CONESTOGA-ROVERS
& ASSOCIATES

5900 Hollis Street, Suite A, Emeryville, California 94608
Telephone: 510·420·0700 Facsimile: 510·420·9170
www.CRAworld.com

July 1, 2008

Ms Barbara Jakub
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: **Additional Site Characterization Work Plan**
1137-1167 65th Street, Oakland, California 94608
Fuel Leak Case No. RO0000082
CRA Project No. 521000

Dear Ms. Jakub,

On behalf of Mr. John Nady, Conestoga-Rovers & Associates, Inc. (CRA) is pleased to present this current edition of our *Additional Site Characterization Work Plan* (Work Plan) for the above referenced site. This Work Plan is in response to your April 22, 2008 agency meeting with our client and CRA. The attached Work Plan supersedes our November 6, 2007 *Additional Site Characterization Work Plan.*

Pending your approval, we proposed additional site characterization by using a Membrane Interface Probe (MIP) and Cone Penetration Test (CPT); collecting and analyzing offsite grab groundwater samples; screening soil sample for analyses; installing new monitoring wells in "B" and "C" Zones, near MW-3 and MW-7; and collecting and analyzing on- and offsite soil vapor samples. After we receive agency approval, we shall proceed with the scope of work presented in this Work Plan.

Please call me at (510) 420-3307 if you would like to discuss any aspect of this project.

Sincerely,
Conestoga-Rovers & Associates,

Mark Jonas, P.G.
Senior Project Manager

Attachment: *Additional Site Characterization Work Plan*

cc: Mr. Frederic Schrag, Esq. c/o John Nady, 6701 Shellmound Street, Emeryville, California 94608 (1 copy + PDF via e-mail)

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To the best of my knowledge, I have no argument or disagreement with the contents of this Work Plan.

Nady Trust U/D/T dated 1/21/1997

John Nady, trustee

CONESTOGA-ROVERS
& ASSOCIATES

ADDITIONAL SITE CHARACTERIZATION WORK PLAN

1137-1167 65th Street
Oakland, California
Fuel Leak Case No. RO0000082
CRA Project No. 521000

July 1, 2008

Submittal to:
Ms. Barbara Jakub
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Prepared By:
Conestoga-Rovers & Associates, Inc.
5900 Hollis Street, Suite A
Emeryville, California 94608

Mark Jonas, P.G.
Senior Project Manager

PROFESSIONAL GEOLOGIST
MARK L. JONAS
No. 6392
STATE OF CALIFORNIA

CONESTOGA-ROVERS
& ASSOCIATES

ADDITIONAL SITE CHARACTERIZATION WORK PLAN
1137-1167 65th Street
Oakland, California 94608

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CONESTOGA-ROVERS
& ASSOCIATES

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Fuel Leak Case No. RO0000082
CRA Project No. 521000
July 1, 2008

1.0 INTRODUCTION

On behalf of Mr. John Nady, Conestoga-Rovers & Associates (CRA) is pleased to submit this *Additional Site Characterization Work Plan* (Work Plan) for the above referenced site. This Work Plan is in response to the April 22, 2008 agency meeting between Alameda County Health Care Services Agency, Environmental Health Services (ACEH), our client, and CRA. ACEH is the lead agency for this site. This Work Plan supersedes the earlier November 6, 2007 *Additional Site Characterization Work Plan.*

2.0 SITE BACKGROUND

2.1. Site Description

The site currently comprises a group of buildings separated by narrow walkways and an outside parking area. The site occupies addresses 1137, 1145, 1147, and 1167 65th Street, in Oakland, California. Currently, various spaces are rented to artists and musicians. The site is surrounded by mixed residential, commercial, and light industrial use. Historically, from approximately 1935 through 1978, the facility was used for dry cleaning. All dry cleaning operations have ceased. Figure 1 is a site vicinity map. Figure 2 provides an aerial photograph of the site and surroundings. Figure 3 is a site map with buildings and structures.

3.0 ENVIRONMENTAL SETTING

3.1. Regional and Local Geology

Regionally, the site is located in the Coast Ranges Geomorphic Province of California. The origin of the local geology is apparently a prehistoric alluvial fan interfacing with marine estuary deposits. Typical lithology of an alluvial fan are mixtures and interfingering lenses of gravel, sand, silt, and clay. Distal alluvial fan deposits are typically comprised of smaller clastic sediments of finer sand, silt, and clay, representing lower energy conditions. These alluvial fan deposits may interface with marine estuary sediments, predominantly comprised of silt and clay mixed with organic material and some discontinuous deposits of sand and gravel. Bedrock well below these shallow clastic sediments is probably Mesozoic Franciscan Formation.

Based on previous site investigations, under any surface material (concrete or asphalt) and fill, subsurface soils to an explored depth or 46 feet (ft) generally consist of interbedded layers of low permeable silts and clays; moderately permeable mixtures of sandy silt and clay; and higher permeable silty sand. Elevation of the site is approximately 35 feet above mean sea level (ft msl).

3.2. Local Hydrogeology

Several water-bearing transmissive zones have been identified beneath the site. At depths for each zone, transmissive sediments may not be laterally continuous across the site. These zones are described, as follows:

- A-Zone, defined as shallow water-bearing transmissive and apparently discontinuous sediments found at depths between approximately 3.5 to 12 feet (ft) below grade (bg). Apparently, in localized areas perched groundwater may exists within transmissive sediments ranging in thickness from 1.5 to 2 ft, at depths of approximately 3.5 to 6 ft. More extensive water-bearing transmissive sediments appear at depths of approximately 6 to 12 ft bg, ranging in thickness from 1 to 8 ft. Groundwater found between 3.5 to 12 ft may hydraulically interact. Groundwater in this zone may be semi-confined to unconfined.
- B-Zone, is water-bearing transmissive and apparently discontinuous sediments found between 13 to 24 ft bg, under semi-confined or confined conditions.
- C-Zone, with water-bearing transmissive sediments found between 25 to 46 ft bg, under semi-confined or confined conditions. Transmissive sediments at these depths appear to be discontinuous.

Table 1 *Well Construction Details* provide monitoring well details for each of these zones. Table 4 *Grab Groundwater Sampling Details* provide zone-specific grab groundwater sampling depths. Groundwater hydraulic gradients and flow directions for each of these zones are provided in Figures 6, 7, and 8, respectively. Figures 9 and 10 present inferred cross-sections for the site. Groundwater flow is typically toward the southwest, in the general direction of the San Francisco Bay.

4.0 INVESTIGATIONS AND ACTIVITIES

4.1. Site Investigations and Activities

The following provides a general synopsis of prior environmental activities and investigations:

1982 Tank Removal: A gasoline underground storage tank (UST) and associated gas pump were removed in 1982. Based on depressions in the site asphalt, the gasoline UST was most likely located beneath the former gasoline pump (Figure 3).

1998 Tank Removal: In 1998, a 750-gallon heating oil UST was removed from beneath the sidewalk north and in front of the 1145 65th Street building (Figure 3). Approximately 18 cubic yards of impacted soil was removed from the UST cavity and transported under manifest for disposal. The former UST cavity was subsequently backfilled with clean fill and resurfaced. One confirmation soil sample was collected at a depth of 12 ft bg and analyzed for total petroleum hydrocarbons as diesel (TPHd) and benzene, toluene, ethylbenzene, and total xylenes (BTEX). The sample contained 14 micrograms per kilogram (μg/kg) TPHd and no detectable concentrations of BTEX constituents. Additional information is present in the December 24, 1998 UST Removal Report prepared by Artesian.

2001 Product Removal: In November 2001, product containing total petroleum hydrocarbon (TPH) compounds with BTEX and volatile organic compounds (VOCs) including 1,2-dichloroethane (1,2-DCA) were removed from six USTs located at the site. Table 9 presents analytical results of product sampled from each tank. The removed product was transported under chain of custody for disposal as hazardous waste.

2002 Tank Removal and Abandonment: In February 2002, five of the six USTs emptied in November 2001 were excavated and removed, and one UST (Interior Tank #5) was filled with cement slurry and abandoned in place. NorCal Geophysical Consultants (NorCal) conducted a limited geophysical survey to identify the location of the buried USTs. Analysis of soil and groundwater samples collected from the tank areas indicated elevated concentrations of TPH compounds including gasoline (TPHg), naphtha (TPHnap), Stoddard solvent (TPHss), and TPHd; BTEX; and VOCs. Soil removed from the former UST areas was transported under manifest for disposal. Additional information is present in the May 17, 2002 UST Removal Report prepared by SCI consultants.

2002 Soil Boring and Geophysical Survey: In November 2002, Cambria advanced eleven soil borings (SB-1 through SB-11) to further define the extent of petroleum hydrocarbons and VOCs in soil and groundwater beneath the site (Figure 3). Temporary wells were installed in each boring to measure groundwater depth and to collect groundwater samples for analyses. The eleven borings are located at and around the former USTs and known conveyance pipes. Prior to drilling, ForeSite (Pleasant Hill, California) conducted a brief geophysical survey to screen proposed boring locations. ForeSite was apparently unable to locate conveyance pipes emanating from the locations of USTs 1, 2, 3, and 4. For the area around USTs 1 through 4, soil and groundwater samples detected TPH (apparently Stoddard Solvent or mineral spirits) and VOCs. Separate phase hydrocarbon (i.e., free product) globules were observed in groundwater at SB-4 (under the former gasoline UST/pump location). Additional information is provided in Cambria's February 13, 2004 Soil and Groundwater Investigation Report.

July 2003 Geophysical Survey: On July 7, 2003, NorCal conducted a limited site geophysical survey to attempt to locate subsurface conveyance pipes. NorCal detected piping apparently connecting the former Exterior USTs 1 through 4 and Interior USTs 5 and 6 (Figure 3). From the Exterior USTs, piping apparently went under concrete, then under the 1167 65th Street building, made a right turn to the east and under the walkway to Interior USTs 5 and 6. Another conveyance pipe apparently continues under the building and northward to some unknown use, possibly for former dry cleaning machines. Some subsurface drain pipes were probably also observed, as identified in Figure 3.

January 2004 Soil Boring Investigation: In January 2004, Cambria advanced numerous soil borings to further define the extent of petroleum hydrocarbons and VOCs in soil and groundwater beneath the site. Soil and groundwater samples were collected from A-Zone, B-Zone, and C-Zone depths. For this event, borings numbers are SB-12 to SB-26. Sample borings were along Peabody Lane, in an adjacent alley west of building, inside the facility and under buildings, and in the sidewalk adjacent to 65th Street. Access for drilling equipment is limited inside the facility, due to walls, doors, height, and narrow walkways. Thirty-three (33) soil samples were collected for analyses, from 11 boring locations. Twenty (20) depth-discrete groundwater samples were collected from 12 locations, using a dual-walled direct-push drilling rig were necessary. Elevated concentrations of TPH as Stoddard Solvent (TPHss) were present at various locations and at depth, down to 17.5 ft bg. TPHd and TPHg concentrations were also found, but they may represent Stoddard Solvent-range TPH, rather than diesel or gasoline. Of the 33 soil samples collected from 11 locations, benzene was only detected once, in SB-14A located just downgradient of the former gasoline UST. The former gasoline UST was located in an outside surfaced lot, east of the buildings. Tetrachloroethene (PCE) was only detected once in soil, at a very low concentration 13 ug/kg. Trichloroethene (TCE) was not detected. Detection limits were high. TPH was detected in groundwater. Benzene was detected six out of the 20 groundwater samples analyzed, but only once above 5 ug/l. PCE was only identified at SB-18, in B- and C-Zone samples collected in the alley off Peabody Lane west of the building. Additional information is provided in Cambria's February 24, 2004 Interim Investigation Data Report.

January 2004 Sensitive Receptor Survey: In January 2004, Cambria conducted a sensitive receptor survey for beneficial use wells (e.g., municipal supply, domestic, irrigation, etc.) and surface water bodies within ½-mile of the site. While several environmental monitoring wells were located during the survey, Cambria did not locate any surface water bodies or beneficial use wells within ½-mile of the site. Cambria understands that local groundwater is not considered a current or reasonably potential source of drinking water. Results of the January 2004 Sensitive Receptor Survey can be found in Cambria's February 24, 2004 Interim Investigation Data Report.

January 2004 Conduit Study: In January 2004, Cambria conducted a conduit study to evaluate if preferential migration pathways exist near the site and merit additional investigation. Underground utilities are shown on Figure 3. No preferential migration pathways were located adjacent to the site in Peabody Lane. Based on site concentrations in grab groundwater samples near 65th Street, it is unlikely that preferential migration is occurring via the underground utilities located in 65th Street. Results of the January 2004 Conduit Study can be found in Cambria's February 24, 2004 Interim Investigation Data Report.

Groundwater Monitoring: Quarterly groundwater monitoring and sampling have been performed at the site since 2004. Monitoring well details are provided in Table 1, with monitoring well analytical results offered in Tables 2 and 3. Groundwater Monitoring Reports have been submitted to the agency.

Soil and groundwater concentrations are graphically displayed in Figures 4 through 9. Sampling details and analytical results are provided in Tables 1 through 9.

5.0 CHEMICAL DISTRIBUTION

5.1. Historic Chemical Use

For former dry cleaning operations, the facility at the site apparently had six USTs and associated conveyance pipes (Figure 3). Prior to emptying these USTs in November 2001, the product inside was sampled. Table 9 presents the results for product in each of the six USTs. Each contained TPH, but the product was undefined, but possibly Stoddard Solvent (a common dry cleaning fluid). Stoddard Solvent contains hydrocarbons typically in the C7 to C12 range. Only one UST (Exterior Tank #1) had significant concentrations of PCE and TCE. This tank also contained elevated concentrations of BTEX, various isomers of benzene (Propylbenzene, Trimethylbenzene, Butylbenzene), and Naphthalene. The site had one gasoline UST and overlying dispenser, located east of the buildings in a paved area. Below the sidewalk, just north of building 1145 65th Street, was a former heating oil tank. Of these eight USTs and associated pipes, some or all appear to have been associated with releases to the environment.

5.2. Chemicals of Potential Concern

For releases from activities associated with dry cleaning and the associated USTs, potential chemicals of concern are associated with Stoddard Solvent and PCE, both common dry cleaning chemicals. According the World Health Organization, in 1996 Environmental Health Criteria 187, Stoddard Solvent (aka White Spirit) "...is a mixture of saturated aliphatic and alicyclic C_7-C_{12} hydrocarbons with a content of 15-20% aromatic C_7-C_{12} hydrocarbons." This typically includes TPH as Stoddard Solvent (TPHss), ethylbenzene, xylenes, and other isomers of benzene. PCE is common to the dry cleaning industry, with a significant concentration found in product in Exterior Tank #1. PCE can degrade into TCE and Dichloroethene (DCE).

The former gasoline UST, removed in 1982, apparently contained gasoline. The former heating oil UST, probably contained heating oil-range hydrocarbons.

5.3. Chemical Distribution in Soil

Figures 4 and 5 graphically present some concentrations in soil. Tables 7 and 8 provide soil analytical results. From these results, some patterns of chemical distribution in soil can be presented, as follows:

- Elevated concentrations of TPHss in the vicinity of the former Exterior and Interior USTs, and conveyance pipes; in an area to the east of the former Exterior USTs; at the southwest corner of the facility, and near the floor drain in the 1167 65th Street building. The deepest concentration of TPHss is at 17.5 ft bg, from a sample collected at the southwest corner of the facility, in an alley just west of the building. TPHss concentrations at this location are non-detect (ND) at 20 ft bg. Some elevated concentrations of TPHg and TPHd may be Stoddard Solvent.
- Across the site, PCE was rarely identified in soil above frequently elevated detection limits (DLs). The highest concentration of PCE in soil was identified below Exterior Tank #3 (Tank 3 Bottom), at 310 ug/kg. Detected concentrations of PCE were all relatively shallow. TCE has not been detected in soil.

- Elevated concentrations of BTEX exist downgradient from the former gasoline UST. This was found at 7.5 ft bg, in SB-14A. A TPHg concentration of 210 mg/kg was also detected at this depth. The 11.5 ft bg samples at this location was none detected (ND) for all these analytes.
- Slightly elevated concentrations of ethylbenzene and/or xylenes also exist southeast of the former Exterior USTs. Moderately elevated concentrations of ethylbenzene and xylenes also apparently occur at depth at the southeast corner of the facility, from borings in an alley apparently covered in vegetation. At this location are the deepest samples with ethylbenzene and xylenes, found at 17.5 ft bg (SB-18B@17.5). No concentrations were found in a sample collected from 20 ft bg at this location in the alley.
- Elevated concentrations of TPHmo-range hydrocarbons were detected in shallow soil adjacent to the former heating oil UST, under the sidewalk adjacent to 65th Street. An elevated concentration of TPHmo-range hydrocarbons also exist at 5.5 ft bg under Peabody Lane, southwest of the facility, but decreases to ND at 11 ft bg.

5.4. Chemical Distribution in Groundwater

Figure 6, 7, and 8 graphically present groundwater concentrations in the A-Zone, B-Zone, and C-Zone, respectively. Figures 9 and 10 present some of these concentrations in cross-section. Tables 1 through 6 present well construction details, monitoring well groundwater analytical results, grab groundwater sampling details, and grab groundwater analytical results. Concentrations of various analytes were detected in groundwater from A-, B-, and C-Zone sampling depths. Following is a summary of groundwater results:

A-Zone Groundwater

In groundwater sampled from the A-Zone, significantly elevated concentrations of TPHss were found in the proximity of the former Exterior USTs; to the east of the Exterior USTs; at the northern defined extend of the conveyance pipe; at and beyond the southwest corner of the facility; and adjacent to the floor drain in the 1167 65th Street building. Elevated concentrations of TPHg and TPHd-range hydrocarbons also are typically found where TPHss is detected. PCE and TCE were only detected in A-Zone groundwater in the immediate vicinity of the former Exterior USTs. The highest concentration of PCE, at 170 ug/l, was detected at SB-10, just north of the Exterior USTs. Elevated concentrations of TPHmo were detected adjacent to the former heating oil UST, where no TPHss was detected. Elevated concentrations of TPHmo-range hydrocarbons were also found adjacent to the Exterior USTs. TPHg-range hydrocarbons were only moderately elevated in groundwater at the location of the former gasoline UST, at monitoring well MW-2A. No benzene was ever detected in groundwater collected from this well. Only very low concentrations of BTEX were detected in groundwater collected from the A-Zone.

B-Zone Groundwater

The B-Zone groundwater was not as characterized as the A-Zone. Elevated concentrations of TPHss were detected beyond the southwest corner of the facility, from groundwater collected from MW-6B and SB-7. Elevated concentrations of TPHd and TPHg-range hydrocarbons were also detected. cis-DCE was detected in SB-17B at 1,100 ug/l, southwest and downgradient of the former Exterior USTs. No PCE or TCE were detected in groundwater collected from SB-17B. No other grab groundwater or B-Zone monitoring wells had detectable concentrations of PCE or TCE. Benzene was practically ND for grab groundwater and groundwater from B-Zone monitoring wells.

C-Zone Groundwater

C-Zone TPH concentrations decrease significantly compared to A- and B-Zone sampling results. A low level of TPHss, along with TPHg-range hydrocarbons, were detected in C-Zone groundwater at the southwest corner of the facility. Very low concentrations of PCE, TCE, cis-DCE, and Vinyl Chloride were detected in groundwater from monitoring well MW-6C, located beyond the southwest corner of the facility. Significantly elevated concentrations of PCE, TCE, and cis-DCE were detected from C-Zone grab groundwater samples collected from SB-18B*(C-Zone) and SB-18C, located below the alley at the southwest corner of the facility. Benzene has not been detected in groundwater collected from C-Zone monitoring wells and only found in a C-Zone grab groundwater sample, from SB-18 and at low concentrations.

6.0 PROPOSED SCOPE OF WORK

This section presents the scope of work for soil gas investigation, subsurface borings for grab groundwater samples, monitor well installation, and characterization using a Cone Penetration Test (CPT) with a Membrane Interface Probe (MIP). Standard field procedures for this proposed scope of work are provided in Appendix A *Standard Field Procedures*. These procedures provide general field guidance. Proposed sampling locations are presented on Figure 11. Proposed CPT/MIP boring locations are on Figure 12.

6.1. Soil Gas Investigation

To evaluate the potential for vapor intrusion, we recommend collecting soil gas samples from nine locations. Four along Peabody Lane, adjacent to the residential area and day care. The remaining five are inside the facility. Soil gas samples will be collected from 5 ft bg, unless high groundwater levels are present. Soil gas samples shall be analyzed for TPHss, TPHg, BTEX, PCE, TCE, DCE, and VC.

6.1.1. Soil Gas Sampling Procedures and Analyses

After pre-sampling preparations are complete, the field program will be initiated. Assuming the absence of subsurface obstructions and groundwater below 5 ft bg, CRA currently anticipates that nine soil gas samples will be collected from approximately 5 feet bgs using soil vapor points. A hand auger will be used to advance a borehole to install each temporary soil gas point (probe). Appendix A presents standard field procedures for installation soil gas (vapor) points and sampling.

The following Table 6-1 presents soil vapor analysis, sampling containers, preservation, detection limit, and holding time.

Table 6-1
Soil Gas Analysis, Sampling Containers, Preservatives, Detection Limits, and Holding Times

Analysis and Method	Sampling Containers	Preservatives	Detection Limit (ug/m^3)	Holding Times
TPHss (Method TO-3)	Summa Canister	None	300	30 days
TPHss (possibly also by Method TO-15)	Summa Canister	None	120	30 days
TPHg (Method TO-3) (possibly also by TO-15)	Summa Canister	None	100	30 days
Benzene, Ethylbenzene, Tolulene, Xylenes (Method TO-15)	Summa Canister	None	2, 2, 2, 2	30 days
PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, VC (Method TO-15)	Summa Canister	None	varies	30 days
Butane, Isobutane, Propane (Method TO-15, TIC) - For leak detection.	Summa Canister	None	6, 6, 4.5	30 days

6.2. Soil Boring Investigation

To characterize groundwater in a residential area downgradient of the facility, assuming access can be acquired, we propose drilling three boring to approximately 40 ft bg collecting groundwater samples from A-, B-, and C-Zone depths. A-Zone, B-Zone, and C-Zone groundwater samples shall be collected from approximate depths ranging from 3.5 to 12 ft bg, 13 to 24 ft bg, and 25 to 40 ft bg, respectively. Soil samples will be collected from any interval with significant staining, odor, or elevated Photoionization Detector (PID) readings. Groundwater and any soil samples will be analyzed for TPHss, TPHg, TPHd, and TPHmo, using a Fuel Fingerprint technique to hopefully identify the actual petroleum hydrocarbon product (i.e., possibly Stoddard Solvent); BTEX, and 8010 target list Halogenated Volatile Organic Compounds (HVOC).

6.2.1. Soil Boring Sampling Procedures and Analyses

After pre-sampling preparations are complete, a field program using a C-57 drilling contractor with a dual-wall direct-push rig (or similar equipment) will be implemented to collect discrete soil and grab groundwater sampling.

Soil Sampling

Soil samples will be collected for screening soil in proposed borings for grab groundwater sampling and during monitoring well installation. It is anticipated a maximum depth of 40+ ft bg, for each boring used for grab groundwater sampling and 35+ ft bg for installing C-Zone monitoring wells. Soil samples will be collected for analysis from any interval with significant staining, odor, or elevated PID readings.

Soil Sample Analysis

For screened soil sample for analysis, soil samples will be analyzed for TPHss, TPHg, TPHd, and TPHmo, using a Fuel Fingerprint technique; BTEX, and 8010 target list HVOC. Table 6-2 presents soil sample analysis, sampling containers, preservation, detection limit, and holding time.

Table 6-2
Soil Sample Analysis, Sampling Containers, Preservatives, Detection Limits, and Holding Times

Analysis and Method	Sampling Containers	Preservatives	Detection Limit (mg/kg)	Holding Times
TPHss (8015M) Fuel Fingerprint	Tube or Glass Containers	Ice	1.0	14 days
TPHg (8015M) Fuel Fingerprint	Tube or Glass Containers	Ice	1.0	14 days
TPHd & TPHmo (8015M) Fuel Fingerprint	Tube or Glass Containers	Ice	1.0 & 5.0	14 days
BTEX (8021M)	Tube or Glass Containers	Ice	0.005	14 days
HVOC 8010 Target List (by 8260b)	Tube or Glass Containers	Ice	varies	14 days

Grab Groundwater Sampling

As proposed, in the residential area three boring will be drilled to approximately 40 ft bg. A dual-tube direct-push (or similar) rig will be used to collect groundwater samples from A-, B-, and C-Zone depths of 3.5 to 12 ft bg, 13 to 24 ft bg, and 25 to 40 ft bg, respectively.

Grab Groundwater Analysis

Grab groundwater samples shall be analyzed for TPHss, TPHg, TPHd, and TPHmo, using Fuel Fingerprinting; BTEX; and 8010 target list HVOC. Table 6-3 presents grab groundwater sample analysis, sampling containers, preservation, detection limit, and holding time.

Table 6-3
Grab Groundwater Analysis, Sampling Containers, Preservatives, Detection Limits, and Holding Times

Analysis and Method	Sampling Containers	Preservatives	Detection Limit (ug/L)	Holding Times
TPHss (8015M) Fuel Fingerprint	VOA	HCl	50	14 days
TPHg (8015M) Fuel Fingerprint	VOA	HCl	50	14 days
TPHd & TPHmo (8015M) Fuel Fingerprint, w/ Silica Gel Cleanup	Amber	HCl	50 & 250	14 days
BTEX (8021M)	VOA	HCl	0.5	14 days
HVOC 8010 Target List (by 8260b)	VOA	HCl	0.5	14 days

6.3. Monitoring Well Installation

Due to B-Zone and C-Zone data gaps, CRA proposes installation of four groundwater monitoring wells to characterize groundwater in the vicinity of MW-3A and MW-7A. Assuming access can be obtained in limited space, 2-inch diameter monitoring wells will be installed. To coincide with other site monitoring wells, B-Zone and C-Zone well will be screen at approximate depths of 15 to 24 ft bg and 25 to 35 ft bg, respectively. During boring activities prior to well installation, if soil staining or elevated PID measurements are identified, soil samples will be collected and analyzed for Table 6-2 analytes. After the well has been installed, it will be surveyed and included in the periodic groundwater monitoring program with other monitoring wells.

6.4. Combined CPT and MIP Procedures

The Site has been identified as having multiple groundwater zones and complex subsurface geology. CRA proposes to utilize a Cone Penetration Test (CPT) with a Membrane Interface Probe (MIP) to help understand the complex lithology and subsurface conditions. Fifteen (15) CPT/MIP borings are proposed along Peabody Lane, as presented in Figure 12. Proposed MIP/CPT boring intervals are approximately every 20 ft along Peabody lane, except in areas in close proximity to MW-6 and MW-1. In areas in the vicinity of MW-6 and MW-1, CRA proposes boring intervals approximately every 15 ft. Each MIP/CPT boring will attempted to be advanced to a depth of approximately 45 ft bg. One CPT boring will be advanced to a depth of approximately 60 ft bg, in the vicinity of MW-6, to hopefully identify a transmissive water-bearing zone between 48 to 60 ft bg. This is below the known C-Zone. A dual-tube direct-push (or similar) rig will be used to collected a groundwater sample between approximate depths of 48 to 60 ft bg. Groundwater will be analyzed for constituents in Table 6-3.

7.0 PRE-SAMPLING PROCEDURES, DOCUMENTATION, AND WASTE MANAGEMENT

7.1. Pre-Sampling Preparations

Prior to performing on-site sampling activities, the proposed sampling approach will be approved, a site-specific Health and Safety Plan (HSP) will be prepared, utility clearance will be performed, and a boring and monitoring well permits will be submitted and approved.

7.1.1. Approval of Sampling Approach

This Work Plan presents the proposed scope of work for the sampling approach. The scope of work shall be approved by the ACEH prior to initiating field activities.

7.1.2. Health and Safety Plan

A site-specific HSP will be prepared for the proposed field activities. The HSP will be maintained on-site during field work

7.1.3. Utility Clearance

Prior to subsurface field activities, proposed boring locations will be marked with white paint and Underground Service Alert (USA) will be notified to perform a utility survey of USA members. Because of the limits of the USA survey, a utility locating service will be subcontracted to also perform an additional utility survey of those areas proposed for subsurface boring and drilling. This will help to identify subsurface utilities at boring locations. In addition, initially a hand auger or air knife may be used to clear the borehole to a reasonable depth and to collect soil samples.

7.1.4 Access Agreement

For locations proposed for off-site borings on private property, we will attempt to acquire written authorization with an access agreement. We will present the agreement to selected property owners. We cannot guarantee that property owner will agree to access their property, in a timely and reasonable fashion.

7.1.5 Permit

Based on regulatory requirements of the local agency, soil boring and monitoring well permit(s) will be obtained from Alameda County Public Works Agency.

7.2 Sample Documentation

Sampling containers will be labeled in the field with the job number, sampling location, date and time of sample, and requested analysis. A chain-of-custody record will be initiated and updated throughout handling of the samples.

7.3 Sampling Locations

Following borehole sampling, sampling locations will be defined based on field measurements from existing structures. Borehole sampling locations will be identified on a scaled figure.

7.4 Investigation Derived Waste

All investigation derived waste (IDW) will be temporarily stored on-site in sealed Department of Transportation-approved drums or other appropriate container(s). The drums will be labeled with the appropriate boring(s) identification number(s), date of collection, and nature of contents. All drummed IDW will be properly disposed of by the client.

8 REPORT

After receiving analytical results from the laboratory, an *Additional Characterization Report* will be prepared that will include the following:

- A summary of the site background and history,
- Description of drilling and sampling methods,
- Lithologic and well construction logs,
- Tabulated results,
- A site map showing the boring locations,
- Analytical reports and chain-of-custody documentation,
- A discussion of hydrocarbon distribution at the site,
- Our conclusions and recommendations.

9 QUALITY ASSURANCE PROJECT PLAN

This Quality Assurance Project Plan (QAPP) is intended to define procedures to facilitate the acquisition of accurate and reliable data.

9.1 Project Organization

John Nady is currently responsible for the site. CRA works for this client to provide consulting and sampling services. Subcontractors will be used for drilling, laboratory analysis, and independent utility clearance. Alameda County Health Agency is the lead agency and will provide oversight for sampling activities. Documents will be sent to the client and the lead agency for their consideration. Underground Service Alert (USA) will be contacted prior to performing any subsurface activities. Following are principal contacts for group currently associated with the project:

Client
Mr. John Nady
c/o Frederic D. Schrag, Esq.
Nady Systems
6701 Shellmound Street, Emeryville, CA 94608
Schrag@nady.com
510/652-2411 x-263; 510/652-5075

Conestoga-Rovers & Associates, Inc.
Mark Jonas, R.G
510/420-3307; 510/420-9170 fax
510/385-0022 mobile
mjonas@crawold.com
5900 Hollis Street, Suite A
Emeryville, CA 94608

Alameda County Health Agency
Ms. Barbara Jakub
510/567-6876; 510/567-6764
barbara.jakub@acgov.org
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Alameda County Public Works Agency
James Yoo (for Drilling Permit)
510/670-6633; 510/782-1939 fax
Jamesy@acpwa.org
399 Elmhurst Street, Hayward, CA 94544

Soil Gas Laboratory
Air Toxics Ltd.
180 Blue Ravine Road, Suite B
Folsom, CA 95630
916/985-1000

Soil Gas Laboratory (alternative)
Data Chem
960 W. LeVoy Drive
Salt Lake City, Utah 84123
800/280-8071

Soil & Groundwater Analytical Laboratory
McCampbell Analytical
1534 Willowpass Road
Pittsburg, California 94565
Angela Rydelius
877/252-9262; 925/252-9269 fax
main@mccampbell.com

9.2 Quality Assurance Objectives

The overall quality assurance objective is to develop and implement procedures for field sampling; chain-of-custody, laboratory analysis, and reporting that will provide results that are defensible and reliable. Quality assurance objectives for accuracy, precision, and method detection limits are discussed as follows:

Accuracy

The criterion for accuracy is a measurement of bias that exists in a measurement system. It refers to the degree of agreement of a measurement, X, with an accepted reference or true value, T, usually expressed as the difference between the two values, X-T. Accuracy can also be assessed by using percent bias and percent recovery information. Accuracy is difficult to measure for the entire data collection activity and specifically the sampling component. The criteria for accuracy is best addressed using laboratory matrix spikes.

Precision

The criterion for precision is a measure of the reproducibility of replicate analyses made under a given set of conditions. Specifically, it is a quantitative measure of the variability of a group of measurements as compared to their average value. The overall precision of each data collection activity should take into account both field sampling precision and analytical precision. The specific criterion for precision for each parameter is detailed within the individual analytical test method. If groundwater is sampled, a blind duplicate ground water sample may be collected and assessed as a means of assessing both sampling and analytical reproducibility and as a measure of the data collection activity's precision. The duplicate sample would be analyzed for the same suite of analyses as the original sample. All results will be included in a report.

Method Detection Limits

Anticipated method detection limits are based on a relatively standard sample with a manageable amount of interference. The specific character of a sample with respect to high concentrations of multiple contaminants, can increase the actual detection limit above the anticipated method detection limit

9.3 Sampling Procedures

Sampling procedures are presented in Section 6.0 *Proposed Scope of Work.*

9.4 Sample Custody Procedures and Documentation

Chain-of-custody procedures and documentation are covered in Section 6.0 *Proposed Scope of Work.*

9.5 Field and Laboratory Calibration Procedures

Field Calibration Procedures

If a PID is used, it will be calibrated in the office or at an equipment supplier, prior to use in the field. If necessary, the PID will also be calibrated periodically in the field.

Laboratory Calibration Procedures

The analytical laboratory has calibration procedures as required by the current analytical Standard Methods and their own laboratory Quality Assurance/Quality Control (QA/QC) plan. The details associated with all the specific laboratory calibration procedures are available from the laboratory upon request.

9.6 Analytical Procedures

Analytical methods to be used are presented in Section 6.0 *Proposed Scope of Work.* Specific laboratory procedures associated with each method are available upon request.

9.7 Certified Analytical Laboratory

Pursuant to Health and Safety Code Section 25198, a state-certified laboratory will perform analytical services. For this project it is anticipated that Air Toxics Ltd, a California-certified laboratory with Department of Health Services (DHS) License #02110CA, or Data Chem, also a California-certified laboratory with DHS License #01150CA, will perform soil gas analytical services. McCampbell Analytical, a California-certified laboratory with DHS License #1644, will perform soil and groundwater analytical services.

9.8 Data Assessment and Corrective Actions

Data Assessment

Data assessment within the analytical laboratory is defined by the specific requirements for the standard analytical method and the laboratory's QA/QC program. Procedures for analytical accuracy, precision, and completeness are in laboratory documents, available upon request. Accuracy and precision are also discussed in Section 9.2 "Quality Assurance Objectives." Completeness of analytical data is a measure of the amount of valid data obtained from the measurement system compared with the amount that was expected under normal conditions.

The analytical laboratories will submit QC documentation with the analytical results. QC documentation typically includes a case narrative describing conformance; surrogate recoveries; spike amount(s), control limits, accuracy, and precision; calibration summaries; and a GC/MS internal standard summary.

Field data and analytical results will be evaluated by a Professional Geologist.

Corrective Actions

Unacceptable conditions or data, nonconformance with the QA procedures, or other deficiency may require corrective actions. A corrective action may be necessary if the nonconformance is of program significance. If required, the action to correct the nonconformance will be developed, initiated, and implemented.

Corrective action(s) may include:

- Reanalyzing the samples, if holding time permits.
- Resampling and reanalyzing.
- Evaluating and amending the sampling and analytical procedures.
- Accepting the data and acknowledging its level of uncertainty.

Necessary corrective actions will be documented.

9.9 Reporting Procedures

Reporting procedures for measurement of system performance and data quality are part of the laboratory's operating procedures and documentation is available upon request. Quality control documentation will be presented with analytical results from the laboratory.

9.10 Data Management

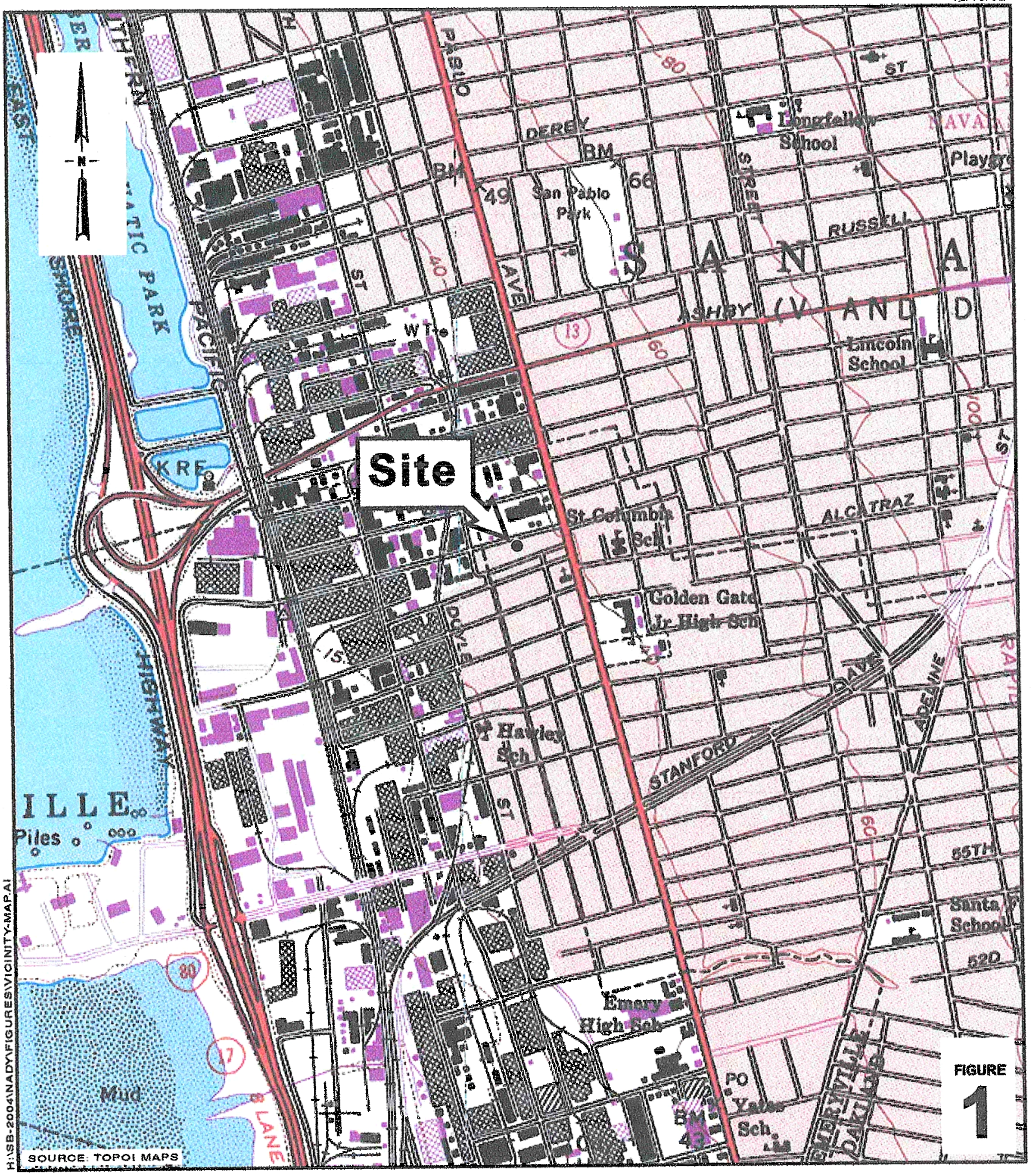
Laboratory data management, data reduction, and reporting requirements are in the laboratory's QA/QC program and operating procedures. Documentation from the laboratory is available upon request. Independent third-party validation will not be performed. Analytical laboratories perform an internal review of analytical and QC results prior to release of a data package signed by a laboratory representative.

Laboratory results and associated QC documentation will be presented in a report following field activities and sample analysis.

9.11 Internal Quality Control

Quality control is defined as the routine application of procedures for obtaining prescribed standards of performance. The procedures used for field work are discussed throughout this report, under Section 6.0 *Proposed Scope of Work*. Standards of performance are discussed in this section of the Work Plan. Laboratory documentation on standard analytical methods and the laboratory's QA/QC program is available upon request.

12/19/02



0 1/8 1/4 1/2 1

SCALE : 1" = 1/4 MILE

CONESTOGA-ROVERS & ASSOCIATES

Vicinity Map

1137 - 1167 65th Street

Oakland, California

06/12/08

N

0 50 100 200

Scale (ft)

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FIGURE

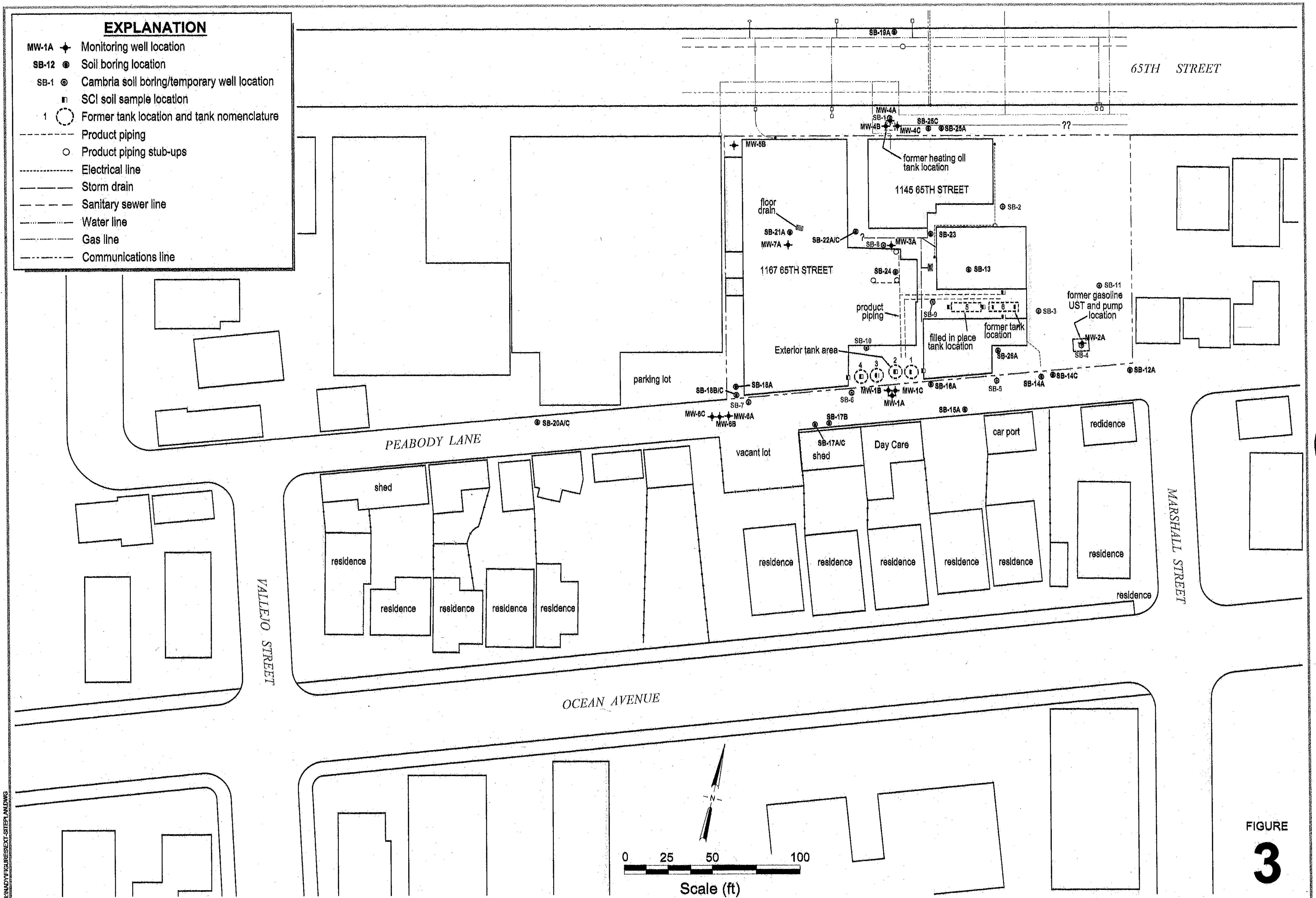
2

Aerial Map

1137 - 1167 65th Street
Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

06/12/08

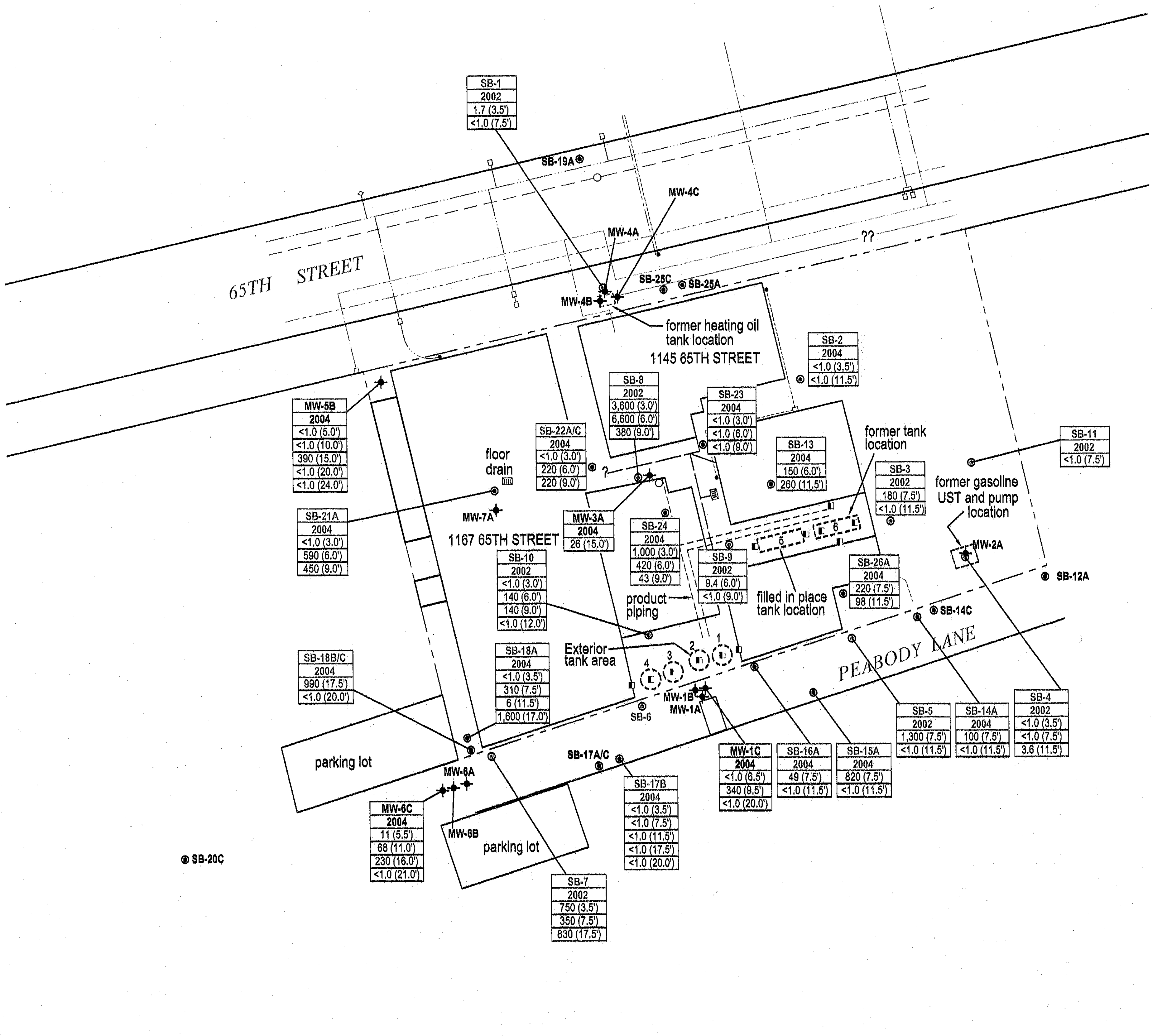


Site Map

CONESTOGA-ROVERS & ASSOCIATES

1137 - 1167 65th Street
Oakland, California

10/17/07



EXPLANATION

- MW-1A — CRA monitoring well location
- SB-12 — CRA soil boring location
- SB-1 — CRA soil boring/temporary well location
- SCI soil sample location
- 1 — Former tank location and tank nomenclature
- Product piping
- Product piping stub-ups
- Electrical line
- Storm drain
- Sanitary sewer line
- Water line
- Gas line
- Communications line

Well ID / Year / TPHss (depth) — Monitoring Well Designation; Sample year; TPHss concentration in soil in mg/kg and (depth of sample)

Boring ID / Year / TPHss (depth) — Soil Boring Designation; Sample year; TPHss concentration in soil in mg/kg and (depth of sample)

FIGURE

4

TPHss Concentrations in Soil

1137 - 1167 65th Street
Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

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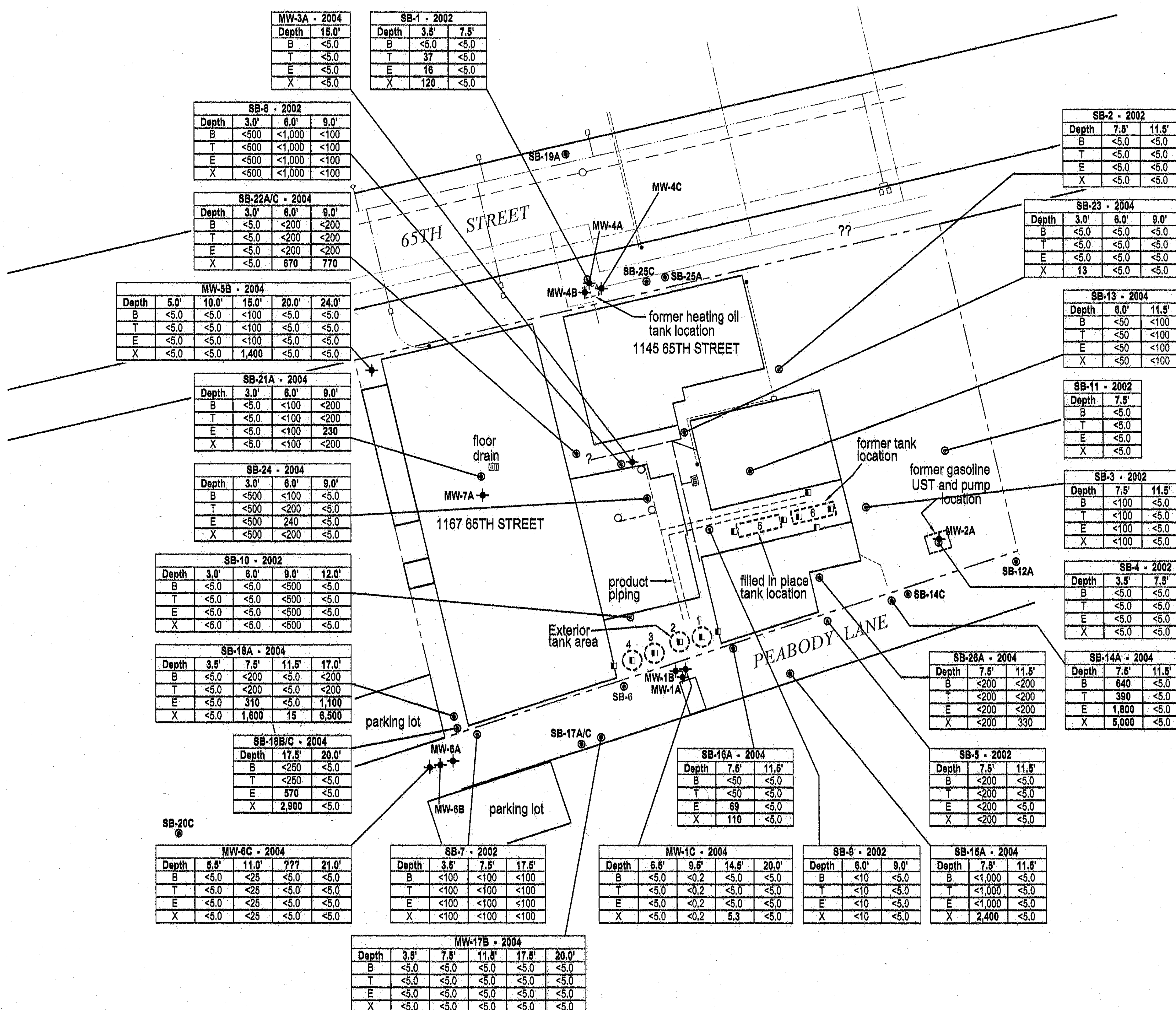
BTEX Concentrations in Soil



MW-3A - 2004	
Depth	15.0'
B	<5.0
T	<5.0
E	<5.0
X	<5.0

SB-1 - 2002		
Depth	3.5'	7.5'
B	<5.0	<5.0
T	37	<5.0
E	16	<5.0
X	120	<5.0

SB-8 - 2002			
Depth	3.0'	6.0'	9.0'
B	<500	<1,000	<100
T	<500	<1,000	<100
E	<500	<1,000	<100
X	<500	<1,000	<100

SB-22A/C - 2004			
Depth	3.0'	6.0'	9.0'
B	<5.0	<200	<200
T	<5.0	<200	<200
E	<5.0	<200	<200
X	<5.0	670	770

MW-5B - 2004					
Depth	5.0'	10.0'	15.0'	20.0'	24.0'
B	<5.0	<5.0	<100	<5.0	<5.0
T	<5.0	<5.0	<100	<5.0	<5.0
E	<5.0	<5.0	<100	<5.0	<5.0
X	<5.0	<5.0	1,400	<5.0	<5.0

SB-21A - 2004			
Depth	3.0'	6.0'	9.0'
B	<5.0	<100	<200
T	<5.0	<100	<200
E	<5.0	<100	230
X	<5.0	<100	<200

SB-24 - 2004			
Depth	3.0'	6.0'	9.0'
B	<500	<100	<5.0
T	<500	<200	<5.0
E	<500	240	<5.0
X	<500	<200	<5.0

SB-10 - 2002				
Depth	3.0'	6.0'	9.0'	12.0'
B	<5.0	<5.0	<500	<5.0
T	<5.0	<5.0	<500	<5.0
E	<5.0	<5.0	<500	<5.0
X	<5.0	<5.0	<500	<5.0

SB-18A - 2004				
Depth	3.5'	7.5'	11.5'	17.0'
B	<5.0	<200	<5.0	<200
T	<5.0	<200	<5.0	<200
E	<5.0	310	<5.0	1,100
X	<5.0	1,600	15	6,500

SB-18B/C - 2004		
Depth	17.5'	20.0'
B	<250	<5.0
T	<250	<5.0
E	570	<5.0
X	2,900	<5.0

MW-6C - 2004				
Depth	5.5'	11.0'	???	21.0'
B	<5.0	<25	<5.0	<5.0
T	<5.0	<25	<5.0	<5.0
E	<5.0	<25	<5.0	<5.0
X	<5.0	<25	<5.0	<5.0

SB-7 - 2002			
Depth	3.5'	7.5'	17.5'
B	<100	<100	<100
T	<100	<100	<100
E	<100	<100	<100
X	<100	<100	<100

MW-17B - 2004					
Depth	3.5'	7.5'	11.5'	17.5'	20.0'
B	<5.0	<5.0	<5.0	<5.0	<5.0
T	<5.0	<5.0	<5.0	<5.0	<5.0
E	<5.0	<5.0	<5.0	<5.0	<5.0
X	<5.0	<5.0	<5.0	<5.0	<5.0

MW-1C - 2004				
Depth	6.5'	9.5'	14.5'	20.0'
B	<5.0	<0.2	<5.0	<5.0
T	<5.0	<0.2	<5.0	<5.0
E	<5.0	<0.2	<5.0	<5.0
X	<5.0	<0.2	5.3	<5.0

SB-16A - 2004		
Depth	7.5'	11.5'
B	<50	<5.0
T	<50	<5.0
E	69	<5.0
X	110	<5.0

SB-9 - 2002		
Depth	6.0'	9.0'
B	<10	<5.0
T	<10	<5.0
E	<10	<5.0
X	<10	<5.0

SB-15A - 2004		
Depth	7.5'	11.5'
B	<1,000	<5.0
T	<1,000	<5.0
E	<1,000	<5.0
X	2,400	<5.0

SB-5 - 2002		
Depth	7.5'	11.5'
B	<200	<5.0
T	<200	<5.0
E	<200	<5.0
X	<200	<5.0

SB-26A - 2004		
Depth	7.5'	11.5'
B	<200	<200
T	<200	<200
E	<200	<200
X	<200	330

SB-14A - 2004		
Depth	7.5'	11.5'
B	640	<5.0
T	390	<5.0
E	1,800	<5.0
X	5,000	<5.0

SB-4 - 2002			
Depth	3.5'	7.5'	11.5'
B	<5.0	<5.0	<5.0
T	<5.0	<5.0	<5.0
E	<5.0	<5.0	7.4
X	<5.0	<5.0	11

SB-3 - 2002		
Depth	7.5'	11.5'
B	<100	<5.0
T	<100	<5.0
E	<100	<5.0
X	<100	<5.0

SB-11 - 2002	
Depth	7.5'
B	<5.0
T	<5.0
E	<5.0
X	<5.0

SB-13 - 2004		
Depth	6.0'	11.5'
B	<50	<100
T	<50	<100
E	<50	<100
X	<50	<100

SB-23 - 2004			
Depth	3.0'	6.0'	9.0'
B	<5.0	<5.0	<5.0
T	<5.0	<5.0	<5.0
E	<5.0	<5.0	<5.0
X	13	<5.0	<5.0

SB-2 - 2002		
Depth	7.5'	11.5'
B	<5.0	<5.0
T	<5.0	<5.0
E	<5.0	<5.0
X	<5.0	<5.0

EXPLANATION

MW-1A — CRA monitoring well location

SB-12 — CRA soil boring location

SB-1 — CRA soil boring/temporary well location

SCI soil sample location

1 — Former tank location and tank nomenclature

Product piping

Product piping stub-ups

Electrical line

Storm drain

Sanitary sewer line

Water line

Gas line

Communications line

Well ID
Depth
Benzene
Toluene
Ethyl benzene
Xylenes

Well ID — Well / Boring Designation - Sample Year

Depth — Depth of sample

Benzene, Toluene, Ethyl benzene, Xylenes — BTEX concentrations in soil in mg/kg

N

Scale (ft): 0 20 40 80

FIGURE 5

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1137 - 1167 65th Street
Oakland, California

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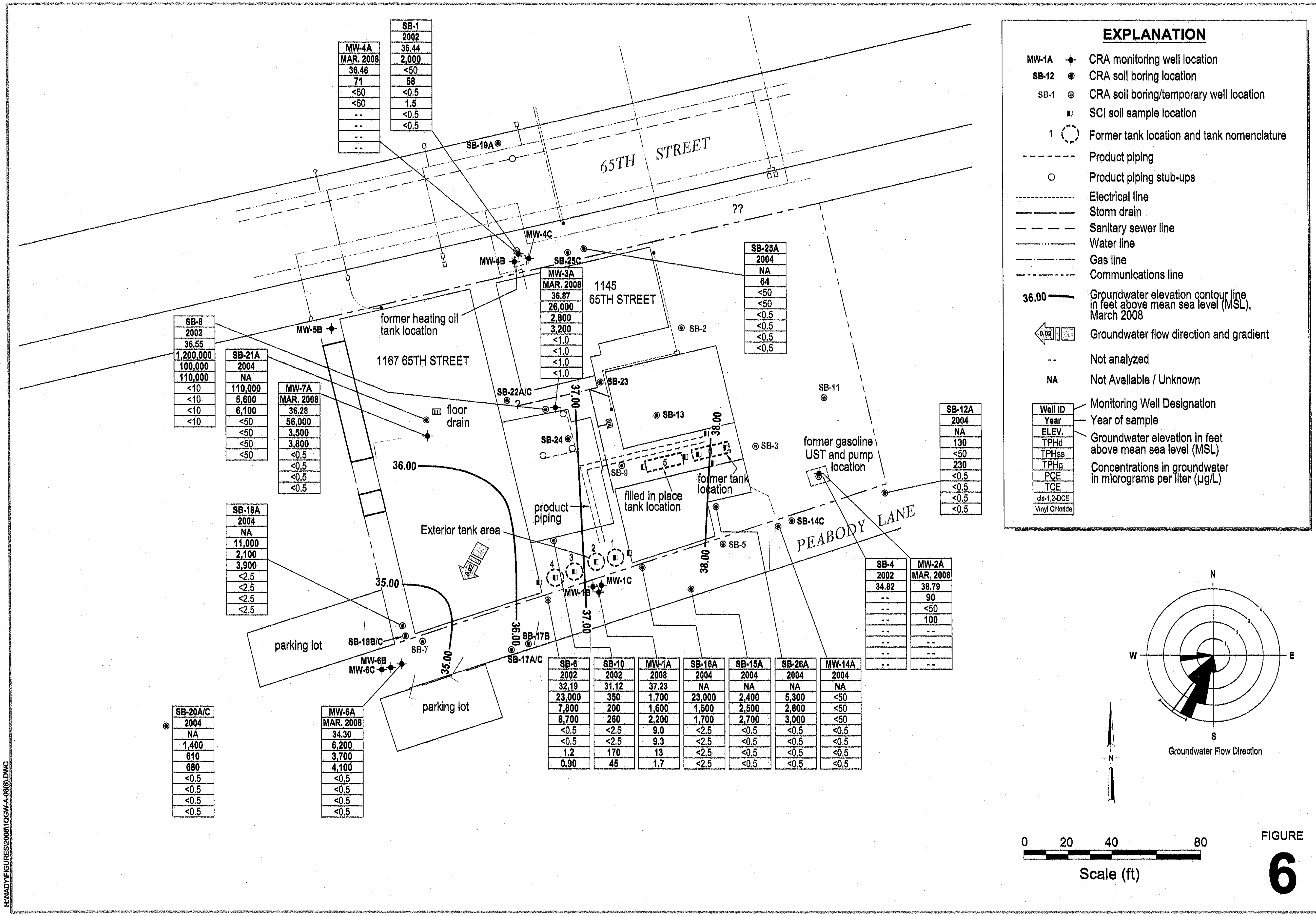

Groundwater Flow and Chemical Concentrations - A Zone

CONESTOGA-ROVERS & ASSOCIATES

1137 - 1167 65th Street
Oakland, California

FIGURE 6

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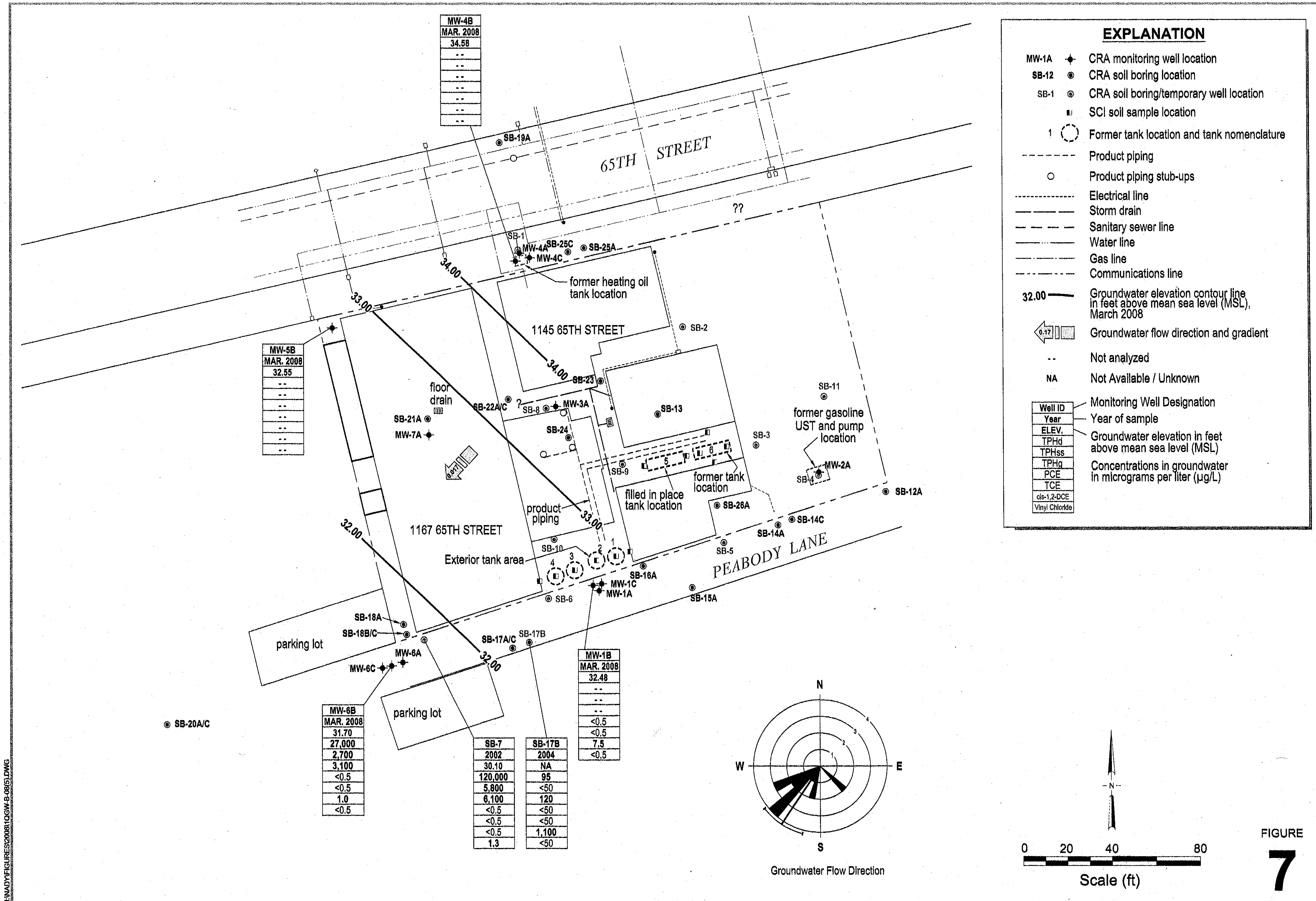
06/23/08



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Groundwater Flow and Chemical Concentrations - B Zone

1137 - 1167 65th Street
Oakland, California

FIGURE 7

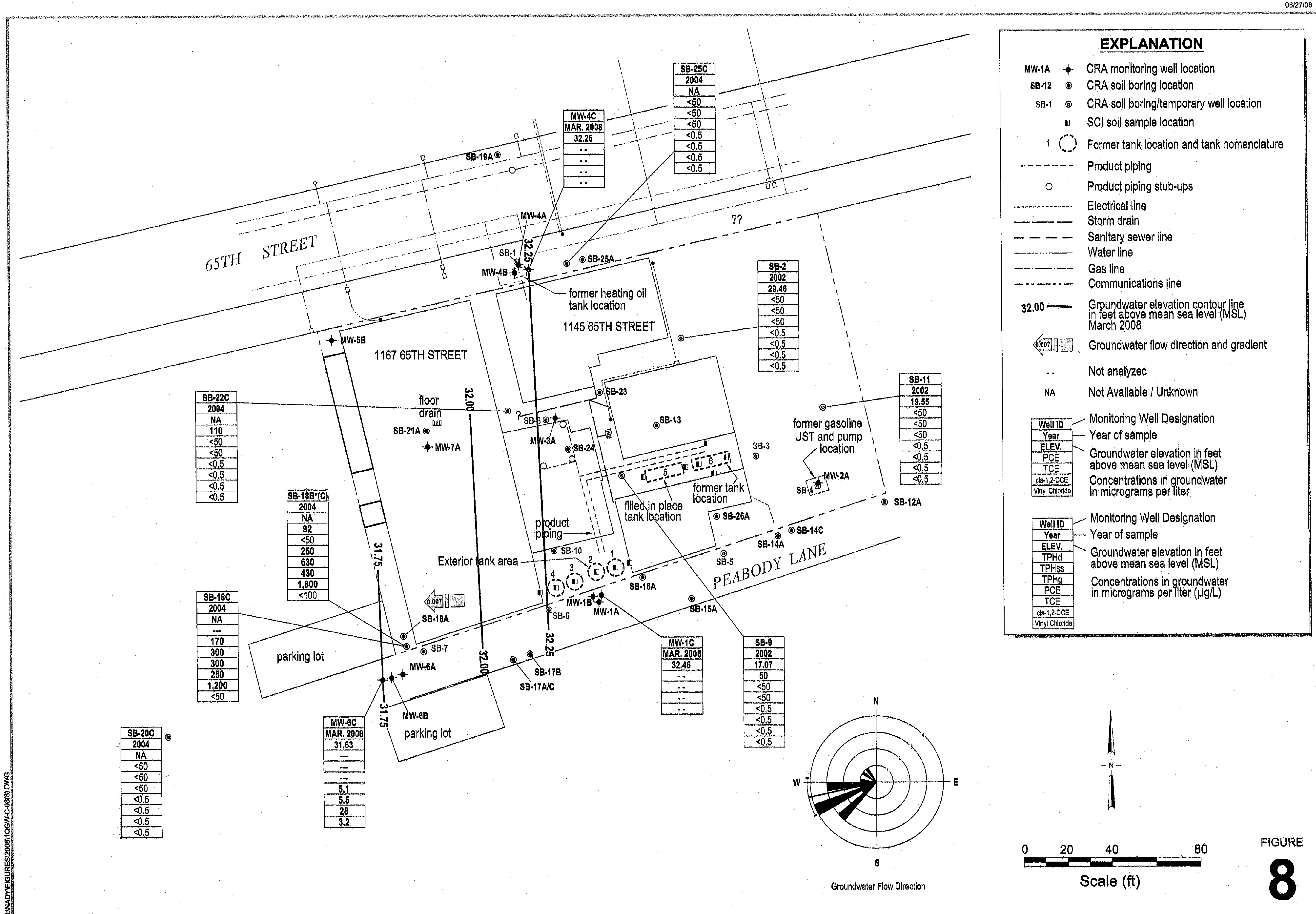


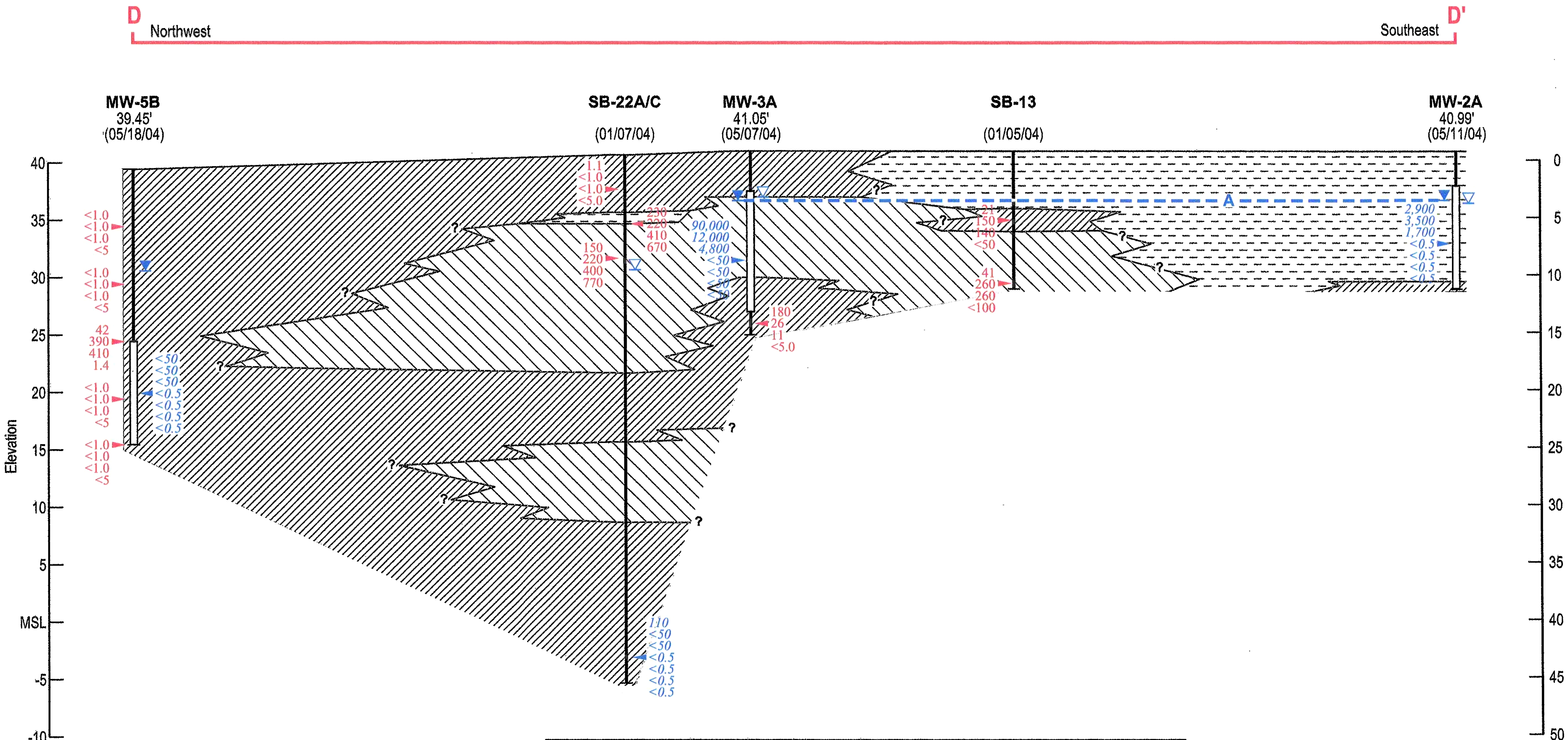
FIGURE 8

Groundwater Flow and Chemical Concentrations - C Zone

CONESTOGA-ROVERS & ASSOCIATES

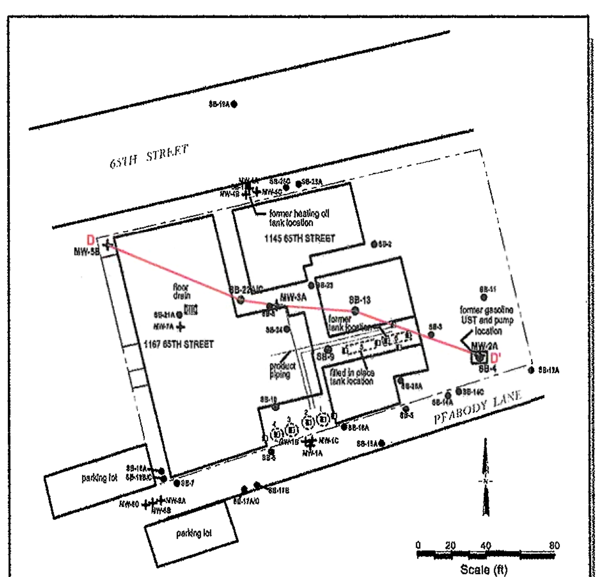
1137 - 1167 65th Street
Oakland, California

06/25/08



EXPLANATION

- = **Low Permeability Soils** — Clay, Silty Clay, Clayey Silt, Silt, Sandy Clay
- = **Moderate Permeability Soils** — Silty Sand, Clayey Sand, Sandy Silt
- = **High Permeability Soils** — Sand, Gravelly Sand
- = **Fill (Tank Pit)**
- Approximate soil sample location
- Approximate groundwater sample location
- TPHd, TPHss, TPHg, Xylenes — Concentrations in Soil, in parts per million
- **Well ID** — Well Designation
- Elev. — Top of Casing Elevation
- (date) — Drilling Date
- Groundwater Monitoring Well
- Well Screen Interval
- Bottom of boring
- A - - - - Potentiometric Surface - 06/03/2004
- Initial Groundwater level
- Depth of Groundwater - 06/03/2004
- TPHd, TPHss, TPHg, PCE, TCE, cis-1,2-DCE, Vinyl Chloride — Concentrations in groundwater, in parts per billion



Scale (ft)
10
0
20

Note: Groundwater sampled from wells on 06/03/04 and from soil borings on date drilled.

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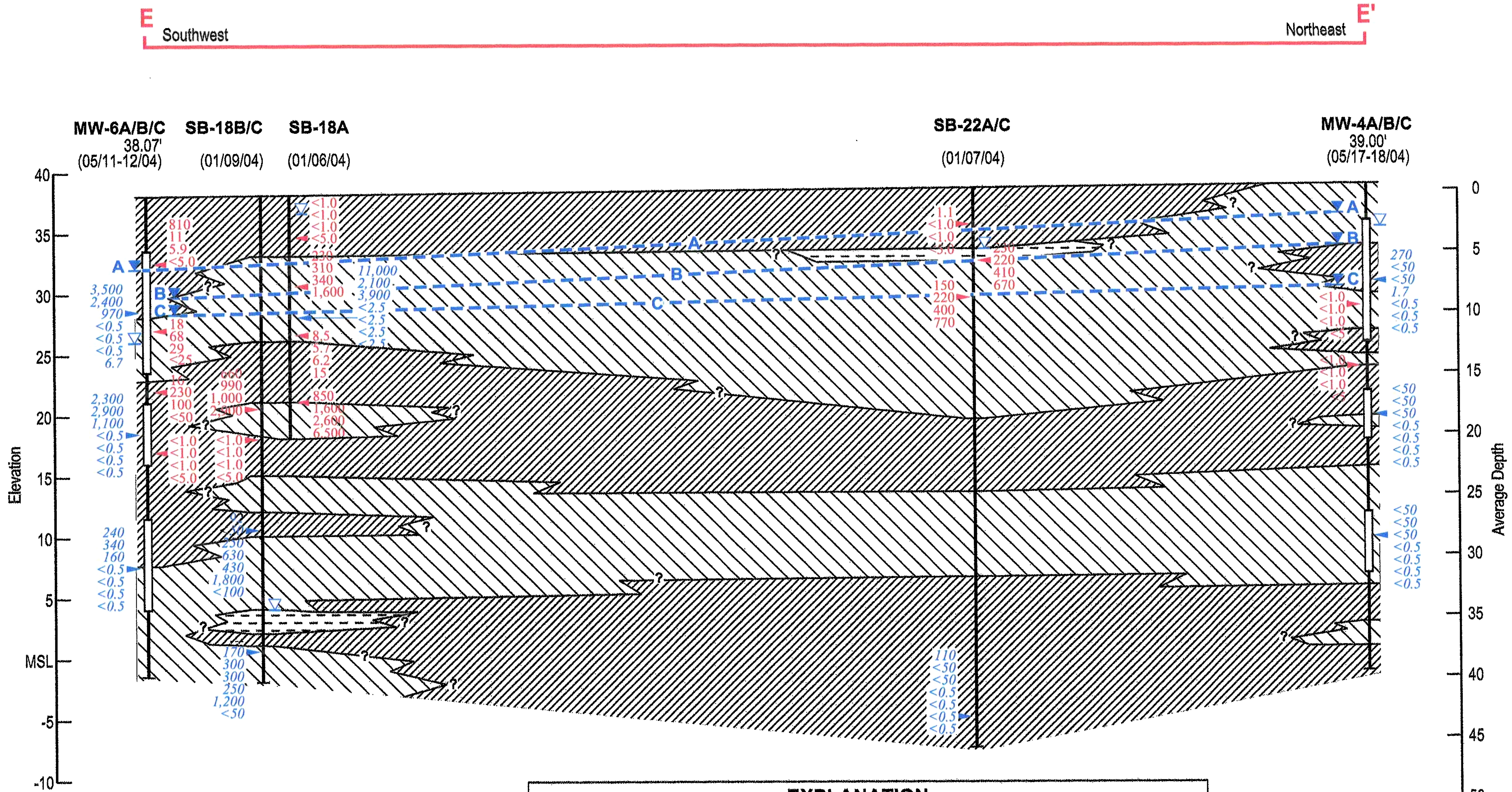
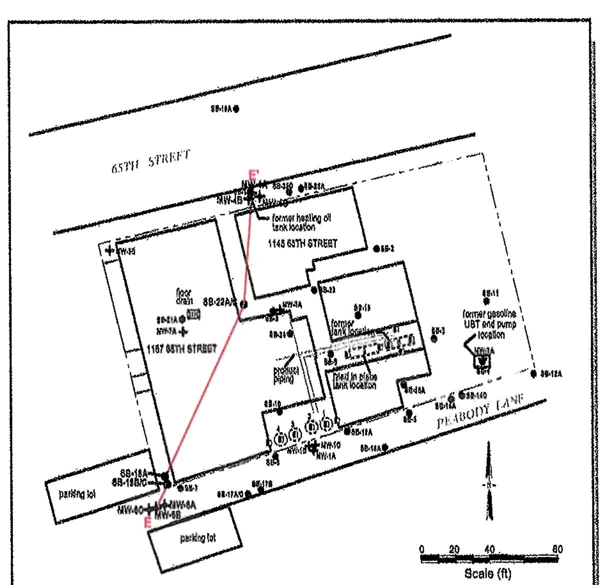
Geologic Cross Section D-D'

CONESTOGA-ROVERS & ASSOCIATES

1137 - 1167 65th Street
Oakland, California

FIGURE
9



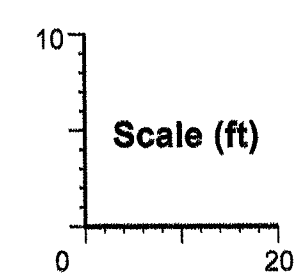


EXPLANATION

- = Low Permeability Soils — Clay, Silty Clay, Clayey Silt, Silt, Sandy Clay
- = Moderate Permeability Soils — Silty Sand, Clayey Sand, Sandy Silt
- = High Permeability Soils — Sand, Gravelly Sand
- = Fill (Tank Pit)
- Approximate soil sample location
- Approximate groundwater sample location
- TPHd, TPHss, TPHg, Xylenes — Concentrations in Soil, in parts per million

- **Well ID** — Well Designation
- Elev. — Top of Casing Elevation
- (date) — Drilling Date
- Groundwater Monitoring Well
- Well Screen Interval
- Bottom of boring
- Potentiometric Surfaces 06/03/04
- Initial Groundwater level
- Depth of Groundwater - 06/03/2004
- TPHd, TPHss, TPHg, PCE, TCE, cis-1,2-DCE, Vinyl Chloride — Concentrations in groundwater, in parts per billion

Note: Groundwater sampled from wells on 06/03/04 and from soil borings on date drilled.



Geologic Cross Section E-E'

CONESTOGA-ROVERS & ASSOCIATES

1137 - 1167 65th Street
Oakland, California

FIGURE 10

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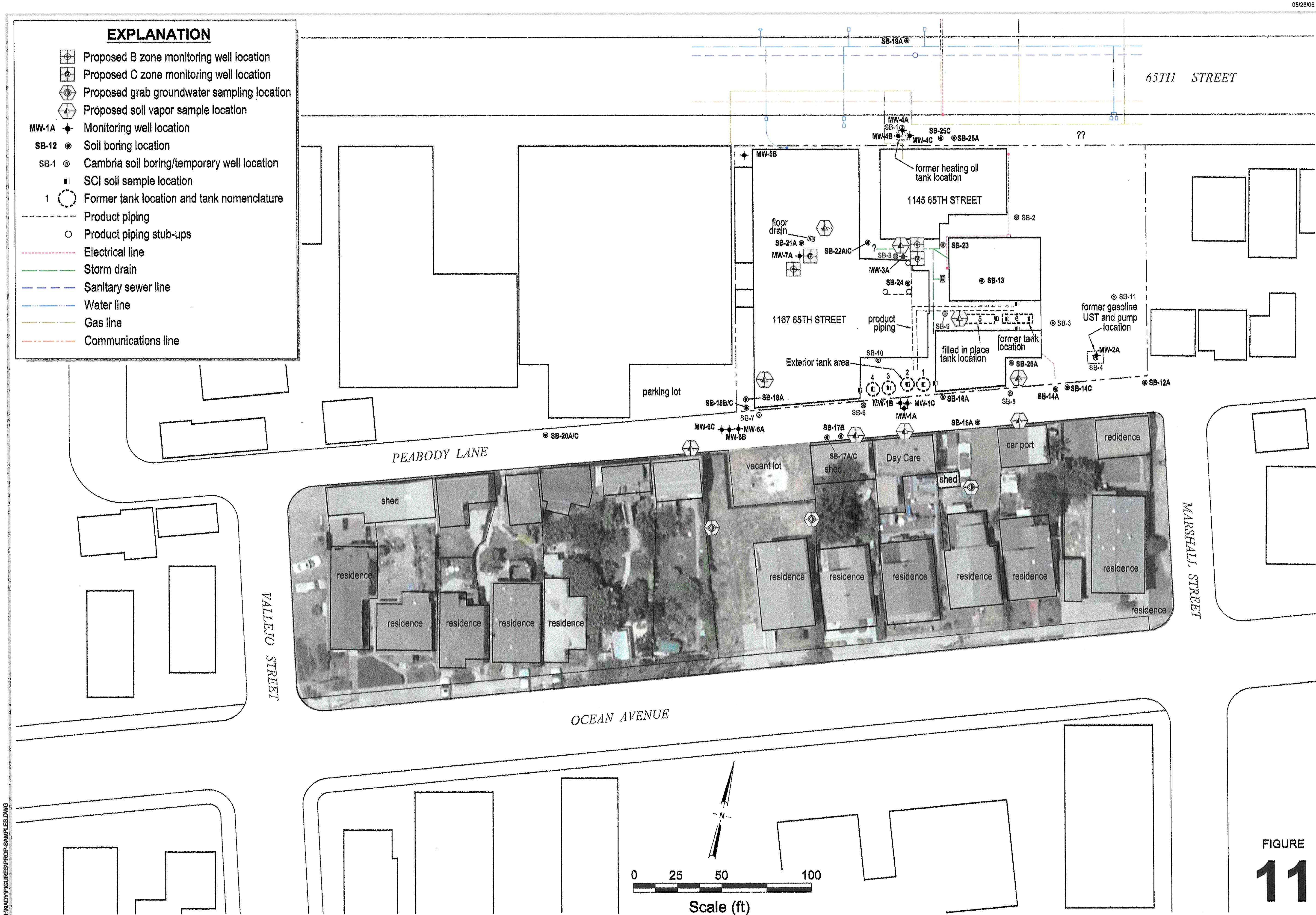
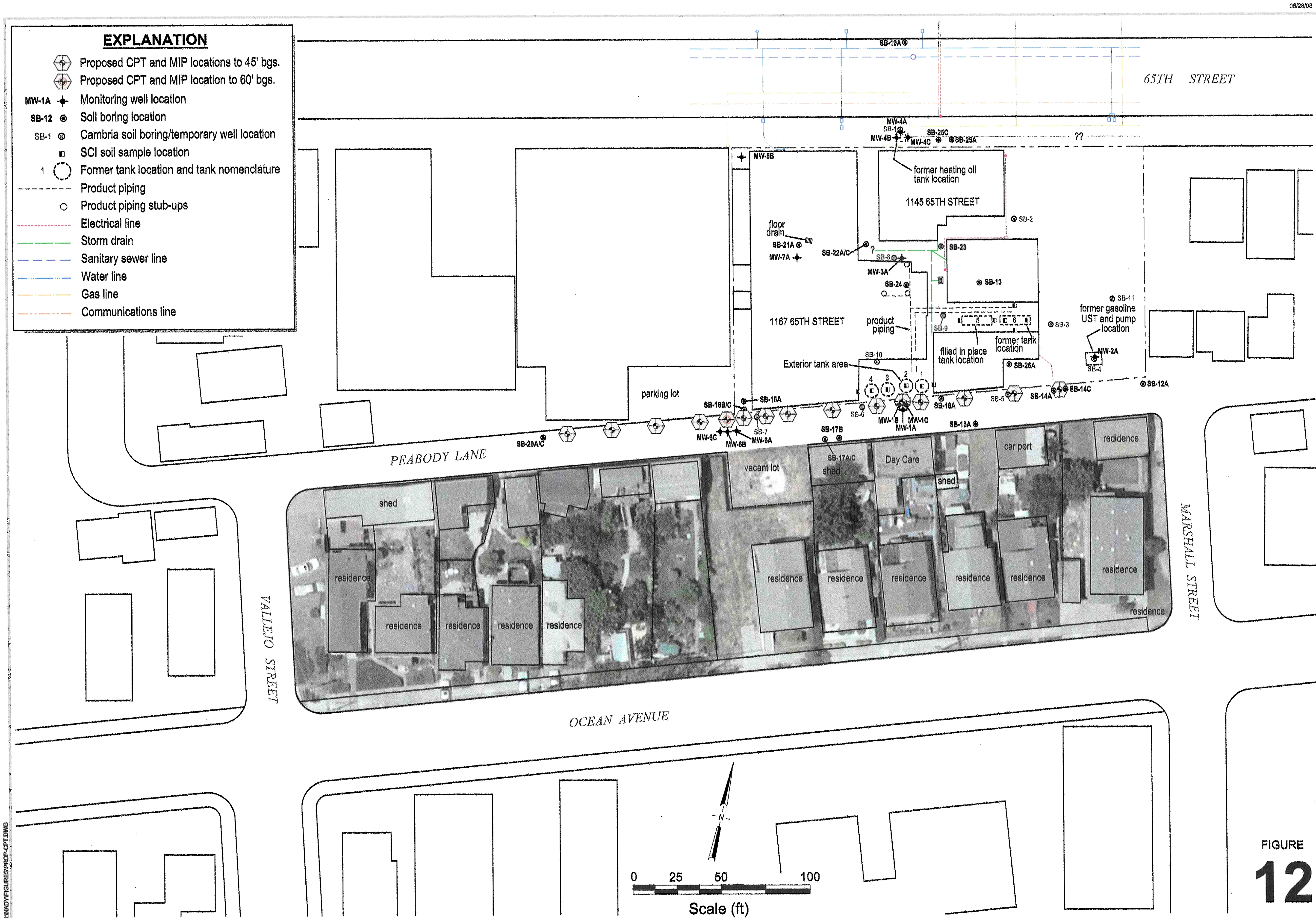


Proposed Sample Locations Map

CONESTOGA-ROVERS & ASSOCIATES

1137 - 1167 65th Street
Oakland, California

FIGURE 11



Proposed CPT and MIP Locations Map

1137 - 1167 65th Street
Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

FIGURE 12

Table 1. Well Construction Details - John Nady, 1137-1167 65th Street, Oakland, California

Well ID	Date Installed	Borehole Depth (ft)	Borehole Diameter (inches)	Casing Diameter (in)	Screen Interval (ft bgs)	Screen Size (in)	Filter Pack (ft bgs)	Bentonite Seal (ft bgs)	Cement Seal (ft bgs)	TOC Elevation (ft msl)	First Water (ft bgs)
A-Zone Monitoring Wells											
MW-1A	5/10/2004	14.5	8	2	4.5 - 14.5	0.010	3.5 - 14.5	2.5 - 3.5	0 - 2.5	39.64	7.0
MW-2A	5/11/2004	12.0	10	4	3.0 - 12.0	0.020	2.5 - 3.0	1.0 - 2.5	0 - 1.0	40.72	4.5
MW-3A	5/7/2004	16.0	8	2	3.5 - 14.0	0.010	3.0 - 3.5	2.0 - 3.0	0 - 2.0	40.88	4.0
MW-4A	5/18/2004	16.0	8	2	3.0 - 13.0	0.010	2.5 - 13.0	1.5 - 2.5	0 - 1.5	38.71	NA
MW-6A	5/11/2004	14.5	8	2	4.5 - 14.5	0.010	3.5 - 14.5	1.5 - 3.5	0 - 1.5	37.98	12.0
MW-7A	5/7/2004	10.0	6.5	1	5.0 - 10.0	0.010	4.0 - 10.0	3.0 - 4.0	0 - 3.0	40.58	6.0
B-Zone Monitoring Wells											
MW-1B	5/12/2004	20.0	8	2	16.5 - 20.0	0.010	15.5 - 20.0	13.0 - 15.5	0 - 13.0	39.50	7.0
MW-4B	5/18/2004	24.0	8	2	17.0 - 21.0	0.010	16.0 - 21.0	12.0 - 14.0 21.0 - 24.0	0 - 12.0	38.54	3.5
MW-5B	5/18/2004	24.0	8	2	15.0 - 24.0	0.010	14.0 - 24.0	12.0 - 14.0	0 - 12.0	38.98	NA
MW-6B	5/12/2004	24.5	8	2	17.0 - 22.0	0.010	16.0 - 22.0	14.0 - 16.0 22.0 - 24.5	0 - 14.0	37.66	15.5
C-Zone Monitoring Wells											
MW-1C	5/10/2004	40.0	8	2	25.0 - 34.0	0.010	24.0 - 34.0	22.0 - 24.0 34.0 - 40.0	0 - 22.0	39.49	7.0
MW-4C	5/17/2004	40.0	8	2	27.0 - 32.0	0.010	26.0 - 27.0	24.0 - 26.0 32.0 - 40.0	0 - 24.0	38.50	12.0
MW-6C	5/11/2004	39.5	8	2	26.5 - 34.0	0.010	25.5 - 34.0	23.0 - 25.0 34.0 - 39.5	0 - 23.0	37.59	15.0

Abbreviations / Notes

ft = feet
in = inches
ft bgs = feet below grade surface
ft msl = feet above mean sea level
TOC = top of casing

Table 2. Monitoring Well Groundwater Analytical Results: Petroleum Hydrocarbons - John Nady, 1137-1167 65th Street, Oakland, California

Well ID (TOC)	Date Sampled	Groundwater Zone	Groundwater Elevation *(ft msl)*	Depth to Water *(ft)*	TPHd	TPHg	TPHmo	TPHss	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					←				μg/L				→	
MW-1A	6/3/2004	Zone A	35.14	4.50	1,300	1,400	260	2,500	ND<0.5	ND<0.5	2.0	11	ND<5.0	
39.64	11/23/2004		36.54	3.10	1,400	2,300	ND<250	2,800	0.64	ND<0.5	2.5	9.7	6.8	a,b,c
	3/14/2005		37.02	2.62	3,200	4,800	ND<250	6,000	0.68	ND<0.5	2.0	6.8	ND<5.0	d,e
	6/15/2005		35.14	4.50	2,500	2,800	ND<250	3,400	ND<2.5	ND<2.5	ND<2.5	5.9	ND<25	a,b,h,i,c
	9/19/2005		33.14	6.50	2,800	4,100	ND<250	6,000	ND<1.0	ND<1.0	3.3	6.2	ND<10	a,b,i,c
	12/12/2005		35.14	4.50	2,500	2,600	ND<250	3,100	ND<1.7	ND<1.7	2.7	6.5	ND<17	a,b,c,h,i
	3/13/2006		37.74	1.90	2,300	2,000	ND<250	2,400	0.51	ND<0.5	1.9	3.5	--	a,b,c,i
	6/19/2006		35.94	3.70	2,600	2,200	ND<250	3,500	0.52	ND<0.5	2.9	6.7	--	m,b,c
	9/20/2006		34.19	5.45	2,400	2,200	ND<250	2,400	ND<2.5	ND<2.5	3.0	9.7	--	a,b,c,i
	12/20/2006		37.02	2.62	1,900	1,300	ND<250	1,400	0.52	ND<0.5	2.9	7.6	--	a,e,h
	3/29/2007		37.04	2.60	1,200	1,800	ND<250	2,100	ND<0.5	ND<0.5	2.2	6.4	ND<5.0	a,b,c
	6/11/2007		35.72	3.92	2,200	3,200	ND<250	2,200	ND<5.0	ND<5.0	ND<5.0	ND<5.0	--	a,b,c
	9/7/2007		33.90	5.74	1,800	2,300	ND<250	1,700	ND<0.5	ND<0.5	2.2	4.6	ND<5.0	a,b,c
	12/12/2007		36.53	3.11	2,500	3,100	ND<250	3,400	ND<5.0	ND<5.0	ND<5.0	12	ND<50	a,c
	3/7/2008		**37.23**	**2.41**	**1,700**	**2,200**	**ND<250**	**1,600**	**ND<0.5**	**ND<0.5**	**2.3**	**8.9**	**--**	**a,c**
MW-2A	6/3/2004	Zone A	36.48	4.24	2,900	1,700	ND<250	3,500	ND<0.5	3.5	4.9	5.1	ND<5.0	
40.72	11/23/2004		37.83	2.89	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
	3/14/2005		39.02	1.70	--	--	--	--	--	--	--	--	--	
	3/15/2005		--	--	560	360	450	260	ND<0.5	2.5	ND<0.5	ND<0.5	ND<5.0	e,d,g,i
	6/15/2005		37.91	2.81	--	--	--	--	--	--	--	--	--	
	6/16/2005		--	--	470	480	330	430	ND<0.5	2.9	ND<0.5	ND<0.5	ND<5.0	a,b,i,g,e
	9/19/2005		35.46	5.26	--	--	--	--	--	--	--	--	--	
	9/20/2005		--	--	2,100	960	870	960	ND<0.5	4.7	2.9	ND<0.5	ND<5.0	e,g,b,i,l
	12/12/2005		37.66	3.06	--	--	--	--	--	--	--	--	--	
	12/13/2005		--	--	700	670	470	510	ND<0.5	5.9	ND<0.5	ND<0.5	ND<5.0	a,b,e,g,i
	3/13/2006		40.33	0.39	--	--	--	--	--	--	--	--	--	
	3/14/2006		--	--	81	100	ND<250	81	ND<0.5	1.5	ND<0.5	ND<0.5	--	a,b,c,i
	6/19/2006		37.31	3.41	--	--	--	--	--	--	--	--	--	
	6/20/2006		--	--	530	270	420	180	ND<0.5	1.7	ND<0.5	ND<0.5	--	e,g,i,l
	9/20/2006		34.65	6.07	800	1,700	730	1,700	ND<2.5	5.5	ND<2.5	ND<2.5	--	a,b,d,e,g,i
	12/20/2006		38.57	2.15	190	94	300	61	ND<0.5	1.5	ND<0.5	ND<0.5	--	e,g,m,n
	3/29/2007		38.22	2.50	200	260	ND<250	240	ND<0.5	2.7	ND<0.5	ND<0.5	ND<5.0	a,b,c
	6/11/2007		37.14	3.58	200	180	ND<250	94	ND<0.5	1.7	ND<0.5	ND<0.5	--	a,b,c,i
	9/7/2007		35.04	5.68	190	240	ND<250	180	ND<0.5	0.98	ND<0.5	ND<0.5	ND<5.0	a,b,c,i
	12/12/2007		37.82	2.90	220	190	360	140	ND<0.5	2.9	ND<0.5	ND<0.5	ND<5.0	a,b,g,e
	3/7/2008		**38.79**	**1.93**	**90**	**100**	**ND<250**	**ND<50**	**ND<0.5**	**1.2**	**ND<0.5**	**ND<0.5**	**--**	**e,b**
MW-3A	6/3/2004	Zone A	36.56	4.32	90,000	4,800	6,000	12,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<50	
40.88	11/23/2004		37.89	2.99	22,000	3,800	ND<2,500	5,700	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<50	a,c,d
	3/14/2005		37.28	3.60	--	--	--	--	--	--	--	--	--	
	3/15/2005		--	--	37,000	2,400	ND<2,500	3,500	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<17	e,d,i
	6/15/2005		36.78	4.10	--	--	--	--	--	--	--	--	--	
	6/16/2005		--	--	15,000	2,100	ND<1,200	3,300	ND<1.7	ND<1.7	ND<1.7	2.4	ND<17	a,c,d,h,i

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Well ID *(TOC)*	Date Sampled	Groundwater Zone	Groundwater Elevation *(ft msl)*	Depth to Water *(ft)*	TPHd	TPHg	TPHmo	TPHss	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					←				µg/L				→	
	9/19/2005		35.93	4.95	--	--	--	--	--	--	--	--	--	
MW-3A	9/20/2005		--	--	55,000	4,700	ND<5,000	8,000	ND<1.0	ND<1.0	2.6	6.8	ND<10	a,b,c,d,i
(cont.)	12/12/2005		36.72	4.16	--	--	--	--	--	--	--	--	--	
	12/13/2005		--	--	34,000	1,100	ND<12,000	1,600	ND<1.7	ND<1.7	ND<1.7	2.3	ND<17	a,b,c,d,h,i
	3/13/2006		37.42	3.46	--	--	--	--	--	--	--	--	--	
	3/14/2006		--	--	21,000	2,200	1,600	3,300	ND<0.5	ND<0.5	1.1	ND<0.5	--	a,c,d,g,h
	6/19/2006		36.48	4.40	--	--	--	--	--	--	--	--	--	
	6/20/2006		--	--	19,000	8,000	1,000	16,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0	--	c,d,g,h,m
	9/20/2006		35.78	5.10	13,000	2,500	1,300	3,300	ND<5.0	ND<5.0	ND<5.0	ND<5.0	--	a,c,d,g,h,i
	12/20/2006		36.78	4.10	15,000	2,600	670	3,500	ND<2.5	ND<2.5	ND<2.5	7.6	--	e,g,h,n
	3/29/2007		36.82	4.06	21,000	2,600	940	3,400	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<50	a,c,d,h
	6/11/2007		36.52	4.36	13,000	5,200	730	3,500	ND<10	ND<10	ND<10	ND<10	--	a,d,h
	9/7/2007		35.98	4.90	36,000	11,000	1,600	15,000	ND<10	ND<10	ND<10	ND<10	ND<100	a,c,d,h
	12/12/2007		36.54	4.34	41,000	9,500	ND<2,500	13,000	ND<5.0	7.1	ND<5.0	32	ND<50	a,c,h,
	3/7/2008		**36.87**	**4.01**	**26,000**	**3,200**	**1,200**	**2,800**	**ND<2.5**	**ND<2.5**	**ND<2.5**	**2.5**	**--**	**a,h,c**
MW-4A	6/3/2004	Zone A	36.26	2.45	270	ND<50	440	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
38.71	11/23/2004		37.13	1.58	73	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	d
	3/14/2005		36.66	2.05	--	--	--	--	--	--	--	--	--	
	3/15/2005		--	--	210	ND<50	300	ND<50	0.91	1.7	ND<0.5	1.9	ND<5.0	g,d,f,i
	6/15/2005		36.38	2.33	--	--	--	--	--	--	--	--	--	
	6/16/2005		--	--	99	59	ND<250	75	1.0	1.9	ND<0.5	2.1	ND<5.0	j,d,f
	9/19/2005		35.01	3.70	--	--	--	--	--	--	--	--	--	
	9/20/2005		--	--	87	ND<50	ND<250	ND<50	1.2	2.1	0.51	2.4	ND<5.0	d,f
	12/12/2005		36.39	2.32	--	--	--	--	--	--	--	--	--	
	12/13/2005		--	--	71	ND<50	ND<250	ND<50	0.67	1.4	ND<0.5	1.9	ND<5.0	d,f,i
	3/13/2006		36.75	1.96	--	--	--	--	--	--	--	--	--	
	3/14/2006		--	--	68	ND<50	ND<250	ND<50	0.60	1.3	ND<0.5	1.8	--	d,f
	6/19/2006		36.15	2.56	--	--	--	--	--	--	--	--	--	
	6/20/2006		--	--	72	ND<50	ND<250	ND<50	0.53	1.1	ND<0.5	1.6	--	f
	9/20/2006		35.10	3.61	160	110	ND<250	88	1.2	2.5	0.61	3.9	--	a,d,f,i
	12/20/2006		36.39	2.32	97	ND<50	ND<250	ND<50	0.99	2.1	0.52	2.9	--	f
	3/29/2007		36.46	2.25	ND<50	ND<50	ND<250	ND<50	ND<0.5	0.93	ND<0.5	1.3	ND<5.0	
	6/11/2007		36.14	2.57	66	ND<50	ND<250	ND<50	ND<0.5	0.92	ND<0.5	1.6	--	d,f
	9/7/2007		35.34	3.37	78	ND<50	ND<250	ND<50	0.74	1.3	ND<0.5	1.9	ND<5.0	f
	12/12/2007		36.25	2.46	68	86	ND<250	62	0.62	1.8	ND<0.5	2.4	ND<5.0	j,d,f
	3/7/2008		**36.46**	**2.25**	**71**	**ND<50**	**ND<250**	**ND<50**	**ND<0.5**	**1.0**	**ND<0.5**	**1.5**	**--**	**l,f**
MW-6A	6/3/2004	Zone A	31.98	6.00	3,500	970	340	2,400	ND<0.5	ND<0.5	ND<0.5	2.1	ND<5.0	
37.98	11/23/2004		33.13	4.85	1,400	1,900	ND<250	3,000	ND<0.5	ND<0.5	ND<0.5	3.0	ND<5.0	a,c
	3/14/2005		35.03	2.95	5,900	2,900	ND<250	2,600	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<50	e,d,i
	6/15/2005		33.28	4.70	6,100	2,200	ND<250	3,400	ND<0.5	ND<0.5	0.60	4.4	ND<10	a,i,c,d
	9/19/2005		32.07	5.91	2,600	2,200	ND<250	3,900	ND<1.0	ND<1.0	1.4	7.6	ND<10	a,b,c
	12/12/2005		33.12	4.86	4,600	2,900	ND<250	4,500	ND<0.5	ND<0.5	1.6	8.9	ND<5.0	a,c,h,i

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Well ID *(TOC)*	Date Sampled	Groundwater Zone	Groundwater Elevation *(ft msl)*	Depth to Water *(ft)*	TPHd	TPHg	TPHmo	TPHss	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					←				µg/L				→	
	3/13/2006		36.05	1.93	4,300	1,900	ND<250	3,000	ND<0.5	ND<0.5	ND<0.5	4.3	--	a,c,d,h
MW-6A	6/19/2006		32.59	5.39	7,800	2,300	260	4,600	ND<1.0	ND<1.0	ND<1.0	ND<1.0	--	c,g,h,m
(cont.)	9/20/2006		31.96	6.02	2,600	960	ND<250	1,200	ND<2.5	ND<2.5	ND<2.5	ND<2.5	--	a,c,i
	12/20/2006		33.57	4.41	4,100	2,400	ND<250	3,200	ND<5.0	ND<5.0	ND<5.0	8.1	--	e,h,n
	3/29/2007		33.67	4.31	2,900	2,200	ND<250	2,700	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<50	a,c
	6/11/2007		32.95	5.03	6,400	4,300	ND<250	3,700	ND<0.5	ND<0.5	2.1	9.5	--	a,c
	9/7/2007		32.32	5.66	5,800	1,600	ND<250	1,400	ND<1.0	ND<1.0	ND<1.0	3.1	ND<10	a,b,c,d,h
	12/12/2007		33.50	4.48	9,600	3,300	ND<250	4,400	ND<5.0	ND<5.0	ND<5.0	8.4	ND<50	a,c,d
	3/7/2008		**34.30**	**3.68**	**6,200**	**4,100**	**280**	**3,700**	**ND<2.5**	**ND<2.5**	**ND<2.5**	**6.9**	**--**	**a,h,c**
MW-7A	6/3/2004	Zone A	36.08	4.50	--	3,900	--	9,900	ND<5.0	ND<5.0	ND<5.0	6.6	ND<50	
40.58	11/23/2004		--	--	--	--	--	--	--	--	--	--	--	
	3/14/2005		37.03	3.55	14,000	3,900	620	3,700	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<50	c,d,h
	6/15/2005		36.41	4.17	24,000	2,500	ND<1,200	3,900	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<50	a,c,d,h,i
	9/19/2005		35.25	5.33	43,000	7,000	ND<5,000	13,000	ND<10	ND<10	ND<10	ND<10	ND<100	a,c,i
	12/12/2005		36.15	4.43	10,000	1,700	ND<1,200	2,500	ND<1.0	ND<1.0	1.4	2.4	ND<10	a,c,d,h,i
	3/13/2006		36.76	3.82	31,000	1,600	1,100	2,300	ND<0.5	ND<0.5	0.93	9.1	--	a,c,d,g,h,i
	6/19/2006		35.78	4.80	36,000	26,000	1,300	44,000	ND<5.0	ND<5.0	10	ND<5.0	--	c,d,g,h,i,m
	9/20/2006		35.03	5.55	36,000	49,000	ND<5,000	69,000	ND<50	ND<50	ND<50	ND<50	--	a,c,h,i
	12/20/2006		36.35	4.23	14,000	38,000	ND<1,200	53,000	ND<50	ND<50	ND<50	150	--	e,h,n
	3/29/2007		36.06	4.52	34,000	4,100	890	5,600	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<50	a,h,c,d
	6/11/2007		36.02	4.56	32,000	3,800	ND<1,200	3,400	ND<5.0	ND<5.0	ND<5.0	ND<5.0	--	a,c,d,h,i
	9/7/2007		35.18	5.40	57,000	21,000	ND<2,500	19,000	ND<10	ND<10	ND<10	54	ND<100	a,b,c,d,h
	12/12/2007		35.96	4.62	45,000	13,000	1,400	16,000	ND<25	ND<25	ND<25	ND<25	ND<250	a,c,d
	3/7/2008		**36.28**	**4.30**	**56,000**	**3,800**	**1,600**	**3,500**	**ND<2.5**	**ND<2.5**	**ND<2.5**	**3.7**	**--**	**a,h,i,c**
MW-1B	6/3/2004	Zone B	25.10	14.40	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
39.50	11/23/2004		26.24	13.26	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
	3/14/2005		33.97	5.53	52	ND<50	ND<250	ND<50	0.60	ND<0.5	ND<0.5	ND<0.5	ND<5.0	d,i
	6/15/2005		31.87	7.63	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	i
	9/19/2005		30.35	9.15	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	i
	12/12/2005		30.39	9.11	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	i
	3/13/2006		32.15	7.35	--	--	--	--	--	--	--	--	--	
	6/19/2006		22.99	16.51	--	--	--	--	--	--	--	--	--	
	9/20/2006		30.32	9.18	--	--	--	--	--	--	--	--	--	
	12/20/2006		31.60	7.90	--	--	--	--	--	--	--	--	--	
	3/29/2007		24.63	14.87	--	--	--	--	--	--	--	--	--	
	6/11/2007		26.39	13.11	--	--	--	--	--	--	--	--	--	
	9/7/2007		28.42	11.08	--	--	--	--	--	--	--	--	--	
	12/12/2007		30.60	8.90	--	--	--	--	--	--	--	--	--	
	3/7/2008		**32.48**	**7.02**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-4B	6/3/2004	Zone B	33.52	5.02	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
38.54	11/23/2004		34.65	3.89	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	

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Well ID (TOC)	Date Sampled	Groundwater Zone	Groundwater Elevation (ft msl)	Depth to Water (ft)	TPHd	TPHg	TPHmo	TPHss	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					←				μg/L				→	
	3/14/2005		34.78	3.76	--	--	--	--	--	--	--	--	--	
MW-4B	3/15/2005		--	--	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	i
(cont.)	6/15/2005		33.98	4.56	--	--	--	--	--	--	--	--	--	
	6/16/2005		--	--	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	i
	9/19/2005		32.57	5.97	--	--	--	--	--	--	--	--	--	
	9/20/2005		--	--	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	i
	12/12/2005		33.65	4.89	--	--	--	--	--	--	--	--	--	
	12/13/2005		--	--	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	i
	3/13/2006		34.61	3.93	--	--	--	--	--	--	--	--	--	
	6/19/2006		33.86	4.68	--	--	--	--	--	--	--	--	--	
	9/20/2006		32.58	5.96	--	--	--	--	--	--	--	--	--	
	12/20/2006		33.92	4.62	--	--	--	--	--	--	--	--	--	
	3/29/2007		33.96	4.58	--	--	--	--	--	--	--	--	--	
	6/11/2007		34.03	4.51	--	--	--	--	--	--	--	--	--	
	9/7/2007		33.22	5.32	--	--	--	--	--	--	--	--	--	
	12/12/2007		33.85	4.69	--	--	--	--	--	--	--	--	--	
	3/7/2008		**34.58**	**3.96**	--	--	--	--	--	--	--	--	--	
MW-5B	6/3/2004	Zone B	30.16	8.82	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
38.98	11/23/2004		31.32	7.66	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
	3/14/2005		32.71	6.27	--	--	--	--	--	--	--	--	--	
	3/15/2005		--	--	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	i
	6/15/2005		31.20	7.78	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	i
	9/19/2005		28.68	10.30	--	--	--	--	--	--	--	--	--	
	9/20/2005		--	--	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
	12/12/2005		30.65	8.33	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	i
	3/13/2006		32.87	6.11	--	--	--	--	--	--	--	--	--	
	6/19/2006		30.97	8.01	--	--	--	--	--	--	--	--	--	
	9/20/2006		29.68	9.30	--	--	--	--	--	--	--	--	--	
	12/20/2006		31.21	7.77	--	--	--	--	--	--	--	--	--	
	3/29/2007		31.40	7.58	--	--	--	--	--	--	--	--	--	
	6/11/2007		31.02	7.96	--	--	--	--	--	--	--	--	--	
	9/7/2007		30.02	8.96	--	--	--	--	--	--	--	--	--	
	12/12/2007		30.88	8.10	--	--	--	--	--	--	--	--	--	
	3/7/2008		**32.55**	**6.43**	--	--	--	--	--	--	--	--	--	
MW-6B	6/3/2004	Zone B	29.36	8.30	2,300	1,100	ND<250	2,900	ND<0.5	ND<0.5	ND<0.5	1.4	ND<5.0	
37.66	11/23/2004		30.53	7.13	280	500	ND<250	700	ND<0.5	ND<0.5	ND<0.5	1.6	ND<5.0	a,c
	3/14/2005		31.86	5.80	5,200	1,300	340	1,200	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	e,d,i
	6/15/2005		30.17	7.49	1,700	900	ND<250	1,300	ND<0.5	ND<0.5	ND<0.5	1.9	ND<5.0	a,c
	9/19/2005		28.83	8.83	2,700	1,200	ND<250	2,000	1.0	1.4	ND<1.0	5.0	ND<20	a,b,c
	12/12/2005		29.85	7.81	4,100	840	ND<250	1,200	ND<0.5	ND<0.5	ND<0.5	3.3	ND<5.0	a,c,h,i
	3/13/2006		32.31	5.35	6,900	1,400	270	2,000	ND<0.5	ND<0.5	ND<0.5	4.7	--	a,c,d,h,i
	6/19/2006		29.88	7.78	7,700	1,700	310	3,300	ND<1.0	ND<1.0	ND<1.0	ND<1.0	--	c,g,h,m

Table 2. Monitoring Well Groundwater Analytical Results: Petroleum Hydrocarbons - John Nady, 1137-1167 65th Street, Oakland, California

Well ID *(TOC)*	Date Sampled	Groundwater Zone	Groundwater Elevation *(ft msl)*	Depth to Water *(ft)*	TPHd	TPHg	TPHmo	TPHss	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					←				μg/L				→	
	9/20/2006		28.78	8.88	16,000	3,200	740	4,200	ND<5.0	ND<5.0	ND<5.0	ND<5.0	--	a,c,d,g,h,i
MW-6B	12/20/2006		30.34	7.32	16,000	55,000	ND<1,200	77,000	ND<50	ND<50	ND<50	130	--	e,g,h,n
(cont.)	3/29/2007		30.44	7.22	24,000	3,400	650	4,300	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<50	a,h,c,d
	6/11/2007		29.93	7.73	29,000	2,600	ND<1,200	2,100	ND<5.0	ND<5.0	ND<5.0	ND<5.0	--	a,c,d,h
	9/7/2007		28.95	8.71	32,000	4,500	ND<1,200	3,800	ND<5.0	ND<5.0	ND<5.0	11	ND<50	a,b,c,d,h
	12/12/2007		30.00	7.66	36,000	12,000	1,000	15,000	ND<25	ND<25	ND<25	ND<25	ND<250	a,h,c,d
	3/7/2008		**31.70**	**5.96**	**27,000**	**3,100**	**1,100**	**2,700**	**ND<2.5**	**ND<2.5**	**ND<2.5**	**6.1**	--	**a,h,k**
MW-1C	6/3/2004	Zone C	30.07	9.42	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
39.49	11/23/2004		31.30	8.19	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
	3/14/2005		32.58	6.91	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	f
	6/15/2005		30.89	8.60	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
	9/19/2005		29.19	10.30	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	i
	12/12/2005		30.54	8.95	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	i
	3/13/2006		32.99	6.50	--	--	--	--	--	--	--	--	--	
	6/19/2006		30.66	8.83	--	--	--	--	--	--	--	--	--	
	9/20/2006		29.53	9.96	--	--	--	--	--	--	--	--	--	
	12/20/2006		31.13	8.36	--	--	--	--	--	--	--	--	--	
	3/29/2007		31.19	8.30	--	--	--	--	--	--	--	--	--	
	6/11/2007		30.63	8.86	--	--	--	--	--	--	--	--	--	
	9/7/2007		29.60	9.89	--	--	--	--	--	--	--	--	--	
	12/12/2007		30.61	8.88	--	--	--	--	--	--	--	--	--	
	3/7/2008		**32.46**	**7.03**	--	--	--	--	--	--	--	--	--	
MW-4C	6/3/2004	Zone C	30.10	8.40	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
38.50	11/23/2004		31.31	7.19	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
	3/14/2005		33.15	5.35	--	--	--	--	--	--	--	--	--	
	3/15/2005		--	--	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	i
	6/15/2005		30.85	7.65	--	--	--	--	--	--	--	--	--	
	6/16/2005		--	--	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
	9/19/2005		25.97	12.53	--	--	--	--	--	--	--	--	--	
	9/20/2005		--	--	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
	12/12/2005		30.00	8.50	--	--	--	--	--	--	--	--	--	
	12/13/2005		--	--	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	i
	3/13/2006		31.18	7.32	--	--	--	--	--	--	--	--	--	
	6/19/2006		30.90	7.60	--	--	--	--	--	--	--	--	--	
	9/20/2006		29.91	8.59	--	--	--	--	--	--	--	--	--	
	12/20/2006		31.21	7.29	--	--	--	--	--	--	--	--	--	
	3/29/2007		31.29	7.21	--	--	--	--	--	--	--	--	--	
	6/11/2007		30.93	7.57	--	--	--	--	--	--	--	--	--	
	9/7/2007		30.20	8.30	--	--	--	--	--	--	--	--	--	
	12/12/2007		31.10	7.40	--	--	--	--	--	--	--	--	--	
	3/7/2008		**32.25**	**6.25**	--	--	--	--	--	--	--	--	--	

Table 2. Monitoring Well Groundwater Analytical Results: Petroleum Hydrocarbons - John Nady, 1137-1167 65th Street, Oakland, California

Well ID *(TOC)*	Date Sampled	Groundwater Zone	Groundwater Elevation *(ft msl)*	Depth to Water *(ft)*	TPHd	TPHg	TPHmo	TPHss	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					←				μg/L				→	
MW-6C	6/3/2004	Zone C	27.89	9.70	240	160	ND<250	340	ND<0.5	ND<0.5	ND<0.5	1.1	ND<5.0	
37.59	11/23/2004		29.21	8.38	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
	3/14/2005		31.79	5.80	60	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	d
	6/15/2005		30.14	7.45	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
	9/19/2005		28.79	8.80	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
	12/12/2005		29.81	7.78	ND<50	ND<50	ND<250	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	
	3/13/2006		32.09	5.50	--	--	--	--	--	--	--	--	--	
	6/19/2006		29.84	7.75	--	--	--	--	--	--	--	--	--	
	9/20/2006		28.74	8.85	--	--	--	--	--	--	--	--	--	
	12/20/2006		30.29	7.30	--	--	--	--	--	--	--	--	--	
	3/29/2007		30.39	7.20	--	--	--	--	--	--	--	--	--	
	6/11/2007		29.86	7.73	--	--	--	--	--	--	--	--	--	
	9/7/2007		28.92	8.67	--	--	--	--	--	--	--	--	--	
	12/12/2007		29.94	7.65	--	--	--	--	--	--	--	--	--	
	3/7/2008		**31.63**	**5.96**	--	--	--	--	--	--	--	--	--	

Abbreviations:

mg/L = micrograms per liter - approximately equal to parts per billion = ppb

(TOC) = Top of casing elevation in feet above mean sea level (msl)

ft = measured in feet

TPHd = Total petroleum hydrocarbons as diesel by EPA Method SW8015C with silica gel cleanup.

TPHg = Total petroleum hydrocarbons as gasoline by EPA Method SW8015C.

TPHmo = Total petroleum hydrocarbons as motor oil by EPA Method SW8015C with silica gel cleanup.

TPHss = Total petroleum hydrocarbons as stoddard solvent by EPA Method SW8015C.

Benzene, toluene, ethylbenzene, and xylenes by EPA Method SW8021B.

MTBE = Methyl tertiary-butyl ether by EPA Method SW8021B (EPA Method SW8260B).

-- = Not available, not applicable, not analyzed, not measured

Notes:

a = TPH pattern that does not appear to be derived from gasoline (stoddard solvent/mineral spirit?).

b = No recognizable pattern.

c = Stoddard solvent/mineral spirit.

d = Diesel range compounds are significant; no recognizable pattern.

e = Gasoline range compounds are significant.

f = One to a few isolated peaks present

g = Oil range compounds are significant.

h = Lighter than water immiscible sheen/product is present.

i = Liquid sample contains greater than ~1 vol. % sediment.

j = Unmodified or weakly modified gasoline is significant

k = TPHg range non-target isolated peaks subtracted out of the TPHg concentration

l = Heavier gasoline compounds are significant (aged gasoline?)

m = Strongly aged gasoline or diesel range compounds are significant

n = Diesel range compounds are significant

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Table 3. Monitoring Well Groundwater Analytical Results: Halogenated Volatile Organic Compounds - John Nady, 1137-1167 65th Street, Oakland, California

Well ID *(TOC)*	Date Sampled	Groundwater Zone	Groundwater Elevation *(ft amsl)*	Depth to Water *(ft)*	Chloroethane	Chloroform	1,1,2,2-Tetrachloroethane	(PCE) Tetrachloroethene	(TCE) Trichloroethene	1,2-Dichlorobenzene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	Vinyl Chloride	Notes/Other VOCs
					←					µg/L					→	
MW-1A *39.64*	6/3/2004	**Zone A**	35.14	4.50	ND<2.5	ND<2.5	ND<2.5	55	16	ND<2.5	36	ND<2.5	ND<2.5	ND<2.5	6.3	
	11/23/2004		36.54	3.10	ND<1.0	ND<1.0	ND<1.0	38	11	ND<1.0	51	2.4	2.8	ND<1.0	9.5	
	3/14/2005		37.02	2.62	ND<1.0	ND<1.0	ND<1.0	42	12	2.0	32	2.2	2.4	ND<1.0	8.0	
	6/15/2005		35.14	4.50	ND<1.0	ND<1.0	ND<1.0	62	19	2.6	24	2.4	3.0	ND<1.0	10	h,i
	9/19/2005		33.14	6.50	ND<1.2	ND<1.2	ND<1.2	55	18	2.3	28	2.0	2.6	ND<1.2	9.4	i
	12/12/2005		35.14	4.50	ND<1.0	ND<1.0	16	60	17	2.0	22	2.3	2.5	ND<1.0	12	h,i
	3/13/2006		37.74	1.90	ND<1.2	ND<1.2	14	30	17	ND<1.2	16	1.4	2.0	ND<1.2	4.0	i
	6/19/2006		35.94	3.70	ND<0.5	ND<0.5	ND<0.5	33	9.0	ND<0.5	15	1.1	1.8	ND<0.5	3.2	
	9/20/2006		34.19	5.45	ND<0.5	ND<0.5	ND<0.5	34	15	ND<0.5	21	1.6	2.3	ND<0.5	5.4	i
	12/20/2006		37.02	2.62	ND<0.5	ND<0.5	ND<0.5	27	15	ND<0.5	16	1.3	1.7	ND<0.5	5.2	
	3/29/2007		37.04	2.60	ND<0.5	ND<0.5	ND<0.5	29	16	ND<0.5	13	1.2	1.4	ND<0.5	ND<0.5	
	6/11/2007		35.72	3.92	ND<0.5	ND<0.5	ND<0.5	26	17	ND<0.5	13	1.6	1.9	ND<0.5	2.3	
	9/7/2007		33.90	5.74	ND<0.5	ND<0.5	ND<0.5	25	15	ND<0.5	17	1.4	2.0	ND<0.5	2.3	
	12/12/2007		36.53	3.11	ND<0.5	ND<0.5	ND<0.5	15	10	ND<0.5	14	1.2	2.1	ND<0.5	1.5	
	3/7/2008		**37.23**	**2.41**	**ND<0.5**	**ND<0.5**	**17**	**9.0**	**9.3**	**1.3**	**13**	**1.2**	**1.7**	**ND<0.5**	**1.7**	
MW-2A *40.72*	6/3/2004	**Zone A**	36.48	4.24	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	11/23/2004		37.83	2.89	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	3/14/2005		39.02	1.70	--	--	--	--	--	--	--	--	--	--	--	
	3/15/2005		--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	6/15/2005		37.91	2.81	--	--	--	--	--	--	--	--	--	--	--	
	6/16/2005		--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	9/19/2005		35.46	5.26	--	--	--	--	--	--	--	--	--	--	--	
	9/20/2005		--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	12/12/2005		37.66	3.06	--	--	--	--	--	--	--	--	--	--	--	
	12/13/2005		--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	3/13/2006		40.33	0.39	--	--	--	--	--	--	--	--	--	--	--	
	6/19/2006		37.31	3.41	--	--	--	--	--	--	--	--	--	--	--	
	9/20/2006		34.65	6.07	--	--	--	--	--	--	--	--	--	--	--	
	12/20/2006		38.57	2.15	--	--	--	--	--	--	--	--	--	--	--	
	3/29/2007		38.22	2.50	--	--	--	--	--	--	--	--	--	--	--	
	6/11/2007		37.14	3.58	--	--	--	--	--	--	--	--	--	--	--	
	9/7/2007		35.04	5.68	--	--	--	--	--	--	--	--	--	--	--	
	12/12/2007		37.82	2.90	--	--	--	--	--	--	--	--	--	--	--	
	3/7/2008		**38.79**	**1.93**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-3A *40.88*	6/3/2004	**Zone A**	36.56	4.32	ND<50	ND<50	ND<50	ND<50	ND<50	ND<50	ND<50	ND<50	ND<50	ND<50	ND<50	e
	11/23/2004		37.89	2.99	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	
	3/14/2005		37.28	3.60	--	--	--	--	--	--	--	--	--	--	--	
	3/15/2005		--	--	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	43	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	j, i, 1,3-dichlorobenzene (1.2) 1,4-dichlorobenzene (5.7)
	6/15/2005		36.78	4.10	--	--	--	--	--	--	--	--	--	--	--	
	6/16/2005		--	--	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	52	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	h,i, 1,3-dichlorobenzene (1.5) 1,4-dichlorobenzene (8.3)
	9/19/2005		35.93	4.95	--	--	--	--	--	--	--	--	--	--	--	
	9/20/2005		--	--	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	51	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	i, 1,4-dichlorobenzene (7.6) 1,3- dichlorobenzene (1.4)
	12/12/2005		36.72	4.16	--	--	--	--	--	--	--	--	--	--	--	
	12/13/2005		--	--	ND<1.0	ND<1.0	26	ND<1.0	ND<1.0	43	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	h,i, 1,4-dichlorobenzene (7.2)
	3/13/2006		37.42	3.46	--	--	--	--	--	--	--	--	--	--	--	
	3/14/2006		--	--	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	i, chlorobenzene (3.7) 1,4-dichlorobenzene (7.2)
	6/19/2006		36.48	4.40	--	--	--	--	--	--	--	--	--	--	--	
	6/20/2006		--	--	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	h, chlorobenzene (9.8) 1,4-dichlorobenzene (7.3)
	9/20/2006		35.78	5.10	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	h,i, chlorobenzene (31)

Table 3. Monitoring Well Groundwater Analytical Results: Halogenated Volatile Organic Compounds - John Nady, 1137-1167 65th Street, Oakland, California

Well ID (TOC)	Date Sampled	Groundwater Zone	Groundwater Elevation (ft amsl)	Depth to Water (ft)	Chloroethane	Chloroform	1,1,2,2-Tetrachloroethane	(PCE) Tetrachloroethene	(TCE) Trichloroethene	1,2-Dichlorobenzene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	Vinyl Chloride	Notes/Other VOCs
					←					µg/L					→	
MW-3A (cont.)	12/20/2006		36.78	4.10	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	h, chlorobenzene (31) 1,4-dichlorobenzene (5.6)
	3/29/2007		36.82	4.06	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	chlorobenzene (55) 1,4- dichlorobenzene (6.0)
	6/11/2007		36.52	4.36	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	h, chlorobenzene (68)
	9/7/2007		35.98	4.90	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.5	h, chlorobenzene (82)
	12/12/2007		36.54	4.34	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	ND<1.7	h, chlorobenzene (72) 1,4- dichlorobenzene (5.6)
	3/7/2008		**36.87**	**4.01**	**ND<1.0**	**ND<1.0**	**ND<1.0**	**ND<1.0**	**ND<1.0**	**19**	**ND<1.0**	**ND<1.0**	**ND<1.0**	**ND<1.0**	**ND<1.0**	**h, chlorobenzene (74)**
MW-4A *38.71*	6/3/2004	**Zone A**	36.26	2.45	ND<0.5	ND<0.5	ND<0.5	1.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	11/23/2004		37.13	1.58	ND<0.5	ND<0.5	ND<0.5	1.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	3/14/2005		36.66	2.05	--	--	--	--	--	--	--	--	--	--	--	
	3/15/2005		--	--	ND<0.5	ND<0.5	ND<0.5	1.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	6/15/2005		36.38	2.33	--	--	--	--	--	--	--	--	--	--	--	
	6/16/2005		--	--	ND<0.5	ND<0.5	ND<0.5	1.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	9/19/2005		35.01	3.70	--	--	--	--	--	--	--	--	--	--	--	
	9/20/2005		--	--	ND<0.5	ND<0.5	ND<0.5	1.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	12/12/2005		36.39	2.32	--	--	--	--	--	--	--	--	--	--	--	
	12/13/2005		--	--	ND<0.5	ND<0.5	ND<0.5	2.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	3/13/2006		36.75	1.96	--	--	--	--	--	--	--	--	--	--	--	
	6/19/2006		36.15	2.56	--	--	--	--	--	--	--	--	--	--	--	
	9/20/2006		35.10	3.61	--	--	--	--	--	--	--	--	--	--	--	
	12/20/2006		36.39	2.32	--	--	--	--	--	--	--	--	--	--	--	
	3/29/2007		36.46	2.25	--	--	--	--	--	--	--	--	--	--	--	
	6/11/2007		36.14	2.57	--	--	--	--	--	--	--	--	--	--	--	
	9/7/2007		35.34	3.37	--	--	--	--	--	--	--	--	--	--	--	
	12/12/2007		36.25	2.46	--	--	--	--	--	--	--	--	--	--	--	
	3/7/2008		**36.46**	**2.25**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-6A *37.98*	6/3/2004	**Zone A**	31.98	6.00	4.7	0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.8	2.1	ND<0.5	6.7	
	11/23/2004		33.13	4.85	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	3/14/2005		35.03	2.95	0.61	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	6/15/2005		33.28	4.70	6.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.3	ND<0.5	2.5	1.5	ND<0.5	3.2	i, 1,4-dichlorobenzene (0.60)
	9/19/2005		32.07	5.91	21	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.6	ND<0.5	6.7	4.7	0.59	5.0	
	12/12/2005		33.12	4.86	13	ND<0.5	8.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.1	0.82	ND<0.5	ND<0.5	h,i
	3/13/2006		36.05	1.93	1.7	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	h
	6/19/2006		32.59	5.39	9.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.0	1.1	ND<0.5	1.3	h
	9/20/2006		31.96	6.02	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.6	1.9	0.57	ND<0.5	i
	12/20/2006		33.57	4.41	12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	h
	3/29/2007		33.67	4.31	8.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.69	0.71	ND<0.5	ND<0.5	
	6/11/2007		32.95	5.03	9.8	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	
	9/7/2007		32.32	5.66	24	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	h
	12/12/2007		33.50	4.48	4.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	3/7/2008		**34.30**	**3.68**	**1.0**	**ND<0.5**	**9.5**	**ND<0.5**	**ND<0.5**	**2.4**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**h**
MW-7A *40.58*	6/3/2004	**Zone A**	36.08	4.50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	11/23/2004		--	--	--	--	--	--	--	--	--	--	--	--	--	
	3/14/2005		37.03	3.55	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	h
	6/15/2005		36.41	4.17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.8	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	h,i
	9/19/2005		35.25	5.33	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	12/12/2005		36.15	4.43	ND<0.5	ND<0.5	21	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	h,i
	3/13/2006		36.76	3.82	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	h,i
	6/19/2006		35.78	4.80	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	h,i
	9/20/2006		35.03	5.55	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	h,i
	12/20/2006		36.35	4.23	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	h

Table 3. Monitoring Well Groundwater Analytical Results: Halogenated Volatile Organic Compounds - John Nady, 1137-1167 65th Street, Oakland, California

Well ID (TOC)	Date Sampled	Groundwater Zone	Groundwater Elevation (ft amsl)	Depth to Water (ft)	Chloroethane	Chloroform	1,1,2,2-Tetrachloroethane	(PCE) Tetrachloroethene	(TCE) Trichloroethene	1,2-Dichlorobenzene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	Vinyl Chloride	Notes/Other VOCs
					← μg/L →											
	3/29/2007		36.06	4.52	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	
MW-7A	6/11/2007		36.02	4.56	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	j,h,i
(cont.)	9/7/2007		35.18	5.40	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	h
	12/12/2007		35.96	4.62	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	chlorobenzene (0.70)
	3/7/2008		**36.28**	**4.30**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**2.6**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**h,i**
MW-1B	6/3/2004	**Zone B**	25.10	14.40	ND<0.5	8.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.9	ND<0.5	8.1	7.9	ND<0.5	
39.50	11/23/2004		26.24	13.26	ND<0.5	6.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.5	ND<0.5	8.4	8.8	ND<0.5	
	3/14/2005		33.97	5.53	1.1	1.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.8	ND<0.5	5.2	12	ND<0.5	i
	6/15/2005		31.87	7.63	ND<0.5	1.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.3	ND<0.5	8.8	9.9	ND<0.5	i
	9/19/2005		30.35	9.15	0.98	0.87	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.0	ND<0.5	7.1	11	ND<0.5	i
	12/12/2005		30.39	9.11	1.5	0.75	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.7	ND<0.5	7.0	12	ND<0.5	i
	3/13/2006		32.15	7.35	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	6.1	ND<0.5	6.8	5.2	ND<0.5	i
	6/19/2006		22.99	16.51	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7.0	ND<0.5	7.8	6.2	ND<0.5	
	9/20/2006		30.32	9.18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	9.9	ND<0.5	11	10	ND<0.5	i
	12/20/2006		31.60	7.90	2.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	9.9	ND<0.5	7.7	7.8	ND<0.5	
	3/29/2007		24.63	14.87	1.6	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	9.0	ND<0.5	9.7	8.7	ND<0.5	
	6/11/2007		26.39	13.11	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	8.5	ND<0.5	8.0	6.5	ND<0.5	i
	9/7/2007		28.42	11.08	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	9.8	ND<0.5	8.6	7.0	ND<0.5	
	12/12/2007		30.60	8.90	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	11	ND<0.5	7.2	7.5	ND<0.5	
	3/7/2008		**32.48**	**7.02**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**7.5**	**ND<0.5**	**8.8**	**5.6**	**ND<0.5**	
MW-4B	6/3/2004	**Zone B**	33.52	5.02	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
38.54	11/23/2004		34.65	3.89	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	3/14/2005		34.78	3.76	--	--	--	--	--	--	--	--	--	--	--	
	3/15/2005		--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	6/15/2005		33.98	4.56	--	--	--	--	--	--	--	--	--	--	--	
	6/16/2005		--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	9/19/2005		32.57	5.97	--	--	--	--	--	--	--	--	--	--	--	
	9/20/2005		--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	12/12/2005		33.65	4.89	--	--	--	--	--	--	--	--	--	--	--	
	12/13/2005		--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	3/13/2006		34.61	3.93	--	--	--	--	--	--	--	--	--	--	--	
	6/19/2006		33.86	4.68	--	--	--	--	--	--	--	--	--	--	--	
	9/20/2006		32.58	5.96	--	--	--	--	--	--	--	--	--	--	--	
	12/20/2006		33.92	4.62	--	--	--	--	--	--	--	--	--	--	--	
	3/29/2007		33.96	4.58	--	--	--	--	--	--	--	--	--	--	--	
	6/11/2007		34.03	4.51	--	--	--	--	--	--	--	--	--	--	--	i
	9/7/2007		33.22	5.32	--	--	--	--	--	--	--	--	--	--	--	
	12/12/2007		33.85	4.69	--	--	--	--	--	--	--	--	--	--	--	
	3/7/2008		**34.58**	**3.96**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-5B	6/3/2004	**Zone B**	30.16	8.82	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
38.98	11/23/2004		31.32	7.66	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	3/14/2005		32.71	6.27	--	--	--	--	--	--	--	--	--	--	--	
	3/15/2005		--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	6/15/2005		31.20	7.78	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	9/19/2005		28.68	10.30	--	--	--	--	--	--	--	--	--	--	--	
	9/20/2005		--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	12/12/2005		30.65	8.33	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	3/13/2006		32.87	6.11	--	--	--	--	--	--	--	--	--	--	--	
	6/19/2006		30.97	8.01	--	--	--	--	--	--	--	--	--	--	--	
	9/20/2006		29.68	9.30	--	--	--	--	--	--	--	--	--	--	--	
	12/20/2006		31.21	7.77	--	--	--	--	--	--	--	--	--	--	--	
	3/29/2007		31.40	7.58	--	--	--	--	--	--	--	--	--	--	--	
	6/11/2007		31.02	7.96	--	--	--	--	--	--	--	--	--	--	--	

Table 3. Monitoring Well Groundwater Analytical Results: Halogenated Volatile Organic Compounds - John Nady, 1137-1167 65th Street, Oakland, California

Well ID (TOC)	Date Sampled	Groundwater Zone	Groundwater Elevation (ft amsl)	Depth to Water (ft)	Chloroethane	Chloroform	1,1,2,2-Tetrachloroethane	(PCE) Tetrachloroethene	(TCE) Trichloroethene	1,2-Dichlorobenzene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	Vinyl Chloride	Notes/Other VOCs
					←					μg/L					→	
MW-5B	9/7/2007		30.02	8.96	--	--	--	--	--	--	--	--	--	--	--	
(cont.)	12/12/2007		30.88	8.10	--	--	--	--	--	--	--	--	--	--	--	
	3/7/2008		**32.55**	**6.43**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-6B	6/3/2004	**Zone B**	29.36	8.30	0.65	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
37.66	11/23/2004		30.53	7.13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.89	ND<0.5	ND<0.5	
	3/14/2005		31.86	5.80	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.1	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.5	i
	6/15/2005		30.17	7.49	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.4	ND<0.5	ND<0.5	0.66	ND<0.5	0.55	
	9/19/2005		28.83	8.83	1.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.0	1.2	ND<0.5	1.1	ND<0.5	1.1	
	12/12/2005		29.85	7.81	2.3	ND<0.5	11	ND<0.5	ND<0.5	ND<0.5	1.3	ND<0.5	1.3	ND<0.5	ND<0.5	h,i
	3/13/2006		32.31	5.35	0.73	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	h
	6/19/2006		29.88	7.78	0.91	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.52	ND<0.5	ND<0.5	h
	9/20/2006		28.78	8.88	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	j,h,i
	12/20/2006		30.34	7.32	2.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.2	ND<0.5	0.69	ND<0.5	ND<0.5	h
	3/29/2007		30.44	7.22	1.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.76	ND<0.5	ND<0.5	
	6/11/2007		29.93	7.73	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	j,h
	9/7/2007		28.95	8.71	1.3	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.9	ND<0.5	0.66	ND<0.5	ND<0.5	h
	12/12/2007		30.00	7.66	0.77	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.4	ND<0.5	0.62	ND<0.5	ND<0.5	h
	3/7/2008		**31.70**	**5.96**	**1.1**	**ND<0.5**	**16**	**ND<0.5**	**ND<0.5**	**1.2**	**1.0**	**ND<0.5**	**0.58**	**ND<0.5**	**ND<0.5**	**h**
MW-1C	6/3/2004	**Zone C**	30.07	9.42	ND<0.5	0.57	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
39.49	11/23/2004		31.30	8.19	ND<0.5	0.56	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	3/14/2005		32.58	6.91	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	6/15/2005		30.89	8.60	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	9/19/2005		29.19	10.30	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	12/12/2005		30.54	8.95	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	3/13/2006		32.99	6.50	--	--	--	--	--	--	--	--	--	--	--	
	6/19/2006		30.66	8.83	--	--	--	--	--	--	--	--	--	--	--	
	9/20/2006		29.53	9.96	--	--	--	--	--	--	--	--	--	--	--	
	12/20/2006		31.13	8.36	--	--	--	--	--	--	--	--	--	--	--	
	3/29/2007		31.19	8.30	--	--	--	--	--	--	--	--	--	--	--	
	6/11/2007		30.63	8.86	--	--	--	--	--	--	--	--	--	--	--	
	9/7/2007		29.60	9.89	--	--	--	--	--	--	--	--	--	--	--	
	12/12/2007		30.61	8.88	--	--	--	--	--	--	--	--	--	--	--	
	3/7/2008		**32.46**	**7.03**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-4C	6/3/2004	**Zone C**	30.10	8.40	ND<0.5	0.84	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
38.50	11/23/2004		31.31	7.19	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	3/14/2005		33.15	5.35	--	--	--	--	--	--	--	--	--	--	--	
	3/15/2005		--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	6/15/2005		30.85	7.65	--	--	--	--	--	--	--	--	--	--	--	
	6/16/2005		--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	9/19/2005		25.97	12.53	--	--	--	--	--	--	--	--	--	--	--	
	9/20/2005		--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	12/12/2005		30.00	8.50	--	--	--	--	--	--	--	--	--	--	--	
	12/13/2005		--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	i
	3/13/2006		31.18	7.32	--	--	--	--	--	--	--	--	--	--	--	
	6/19/2006		30.90	7.60	--	--	--	--	--	--	--	--	--	--	--	
	9/20/2006		29.91	8.59	--	--	--	--	--	--	--	--	--	--	--	
	12/20/2006		31.21	7.29	--	--	--	--	--	--	--	--	--	--	--	
	3/29/2007		31.29	7.21	--	--	--	--	--	--	--	--	--	--	--	
	6/11/2007		30.93	7.57	--	--	--	--	--	--	--	--	--	--	--	
	9/7/2007		30.20	8.30	--	--	--	--	--	--	--	--	--	--	--	
	12/12/2007		31.10	7.40	--	--	--	--	--	--	--	--	--	--	--	
	3/7/2008		**32.25**	**6.25**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	

Table 3. Monitoring Well Groundwater Analytical Results: Halogenated Volatile Organic Compounds - John Nady, 1137-1167 65th Street, Oakland, California

Well ID (TOC)	Date Sampled	Groundwater Zone	Groundwater Elevation (ft amsl)	Depth to Water (ft)	Chloroethane	Chloroform	1,1,2,2-Tetrachloroethane	(PCE) Tetrachloroethene	(TCE) Trichloroethene	1,2-Dichlorobenzene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	Vinyl Chloride	Notes/Other VOCs
					←					μg/L					→	
MW-6C	6/3/2004	**Zone C**	27.89	9.70	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.8	ND<0.5	0.61	ND<0.5	ND<0.5	
37.59	11/23/2004		29.21	8.38	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	
	3/14/2005		31.79	5.80	ND<0.5	ND<0.5	ND<0.5	1.8	1.9	ND<0.5	12	ND<0.5	1.1	ND<0.5	2.3	
	6/15/2005		30.14	7.45	ND<0.5	ND<0.5	ND<0.5	3.1	3.1	ND<0.5	20	0.64	1.4	ND<0.5	5.7	
	9/19/2005		28.79	8.80	ND<0.5	ND<0.5	ND<0.5	2.9	3.0	ND<0.5	18	0.57	1.3	ND<0.5	6.8	
	12/12/2005		29.81	7.78	0.66	ND<0.5	ND<0.5	3.2	3.0	ND<0.5	19	0.61	1.4	ND<0.5	10	
	3/13/2006		32.09	5.50	ND<0.5	ND<0.5	ND<0.5	3.2	3.9	ND<0.5	26	0.61	0.95	ND<0.5	5.1	
	6/19/2006		29.84	7.75	ND<0.5	ND<0.5	ND<0.5	4.0	3.4	ND<0.5	32	0.78	0.96	ND<0.5	11	
	9/20/2006		28.74	8.85	ND<0.5	ND<0.5	ND<0.5	3.7	4.6	ND<0.5	23	0.76	1.0	ND<0.5	9.4	i
	12/20/2006		30.29	7.30	ND<0.5	ND<0.5	ND<0.5	4.1	4.6	ND<0.5	36	0.88	0.92	ND<0.5	13	
	3/29/2007		30.39	7.20	ND<0.5	ND<0.5	ND<0.5	6.0	6.4	ND<0.5	35	1.2	1.1	ND<0.5	5.3	
	6/11/2007		29.86	7.73	ND<0.5	ND<0.5	ND<0.5	6.1	6.4	ND<0.5	26	0.99	0.85	ND<0.5	4.0	
	9/7/2007		28.92	8.67	ND<0.5	ND<0.5	ND<0.5	7.0	6.9	ND<0.5	32	0.99	0.90	ND<0.5	4.2	
	12/12/2007		29.94	7.65	ND<0.5	ND<0.5	ND<0.5	5.0	5.2	ND<0.5	29	0.84	0.87	ND<0.5	3.8	
	3/7/2008		**31.63**	**5.96**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**5.1**	**5.5**	**ND<0.5**	**28**	**0.90**	**0.78**	**ND<0.5**	**3.2**	

Abbreviations:

μg/L = micrograms per liter; approximately equal to parts per billion = ppb

(TOC) = Top of casing elevation in feet above mean sea level (msl)

ft = measured in feet

Halogenated Volatile Organic Compounds analyzed by EPA Method SW8260B, reported EPA Method 8010 basic target list.

ND<0.5 = Not Detected above detection limit cited.

-- = Not available, not applicable, not analyzed, not measured

Notes:

b = Sample diluted due to high organic content

h = lighter than water immiscible sheen/product is present

i = liquid sample that contains greater than ~1 vol. % sediment

j = sample diluted due to high organic content/matrix interference

Table 4. Grab Groundwater Sampling Details - John Nady, 1137-1167 65th Street, Oakland, California

Boring ID	Boring Date	Borehole Depth (ft bgs)	Borehole Diameter (inches)	Casing Diameter (in)	Screening Interval (ft bgs)	Screen Size (in)	First Water (ft bgs)
A-Zone Grab Groundwater Samples / Temporary Samplng Wells							
SB-12A	1/13/2004	13.0	2.5	---	8 to 13	---	4.5
SB-14A	1/9/2004	5.0	2.375	---	2 to 7	---	4.0
SB-15A	1/12/2004	13.0	2.5	---	8 to 13	---	4.0
SB-16A	1/12/2004	13.0	2.5	---	8 to 13	---	4.0
SB-18A	1/6/2004	20.0	2.375	---	7 to 12	---	1.5
SB-20A	1/13/2004	13.0	2.5	---	8 to 13	---	8.0
SB-21A	1/20/2004	9.5	3	---	4.5 to 9.5	---	8.5
SB-25A	1/8/2004	10.0	2.375	---	5 to 10	---	5.0
SB-26A	1/7/2004	13.0	2.375	---	8 to 13	---	4.0
SB-1	11/26/2002	12.0	2	1	7 to 12	0.01	3.45
SB-4	11/26/2002	12.0	2	1	7 to 12	0.01	6.10
SB-6	11/26/2002	12.0	2	1	7 to 12	0.01	11.25
SB-8	11/26/2002	9.0	2	1	4 to 9	0.01	4.70
SB-10	11/26/2002	12.0	2	1	7 to 12	0.01	11.60
B-Zone Grab Groundwater Samples / Temporary Sampling Wells							
SB-17B	1/8/2004	22.0	2.375	---	17 to 22	---	16.5
SB-7	11/26/2002	18.0	2	1	13 to 18	0.01	10.30
C-Zone Grab Groundwater Samples / Temporary Sampling Wells							
SB-18B	1/9/2004	31.0	2.375	---	26 to 31	---	25.0
SB-18C	1/9/2004	40.0	2.375	---	35 to 40	---	34.0
SB-20C	1/13/2004	40.0	2.5	---	29 to 34	---	31.0
SB-22C	1/7/2004	46.0	2.375	---	41 to 46	---	---
SB-25C	1/8/2004	34.0	2.375	---	29 to 34	---	29.0
SB-2	11/26/2002	36.0	2	1	31 to 36	0.01	29.50
SB-9	11/26/2002	29.0	2	1	24 to 29	0.01	25.00
SB-11	11/26/2002	30.0	2	1	25 to 30	0.01	29.30

Abbreviations / Notes

ft = feet

in = inches

ft bgs = feet below grade surface

ft msl = feet above mean sea level

Table 5. Grab Groundwater Analytical Results: Petroleum Hydrocarbons - John Nady, 1137-1167 65th Street, Oakland, California

Boring ID *(TOC)*	Date Sampled	Groundwater Zone	Groundwater Elevation *(ft msl)*	Depth to Water (ft)	TPHmo	TPHd	TPHss	TPHg	Notes
					←	μg/L		→	
SB-1	11/25/2002	Zone A	35.39	3.45	---	---	---	---	
(38.84)	11/26/2002		35.44	3.40	7,500	2,000	<50	58	
SB-2	11/25/2002	Zone C	11.61	29.50	---	---	---	---	
(41.11)	11/26/2002		29.46	11.65	<250	<50	<50	<50	
SB-4	11/25/2002	Zone A	34.02	6.90	---	---	---	---	
(40.92)	11/26/2002		34.82	6.10	---	---	---	---	SPH
SB-6	11/25/2002	Zone A	28.24	11.25	---	---	---	---	
(39.49)	11/26/2002		32.19	7.30	620	23,000	7,800	8,700	a,b,c
SB-7	11/25/2002	Zone B	28.20	10.30	---	---	---	---	
(38.50)	11/26/2002		30.10	8.40	<25,000	120,000	5,800	6,100	a,b,c
SB-8	11/25/2002	Zone A	36.30	4.70	---	---	---	---	
(41.00)	11/26/2002		36.55	4.65	<250,000	1,200,000	100,000	110,000	a,b,c
SB-9	11/25/2002	Zone C	16.02	25.00	---	---	---	---	
(41.02)	11/26/2002		17.07	23.95	300	50	<50	<50c	
SB-10	11/25/2002	Zone A	29.27	11.60	---	---	---	---	
(40.87)	11/26/2002		31.12	9.75	<250	350	200	260a,c	
SB-11	11/25/2002	Zone C	12.15	29.30	---	---	---	---	
(41.45)	11/26/2002		19.55	21.90	<250	<50	<50	<50	
SB-12A	1/13/2004	Zone A	---	4.5	300	130	<50	230	h,c,e,d,f
SB-14A	1/9/2004	Zone A	---	4.0	<250	<50	<50	<50	c
SB-14C	1/9/2004	Zone C	---	NW	---	---	---	---	
SB-15A	1/12/2004	Zone A	---	4.0	290	2,400	2,500	2,700	a,c,d
SB-16A	1/12/2004	Zone A	---	4.0	9,800	23,000	1,500	1,700	a,b,c,d,e,i

Table 5. Grab Groundwater Analytical Results: Petroleum Hydrocarbons - John Nady, 1137-1167 65th Street, Oakland, California

Boring ID (TOC)	Date Sampled	Groundwater Zone	Groundwater Elevation (ft msl)	Depth to Water (ft)	TPHmo	TPHd	TPHss	TPHg	Notes
					←	µg/L		→	
SB-17A	1/13/2004	Zone A	---	NW	---	---	---	---	
SB-17B	1/8/2004	Zone B	---	16.5	<250	95	<50	120	c,d,f,g
SB-17C	1/13/2004	Zone C	---	NW	---	---	---	---	
SB-18A	1/6/2004	Zone A	---	1.5	<2,500	11,000	2,100	3,900	d,b
SB-18B*	1/9/2004	Zone C	---	25.0	<250	92	<50	250	g,h
SB-18C	1/9/2004	Zone C	---	34.0	---	---	170	300	c,g,h
SB-19A	1/13/2004	Zone A	---	NW	---	---	---	---	
SB-20A	1/13/2004	Zone A	---	8.0	<250	1,400	610	680	b,d,j
SB-20C	1/13/2004	Zone C	---	31.0	<250	<50	<50	<50	c
SB-21A	1/20/2004	Zone A	---	8.5	<25,000	110,000	5,600	6,100	a,b,i,k
SB-22A	1/7/2004	Zone A	---	NW	---	---	---	---	
SB-22C	1/7/2004	Zone C	---	--	<250	110	<50	<50	c,f
SB-25A	1/8/2004	Zone A	---	5.0	<250	64	<50	<50	c,f,g
SB-25C	1/8/2004	Zone C	---	29.0	<250	<50	<50	<50	c
SB-26A	1/7/2004	Zone A	---	4.0	1,000	5,300	2,600	3,000	c,d,e
Previous SCI Samples									
Interior	2/20/2002		---	---	---	94,000	13,000	21,000	
Exterior	2/25/2002		---	---	---	82,000	42,000	66,000	

Table 5. Grab Groundwater Analytical Results: Petroleum Hydrocarbons - John Nady, 1137-1167 65th Street, Oakland, California

Boring ID (*TOC*)	Date Sampled	Groundwater Zone	Groundwater Elevation (*ft msl*)	Depth to Water (ft)	TPHmo	TPHd	TPHss	TPHg	Notes
					←		μg/L	→	

Abbreviations:

μg/L = micrograms per liter = parts per billion = ppb

(TOC) = Top of temporary casing in feet above mean seal level.

ft msl = Feet above mean sea level.

TPHmo = Total petroleum hydrocarbons as motor oil by EPA Method 8015C with silica gel cleanup

TPHd = Total petroleum hydrocarbons as diesel by EPA Method 8015C with silica gel cleanup

TPHss = Total petroleum hydrocarbons as Stoddard solvent by EPA Method 8021B/8015Cm

TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8021B/8015Cm

--- = Not available, not analyzed, or does not apply.

< n = Chemical not present at a concentration in excess of detection limit.

Notes:

Grab groundwater samples may have been collected without protection against cross contamination between groundwater zones; may not be discrete.

* = Sample SB-18B collected in the C-zone

a = Laboratory note: TPH pattern that does not appear to be derived from gasoline (Stoddard solvent/mineral spirit?)

b = Laboratory note: lighter than water immiscible sheen/product is present

c = Laboratory note: liquid sample that contains greater than ~2 vol. % sediment

d = Laboratory note: gasoline range compounds are significant

e = Laboratory note: oil range compounds are significant

f = Laboratory note: diesel range compounds are significant; no recognizable pattern

g = Laboratory note: one to a few isolated non-target peaks present

h = Laboratory note: unmodified or weakly modified gasoline is significant

i = Laboratory note: sample diluted due to high organic content

j = Laboratory note: strongly aged gasoline or diesel range compounds are significant

k = Laboratory note: stoddard solvent/mineral spirit

Table 6. Grab Groundwater Analytical Results: Volatile Organic Compounds - John Nady, 1137-1167 65th Street, Oakland, California

Boring ID *(TOC)*	Date Sampled	Groundwater Zone	Groundwater Elevation *(ft msl)*	Depth to Water *(ft)*	Benzene	Toulene	Ethylbenzene	Xylenes	Chloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Trichloroethene	1,2-Dichlorobenzene	cis-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	Vinyl Chloride	Notes
					← μg/L →													
Soil Boring Grab Groundwater Samples																		
SB-1	11/25/2002	Zone A	35.39	3.45	---	---	---	---	---	---	---	---	---	---	---	---	---	
(38.84)	11/26/2002		35.44	3.40	1.7	3.2	0.55	3.6	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	j,o
SB-2	11/25/2002	Zone C	11.61	29.50	---	---	---	---			---	---		---			---	
(41.11)	11/26/2002		29.46	11.65	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	o
SB-4	11/25/2002	Zone A	34.02	6.90	---	---	---	---	---	---	---	---	---	---	---	---	---	
(40.92)	11/26/2002		34.82	6.10	---	---	---	---	---	---	---	---	---	---	---	---	---	SPH
SB-6	11/25/2002	Zone A	28.24	11.25	---	---	---	---	---	---	---	---	---	---	---	---	---	
(39.49)	11/26/2002		32.19	7.30	2.1	1.2	<0.5	0.55	3.8	<0.5	<0.5	<0.5	<0.5	1.2	1.4	<0.5	0.90	a,n,o
SB-7	11/25/2002	Zone B	28.20	10.30	---	---	---	---			---	---		---			---	
(38.50)	11/26/2002		30.10	8.40	<0.5	0.74	<0.5	3	16	16	<0.5	<0.5	<0.5	<0.5	1.7	<0.5	1.3	a,n,o
SB-8	11/25/2002	Zone A	36.30	4.70	---	---	---	---	---	---	---	---	---	---	---	---	---	
(41.00)	11/26/2002		36.55	4.65	<10	<10	<10	<10	<10	<10	<10	<10	20	<10	<10	<10	<10	a,n,o
SB-9	11/25/2002	Zone C	16.02	25.00	---	---	---	---	---	---	---	---	---	---	---	---	---	
(41.02)	11/26/2002		17.07	23.95	<0.5	0.88	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	o
SB-10	11/25/2002	Zone A	29.27	11.60	---	---	---	---	---	---	---	---	---	---	---	---	---	
(40.87)	11/26/2002		31.12	9.75	<2.5	3.4	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	170	19	<2.5	45	a,o
SB-11	11/25/2002	Zone C	12.15	29.30	---	---	---	---	---	---	---	---	---	---	---	---	---	
(41.45)	11/26/2002		---	21.90	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
SB-12A	1/13/2004	Zone A	---	4.5	<0.5	2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	a,i,o

Table 6. Grab Groundwater Analytical Results: Volatile Organic Compounds - John Nady, 1137-1167 65th Street, Oakland, California

Boring ID *(TOC)*	Date Sampled	Groundwater Zone	Groundwater Elevation *(ft msl)*	Depth to Water *(ft)*	Benzene	Toulene	Ethylbenzene	Xylenes	Chloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Trichloroethene	1,2-Dichlorobenzene	cis-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	Vinyl Chloride	Notes
					µg/L													
SB-14A	1/9/2004	Zone A	---	4.0	0.58	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	i,o
SB-14C	1/9/2004	Zone C	---	NW	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-15A	1/12/2004	Zone A	---	4.0	<0.5	<0.5	<0.5	17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	e,i,o
SB-16A	1/12/2004	Zone A	---	4.0	0.65	0.51	1.3	7.7	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	e, h,i,p,n,o
SB-17A	1/13/2004	Zone A	---	NW	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-17B	1/8/2004	Zone B	---	16.5	<0.5	<0.5	<0.5	<0.5	<50	<50	<50	<50	<50	1,100	<50	<50	<50	f,i,o
SB-17C	1/13/2004	Zone C	---	NW	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-18A	1/6/2004	Zone A	---	1.5	<5.0	<5.0	<5.0	11	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	e,h,p,n
SB-18B*	1/9/2004	Zone C	---	25.0	0.54	<0.5	<0.5	0.64	<100	<100	630	430	<100	1,800	<100	<100	<100	a,f
SB-18C	1/9/2004	Zone C	---	34.0	0.82	<0.5	<0.5	1.3	<50	<50	300	250	<50	1,200	<50	<50	<50	a,f,i,o
SB-19A	1/13/2004	Zone B	---	NW	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-20A	1/13/2004	Zone A	---	8.0	<0.5	<0.5	<0.5	3.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	g,h,n
SB-20C	1/13/2004	Zone C	---	31.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	i,o
SB-21A	1/20/2004	Zone A	---	8.5	<5.0	<5.0	<5.0	<5.0	<50	<50	<50	<50	<50	<50	<50	<50	<50	e,h,p.n
SB-22A	1/7/2004	Zone A	---	NW	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-22C	1/7/2004	Zone C	---	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	i, o
SB-25A	1/8/2004	Zone A	---	5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	i, o
SB-25C	1/8/2004	Zone C	---	29.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	i, o
SB-26A	1/7/2004	Zone A	---	4.0	6.2	<5.0	<5.0	13	<0.5	<0.5	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<5.0	i,e,o,p

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Table 6. Grab Groundwater Analytical Results: Volatile Organic Compounds - John Nady, 1137-1167 65th Street, Oakland, California

Boring ID *(TOC)*	Date Sampled	Groundwater Zone	Groundwater Elevation *(ft msl)*	Depth to Water *(ft)*	Benzene	Toulene	Ethylbenzene	Xylenes	Chloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Trichloroethene	1,2-Dichlorobenzene	cis-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	Vinyl Chloride	Notes
					µg/L													
Trip Blank	11/26/2002		---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Previous SCI Samples																		
Interior	2/20/2002		---	---	47	<5.0	9.4	114			<5.0	<5.0		<5.0			<5.0	
Exterior	2/20/2002		---	---	<7.1	<7.1	<7.1	24			83	<7.1		9.6			<7.1	

Abbreviations:

µg/L = micrograms per liter = parts per billion = ppb

Volatile organic compounds by EPA Method 8260B

--- = Not available, not analyzed, or does not apply

< n = Chemical not present at a concentration in excess of detection limit.

(TOC) = Top of temporary casing in feet above mean seal level.

ft msl = Feet above mean sea level.

Grab groundwater samples may have been collected without protection against cross contamination between groundwater zones; may not be discrete.

* = Sample 18B collected in the C-zone

Notes:

a = TPH pattern that does not appear to be derived from gasoline

b = No recognizable pattern.

c = Stoddard solvent/mineral spirit.

d = Diesel range compounds are significant; no recognizable pattern.

e = Gasoline range compounds are significant.

f = One to a few isolated peaks present

g = Oil range compounds are significant.

h = Lighter than water immiscible sheen/product is present.

i = Liquid sample contains greater than ~1 vol. % sediment.

j = Unmodified or weakly modified gasoline is significant

k = TPHg range non-target isolated peaks subtracted out of the TPHg concentration

l = Heavier gasoline compounds are significant (aged gasoline?)

m = Strongly aged gasoline or diesel range compounds are significant

n = Laboratory note: lighter than water immiscible sheen/product is present

o = Laboratory note: liquid sample that contains greater than `2vol.. % sediment

p = Laboratory note: sample diluted due to high organic content

q = Laboratory note: reporting limit rasied due to insufficient sample amount

Table 7. Soil Analytical Results: Petroleum Hydrocarbons and Lead - 1137-1167 65th Street, Oakland, California

Sample ID	Date Sampled	Sample Depth (ft)	TPHmo	TPHd	TPHss	TPHg	TPHnap	Lead	Notes
			←		mg/kg			→	
Cambria Samples									
MW-1C @6.5	5/10/2004	6.5	<5.0	<1.0	<1.0	<1.0	--	--	
MW-1C @9.5	5/10/2004	9.5	<5.0	60	340	160	--	--	
MW-1C @14.5	5/10/2004	14.5	<5.0	10	--	6	--	--	
MW-1C @20	5/10/2004	20	<5.0	<1.0	<1.0	<1.0	--	--	
MW-3A @15	5/7/2004	15	9.2	180	26	11	--	--	
MW-5B @5	5/18/2004	5	<5.0	<1.0	<1.0	<1.0	--	--	
MW-5B @10	5/18/2004	10	<5.0	<1.0	<1.0	<1.0	--	--	
MW-5B @15	5/18/2004	15	<5.0	42	390	410	--	--	
MW-5B @20	5/18/2004	20	<5.0	<1.0	<1.0	<1.0	--	--	
MW-5B @24	5/18/2004	24	<5.0	<1.0	<1.0	<1.0	--	--	
MW-6C @5.5	5/11/2004	5.5	1800	810	11	6	--	--	
MW-6C @11	5/11/2004	11	<5.0	18	68	29	--	--	
MW-6C @16	5/11/2004	16	<5.0	16	230	100	--	--	
MW-6C @21	5/11/2004	21	<5.0	<1.0	<1.0	<1.0	--	--	
SB-13 @6.0	1/5/2004	6	<5.0	21	150	140	--	--	
SB-13 @11.5	1/5/2004	11.5	<5.0	41	260	260	--	--	
							--	--	
SB-14A @7.5	1/9/2004	7.5	<5.0	64	100	210	--	--	
SB-14A @11.5	1/9/2004	11.5	<5.0	<1.0	<1.0	<1.0	--	--	
SB-15A @7.5	1/12/2004	7.5	9.3	190	820	1,500	--	--	
SB-15A @11.5	1/12/2004	11.5	<5.0	<1.0	<1.0	<1.0	--	--	
SB-16A @7.5	1/12/2004	7.5	<5.0	59	49	90	--	--	
SB-16A @11.5	1/12/2004	11.5	<5.0	<1.0	<1.0	<1.0	--	--	
SB-17B @3.5	1/8/2004	3.5	210	110	<1.0	<1.0	--	--	
SB-17B @7.5	1/8/2004	7.5	<5.0	<1.0	<1.0	<1.0	--	--	
SB-17B @11.5	1/8/2004	11.5	<5.0	<1.0	<1.0	<1.0	--	--	
SB-17B @17.0	1/8/2004	17.5	<5.0	<1.0	<1.0	<1.0	--	--	
SB-17B @20	1/8/2004	20	5.5	1	<1.0	<1.0	--	--	

Table 7. Soil Analytical Results: Petroleum Hydrocarbons and Lead - 1137-1167 65th Street, Oakland, California

Sample ID	Date Sampled	Sample Depth (ft)	TPHmo	TPHd	TPHss	TPHg	TPHnap	Lead	Notes
			←		mg/kg			→	
SB-18A @3.5	1/6/2004	3.5	<5.0	<1.0	<1.0	<1.0	--	--	
SB-18A @7.5	1/6/2004	7.5	<50	230	310	340	--	--	
SB-18A @11.5	1/6/2004	11.5	<5.0	9	6	6	--	--	
SB-18A @17	1/6/2004	17	<100	850	1,600	2,600	--	--	
SB-18B @17.5	1/6/2004	17.5	<50	660	990	1,000	--	--	
SB-18B @20	1/9/2004	20	<5.0	<1.0	<1.0	<1.0	--	--	
SB-21A @3	1/20/2004	3.0	<5.0	<1.0	<1.0	<1.0	--	--	
SB-21A @6	1/20/2004	6.0	<25	220.0	590.0	590.0	--	--	
SB-21A @9	1/20/2004	9.0	<25	270.0	450.0	470.0	--	--	
SB-22A/C @3	1/7/2004	3.0	<5.0	1.1	<1.0	<1.0	--	--	
SB-22A/C @6	1/7/2004	6.0	11.0	230.0	220.0	410.0	--	--	
SB-22A/C @9	1/7/2004	9.0	6.7	150.0	220.0	400.0	--	--	
SB-23 @3	1/6/2004	3.0	<5.0	<1.0	<1.0	<1.0	--	--	
SB-23 @6	1/6/2004	6.0	<5.0	<1.0	<1.0	<1.0	--	--	
SB-23 @9	1/6/2004	9.0	<5.0	<1.0	<1.0	<1.0	--	--	
SB-24 @3	1/5/2004	3.0	<250	1300	1000	980	--	--	
SB-24 @6	1/5/2004	6.0	8.9	220	420	430	--	--	
SB-24 @9	1/5/2004	9.0	<5.0	54	43	43	--	--	
							--	--	
SB-26A @7.5	1/7/2004	7.5	6.8	150	220	240	--	--	
SB-26A @11.5	1/7/2004	11.5	<5.0	67	98	180	--	--	
SB-1-3.5	11/25/2002	3.5	860	170	1.7	2.6a,b	--	37	
SB-1-7.5	11/25/2002	7.5	140	32	<1.0	<1.0	--	5.8	
SB-2-3.5	11/25/2002	3.5	<5.0	<1.0	<1.0	<1.0	--	3.9	
SB-2-11.5	11/25/2002	11.5	<5.0	<1.0	<1.0	<1.0	--	6.8	
SB-3-7.5	11/25/2002	7.5	<5.0	20	180	190a	--	<3.0	
SB-3-11.5	11/25/2002	11.5	<5.0	<1.0	<1.0	<1.0	--	9.7	
SB-4-3.5	11/25/2002	3.5	<5.0	<1.0	<1.0	<1.0	--	3.1	
SB-4-7.5	11/25/2002	7.5	15	2.1	<1.0	<1.0	--	21	
SB-4-11.5	11/25/2002	11.5	5.9	4.8	3.6	4.0	--	3.9	
SB-5-7.5	11/25/2002	7.5	5	190	1,300	1,200a	--	4.2	

Table 7. Soil Analytical Results: Petroleum Hydrocarbons and Lead - 1137-1167 65th Street, Oakland, California

Sample ID	Date Sampled	Sample Depth (ft)	TPHmo	TPHd	TPHss	TPHg	TPHnap	Lead	Notes
			← mg/kg →						
SB-5-11.5	11/25/2002	11.5	<5.0	<1.0	<1.0	<1.0	--	<3.0	
SB-7-3.5	11/25/2002	3.5	16	250	750	810a	--	8.5	
SB-7-7.5	11/25/2002	7.5	13	79	350	380a	--	6.1	
SB-7-17.5	11/25/2002	17.5	18	470	830	890a	--	6.6	
SB-8-3	11/25/2002	3.0	<500	2,500	3,600	3,500a	--	6.1	
SB-8-6	11/25/2002	6.0	<500	2,900	6,600	6,400a	--	7.5	
SB-8-9	11/25/2002	9.0	6.3	58	380	380a	--	7.5	
SB-9-6	11/25/2002	6.0	<5.0	2.8	9.4	9.5a	--	6.4	
SB-9-9	11/25/2002	9.0	<5.0	<1.0	<1.0	<1.0	--	6.0	
SB-10-3	11/25/2002	3.0	<5.0	<1.0	<1.0	<1.0	--	5.0	
SB-10-6	11/25/2002	6.0	<5.0	70	140	140a	--	6.4	
SB-10-9	11/25/2002	9.0	<5.0	96	140	180a	--	<3.0	
SB-10-12	11/25/2002	12.0	<5.0	<1.0	<1.0	<1.0	--	<3.0	
SB-11-7.5	11/25/2002	7.5	<5.0	<1.0	<1.0	<1.0	--	9.1	
Previous SCI Samples									
Tank 1 Bottom	2/25/2002	--	--	69	74	110	58	--	
Tank 2 Bottom	2/25/2002	--	--	34	280	440	230	--	
Tank 3 Bottom	2/25/2002	--	--	220	940	1,500	750	--	
Tank 4 Bottom	2/25/2002	--	--	12	1,000	1,600	830	--	
E End @ 6'	2/26/2002	6.0	--	220	1,400	2,200	1,100	--	
W End @ 6'	2/26/2002	6.0	--	390	1,800	2,900	1,500	--	
Pipe #1	2/26/2002	--	--	68	<0.99	<0.99	<0.99	--	
Pipe #2	2/26/2002	--	--	6.8	<0.95	<0.95	<0.95	--	
Tank 5 E End	2/13/2002	--	--	1,000	11,000	17,000	8,400	--	
Tank 5 W End	2/13/2002	--	--	1,800	8,400	13,000	6,200	--	
Tank 6 N Wall	3/7/2002	2.0	--	53	<0.98	<0.98	<0.98	--	
Tank 6 S Wall	3/7/2002	5.0	--	260	270	310	140	--	
Tank 6 E End	2/13/2002	--	--	670	300	470	240	--	
Tank 6 W End	2/13/2002	--	--	1,500	17,000	26,000	12,000	--	

Abbreviations and Methods:

mg/kg = Milligrams per kilogram

-- = Not available or not analyzed.

<x = Not detected above laboratory reporting limit. Laboratory reporting limit = numerical value

TPHmo = Total petroleum hydrocarbons as motor oil by EPA Method 8015C with silica gel cleanup

TPHd = Total petroleum hydrocarbons as diesel by EPA Method 8015C with silica gel cleanup

Table 7. Soil Analytical Results: Petroleum Hydrocarbons and Lead - 1137-1167 65th Street, Oakland, California

Sample ID	Date Sampled	Sample Depth (ft)	TPHmo	TPHd	TPHss	TPHg	TPHnap	Lead	Notes
			←		mg/kg			→	

TPHss = Total petroleum hydrocarbons as Stoddard solvent by EPA Method 8021B/8015Cm

TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8021B/8015Cm

TPHnap = Total petroleum hydrocarbons as naphtha by EPA Method 8015m/8020

Lead by EPA Method 6010C

a = Laboratory note: TPH pattern that does not appear to be derived from gasoline

b = Laboratory note: heavier gasoline range compounds are significant

Table 8. Soil Analytical Results: Volatile Organic Compounds - 1137-1167 65th Street, Oakland, California

Sample ID	Date Sampled	Depth (ft)	Benzene	Toulene	Ethylbenzene	Xylenes	Tetrachloroethene	cis-1,2-Dichloroethene	Trichloroethene	Isopropylbenzene (Cumene)	n-Propylbenzene	1,3,5-Trimethylbenzene	1,2,4-Trimethylbenzene	sec-Butylbenzene	4-Isopropyl Toluene	n-Butylbenzene	Naphthalene	Styrene	Methylene Chloride	Acetone	2-Butanone (MEK)	4-methyl-2-pentanone(MBK)	Vinyl Chloride	1, 2- Dichloropropane
			ug/kg																					
Cambria Samples																								
MW-1C @6.5	5/10/2004	6.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
MW-1C @9.5	5/10/2004	9.5	<0.2	<0.2	<0.2	<0.2	<20	<20	<20	--	--	--	--	--	--	--	--	--	<20	--	--	--	<20	<20
MW-1C @14.5	5/10/2004	14.5	<5.0	<5.0	<5.0	5.3	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
MW-1C @20	5/10/2004	20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
MW-3A @15	5/7/2004	15	<5.0	<5.0	<5.0	<5.0	<100	<100	<100	--	--	--	--	--	--	--	--	--	<100	--	--	--	<100	<100
MW-5B @5	5/18/2004	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
MW-5B @10	5/18/2004	10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
MW-5B @15	5/18/2004	15	<100	<100	<100	1400	<20	<20	<20	--	--	--	--	--	--	--	--	--	<20	--	--	--	<20	<20
MW-5B @20	5/18/2004	20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
MW-5B @24	5/18/2004	24	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
MW-6C @5.5	5/11/2004	5.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
MW-6C @11	5/11/2004	11	<25	<25	<25	<25	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
MW-6C @16	5/11/2004	16	<50	<50	<50	<50	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
MW-6C @21	5/11/2004	21	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-13 @6.0	1/5/2004	6	<50	<50	<50	<50	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-13 @11.5	1/5/2004	11.5	<100	<100	<100	<100	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-14A @7.5	1/9/2004	7.5	640	390	1800	5000	<400	<400	<400	--	--	--	--	--	--	--	--	--	<400	--	--	--	<400	<400
SB-14A @11.5	1/9/2004	11.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-15A @7.5	1/12/2004	7.5	<1000	<1000	<1000	2400	<400	<400	<400	--	--	--	--	--	--	--	--	--	<400	--	--	--	<400	<400
SB-15A @11.5	1/12/2004	11.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-16A @7.5	1/12/2004	7.5	<50	<50	69	110	<100	<100	<100	--	--	--	--	--	--	--	--	--	<100	--	--	--	<100	<100
SB-16A @11.5	1/12/2004	11.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-17B @3.5	1/8/2004	3.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-17B @7.5	1/8/2004	7.5	<5.0	<5.0	<5.0	<5.0	<5.0	8.3	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-17B @11.5	1/8/2004	11.5	<5.0	<5.0	<5.0	<5.0	<5.0	180	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	8.3	7.4
SB-17B @17.0	1/8/2004	17.5	<5.0	<5.0	<5.0	<5.0	<5.0	170	<10	--	--	--	--	--	--	--	--	--	<10	--	--	--	<10	<10
SB-17B @20	1/8/2004	20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-18A @3.5	1/6/2004	3.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-18A @7.5	1/6/2004	7.5	<200	<200	310	1600	<400	<400	<400	--	--	--	--	--	--	--	--	--	<400	--	--	--	<400	<400
SB-18A @11.5	1/6/2004	11.5	<5.0	<5.0	<5.0	15	<50	<50	<50	--	--	--	--	--	--	--	--	--	<50	--	--	--	<50	<50
SB-18A @17	1/6/2004	17	<200	<200	1100	6500	<400	<400	<400	--	--	--	--	--	--	--	--	--	<400	--	--	--	<400	<400
SB-18B @17.5	1/6/2004	17.5	<250	<250	570	2900	<400	<400	<400	--	--	--	--	--	--	--	--	--	<400	--	--	--	<400	<400
SB-18B @20	1/9/2004	20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-21A @3	1/20/2004	3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-21A @6	1/20/2004	6.0	<100	<100	<100	<100	<100	<100	<100	--	--	--	--	--	--	--	--	--	<100	--	--	--	<100	<100
SB-21A @9	1/20/2004	9.0	<200	<200	230	<200	<200	<200	<200	--	--	--	--	--	--	--	--	--	<200	--	--	--	<200	<200
SB-22A/C @3	1/7/2004	3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-22A/C @6	1/7/2004	6.0	<200	<200	<200	670	<400	<400	<400	--	--	--	--	--	--	--	--	--	<400	--	--	--	<400	<400

Conestoga-Rovers & Associates

Table 8. Soil Analytical Results: Volatile Organic Compounds - 1137-1167 65th Street, Oakland, California

Sample ID	Date Sampled	Depth (ft)	Benzene	Toluene	Ethylbenzene	Xylenes	Tetrachloroethene	cis-1,2-Dichloroethene	Trichloroethene	Isopropylbenzene (Cumene)	n-Propylbenzene	1,3,5-Trimethylbenzene	1,2,4-Trimethylbenzene	sec-Butylbenzene	4-Isopropyl Toluene	n-Butylbenzene	Naphthalene	Styrene	Methylene Chloride	Acetone	2-Butanone (MEK)	4-methyl-2-pentanone(MIBK)	Vinyl Chloride	1, 2-Dichloropropane
			ug/kg																					
SB-22A/C @9	1/7/2004	9.0	<200	<200	<200	770	<100	<100	<100	--	--	--	--	--	--	--	--	--	<100	--	--	--	<100	<100
SB-23 @3	1/6/2004	3.0	<5.0	<5.0	<5.0	<5.0	13	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-23 @6	1/6/2004	6.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-23 @9	1/6/2004	9.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	<5.0	--	--	--	<5.0	<5.0
SB-24 @3	1/5/2004	3.0	<500	<500	<500	<500	<400	<400	<400	--	--	--	--	--	--	--	--	--	<400	--	--	--	<400	<400
SB-24 @6	1/5/2004	6.0	<200	<200	240	<200	<400	<400	<400	--	--	--	--	--	--	--	--	--	<400	--	--	--	<400	<400
SB-24 @9	1/5/2004	9.0	<50	<50	<50	<50	<50	<50	<50	--	--	--	--	--	--	--	--	--	<50	--	--	--	<50	<50
SB-26A @7.5	1/7/2004	7.5	<200	<200	<200	<200	<100	<100	<100	--	--	--	--	--	--	--	--	--	<100	--	--	--	<100	<100
SB-26A @11.5	1/7/2004	11.5	<200	<200	<200	330	<50	<50	<50	--	--	--	--	--	--	--	--	--	<50	--	--	--	<50	<50
SB-1-3.5	11/25/2002	3.5	<5.0	37	16	120	44	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	9.6	36	<5.0	<5.0	<50	<10	<5.0	ND	
SB-1-7.5	11/25/2002	7.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	150	<5.0	<5.0	<50	<10	<5.0	ND	
SB-2-3.5	11/25/2002	3.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND	
SB-2-11.5	11/25/2002	11.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND	
SB-3-7.5	11/25/2002	7.5	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<1,000	<200	<100	ND	
SB-3-11.5	11/25/2002	11.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND	
SB-4-3.5	11/25/2002	3.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND	
SB-4-7.5	11/25/2002	7.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND	
SB-4-11.5	11/25/2002	11.5	<5.0	<5.0	7.4	11	<5.0	<5.0	<5.0	7.8	33	79	160	9.5	<5.0	<5.0	59	<5.0	<5.0	<50	<10	<5.0	ND	
SB-5-7.5	11/25/2002	7.5	<200	<200	<200	<200	<200	<200	<200	360	970	300	<200	1,700	260	1,600	<200	<200	<200	<2,000	<400	<200	ND	
SB-5-11.5	11/25/2002	11.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND	
SB-7-3.5	11/25/2002	3.5	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	200	<100	<100	<1,000	<200	<100	ND	
SB-7-7.5	11/25/2002	7.5	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	130	<100	<100	<100	<100	<1,000	<200	<100	ND	
SB-7-17.5	11/25/2002	17.5	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	470	<100	<100	<100	<100	<1,000	<200	<100	ND	
SB-8-3	11/25/2002	3.0	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<5,000	<1,000	<500	ND	
SB-8-6	11/25/2002	6.0	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<10,000	<2,000	<1,000	ND	
SB-8-9	11/25/2002	9.0	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	470	<100	<100	<100	<100	<1,000	<200	<100	ND	
SB-9-6	11/25/2002	6.0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<20	<10	ND	
SB-9-9	11/25/2002	9.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND	
SB-10-3	11/25/2002	3.0	<5.0	<5.0	<5.0	<5.0	56	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND	
SB-10-6	11/25/2002	6.0	<50	<50	<50	<50	<50	<50	<50	<50	100	<50	<50	260	71	260	<50	<50	<50	<500	<100	<50	ND	
SB-10-9	11/25/2002	9.0	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<5,000	<1,000	<500	ND	
SB-10-12	11/25/2002	12.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	a	
SB-11-7.5	11/25/2002	7.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<5.0	ND	
Previous SCI Samples																								
Tank 1 Bottom	2/25/2002	--	<130	<130	<130	<130	<130	<130	<130	<130	<130	<130	230	<130	<130	<130	<130	<130	<130	<130	<130	<130		
Tank 2 Bottom	2/25/2002	--	<250	<250	<250	<250	<250	<250	<250	<250	<250	300	680	290	370	550	<250	<250	<250	<250	<250	<250		
Tank 3 Bottom	2/25/2002	--	<250	<250	<250	<250	310	<250	<250	<250	570	680	1,600	960	930	1,500	<250	<250	<250	<250	<250	<250		
Tank 4 Bottom	2/25/2002	--	<250	<250	<250	<250	<250	<250	<250	740	1,700	<250	840	2,100	940	1,900	660	<250	<250	<250	<250	<250		
E End @ 6'	2/25/2002	6.0	<250	<250	<250	950	<250	<250	<250	1,300	3,200	<250	<250	1,700	920	2,400	<250	<250	<250	<250	<250	<250		
W End @ 6'	2/25/2002	6.0	<250	<250	<250	<250	<250	<250	<250	520	1,300	1,100	<250	1,700	890	1,700	<250	<250	<250	<250	<250	<250		
Pipe #1	2/25/2002	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
Pipe #2	2/25/2002	--	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9		
Tank 5 E End	3/7/2002	--	<2,000	<2,000	8,600	<2,000	<2,000	<2,000	<2,000	5,600	16,000	25,000	63,000	13,000	9,900	14,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000		
Tank 5 W End	3/7/2002	--	<1,700	<1,700	5,900	<1,700	<1,700	<1,700	<1,700	4,100	11,000	17,000	47,000	9,600	8,500	1,000	<1,700	<1,700	<1,700	<1,700	<1,700	<1,700		
Tank 6 N Wall	3/7/2002	2.0	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7	<4.7		
Tank 6 S Wall	3/7/2002	5.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8		
Tank 6 E End	3/7/2002	--	<420	<420	<420	<420	<420	<420	<420	<420	<420	1,600	2,100	<420	510	<420	<420	<420	<420	<420	<420	<420		
Tank 6 W End	3/7/2002	--	<3,100	<3,100	<3,100	<3,100	<3,100	<3,100	<3,100	8,500	24,000	46,000	100,000	30,000	27,000	<3,100	<3,100	<3,100	<3,100	<3,100	<3,100	<3,100		

Conestoga-Rovers & Associates

Table 8. Soil Analytical Results: Volatile Organic Compounds - 1137-1167 65th Street, Oakland, California

Sample ID	Date Sampled	Depth (ft)	Benzene	Toulene	Ethylbenzene	Xylenes	Tetrachloroethene	cis-1,2-Dichloroethene	Trichloroethene	Isopropylbenzene (Cumene)	n-Propylbenzene	1,3,5-Trimethylbenzene	1,2,4-Trimethylbenzene	sec-Butylbenzene	4-Isopropyl Toluene	n-Buytlbenzene	Naphthalene	Styrene	Methylene Chloride	Acetone	2-Butanone (MEK)	4-methyl-2-pentanone(MIBK)	Vinyl Chloride	1, 2- Dichloropropane
			ug/kg																					

Abbreviations and Methods:
ug/kg = Micrograms per kilogram
Volatile organic compounds by EPA Method 8260B (8010)
< n = Chemical not present at a concentration in excess of detection limit shown
ND = None detected above laboratory reporting limit, see laboratory report for individual reporting limits.

Notes:
a = Vinyl Chloride: 18 ug/kg
'-- = Not available or not analyzed.

Subsurface Consultants, Inc.

Table 9: Analytical Results of Product Samples from Tanks
1137-1167 65th Street
Oakland, California
SCI 855.003

		Ports					
		Exterior Tanks				Interior Tanks	
		1	2	3	4	5	6
		9/13/01	9/13/01	9/13/01	10/23/01	10/23/01	10/23/01
Petroleum Hydrocarbons							
Gasoline Range	ug/L	**130,000,000**	**7,700**	**8,000**	**3,800,000**	**5,100**	**81,000,000**
Naphtha Range	ug/L	**59,000,000**	**3,600**	**3,700**	**2,100,000**	**2,500**	**44,000,000**
Diesel Range*	ug/L	**280,000,000**	<390,000	<400,000	**2,300,000**	**19,000**	**91,000**
Volatile Organic Compounds**							
Benzene	ug/L	**2,400**	**18**	<13	<1.7	<2.5	<3.1
Toulene	ug/L	**24,000**	**25**	**17**	**23**	**14**	**3.7**
Ethylbenzene	ug/L	**74,000**	**39**	**28**	**62**	**23**	**4.5**
Xylenes	ug/L	**730,000**	**600**	**540**	**840**	**250**	**161**
Tetrachloroethene	ug/L	**42,000**	<13	<13	**5.3**	**3.3**	<3.1
cis-1,2-Dichloroethene	ug/L	**170**	<13	<13	**2.4**	<2.5	**15**
Trichloroethene	ug/L	**550**	<13	<13	**3.0**	<2.5	<3.1
Isopropylbenzene (Cumene)	ug/L	**170,000**	<130	<130	**53**	<25	<31
Propylbenzene (n)	ug/L	**210,000**	<130	<130	**82**	**40**	<31
1,3,5-Trimethylbenzene	ug/L	**470,000**	**360**	**380**	**400**	**150**	**130**
1,2,4-Trimethylbenzene	ug/L	**470,000**	**790**	**670**	**1,800**	**400**	**270**
sec-Butylbenzene	ug/L	**140,000**	<130	<130	<17	<25	<31
para-Isopropyl Toluene	ug/L	**140,000**	<130	<130	**23**	<25	<31
n-buytlbenzene	ug/L	**130,000**	<130	<130	**18**	<25	<31
Naphthalene	ug/L	**10,000**	<130	<130	<17	<25	<31
Styrene	ug/L	<1,300	<130	<130	<17	**300**	<31
Methylene Chloride	ug/L	<5,000	<500	**720**	<67	<100	<130
Acetone	ug/L	<5,000	<500	<500	**130**	**810**	**520**
2-Butanone (MEK)	ug/L	<2,500	<250	<250	<33	**270**	**180**
4-methyl-2-pentanone(MIBK)	ug/L	<2,500	<250	<250	<33	<50	**64**

Notes: Port locations are shown on Plate 3.
* Using Silica gel cleanup
** Only VOCs detected are listed
mg/L Milligrams per liter
ug/L Micrograms per liter
<13 less than listed analytical reporting limit.

CONESTOGA-ROVERS
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APPENDIX A

Standard Field Procedures

STANDARD FIELD PROCEDURES

MEMBRANE INTERFACE PROBE AND CONE PENETROMETER TESTING AND SAMPLING

This document describes Conestoga-Rovers & Associates' standard field methods for Membrane Interface Probe (MIP) with Cone Penetrometer Testing (CPT) and direct-push soil and groundwater sampling. These procedures are designed to comply with Federal, State and local regulatory guidelines.

Use of MIP/CPT for logging and soil and groundwater sampling requires separate borings. Typically an initial boring is advanced to estimate soil and groundwater characteristics as described below. To collect soil samples a separate boring must be advanced using a soil sampling device. If groundwater samples are collected, another separate boring must be advanced using a groundwater sampling device. Specific field procedures are summarized below.

Membrane Interface Probe (MIP) with Cone Penetrometer Testing (CPT)

Membrane Interface Probe with Cone Penetrometer Testing is performed by a trained geologist or engineer working under the supervision of a California Registered Geologist (RG) or a Certified Engineering Geologist (CEG). Cone Penetrometer Tests (CPT) are carried out by pushing an integrated electronic piezocone combined with a membrane interface probe into the subsurface. The piezocone is pushed using a specially designed CPT rig with a force capacity of 20 to 25 tons. The piezocones are capable of recording the following parameters:

Tip Resistance (Qc)
Sleeve Friction (Fs)
Pore Water Pressure (U)
Bulk Soil Resistivity (rho) - with an added module

The membrane interface probes are capable of recording the following parameters:

Photo Ionization Detector (PID)
Flame Ionization Detector (FID)
Radioactive Beta Emitter (ECD)

A compression cone is used for each CPT sounding. Piezocones with rated load capacities of 5, 10 or 20 tons are used depending on soil conditions. The 5 and 10 ton cones have a tip area of 10 sq. cm. and a friction sleeve area of 150 sq. cm. The 20 ton cones have a tip area of 15 sq. cm. and a friction sleeve area of 250 sq. cm. A pore water pressure filter is located directly behind the cone tip. Each of the filters is saturated in glycerin under vacuum pressure prior to penetration. Pore Pressure Dissipation Tests (PPDT) are recorded at 5 second intervals during pauses in penetration. The equilibrium pore water pressure from the dissipation test can be used to identify the depth to groundwater.

The measured parameters are printed simultaneously on a printer and stored on a computer disk for future analysis. All MIP/CPTs are carried out in accordance with ASTM D-3441. A complete set of baseline readings is taken prior to each sounding to determine any zero load offsets.

The inferred stratigraphic profile at each MIP/CPT location is included on the plotted CPT logs. The stratigraphic interpretations are based on relationships between cone bearing (Qc) and friction ratio

(Rf). The friction ratio is a calculated parameter (Fs/Qc) used in conjunction with the cone bearing to identify the soil type. Generally, soft cohesive soils have low cone bearing pressures and high friction ratios. Cohesionless soils (sands) have high cone bearing pressures and low friction ratios. The classification of soils is based on correlations developed by Robertson et al (1986). It is not always possible to clearly identify a soil type based on Qc and Rf alone. Correlation with existing soils information and analysis of pore water pressure measurements should also be used in determining soil type.

MIP/CPT and sampling equipment are steam-cleaned or washed prior to work and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent. Groundwater samples are decanted into appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4° C, and transported under chain-of-custody to the laboratory.

After the MIP/CPT probes are removed, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate groundwater depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Registered Geologist (RG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e., sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or separate-phase hydrocarbon saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e., cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Sampling

Soil samples are collected from borings driven using hydraulic push technologies. A minimum of one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples can be collected near the water table and at lithologic changes. Samples are collected using samplers lined with polyethylene or brass tubes driven into undisturbed sediments at the bottom of the borehole. The ground surface immediately adjacent to the boring is used as a datum to measure sample depth. The horizontal location of each boring is measured in the field relative to a permanent on-site reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned or washed prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon[7] tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

After a soil sample has been collected, soil from the remaining tubing is placed inside a sealed plastic bag and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector measures volatile hydrocarbon vapor concentrations in the bag=s headspace, extracting the vapor through a slit in the plastic bag. The measurements are used along with the field observations, odors, stratigraphy and groundwater depth to select soil samples for analysis.

Grab Groundwater Sampling

Groundwater samples are collected from the open borehole using bailers, advancing disposable Tygon[7] tubing into the borehole and extracting groundwater using a diaphragm pump, or using a hydro-punch style sampler with a bailer or tubing. The groundwater samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4° C, and transported under chain-of-custody to the laboratory.

Duplicates and Blanks

Blind duplicate water samples are usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory quality assurance/quality control (QA/QC) blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

SOP MIP-CPT Boring.doc

STANDARD FIELD PROCEDURES
HAND-AUGER SOIL BORINGS AND SAMPLING

This document describes Conestoga-Rovers & Associates standard field methods for drilling and sampling soil borings using a hand-auger. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the modified Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Professional Geologist (PG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e. sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or product saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e. cementation, presence of marker horizons, mineralogy), &
- Estimated permeability.

Soil Boring and Sampling

Hand-auger borings are typically drilled using a hand-held bucket auger to remove soil to the desired sampling depth. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments beyond the bottom of the augered hole. The vertical location of each soil sample is determined using a tape measure. All sample depths use the ground surface immediately adjacent to the boring as a datum. The horizontal location of each boring is measured in the field from an onsite permanent reference using a measuring wheel or tape measure.

Augering and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector (PID) measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. PID measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are collected from the open borehole using bailers. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory.

Duplicates and Blanks

Blind duplicate water samples are collected usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory QA/QC blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

The borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite on top of and covered by plastic sheeting. At least four individual soil samples are collected from the stockpiles for later compositing at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Ground water removed during sampling and/or rinsate generated during decontamination procedures are stored onsite in sealed 55-gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Disposal of the water is based on the analytic results for the well samples. The water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.

STANDARD FIELD PROCEDURES
SOIL BORINGS AND SAMPLING

This document describes Conestoga-Rovers & Associates' standard field methods for drilling and sampling soil borings. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the modified Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Professional Geologist (PG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e. sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or product saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e. cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or hydraulic push technologies. At least one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments beyond the bottom of the borehole. The vertical location of each soil sample is determined by measuring the distance from the middle of the soil sample tube to the end of the drive rod used to advance the split barrel sampler. All sample depths use the ground surface immediately adjacent to the boring as a datum. The horizontal location of each boring is measured in the field from an onsite permanent reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector (PID) measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. PID measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch type sampler or are collected from the open borehole using bailers. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory.

Duplicates and Blanks

Blind duplicate water samples are collected usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory QA/QC blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite on top of and covered by plastic sheeting. At least four individual soil samples are collected from the stockpiles for later compositing at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Ground water removed during sampling and/or rinsate generated during decontamination procedures are stored onsite in sealed 55 gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Disposal of the water is based on the analytic results for the well samples. The water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.

STANDARD FIELD PROCEDURES
ENVIROCORE® OR SIMILAR DUAL TUBE SAMPLING

This document describes Conestoga-Rovers & Associates' (CRA's) standard field methods for Envirocore® or similar soil and groundwater sampling. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate groundwater depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Registered Geologist (RG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e., sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate moisture content,
- Observed odor and/or discoloration,
- Other significant observations (i.e., cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Sampling

The Envirocore® (dual-tube) system consists of a segmented casing with an internal sampler which is driven hydraulically into the subsurface. The casing and the sampler are driven simultaneously in three-foot increments. Continuous sample cores are collected by the sampler in 1.5-inch diameter sample tubes which are either 6-inch long stainless steel or 3-foot long butyrate. The ground surface immediately adjacent to the boring is used as a datum to measure sample depth. The horizontal location of each boring is measured in the field relative to a permanent on-site reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned or washed prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate, Alconox® or an equivalent EPA-approved detergent, and double rinsed with de-ionized water.

Hydrocarbon Field Screening

When hydrocarbons are a chemical of concern, soil samples are field screened for the presence of hydrocarbon vapors. After a soil sample has been collected, soil from the remaining tubing is placed inside a sealed plastic bag and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable GasTech® or photoionization detector measures volatile hydrocarbon vapor concentrations in the bag's headspace, extracting the vapor through a slit in the plastic bag. The measurements are used along with the field observations, odors, stratigraphy and groundwater depth to select soil samples for analysis.

Soil Sample Storage, Handling and Transport

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon® tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Grab Groundwater Sampling

Groundwater samples are collected from the open borehole using bailers, advancing disposable Tygon® tubing into the borehole and extracting groundwater using a diaphragm pump, or using a hydro-punch style sampler with a bailer or tubing. The groundwater samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4° C, and transported under chain-of-custody to the laboratory.

Duplicates and Blanks

Blind duplicate water samples are usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all hydrocarbon sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory quality assurance/quality control (QA/QC) blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement/bentonite grout poured or pumped through a tremie pipe.

STANDARD FIELD PROCEDURES
VAPOR POINT INSTALLATION AND SAMPLING

This document describes Conestoga-Rovers & Associates' standard field methods for soil vapor sampling. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil vapor samples are collected and analyzed to assess whether vapor-phase subsurface contaminants pose a threat to human health or the environment.

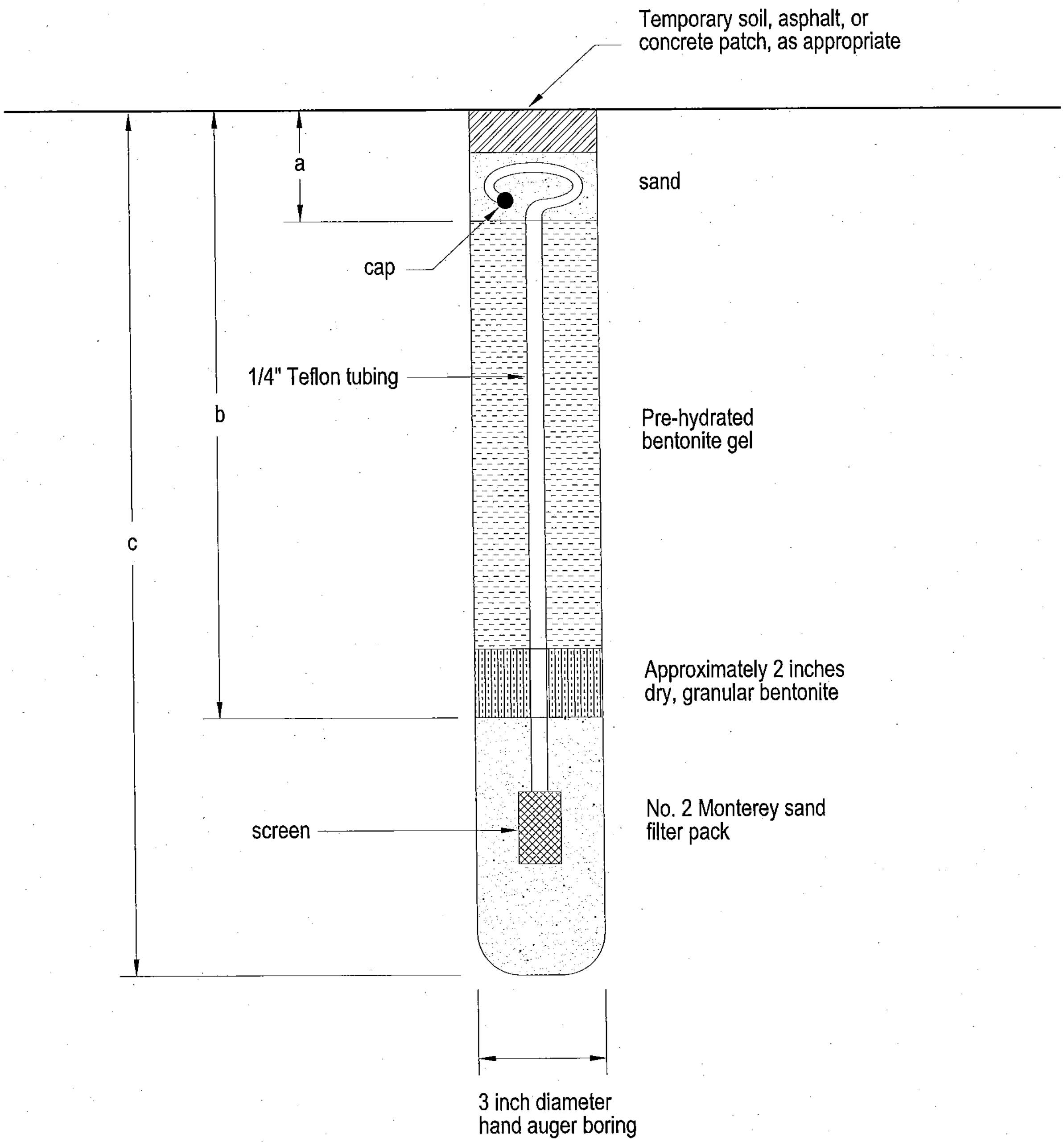
Shallow Soil Vapor Point Method for Soil Vapor Sampling

The shallow soil vapor point method for soil vapor sampling utilizes a hand auger or drill rig to advance a boring for the installation of a soil vapor sampling point. Once the boring is hand augered to the final depth, a 6-inch slotted probe, capped on either end with brass or Swagelok fittings, is placed within 12-inches of number 2/16 filter sand (Figure A). Nylon tubing of ¼-inch outer-diameter of known length is attached to the probe. A 2-inch to 12-inch layer of unhydrated bentonite chips is placed on top of the filter pack. Next pre-hydrated granular bentonite is then poured into the hole to approximately and topped with another 2-inch layer of unhydrated bentonite chips or concrete, depending if the boring will hold one probe or multiple probes. The tube is coiled and placed within a wellbox finished flush to the surface. Soil vapor samples will be collected no sooner than one week after installation of the soil vapor points to allow adequate time for representative soil vapors to accumulate. Soil vapor sample collection will not be scheduled until after a minimum of three consecutive precipitation-free days and irrigation onsite has ceased. Figure B shows the soil vapor sampling apparatus. A measured volume of air will be purged from the tubing using a different Summa purge canister. Immediately after purging, soil vapor samples will be collected using the appropriate size Summa canister with attached flow regulator and sediment filter. The soil vapor points will be preserved until they are no longer needed for risk evaluation purposes. At that time, they will be destroyed by extracting the tubing, hand augering to remove the sand and bentonite, and backfilling the boring with neat cement. The boring will be patched with asphalt or concrete, as appropriate.

Vapor Sample Storage, Handling, and Transport

Samples are stored and transported under chain-of-custody to a state-certified analytic laboratory. Samples should never be cooled due to the possibility of condensation within the canister.

Attachments: Figure A: Soil Vapor Point
Figure B: Soil Vapor Sampling Apparatus Diagram



Schematic Not to Scale

FIGURE

A

S:\0-TEXACOTEX-SITES\211273\FIGURES\VAPOR-POINT.DWG

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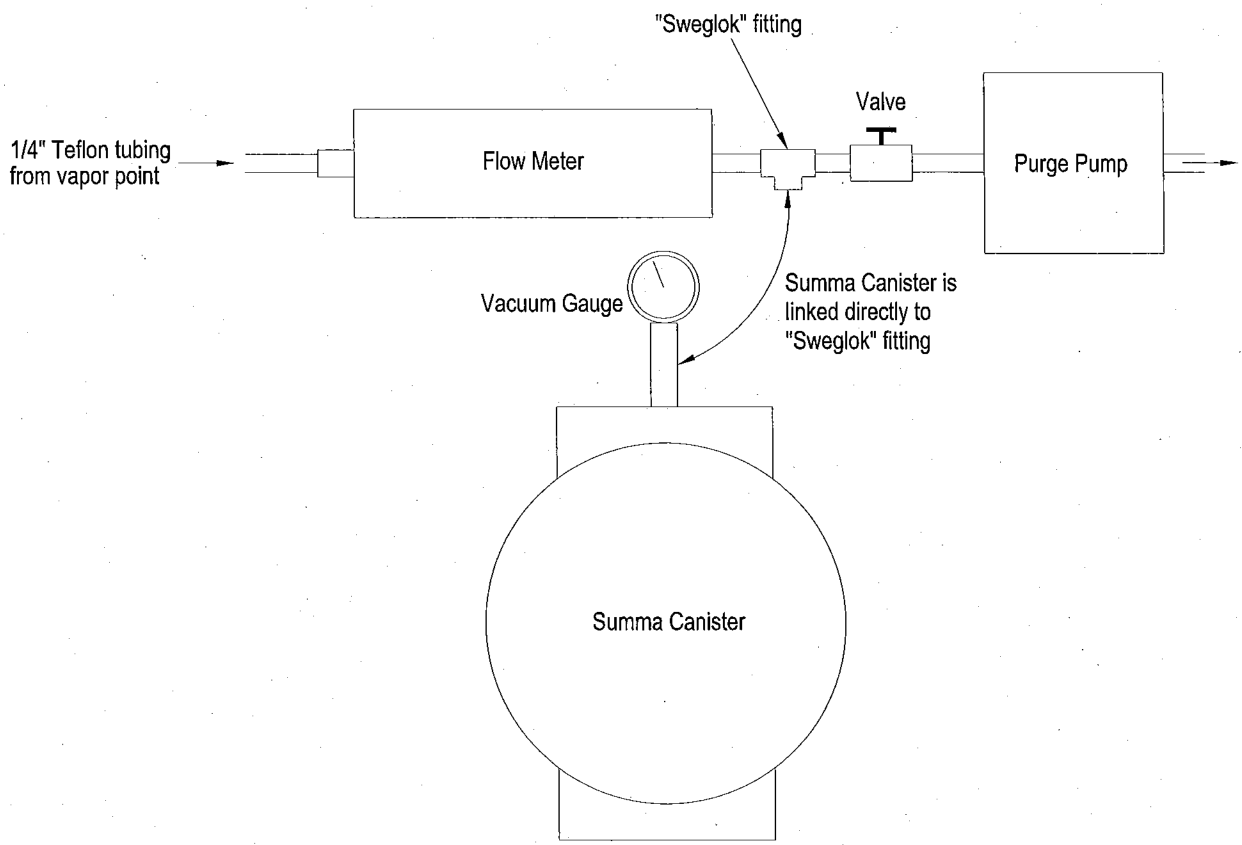
Soil Vapor Point

09/25/02



Schematic Not to Scale

FIGURE

B

S:\0-TEXACO\TEX-SITES\211273\FIGURES\VAPOR-DIAG.DWG

CONESTOGA-ROVERS & ASSOCIATES

Soil Vapor Sampling Apparatus Diagram

STANDARD FIELD PROCEDURES
DIRECT PUSH SOIL VAPOR SAMPLING

This document describes Conestoga-Rovers & Associates' standard field methods for soil vapor sampling. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil vapor samples are collected and analyzed to assess whether vapor-phase subsurface contaminants pose a threat to human health or the environment.

Direct Push Method for Soil Vapor Sampling

The direct push method for soil vapor sampling uses a hollow vapor probe, which is pushed into the ground, rather than augured, and the stratigraphy forms a vapor seal between the surface and subsurface environments ensuring that the surface and subsurface gases do not mix. Once the desired soil vapor sampling depth has been reached, the field technician installs disposable polyethylene tubing with a threaded adapter that screw into the bottom of the rods. The screw adapter ensures that the vapor sample comes directly from the bottom of the drill rods and does not mix with other vapor from inside the rod or from the ground surface. In addition, hydrated bentonite is placed around the sampling rod and the annulus of the boring to prevent ambient air from entering the boring. The operator then pulls up on the rods and exposes the desired stratigraphy by leaving an expendable drive point at the maximum depth. The required volume of soil vapor is then purged through the polyethylene tubing using a standard vacuum pump. The soil vapor can be sampled for direct injection into a field gas chromatograph, pumped into inert tedlar bags using a "bell jar" sampling device, or allowed to enter a Summa vacuum canister. Once collected, the vapor sample is transported under chain-of-custody to a state-certified laboratory. The ground surface immediately adjacent to the boring is used as a datum to measure sample depth. The horizontal location of each boring is measured in the field relative to a permanent on-site reference using a measuring wheel or tape measure. Drilling and sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent. Once the sampling is completed, the borings are filled to the ground surface with neat cement.

Vapor Sample Storage, Handling, and Transport

Samples are stored and transported under chain-of-custody to a state-certified analytic laboratory. Samples should never be cooled due to the possibility of condensation within the canister.

STANDARD FIELD PROCEDURES
MONITORING WELL INSTALLATION

This document presents standard field methods for drilling and sampling soil borings and installing, developing and sampling groundwater monitoring wells. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

SOIL BORINGS

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor or staining, and to collect samples for analysis at a State-certified laboratory. All borings are logged using the Unified Soil Classification System by a trained geologist working under the supervision of a California Professional Geologist (P.G.) or Professional Engineer (P.E.).

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or direct-push technologies such as the Geoprobe®. Soil samples are collected at least every five ft to characterize the subsurface sediments and for possible chemical analysis. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments at the bottom of the borehole.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Analysis

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4° C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable volatile vapor analyzer measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. Volatile vapor analyzer measurements are used along with the field observations, odors, stratigraphy and groundwater depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch® type sampler or are collected from the open borehole using bailers. The groundwater samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

Well Construction and Surveying

Groundwater monitoring wells are installed to monitor groundwater quality and determine the groundwater elevation, flow direction and gradient. Well depths and screen lengths are based on groundwater depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and State and local regulatory guidelines. Well screens typically extend 10 to 15 feet below and 5 feet above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three feet thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about one to two feet above the well screen. A two feet thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of Portland type I,II cement.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security.

The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

Well Development

Wells are generally developed using a combination of groundwater surging and extraction. Surging agitates the groundwater and dislodges fine sediments from the sand pack. After about ten minutes of surging, groundwater is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of groundwater are extracted and the sediment volume in the groundwater is negligible. This process usually occurs prior to installing the sanitary surface seal to ensure sand pack stabilization. If development occurs after surface seal installation, then development occurs 24 to 72 hours after seal installation to ensure that the Portland cement has set up correctly.

All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 24 hours after they are developed.

Groundwater Sampling

Depending on local regulatory guidelines, three to four well-casing volumes of groundwater are purged prior to sampling. Purging continues until groundwater pH, conductivity, and temperature have stabilized. Groundwater samples are collected using bailers or pumps and are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite and covered by plastic sheeting. At least three individual soil samples are collected from the stockpiles and composited at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples in addition to any analytes required by the receiving disposal facility. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Groundwater removed during development and sampling is typically stored onsite in sealed 55-gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Upon receipt of analytic results, the water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.

STANDARD FIELD PROCEDURE
GROUNDWATER MONITORING AND SAMPLING

This document presents standard field methods for groundwater monitoring, purging and sampling, and well development. These procedures are designed to comply with Federal, State and local regulatory guidelines. CRA's specific field procedures are summarized below.

Groundwater Elevation Monitoring

Prior to performing monitoring activities, the historical monitoring and analytical data of each monitoring well shall be reviewed to determine if any of the wells are likely to contain non-aqueous phase liquid (NAPL) and to determine the order in which the wells will be monitored (i.e. cleanest to dirtiest). Groundwater monitoring should not be performed when the potential exists for surface water to enter the well (i.e. flooding during a rainstorm).

Prior to monitoring, each well shall be opened and the well cap removed to allow water levels to stabilize and equilibrate. The condition of the well box and well cap shall be observed and recommended repairs noted. Any surface water that may have entered and flooded the well box should be evacuated prior to removing the well cap. In wells with no history of NAPL, the static water level and total well depth shall be measured to the nearest 0.01 foot with an electronic water level meter. Wells with the highest contaminant concentrations shall be measured last. In wells with a history of NAPL, the NAPL level/thickness and static water level shall be measured to the nearest 0.01 foot using an electronic interface probe. The water level meter and/or interface probe shall be thoroughly cleaned and decontaminated at the beginning of the monitoring event and between each well. Monitoring equipment shall be washed using soapy water consisting of Liqui-nox™ or Alconox™ followed by one rinse of clean tap water and then two rinses of distilled water.

Groundwater Purging and Sampling

Prior to groundwater purging and sampling, the historical analytical data of each monitoring well shall be reviewed to determine the order in which the wells should be purged and sampled (i.e. cleanest to dirtiest). No purging or groundwater sampling shall be performed on wells with a measurable thickness of NAPL or floating NAPL globules. If sheen is observed, the well should be purged and a groundwater sample collected only if no NAPL is present. Wells shall be purged either by hand using a disposal or PVC bailer or by using an aboveground pump (e.g. peristaltic or Wattera™) or down-hole pump (e.g. Grundfos™ or DC Purger pump).

Groundwater wells shall be purged approximately three to ten well-casing volumes (depending on the regulatory agency requirements) or until groundwater parameters of temperature, pH, and conductivity have stabilized to within 10% for three consecutive readings. Temperature, pH, and conductivity shall be measured and recorded at least once per well casing volume removed. The total volume of groundwater removed shall be recorded along with any other notable physical characteristic such as color and odor. If required, field parameters such as turbidity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) shall also be measured prior to collection of each groundwater sample.

Groundwater samples shall be collected after the well has been purged. If the well is slow to recharge, a sample shall be collected after the water column is allowed to recharge to 80% of the pre-purging static water level. If the well does not recover to 80% in 2 hours, a sample shall be collected once there is enough groundwater in the well. Groundwater samples shall be collected using clean disposable bailers or pumps (if an operating remediation system exists on site and the project manager approves of its use for sampling) and shall be decanted into clean containers supplied by the analytical laboratory. New latex gloves and disposable tubing or bailers shall be used for sampling each well. If a PVC bailer or down-hole pump is used for groundwater purging, it shall be decontaminated before purging each well by using soapy water consisting of Liqui-nox™ or Alconox™ followed by one rinse of clean tap water and then two rinses of distilled water. If a submersible pump with non-dedicated discharge tubing is used for groundwater purging, both the inside and outside of pump and discharge tubing shall be decontaminated as described above.

Sample Handling

Except for samples that will be tested in the field, or that require special handling or preservation, samples shall be stored in coolers chilled to 4° C for shipment to the analytical laboratory. Samples shall be labeled, placed in protective foam sleeves or bubble wrap as needed, stored on crushed ice at or below 4° C, and submitted under chain-of-custody (COC) to the laboratory. The laboratory shall be notified of the sample shipment schedule and arrival time. Samples shall be shipped to the laboratory within a time frame to allow for extraction and analysis to be performed within the standard sample holding times.

Sample labels shall be filled out using indelible ink and must contain the site name; field identification number; the date, time, and location of sample collection; notation of the type of sample; identification of preservatives used; remarks; and the signature of the sampler. Field identification must be sufficient to allow easy cross-reference with the field datasheet.

All samples submitted to the laboratory shall be accompanied by a COC record to ensure adequate documentation. A copy of the COC shall be retained in the project file. Information on the COC shall consist of the project name and number; project location; sample numbers; sampler/recorder's signature; date and time of collection of each sample; sample type; analyses requested; name of person receiving the sample; and date of receipt of sample.

Laboratory-supplied trip blanks shall accompany the samples and be analyzed to check for cross-contamination, if requested by the project manager.

Waste Handling and Disposal

Groundwater extracted during sampling shall be stored onsite in sealed U.S. DOT H17 55-gallon drums and shall be labeled with the contents, date of generation, generator identification, and consultant contact. Extracted groundwater may be disposed offsite by a licensed waste handler or may be treated and discharged via an operating onsite groundwater extraction/treatment system.

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