND	ND	1,000	g	690	d	ND
	03/31/99	330	b	4.2	0.83	ND	1.5	22,000	e	16,000	d	ND
	06/17/99	504		4.56	0.863	0.573	1.2	1,460	s	7,090	d	9.85
	09/13/99	192		4.74	1.24	ND	3.64	826		694		6.2
	12/28/99	3690		4.4	ND	ND	ND	527		ND		16.2
	03/02/00	336		4.92	1.18	ND	1.89	1,600		ND		4.75
	06/30/00	8550	b	58.9	73.1	ND	56.7	590	g	ND		ND
	09/29/00	642	b	4.41	0.793	ND	1.32	863	g	ND		14.4
	12/28/00	500	b	4.89	ND	ND	ND	6,750	g	3,440	d	ND
	03/26/01	14000	b	ND	ND	ND	ND	773	c	ND		ND
	06/28/01	620	b	3.3	0.76	0.58	1.6	31,000		22,000	d	3.9
	09/18/01	430	b	3.1	0.54	2.6	2.8	NA		NA		4.1
	11/01/01	600	b	2.5	ND	ND	0.52	290	g	ND		ND
	02/12/02	860	b	3.7	ND	ND	ND	350	t	ND		ND
	05/31/02	210	u	5.5	0.76	ND	2.1	280	t	ND		ND
	08/29/02	120	u	2.7	0.88	ND	1.4	8,600	t	2,900		ND
	11/25/02	150	u	3.5	0.99	ND	1.1	230	t	ND		ND
	02/27/03	570	u	4.1	1.9	ND	ND	430	t	ND		ND
MW-7	05/15/95	110		ND	ND	ND	ND	ND		NA		NA
	08/28/95	ND		ND	ND	ND	ND	ND		NA		NA
	11/29/95	NA		NA	NA	NA	NA	NA		NA		NA
	12/06/95	62		ND	ND	ND	ND	ND		NA		NA
	01/18/96	NA		NA	NA	NA	NA	ND		NA		NA
	03/08/96	ND		ND	ND	ND	ND	ND		NA		ND
	07/02/96	ND		ND	ND	ND	ND	ND		ND		580
	12/17/96	ND		ND	ND	ND	ND	120	g	ND		100
	03/21/97	ND		ND	ND	ND	ND	79	g	ND		190
	06/25/97	ND		ND	ND	ND	ND	58	g	ND		580
	09/29/97	ND		ND	ND	ND	ND	ND		ND		310
	12/11/97	ND		ND	ND	ND	ND	ND		ND		ND
	03/27/98	ND		ND	ND	ND	ND	ND		ND		ND
	06/26/98	ND		ND	ND	ND	ND	ND		ND		110
	09/11/98	ND		ND	ND	ND	ND	ND		ND		110
	09/11/98	NA		NA	NA	NA	NA	140	g	ND		NA
	12/24/98	ND		ND	ND	ND	ND	ND		ND		150
	03/31/99	ND		ND	ND	ND	ND	78	r	ND		11
	06/17/99	ND		ND	ND	ND	ND	53.7	g	ND		59.1
	09/13/99	ND		ND	ND	ND	ND	ND		ND		55.3
	12/28/99	ND		ND	ND	ND	ND	ND		ND		67.6
	03/02/00	ND		ND	ND	ND	ND	334		ND		16.1
	06/30/00	ND		ND	ND	ND	ND	95.8		ND		35.8
	09/29/00	ND		ND	ND	ND	ND	70.0	g	ND		50.4
	12/28/00	ND		ND	ND	ND	ND	73.8	g	ND		41.5
	03/26/01	ND		ND	ND	ND	ND	76.1	g	ND		11.1
	06/28/01	ND		ND	ND	ND	ND	ND		ND		40
	09/18/01	ND		ND	ND	ND	ND	NA		NA		16
	11/01/01	ND		ND	ND	ND	ND	ND		ND		7.6
	02/12/02	ND		ND	ND	ND	ND	ND		ND		ND
	05/31/02	ND		ND	ND	ND	ND	ND		ND		ND
	08/29/02	ND		ND	ND	ND	ND	ND		ND		8.2
	11/25/02	ND		ND	ND	ND	ND	ND		ND		5.9
	02/27/03	ND		ND	ND	ND	ND	ND		ND		ND

Table 2
Groundwater Analytical Data
TPPH as Gasoline, BTEX Compounds, TEPH as Diesel and Motor Oil, and MtBE

2901 Glascock Street
Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	TEPH as Diesel (µg/L)		TEPH as Motor Oil (µg/L)		MTBE (µg/L)
MW-8	11/29/95	NA	NA	NA	NA	NA	NA		NA		NA
	01/18/96	NA	NA	NA	NA	NA	ND		NA		NA
	03/08/96	NS	NS	NS	NS	NS	NS		NS		NS
	07/02/96	ND	0.74	0.88	ND	0.82	ND		ND		ND
	12/17/96	ND	ND	ND	ND	ND	53	g	ND		ND
	03/21/97	ND	ND	ND	ND	ND	ND		ND		ND
	06/25/97	ND	ND	ND	ND	ND	ND		ND		ND
	09/29/97	ND	ND	ND	ND	ND	ND		ND		ND
	12/11/97	270	8.0	1.8	5.7	14	ND		ND		72
	03/27/98	ND	ND	ND	ND	ND	ND		ND		ND
	06/26/98	ND	ND	ND	ND	ND	ND		ND		ND
	09/11/98	ND	ND	ND	ND	ND	ND		ND		ND
	09/11/98	NA	NA	NA	NA	NA	130	g	ND		NA
	12/24/98	ND	ND	ND	ND	ND	ND		ND		ND
	03/31/99	ND	ND	ND	ND	ND	ND		ND		ND
	06/17/99	ND	ND	ND	ND	ND	10,400	g	12,700	d	ND
	09/13/99	ND	ND	ND	ND	ND	ND		ND		ND
	12/28/99	ND	ND	ND	ND	ND	ND		ND		ND
	03/02/00	ND	ND	ND	ND	ND	50.6		ND		ND
	06/30/00	ND	ND	ND	ND	ND	77.5		ND		ND
	09/29/00	ND	ND	ND	ND	ND	ND		ND		ND
	12/28/00	ND	ND	ND	ND	ND	66.7	g	ND		ND
	03/26/01	ND	ND	ND	ND	ND	67.9	g	ND		ND
	06/28/01	ND	ND	ND	ND	ND	ND		ND		ND
	09/18/01	ND	ND	ND	ND	ND	NA		NA		ND
	11/01/01	ND	ND	ND	ND	ND	ND		ND		ND
	02/12/02	ND	ND	ND	ND	ND	ND		ND		ND
	05/31/02	ND	ND	ND	ND	ND	ND		ND		ND
	08/29/02	ND	ND	ND	ND	ND	ND		ND		ND
	11/25/02	ND	ND	ND	ND	ND	ND		ND		ND
	02/27/03	ND	ND	ND	ND	ND	ND		ND		ND

TPPH = Total purgeable petroleum hydrocarbons
TEPH = Total extractable petroleum hydrocarbons
MtBE = Methyl tert-butyl ether
µg/L = Micrograms per liter
NS = Not sampled
ND = Not detected (see certified analytical reports for detection limits)
NA = Not analyzed

a. Chromatogram pattern is not gasoline, but volatile fraction of diesel quantified as gasoline.
b. Chromatogram pattern is not gasoline, but unidentified hydrocarbons in C6 - C12 range.
c. Chromatogram pattern is a mixture of weathered diesel and unidentified hydrocarbons in C9 - C24 range.
d. Chromatogram pattern is not motor oil, but unidentified hydrocarbons in C16 - C36 range.
e. Chromatogram pattern is weathered diesel in C9 - C24 range.
f. Chromatogram pattern is not gasoline, but unidentified hydrocarbons > C10.
g. Chromatogram pattern is not diesel, but unidentified hydrocarbons in the C9 - C24 range.
h. Chromatogram pattern is weathered gasoline.
i. Chromatogram pattern is not gasoline, but unidentified hydrocarbons in C6 - C8 range.
j. Chromatogram pattern is not motor oil, but unidentified hydrocarbons in the C16 to C34 range.
k. Chromatogram pattern is not gasoline, but unidentified hydrocarbons > C5.
l. Chromatogram pattern is not gasoline, but unidentified hydrocarbons > C12.
m. Chromatogram pattern is a mixture of weathered diesel and unidentified hydrocarbons in the C18 - C40 range.
n. Chromatogram pattern is a mixture of weathered diesel and unidentified hydrocarbons in the C9 - C40 range.
o. Chromatogram pattern is not diesel, but unidentified hydrocarbons in the C9 - C40 range.
p. Chromatogram pattern is a mixture of gasoline and unidentified hydrocarbons > C10.
q. Chromatogram pattern is not gasoline, but unidentified hydrocarbons > C8.

Table 2
Groundwater Analytical Data
TPPH as Gasoline, BTEX Compounds, TEPH as Diesel and Motor Oil, and MtBE

2901 Glascock Street
Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	TEPH as Diesel (µg/L)	TEPH as Motor Oil (µg/L)	MTBE (µg/L)
r. Chromatogram pattern is unidentified hydrocarbons in the C9 - C40 range.									
s. Chromatogram pattern is a mixture of weathered diesel and unidentified hydrocarbons in the C15 - C24 range.									
t. Chromatogram pattern does not match the pattern of laboratory diesel standard.									
u. Chromatogram pattern does not match the pattern of laboratory gasoline standard.									

Table 3

Groundwater Inorganic Analytical Data

Ferrous Iron, Nitrate as NO_3, Sulfate as SO_4, Dissolved Oxygen, Oxidation-Reduction Potential

2901 Glascock Street
Oakland, California

Well	Date Sampled	Ferrous Iron (mg/L)	Nitrate as NO_3 (mg/L)	Sulfate as SO_4 (mg/L)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential
MW-1	06/17/99	----	----	----	1.8	----
	09/13/99	----	----	----	4.6	----
	12/28/99	----	----	----	8.3	----
	03/02/00	----	----	----	6.2	----
	06/30/00	----	----	----	6.0	----
	09/29/00	----	----	----	5.2	----
	12/28/00	0.311	ND*	12.0	2.0/2.0	-71/-100
	03/26/01	0.247*	ND	12.0	1/2	-96/-106
	06/28/01	ND	0.4	10	10/9.6	39/-98
	09/18/01	ND	ND	10	8/3	-54/-86
	11/01/01	ND	1.6	9.9	4.2/2.8	-10/19
	02/12/02	ND	ND	9.0	9.4/4.0	0.57/0.78
	05/31/02	ND	0.71[a]	8.2	2.0	31
	08/29/02	ND	1.80	14	4.2/2.4	-90/-102
	11/25/02	ND	ND	14	4.2/3.1	-35/-40
	02/27/03	0.66	ND	14	6.8/3.2	116/-87
MW-2	06/17/99	----	----	----	2.2	----
	09/13/99	----	----	----	2.0	----
	12/28/99	----	----	----	NM (cloudy)	----
	03/02/00	----	----	----	5.2	----
	06/30/00	----	----	----	5.4	----
	09/29/00	----	----	----	4.8	----
	12/28/00	0.0505	ND*	0.33	2.0/2.0	-69/-72
	03/26/01	0.482*	ND	ND	2/2	-61/-95
	06/28/01	ND	0.9	0.84	2.8/1.6	-80/-71
	09/18/01	0.10	ND	1.1	2/2	-73/-91
	11/01/01	ND	1.6	13	1.2/1.0	-57/-99
	02/12/02	ND	ND	ND	1/1	53/51
	05/31/02	ND	ND	ND	0.8	10
	08/29/02	ND	ND	1.2	4.2/2.8	-60/-82
	11/25/02	ND	ND	ND	4.2/2.4	-61/-81
	02/27/03	0.92	ND	1.4	6.8/4.2	-92/-77
MW-3	12/28/00	0.0580	ND*	12.0	2.0/2.0	56/-46
	03/26/01	0.051*	5.9	17.5	NM	NM
	06/28/01	ND	0.6	1.8	1.2	-140
	09/18/01	ND	ND	0.61	NM	NM
	11/01/01	ND	ND	1.6	NM	NM
	02/12/02	ND	2.6	13.0	NM	NM
	05/31/02	ND	ND	4.9	1.8	-102
	08/29/02	ND	ND	1.4	NM	NM
	11/25/02	0.6300	ND	4.1	NM	NM
	02/27/03	0.44	2.6	15	NM	NM
MW-4	12/28/00	0.0308	22*	48.0	4.0/4.0	5/20
	03/26/01	1.37*	20.4	48.0	NM	NM
	06/28/01	0.17	25.0	49	2.4	78
	09/18/01	0.18	28.0	54	NM	NM
	11/01/01	ND	30.0	61	NM	NM
	02/12/02	ND	33.0	58	NM	NM
	05/31/02	ND	30[a]	59	2.2	121
	08/29/02	ND	41.0	67	NM	NM
	11/25/02	ND	32.0	57	NM	NM
	02/27/03	0.43	36	62	NM	NM

Table 3

Groundwater Inorganic Analytical Data

Ferrous Iron, Nitrate as NO_3, Sulfate as SO_4, Dissolved Oxygen, Oxidation-Reduction Potential

2901 Glascock Street
Oakland, California

Well	Date Sampled	Ferrous Iron (mg/L)	Nitrate as NO_3 (mg/L)	Sulfate as SO_4 (mg/L)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential
MW-6	06/17/99	----	----	----	1.6	----
	09/13/99	----	----	----	2.2	----
	12/28/99	----	----	----	NM (cloudy)	----
	03/02/00	----	----	----	1.8	----
	06/30/00	----	----	----	1.4	----
	09/29/00	----	----	----	1.8	----
	12/28/00	0.444	ND*	0.24	3.0/3.0	-61/-104
	03/26/01	0.765*	ND	ND	2/2	-102/-138
	06/28/01	ND	0.3	0.72	1.2/1.0	-117/-112
	09/18/01	ND	ND	0.64	3/2	-53/-112
	11/01/01	ND	ND	1.3	2.0/2.4	-119/-115
	02/12/02	ND	ND	2	1.0/1.0	-121/-107
	05/31/02	ND	ND	ND	1.0	23
	08/29/02	ND	ND	ND	2.2/4.2	-60/-70
	11/25/02	0.61	ND	ND	3.0/2.0	-92/-85
	02/27/03	10	ND	2.7	5.8/2.0	-101/113
MW-7	12/28/00	ND	80.0*	100	2.0/3.0	-15/11
	03/26/01	0.199*	69.6	96.8	NM	NM
	06/28/01	0.12	73.0	100	3.2	12
	09/18/01	ND	82.0	96	NM	NM
	11/01/01	ND	77.0	98	NM	NM
	02/12/02	ND	69.0	93	NM	NM
	05/31/02	ND	53[a]	83	3.1	138
	08/29/02	ND	74	99	NM	NM
	11/25/02	ND	69	96	NM	NM
	02/27/03	0.32	69	100	NM	NM
MW-8	12/28/00	ND	50.0*	120	4.0/4.0	82/84
	03/26/01	139*	32.5	138	NM	NM
	06/28/01	0.15	36.0	160	6.2	99
	09/18/01	ND	42.0	120	NM	NM
	11/01/01	ND	43.0	110	NM	NM
	02/12/02	ND	37.0	120	NM	NM
	05/31/02	ND	35[a]	110	8.4	142
	08/02/02	ND	42.0	130	NM	NM
	11/25/02	ND	42.0	120	NM	NM
	02/27/03	0.60	44	130	NM	NM

mg/L	= Milligrams per Liter
NM	= Not measured
ND	= Not detected (see certified analytical reports for detection limits)
*	= Sample analyzed outside of the EPA recommended holding time
a	= Nitrate reported as total nitrate
2.0/3.0	= Before purging well/After purging well

Table 4
Groundwater Analytical Data
PCBs, Metals, and VOCs

Former Dorr-Oliver Site
2901 Glascock Street
Oakland, California

Well Number	Date Sampled	PCBs (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	VOCs (µg/L)	
MW-1	11/29/95	NA	NA	NA	NA	NA	NA	ND	
	01/18/96	NA	ND	ND	ND	ND	ND	NA	
	06/25/97	NA	NA	NA	NA	NA	NA	NA	
	03/27/98	NA	NA	NA	NA	NA	NA	NA	
	03/31/99	NA	ND	5.8	1	21	12	ND	f
	02/12/02	NA	NA	NA	NA	NA	NA	NA	
	05/31/02	NA	NA	NA	NA	NA	NA	NA	
MW-2	11/29/95	NA	NA	NA	NA	NA	NA	NA	
	01/18/96	NA	ND	ND	ND	ND	ND	NA	
	06/25/97	NA	NA	NA	NA	NA	NA	NA	
	03/27/98	NA	NA	NA	NA	NA	NA	NA	
	03/31/99	NA	ND	ND	0.8	11	11	ND	g
	02/12/02	NA	NA	NA	NA	NA	NA	NA	
	05/31/02	NA	NA	NA	NA	NA	NA	NA	
MW-3	11/29/95	NA	NA	NA	NA	NA	NA	NA	
	01/18/96	NA	ND	ND	ND	ND	51.2	NA	
	06/25/97	NA	NA	NA	NA	NA	NA	NA	
	03/27/98	NA	NA	NA	NA	NA	NA	NA	
	03/31/99	NA	ND	ND	ND	5.7	3.2	ND	h
	02/12/02	NA	NA	NA	NA	NA	NA	NA	
	05/31/02	NA	NA	NA	NA	NA	NA	NA	
MW-4	11/29/95	NA	NA	NA	NA	NA	NA	ND	a
	01/18/96	NA	ND	ND	ND	ND	20.5	NA	
	06/25/97	NA	NA	NA	NA	NA	NA	NA	
	03/27/98	NA	NA	NA	NA	NA	NA	NA	
	03/31/99	NA	ND	ND	ND	6.2	3.7	ND	j
	02/12/02	NA	NA	NA	NA	NA	NA	NA	
	05/31/02	NA	NA	NA	NA	NA	NA	NA	
MW-5	11/29/95	NA	NA	NA	NA	NA	NA	NA	
	01/18/96	NA	ND	ND	ND	ND	22.6	NA	
	-- Well Destroyed in September 1996 --								
MW-6	11/29/95	ND	ND	822	107	1,190	851	ND	
	01/18/96	NA	ND	ND	ND	ND	ND	NA	
	06/25/97	NA	ND	0.14	ND	0.2	0.18	ND	d
	03/27/98	NA	ND	ND	ND	ND	0.017	ND	e
	03/31/99	NA	ND	13	7.2	27	45	ND	k
	02/12/02	NA	0.0060	0.11	0.039	0.14	0.15	ND	m
	05/31/02	NA	NA	NA	NA	NA	NA	NA	
	02/27/03	NA	0.0025	0.013	0.011	0.033	0.077	ND	n
MW-7	11/29/95	NA	NA	NA	NA	NA	NA	ND	b
	01/18/96	NA	ND	ND	ND	ND	25.1	NA	
	06/25/97	NA	NA	NA	NA	NA	NA	NA	
	03/27/98	NA	NA	NA	NA	NA	NA	NA	
	03/31/99	NA	ND	ND	ND	8.5	14	ND	l
	02/12/02	NA	NA	NA	NA	NA	NA	NA	
	05/31/02	NA	NA	NA	NA	NA	NA	NA	

Table 4
Groundwater Analytical Data
PCBs, Metals, and VOCs

Former Dorr-Oliver Site
2901 Glascock Street
Oakland, California

Well Number	Date Sampled	PCBs (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	VOCs (µg/L)
MW-1	11/29/95	NA	NA	NA	NA	NA	NA	ND
	01/18/96	NA	ND	ND	ND	ND	ND	NA
	06/25/97	NA	NA	NA	NA	NA	NA	NA
	03/27/98	NA	NA	NA	NA	NA	NA	NA
	03/31/99	NA	ND	5.8	1	21	12	ND f
	02/12/02	NA	NA	NA	NA	NA	NA	NA
	05/31/02	NA	NA	NA	NA	NA	NA	NA
MW-2	11/29/95	NA	NA	NA	NA	NA	NA	NA
	01/18/96	NA	ND	ND	ND	ND	ND	NA
	06/25/97	NA	NA	NA	NA	NA	NA	NA
	03/27/98	NA	NA	NA	NA	NA	NA	NA
	03/31/99	NA	ND	ND	0.8	11	11	ND g
	02/12/02	NA	NA	NA	NA	NA	NA	NA
	05/31/02	NA	NA	NA	NA	NA	NA	NA
MW-3	11/29/95	NA	NA	NA	NA	NA	NA	NA
	01/18/96	NA	ND	ND	ND	ND	51.2	NA
	06/25/97	NA	NA	NA	NA	NA	NA	NA
	03/27/98	NA	NA	NA	NA	NA	NA	NA
	03/31/99	NA	ND	ND	ND	5.7	3.2	ND h
	02/12/02	NA	NA	NA	NA	NA	NA	NA
	05/31/02	NA	NA	NA	NA	NA	NA	NA
MW-4	11/29/95	NA	NA	NA	NA	NA	NA	ND a
	01/18/96	NA	ND	ND	ND	ND	20.5	NA
	06/25/97	NA	NA	NA	NA	NA	NA	NA
	03/27/98	NA	NA	NA	NA	NA	NA	NA
	03/31/99	NA	ND	ND	ND	6.2	3.7	ND j
	02/12/02	NA	NA	NA	NA	NA	NA	NA
	05/31/02	NA	NA	NA	NA	NA	NA	NA
MW-5	11/29/95	NA	NA	NA	NA	NA	NA	NA
	01/18/96	NA	ND	ND	ND	ND	22.6	NA
		-- Well Destroyed in September 1996 --						
MW-6	11/29/95	ND	ND	822	107	1,190	851	ND
	01/18/96	NA	ND	ND	ND	ND	ND	NA
	06/25/97	NA	ND	0.14	ND	0.2	0.18	ND d
	03/27/98	NA	ND	ND	ND	ND	0.017	ND e
	03/31/99	NA	ND	13	7.2	27	45	ND k
	02/12/02	NA	0.0060	0.11	0.039	0.14	0.15	ND m
	05/31/02	NA	NA	NA	NA	NA	NA	NA
	02/27/03	NA	0.0025	0.013	0.011	0.033	0.077	ND n
MW-7	11/29/95	NA	NA	NA	NA	NA	NA	ND b
	01/18/96	NA	ND	ND	ND	ND	25.1	NA
	06/25/97	NA	NA	NA	NA	NA	NA	NA
	03/27/98	NA	NA	NA	NA	NA	NA	NA
	03/31/99	NA	ND	ND	ND	8.5	14	ND l
	02/12/02	NA	NA	NA	NA	NA	NA	NA
	05/31/02	NA	NA	NA	NA	NA	NA	NA

Table 4
Groundwater Analytical Data
PCBs, Metals, and VOCs

Former Dorr-Oliver Site
2901 Glascock Street
Oakland, California

Well Number	Date Sampled	PCBs (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	VOCs (µg/L)	
MW-8	11/29/95	ND	ND	319	42.0	381	309	ND	c
	01/18/96	NA	ND	ND	ND	ND	ND	NA	
	06/25/97	NA	ND	0.54	ND	0.69	0.42	ND	
	03/27/98	NA	ND	0.013	ND	ND	0.02	ND	
	03/31/99	NA	ND	12	8.8	16	13	ND	
	02/12/02	NA	ND	0.036	ND	0.057	0.054	ND	
	05/31/02	NA	NA	NA	NA	NA	NA	NA	
	02/27/03	NA	ND	0.027	ND	0.024	0.023	ND	

PCBs = Polychlorinated bi-phenyls
VOCs = Volatile organic compounds
µg/L = Micrograms per liter
NA = Not analyzed
ND = Not detected (see certified analytical reports for detection limits)

a. 0.61 µg/L 1,1-Dichloroethane
b. 0.79 µg/L 1,1-Dichloroethane
0.74 µg/L *trans*-1,2-Dichloroethene
c. 0.53 µg/L Vinyl Chloride
1.3 µg/L Trichloroethene
d. 2.5 µg/L Chloroethene
0.97 µg/L 1,1-Dichloroethane
3.4 µg/L *trans*-1,2-Dichloroethene
1.4 µg/L Vinyl Chloride
e. 2.1 µg/L Chloroethene
1.1 µg/L 1,1-Dichloroethane
0.85 µg/L cis-1,2-Dichloroethene
3.2 µg/L *trans*-1,2-Dichloroethene
f. 1.2 µg/L 1,1-Dichloroethane
4.7 µg/L cis-1,2-Dichloroethene
6.2 µg/L trans-1,2-Dichloroethene
g. 0.93 µg/L 1,1-Dichloroethane
4.0 µg/L Vinyl Chloride
h. 4.3 µg/L Chloroethane
1.2 µg/L Chloromethane
j. 0.98 µg/L 1,1-Dichloroethane
0.58 µg/L 1,1-Dichloroethene
k. 0.79 µg/L 1,1-Dichloroethane
2.3 µg/L *trans*-1,2-Dichloroethene
l. 0.64 µg/L 1,1-Dichloroethane
0.87 µg/L 1,1-Dichloroethene
0.71 µg/L cis-1,2-Dichloroethene
1.4 µg/L *trans*-1,2-Dichloroethene
m. 0.83 µg/L 1,1-Dichloroethane
2.1 µg/L trans-1,2-Dichloroethene
n. 0.76 µg/L 1,1-Dichloroethane
2.3 µg/L *trans*-1,2-Dichloroethene

APPENDIX C

SOIL AND GROUND WATER SAMPLING PROTOCOL

Soil Sampling: Soil samples for laboratory analysis were collected in brass liners. The ends of the liners were covered in aluminum foil or Teflon film, fitted with plastic end caps, taped, and labeled with a unique identification number. The samples were then placed in an ice-chilled cooler, and transported to a state-certified analytical laboratory with chain of custody documentation.

Equipment Decontamination: All drilling and sampling equipment was cleaned in a solution of laboratory grade detergent and distilled water or steam cleaned before use at each sampling point.

Hydraulic Borings/Temporary Wells: The subsurface investigation was performed using a limited access hydraulic coring rig. Soils encountered in the borings were logged using the Unified Soil Classification System (ASTM D-2487). The logs of the borings, as well as a key to the classification of soil (Figure A-1), are included as part of this appendix.

Borings were converted into "temporary" wells with the installation of 1-inch I.D. flush-threaded, Schedule 40 PVC casing. The casing in the lower portion of the well had 0.02-inch factory machined slots. Ground water grab samples were collected from the temporary wells with a Teflon bailer. Samples were collected in appropriate sampled bottles, labeled, and immediately placed into an ice-chilled chest for delivery to a state-certified analytical laboratory for analysis.

EXPLORATORY BORING: GB-1

Sheet 1 of 1

DRILL RIG: DIRECT PUSH	PROJECT NO: 1731-2G
BORING TYPE:	PROJECT: 2901 GLASCOCK AVENUE
LOGGED BY: CMT	LOCATION: OAKLAND, CA
START DATE: 9-12-03 FINISH DATE: 9-12-03	COMPLETION DEPTH: 16.0 FT.

This log is a part of a report by Lowney Associates, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (FT)	DEPTH (FT)	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE	PENETRATION RESISTANCE (BLOWS/FT.)	SAMPLER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PERCENT PASSING NO. 200 SIEVE
		SURFACE ELEVATION:						
	0	**GRAVELLY CLAY [FILL]** stiff, damp, black, loosely compacted, trace brick	FILL					0.1
		FAT CLAY (CH) stiff, black, trace gravel, high plasticity, no odor or staining	CH					0.1
	5	**FAT CLAY (CH)** medium stiff, damp, green, high plasticity, weak TPH odor	CH					84.2 86.4
		SILTY CLAY (CL) medium stiff, damp, green, moderate plasticity, weak to moderate TPH odor	CL					42.6
	10							72.7
		SOFT CLAY (CH) wet, light gray to white, high plasticity, moderate to strong TPH odor droplets of brown, free product mostly at 12-13 feet	CH					33.0
		SILTY CLAY (CL) soft, green-gray, moderate plasticity increase sand to 50%	CL					61.7
	15	Bottom of Boring at 16 feet						100
	20							
	25							
	30							

Undrained Shear Strength (ksf)

○ Pocket Penetrometer

△ Torvane

● Unconfined Compression

▲ U-U Triaxial Compression

1.0 2.0 3.0 4.0

GROUND WATER OBSERVATIONS:

▽: FREE GROUND WATER MEASURED DURING DRILLING AT 13.0 FEET

LA CORP.GDT 10/7/03 MV*

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EXPLORATORY BORING: GB-2

Sheet 1 of 1

DRILL RIG: DIRECT PUSH	PROJECT NO: 1731-2G
BORING TYPE:	PROJECT: 2901 GLASCOCK AVENUE
LOGGED BY: CMT	LOCATION: OAKLAND, CA
START DATE: 9-12-03 FINISH DATE: 9-12-03	COMPLETION DEPTH: 16.0 FT.

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ELEVATION (FT)	DEPTH (FT)	SOIL LEGEND	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE	PENETRATION RESISTANCE (BLOWS/FT.)	SAMPLER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PERCENT PASSING NO. 200 SIEVE
			SURFACE ELEVATION:						
	0		**FAT CLAY (CH)** stiff, black, high plastic, ~5% gravel, no odor staining						0.2
				CH					
			black, stiff fat clay, no gravel						0.2
			trace gravel						
	5		**FAT CLAY (CH)** damp, green, gray mottled, high plasticity, moderate TPH odor						0.5
				CH					122
			increase silt, less plastic						165
	10								61.9
▽			**SOFT CLAY (CH)** wet, light gray to white, dark gray mottles, strong TPH odor	CH					90.1
				CL					
			SILTY CLAY (CL) stiff, green, strong odor, brown staining	SC					102.8
	15		**CLAYEY SAND (SC)** green-gray, poorly graded fine grained sand, 30% clay in matrix, strong TPH odor, some brown staining	CL					11.6
			SILTY CLAY (CL) gray-green, strong odor/staining Bottom of Boring at 16 feet						
	20								
	25								
	30								

Undrained Shear Strength (ksf)
○ Pocket Penetrometer
△ Torvane
● Unconfined Compression
▲ U-U Triaxial Compression
1.0 2.0 3.0 4.0

GROUND WATER OBSERVATIONS:
▽: FREE GROUND WATER MEASURED DURING DRILLING AT 12.0 FEET

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EXPLORATORY BORING: GB-3

Sheet 1 of 1

DRILL RIG: DIRECT PUSH
BORING TYPE:
LOGGED BY: CMT
START DATE: 9-12-03 FINISH DATE: 9-12-03

PROJECT NO: 1731-2G
PROJECT: 2901 GLASCOCK AVENUE
LOCATION: OAKLAND, CA
COMPLETION DEPTH: 16.0 FT.

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ELEVATION (FT)	DEPTH (FT)	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE	PERCENT PASSING NO. 200 SIEVE
		SURFACE ELEVATION:		
	0	**GRAVELLY CLAY (FILL)** stiff, black, loosely compacted	FILL	0.9
		FAT CLAY (CH) stiff, damp, black, ~5% gravel, trace debris no TPH odor	CH	1.0
	5	**SOFT CLAY (CH)** damp to moist, light brown, high plasticity, no debris, no odor increase silt, trace sand no recovery between 8-10 feet	CH	0.6 0.4
	10	**SOFT CLAY (CH)** damp to moist, brown, high plasticity	CH	0.4
▽		**CLAY (CH)** very soft, wet, light gray, white bleached, high plasticity	CH	0.5
	15	**CLAY (CH)** soft, moist to wet, light brown to olive, trace sand, high plasticity	CH	0.5
				0.1
		Bottom of Boring at 16 feet		
	20			
	25			
	30			

SOIL LEGEND

PENETRATION RESISTANCE (BLOWS/FT.)

SAMPLER

MOISTURE CONTENT (%)

DRY DENSITY (PCF)

Undrained Shear Strength (ksf)
○ Pocket Penetrometer
△ Torvane
● Unconfined Compression
▲ U-U Triaxial Compression
1.0 2.0 3.0 4.0

GROUND WATER OBSERVATIONS:
▽: FREE GROUND WATER MEASURED DURING DRILLING AT 12.5 FEET

LA CORP.GDT 10/7/03 MV*

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EXPLORATORY BORING: GB-4

DRILL RIG: DIRECT PUSH
BORING TYPE:
LOGGED BY: CMT
START DATE: 9-12-03 FINISH DATE: 9-12-03

PROJECT NO: 1731-2G
PROJECT: 2901 GLASCOCK AVENUE
LOCATION: OAKLAND, CA
COMPLETION DEPTH: 16.0 FT.

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ELEVATION (FT)	DEPTH (FT)	SOIL LEGEND	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE	PENETRATION RESISTANCE (BLOWS/FT.)	SAMPLER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PERCENT PASSING NO. 200 SIEVE
	0		SURFACE ELEVATION:						
			FAT CLAY (CH) stiff, damp, black, high plastic, some orange-rust spots 0-2 feet, ~5% gravel	CH					0.4
			no TPH odor, but musty odor						0.5
	5		**FAT CLAY (CH)** soft, damp, light brown, high plasticity	CH					0.6
			increase silt with depth, trace sand						0.2
			SILTY CLAY (CL) stiff, olive brown, light brown-mottled	CL					0.4
	10		no TPH odors non staining						
			SOFT CLAY (CH) wet to moist, light gray to white, capillary fringe	CH					0.6
			SILTY CLAY (CL) medium stiff, moist, olive brown, trace sand increasing with depth, weak TPH odor, no staining	CL					14
	15		**CLAYEY SAND (SC)** dense, wet, brown, poorly graded, well sorted, medium grained sand in 30% clay matrix	SC					0.4
			Bottom of Boring at 16 feet						
	20								
	25								
	30								

Undrained Shear Strength (ksf)
○ Pocket Penetrometer
△ Torvane
● Unconfined Compression
▲ U-U Triaxial Compression
1.0 2.0 3.0 4.0

GROUND WATER OBSERVATIONS:
▽: FREE GROUND WATER MEASURED DURING DRILLING AT 12.5 FEET

LA CORP.GDT 10/7/03 MV*

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EXPLORATORY BORING: GB-8

DRILL RIG: DIRECT PUSH
BORING TYPE:
LOGGED BY: CMT
START DATE: 9-16-03 FINISH DATE: 9-16-03

PROJECT NO: 1731-2G
PROJECT: 2901 GLASCOCK AVENUE
LOCATION: OAKLAND, CA
COMPLETION DEPTH: 16.0 FT.

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ELEVATION (FT)	DEPTH (FT)	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE
		SURFACE ELEVATION:	
	0	**GRAVELLY CLAY (CH)** black, loosely compacted	CH
		SILTY CLAY (CL) stiff, damp, light brown, light gray mottled, low plasticity, no odor	CL
	5	**FAT CLAY (CH)** olive brown, trace sand, no odors, staining	CH
		FAT CLAY (CH) soft, damp, green, high plasticity, moderate TPH odor	CH
	10	**SANDY SILTY GRAVEL (GC)** dense, wet, gray-green mottled droplets of brown free product approximately 1-2 inch thick layer at base of gravel layer	GC
		POORLY GRADED SAND (SP) medium dense, moist to wet, green-gray, well sorted, medium grained sand	SP
	15		
		Bottom of Boring at 16 feet	
	20		
	25		
	30		

PENETRATION RESISTANCE (BLOWS/FT.) | SAMPLER | MOISTURE CONTENT (%) | DRY DENSITY (PCF) | PERCENT PASSING NO. 200 SIEVE

Undrained Shear Strength (ksf)
○ Pocket Penetrometer
△ Torvane
● Unconfined Compression
▲ U-U Triaxial Compression
1.0 2.0 3.0 4.0

GROUND WATER OBSERVATIONS:
▽: FREE GROUND WATER MEASURED DURING DRILLING AT 11.5 FEET

LA_CORP.GDT 10/7/03 MV*

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Environmental/Geotechnical/Engineering Services

EXPLORATORY BORING: GB-12

Sheet 1 of 1

DRILL RIG: DIRECT PUSH	PROJECT NO: 1731-2G
BORING TYPE:	PROJECT: 2901 GLASCOCK AVENUE
LOGGED BY: CMT	LOCATION: OAKLAND, CA
START DATE: 9-16-03 FINISH DATE: 9-16-03	COMPLETION DEPTH: 16.0 FT.

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ELEVATION (FT)	DEPTH (FT)	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE	PERCENT PASSING NO. 200 SIEVE
	SURFACE ELEVATION:			
	0	**FILL** stiff, dry, black with brick debris	FILL	0.1
		CLAY (CL) stiff, slightly moist, black gray-brown with black mottled, slightly moist	CL	0.1
		CLAY (CL) stiff, slightly moist, gray-brown	CL	0.1
	5	**CLAY WITH SILT (CL)** stiff, slightly moist, light brown with black mottle, rounded gravel	CL	
		CLAY (CH) medium stiff, slightly moist, green	CH	
		SILTY CLAY (CL) stiff, slightly moist, green, moderate TPH odor	CL	
	10	**SILTY CLAY (CL)** very stiff, slightly moist, green with brown mottles	CL	
		SANDY SILTY GRAVEL (GC) dense, moist to wet, brown, gray mottled	GC	
	15	**SAND (SP)** dense, very moist, green, brown	SP	
		Bottom of Boring at 16 feet		
	20			
	25			
	30			

Undrained Shear Strength (ksf)
○ Pocket Penetrometer
△ Torvane
● Unconfined Compression
▲ U-U Triaxial Compression
1.0 2.0 3.0 4.0

PENETRATION RESISTANCE (BLOWS/FT.) | SAMPLER | MOISTURE CONTENT (%) | DRY DENSITY (PCF)

GROUND WATER OBSERVATIONS:

LA_CORP.GDT 10/7/03 MV*

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EXPLORATORY BORING: GB-13

Sheet 1 of 1

DRILL RIG: DIRECT PUSH	PROJECT NO: 1731-2G
BORING TYPE:	PROJECT: 2901 GLASCOCK AVENUE
LOGGED BY: CMT	LOCATION: OAKLAND, CA
START DATE: 9-16-03 FINISH DATE: 9-16-03	COMPLETION DEPTH: 16.0 FT.

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ELEVATION (FT)	DEPTH (FT)	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE
	0	SURFACE ELEVATION:	
	0	**FAT CLAY (CH)** stiff, damp, black gray mottled, ~5% gravel, debris	CH
		musty odor	
	5	**SILTY CLAY (CL)** medium stiff, damp, brown, moderate plasticity, no odor	CL
		FAT CLAY (CH) soft, moist, green-gray, high plasticity, weak TPH odor	CH
	10	**FAT CLAY (CH)** soft, wet, light gray, high plasticity, weak to moderate TPH odor	CH
		CLAY (CH) soft, moist, wet, green gray, high plastic, increasing sand	CH
	15	**CLAYEY SAND (SC)** dense, wet, green gray changing to brown with depth, ~30% clay in matrix of fine grained sand	SC
		Bottom of Boring at 16 feet	
	20		
	25		
	30		

PENETRATION RESISTANCE (BLOWS/FT.) | SAMPLER | MOISTURE CONTENT (%) | DRY DENSITY (PCF) | PERCENT PASSING NO. 200 SIEVE

Undrained Shear Strength (ksf)
○ Pocket Penetrometer
△ Torvane
● Unconfined Compression
▲ U-U Triaxial Compression
1.0 2.0 3.0 4.0

GROUND WATER OBSERVATIONS:
▽: FREE GROUND WATER MEASURED DURING DRILLING AT 11.5 FEET

LA CORP.GDT 10/7/03 MV*

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

EXPLORATORY BORING: GB-14

Sheet 1 of 1

DRILL RIG: DIRECT PUSH
BORING TYPE:
LOGGED BY: CMT
START DATE: 9-16-03 FINISH DATE: 9-16-03

PROJECT NO: 1731-2G
PROJECT: 2901 GLASCOCK AVENUE
LOCATION: OAKLAND, CA
COMPLETION DEPTH: 16.0 FT.

This log is a part of a report by Lowney Associates, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (FT)	DEPTH (FT)	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE	PENETRATION RESISTANCE (BLOWS/FT.)	SAMPLER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PERCENT PASSING NO. 200 SIEVE
		SURFACE ELEVATION:						
	0	**FAT CLAY (CH)** stiff, damp, black, high plasticity	CH					
		trace gravel, musty odor						
	5	**FAT CLAY (CH)** stiff, damp, brown, light brown mottled, high plasticity, no odor	CH					
		CLAY (CH) stiff, damp, green, high plasticity no odor	CH					
	10	weak TPH odor						
▽		**SILTY CLAY (CL)** stiff, white mottled, moderate plastic weak TPH odor	CL					
		CLAYEY SANDY GRAVEL (GC) very dense, moist, varicolored, red, brown, green, no odor	GC					
	15	**CLAYEY SAND (SC)** dense, wet, brown, ~30% clay in fine grained poorly graded sand, no odor	SC					
		Bottom of Boring at 16 feet						
	20							
	25							
	30							

Undrained Shear Strength (ksf)
○ Pocket Penetrometer
△ Torvane
● Unconfined Compression
▲ U-U Triaxial Compression
1.0 2.0 3.0 4.0

GROUND WATER OBSERVATIONS:
▽: FREE GROUND WATER MEASURED DURING DRILLING AT 12.5 FEET

LA_CORP.GDT 10/7/03 MV*

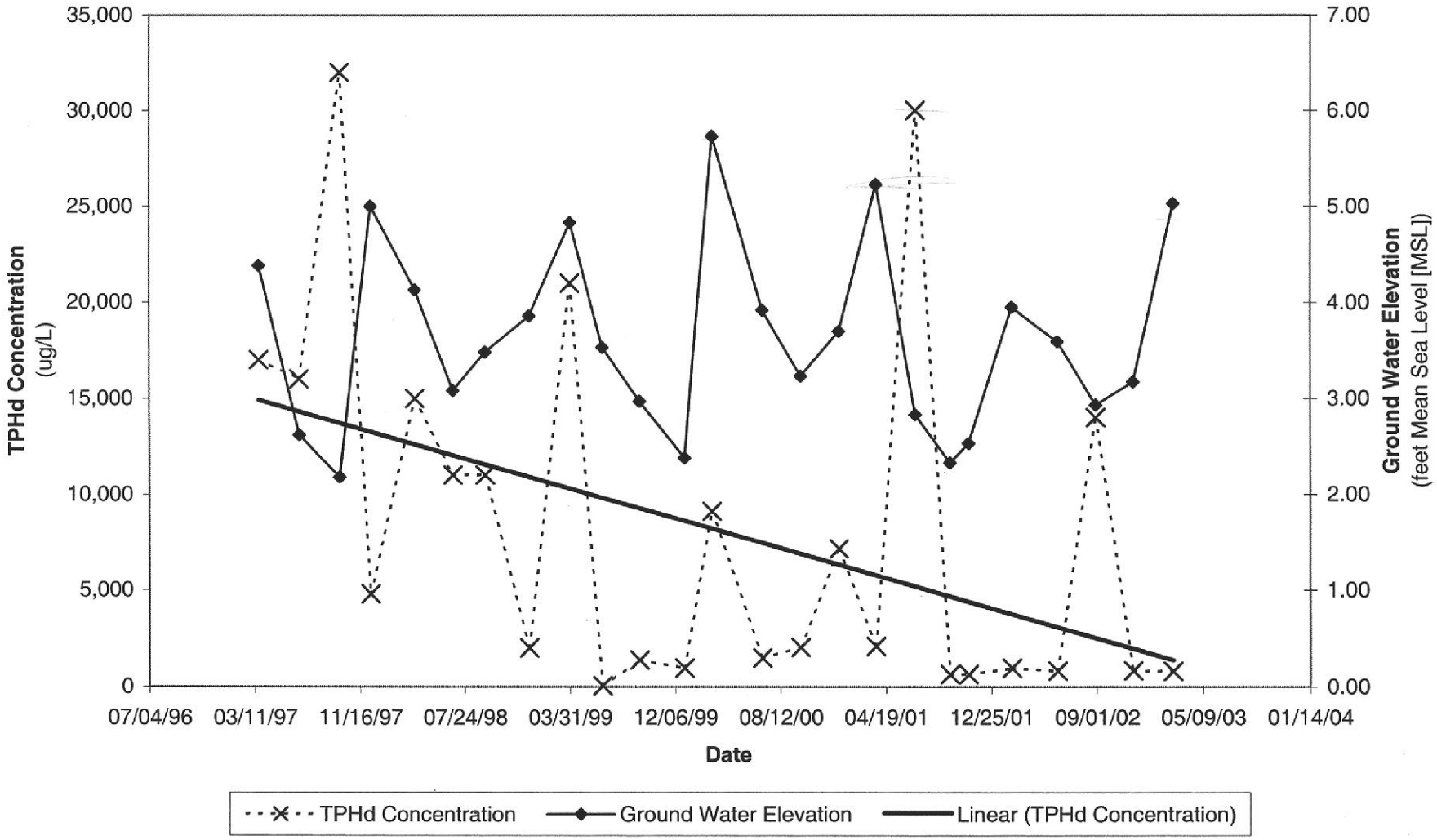
LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

APPENDIX E

PLOT OF TPHD VS. GROUND WATER ELEVATIONS

MW-2: TPHd Concentrations Over Time

2901 Glascock Avenue
Oakland, California



MW-6: TPHd Concentrations Over Time

2901 Glascock Avenue
Oakland, California