Additional Supplemental Site Investigation
Completion Report
Proposed Aspire Charter High School
1009 66th Avenue
Oakland, Alameda County, California

DTSC Site Code: 204147-11

January 23, 2006
003-09155-00

Prepared for
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January 23, 2006

003-09155-00

Mr. Michael Hall
California Environmental Protection Agency
Department of Toxic Substances Control
School Property Evaluation and Cleanup Division
5796 Corporate Avenue
Cypress, California 90630

Subject: Supplemental Site Investigation Completion Report, Proposed Aspire Charter High School, 1009 66th Avenue, Oakland, Alameda County, California

DTSC Site Code: 204147-11

Dear Mr. Hall:

LFR Inc. (LFR) has prepared this Supplemental Site Investigation (SSI) Completion Report for the second SSI sampling event on behalf of Aspire Public Schools for the Proposed Aspire Charter High School, 1009 66th Avenue, Oakland, Alameda County, California ("the Site"). The Site is located on the western side of 66th Avenue between East 14th Street to the north and San Leandro Street to the south.

A Preliminary Environmental Assessment (PEA) and Initial Supplemental Site Investigation were performed at the Site by CSS Environmental, Inc. Additional investigation at the Site has been requested by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). The purpose of this SSI Completion Report is to present a summary of the work conducted at the Site to date, delineate the extent of affected soil and groundwater on the Site, and provide information to aid in making a decision about any further action, if any, that may be necessary.

If you have any questions or comments concerning this SSI Completion Report, please call either of the undersigned at (916) 786-0320.

Sincerely,

Lita D. Freeman

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Senior Associate Geologist

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Enclosure

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ACRONYMS AND ABBREVIATIONS

ACC	ACC Environmental Consultants, Inc.
μg/dl	micrograms per deciliter
μg/l	micrograms per liter, approximately equivalent to parts per billion
ASTM	American Society for Testing and Materials
bgs	below ground surface
Cal/OSHA	California Occupational Safety and Health Administration
CCR	California Code of Regulations
CDE	California Department of Education
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
cm^2 /day	square centimeters per day
CSS	CSS Environmental, Inc.
COPCs	Contaminants of Potential Concern
DHS	California Department of Health Services
DTSC	California Environmental Protection Agency, Department of Toxic Substances Control
Environ	Environ Corporation
ESA	Environmental Site Assessment
HSC	California Health and Safety Code
HSP	Health and Safety Plan
kg	kilogram
LFR	LFR Inc.
m^3/day	cubic meters per day
m^3/hr	cubic meters per hour
mg	milligrams
mg/cm^2	milligrams per square centimeter
mg/day	milligrams per day
mg/kg	milligrams per kilogram, approximately equivalent to parts per million
mini-RAM	miniature real-time aerosol monitor
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PCE	tetrachloroethene
pCi/l	picoCuries per liter of air

PEA	Preliminary Environmental Assessment
Aspire	Aspire Public Schools
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RME	Reasonable Maximum Exposure
SAP	Sampling and Analysis Plan
SSI	Supplemental Site Investigation
SVOCs	semi-volatile organic compounds
U.S. EPA	United States Environmental Protection Agency
UCL	Upper Confidence Limit
USGS	United States Geological Survey
UST	underground storage tank
VOCs	volatile organic compounds

CERTIFICATION

LFR Inc. has prepared this Supplemental Site Investigation (SSI) Completion Report for the second SSI sampling event on behalf of Aspire Public Schools in a manner consistent with the level of care and skill ordinarily exercised by professional geologists and environmental scientists. This SSI Completion Report was prepared under the technical direction of the undersigned California Professional Geologists and Registered Environmental Assessors II.

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1.0 INTRODUCTION

LFR Inc. (LFR) has prepared this Supplemental Site Investigation (SSI) Completion Report for the second SSI sampling event ("the Additional SSI") on behalf of Aspire Public Schools ("Aspire") for the property located at 1009 66th Avenue, in Oakland, Alameda County, California ("the Site"; Figure 1). This SSI Completion Report summarizes the previous site characterization and remedial work performed at the Site and presents data obtained during the Additional SSI.

The 2.51 acre site is located in an area of commercial, industrial, government and multi-family residential developments. The Site is located on the western side of 66th Avenue between East 14th Street to the north and San Leandro Street to the south (Figure 2). Aspire plans to construct a charter high school on the Site.

The Site has been used for manufacturing and warehouse storage in the past. The Site is currently developed with a manufacturing building and a warehouse building. Landscaping areas and paved parking areas and driveways surround the on-site buildings.

CSS Environmental Services, Inc. (CSS) conducted a Preliminary Environmental Assessment (PEA) at the Site under the oversight of the California Environmental Protection Agency (Cal-EPA) Department of Toxic Substances Control (DTSC) to fulfill the California Department of Education (CDE) requirements related to new school sites. The PEA was performed in conformance with the PEA work plan (CSS 2005a) prepared by CSS and approved by the DTSC; the results of the PEA were summarized by CSS in a draft PEA report (CSS 2005b).

Based on the results of the PEA, DTSC requested that additional investigation be performed at the Site to help define the extent of affected soil and groundwater. CSS prepared a SSI work plan (CSS 2005c) that was approved by the DTSC for implementation; the results of the SSI by CSS ("the Initial SSI") were presented in a draft SSI report (CSS 2005d).

DTSC requested that additional soil and groundwater samples be collected from the Site to further define the lateral and vertical extent of affected soil and groundwater encountered at the Site during the PEA and Initial SSI. LFR presented the proposed scope of work for the Additional SSI in the Additional SSI Work Plan dated December 13, 2005 (LFR 2005).

1.1 Supplemental Site Investigation Objectives

The PEA and Initial SSI revealed the presence of petroleum hydrocarbons (gasoline, diesel and motor oil), semi-volatile organic compounds (SVOCs) including polycyclic aromatic hydrocarbons (PAHs), metals, volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), dioxins in soil and groundwater at the Site. The

findings of the PEA and Initial SSI are summarized in Section 2.2 of this Additional SSI Completion Report.

The objective of this Additional SSI was to better define the extent of affected soil and groundwater at the Site and evaluate potential impacts to future site users.

1.2 Scope of Work

As noted above, soil and groundwater samples collected from the Site during the PEA and Initial SSI were analyzed for various compounds of potential concern (COPCs). The PEA and Initial SSI sampling locations are shown on Figure 3.

Results of the PEA and Initial SSI are summarized in Section 2.2 of this SSI Completion Report and presented on Figures 4 series through 12 series.

Based on the results of the PEA and the Initial SSI performed at the Site, LFR conducted a sampling and analysis program to establish the extent of affected soil and groundwater at the Site. The Additional SSI field investigation consisted of collecting soil and groundwater samples for analysis to assess environmental conditions at areas identified in the PEA and Initial SSI.

The scope of work completed during the Additional SSI is presented below and sampling locations for the Additional SSI are shown on Figure 13.

LFR also retained Tronoff Associates to resurvey sampling locations from the PEA and Initial SSI, where possible, and the groundwater monitoring wells as discussed in Section 3.1 of this report. The scale, sampling locations and groundwater monitoring well locations presented on figures in this report are approximate since correct survey data was not available during preparation of this report. Tronoff Associates also located and marked two control points across the street to facilitate relocating sampling points and areas requiring remedial action in the future.

1.3 SSI Report Format

The Additional SSI Completion Report is formatted in general accordance with DTSC's recommended SSI report outline. Section 2.0 of this report summarizes work completed to date by other consultants and Section 3.0 summarizes work completed at the Site by LFR.

2.0 SUMMARY OF SITE BACKGROUND

The following section provides a summary of the site description, location and background.

2.1 Site Description and Location

Site Description

The 2.51-acre site is located on the western side of 66th Avenue between East 14th Street to the north and San Leandro Street to the south (Figure 2). The area around the Site is developed with a mixture of commercial, industrial, government and multi-family residential buildings. The Site is bound by 66th Avenue on the east, industrial buildings on the south, and residential buildings on the north and west.

Two structures are currently located on the Site. One structure (denoted as the "Manufacturing Building" on Figure 2) has been used for office space and manufacturing and encompasses approximately 27,000 square feet with a second story providing additional office and storage space. The Manufacturing Building is located on the southeastern portion of the Site. The second structure (denoted as the "Warehouse Building") is located on the northern portion of the Site and is approximately 5,000 square feet in size.

The Site has been used for manufacturing and warehousing. Past operations at the Site included manufacturing of specialty magnets, power supplies, and components used in high-energy physics and repairing and rebuilding of motors, generators, transformers and specialty magnets.

Eight groundwater monitoring wells are located on the Site. Five of these wells were installed during previous investigations for a former gasoline UST. LFR installed three nested groundwater monitoring wells during the Additional SSI.

No groundwater production wells are located on the Site. East Bay Municipal Utility District provides drinking water and sanitary sewer services.

Site Location

The Site is located approximately 10 feet above mean sea level, according to the United States Geological Survey (USGS) Oakland East, California Quadrangle 7.5 minute topographic map. The local topography is relatively flat.

Based on the United States Geological Survey (USGS; 1980) Oakland East Quadrangle, California, 7.5-minute topographic map, the Site is located in Section 16 in Township 2 South, Range 3 West (Mt. Diablo Base and Meridian). The approximate geographic coordinates of the Site are latitude 37.758390° North and longitude 122.197595° West.

2.2 Preliminary Environmental Assessment

LFR obtained information on prior assessments at the Site from our review of various documents, including the following reports:

- Phase I ESA report of the Site issued by Environ Corporation (Environ) titled, "Phase I Environmental Assessment, Pacific Electric Motor, Co., 1009-66th Avenue, Oakland California," dated July 2, 1997

- Phase I ESA of the Site issued by ACC Environmental Consultants, Inc. (ACC) titled, "Phase I Environmental Assessment, 1009 66th Avenue, Oakland, California," dated November 22, 2000

- PEA work plan for the Site, issued by the DTSC and CSS titled, "Preliminary Environmental Assessment Workplan, Proposed Aspire Charter High School, 1009 66th Avenue, Oakland, California," dated March 4, 2005 (CSS 2005a)

- Draft PEA report issued by DTSC and CSS titled, "Draft - Preliminary Endangerment Assessment Report, Proposed Aspire Charter High School, 1009 66th Avenue, Oakland, California," dated April 11, 2005 (CSS 2005b)

- Draft Supplemental Site Investigation (SSI) Completion Report titled, "Draft - Supplemental Site Investigation (SSI) Workplan, Proposed Aspire Charter High School, 1009 66th Avenue, Oakland, California," dated May 24, 2005 (CSS 2005c)

- Draft SSI report prepared by CSS titled, "Draft - Supplemental Site Investigation (SSI) Summary Report, Proposed Aspire Charter High School, 1009 66th Avenue, Oakland, California," dated October 6, 2005 (CSS 2005d)

Site History

Information obtained by LFR from the Phase I Environmental Site Assessment (ESA) reports prepared by Environ and ACC indicate that the first documented land use was residential (Environ 1997 and ACC 2000). A 1947 aerial photograph showed a house and several small buildings present on the Site. The first industrial development of the Site was in about 1948 when the two buildings currently present on the Site were constructed by Pacific Electric Motor (PEM). PEM occupied the Site from 1948 to 2001.

The manufacturing building currently present on the Site was shown on the 1950 aerial photograph according to Environ's Phase I ESA report (Environ 1997). Portions of the Site were paved and the area behind the building was vegetated in the 1950 aerial photograph.

The warehouse building and a gasoline shed initially appear on the Site in the 1957 photograph (Environ 1997). The gasoline shed is visible on the Site in each of the aerial photographs taken between 1957 and the mid-1990s and reviewed by Environ. The warehouse building is still present on the northern portion of the Site. Environ noted several square objects along the southern border of the Site and on the property

adjacent to the south in the 1957 aerial photograph; however, no conclusions were drawn regarding these objects (Environ 1997).

Following acquisition of the Site by Modad Properties in 2001, the on-site buildings were occupied by Bay Area Powder Coatings. Bay Area Powder Coatings has declared bankruptcy and ceased operations at the Site; however, some equipment belonging to this company is still present on the Site. There are no details as to the specific processes of Bay Area Powder Coatings.

Landeros Iron Works, who subleased from Bay Area Powder Coatings, operated in the outdoor area southwest of the warehouse building. Their operations appear to be primarily welding and metal structure fabrication.

The proposed future use of the Site assumes the removal of the existing buildings, mitigation of affected soil and groundwater, as required, and redevelopment of the Site as a school campus.

Documented releases of hazardous materials at the Site by PEM include PCBs, presumably from their repair and service of transformers and other electrical equipment, and petroleum hydrocarbon compounds from the former UST.

By the time of the 1996 aerial photograph, the gasoline shed had been demolished and soil stockpiles were visible on the northern portion of the Site (Environ 1997). An area of lighter paving is visible at the former location of the gasoline shed in this photograph.

The aerial photographs appear to depict several instances of staining on pavement across the Site, according to Environ's Phase I ESA (Environ 1997).

Housekeeping and hazardous materials and waste use, generation, and storage issues were identified from a review of the Phase I ESA reports prepared for the Site in 1997 and 2000 (Environ 1997 and ACC 2000) and during a site reconnaissance conducted by CSS, Aspire, and DTSC personnel on January 20, 2005. These issues included:

- Bay Area Air Quality Management District permits indicate the past use by PEM of a varnish impregnator, two varnish dip tanks, a paint spray booth, two natural gas-fired burn-out ovens, a paint spray booth, an abrasive blast machine, and a natural gas-fired bake oven (Environ 1997).

- Past wastewater discharges included sanitary wastewater, wastewater from steam cleaning operations, drill press water, air compressor condensate, and boiler blow-down (Environ 1997).

- Two sumps containing oily water were observed on-site (Site Walk, 2005). In 1995, PEM was informed by the East Bay Municipal Utility District (EBMUD) that a steam-cleaning sump was found to contain trace concentrations of PCBs (Environ 1997).

- Various 55-gallon and 5-gallon drums are present; many of these drums are unlabeled (site walk 2005).

- Old equipment, vehicles, vehicle parts, pallets, and miscellaneous junk are present around the Site (site walk 2005).

- Stained surfaces are present inside the manufacturing building and in the drum storage area (site walk 2005).

Soil cuttings produced during the geotechnical investigation by LFR were placed in 55-gallon drums. These drums are also present on the Site.

Information regarding prior assessments and remedial actions at the Site is presented in Section 2.3 of this Completion Report.

The Site is currently listed as an open Leaking UST (LUST) case with the Alameda County Health Care Services Agency (ACHCSA).

Past Activities by Pacific Electric Motor

Past activities at the Site by PEM included: 1) manufacturing of specialty magnets, power supplies and components; and 2) the repair of motors, generators, transformers, and magnets. A 2,000-gallon gasoline UST was reportedly installed at the Site in 1975. In addition, a former shed in the fueling area may have stored vehicle lubricants and oil for vehicle maintenance.

Additional information on past operations at the Site is presented in Section 2.1 of this Completion Report.

Excavation of PCB-Affected Soil

PEM conducted investigations and soil removal action for PCBs in 1992 and 1993 at the direction of the ACHCSA. Soils near the northwestern corner were reportedly impacted by the historic storage of transformers by PEM. This work included removing and disposing of approximately 400 cubic yards of PCB-affected soil from the northwestern corner of the Site, and approximately 4 cubic yards of PCB-affected soil from an off-site area located adjacent to the Site's northwestern corner.

The maximum concentration of PCBs detected prior to soil removal from these two areas was reportedly 113,713 milligrams per kilogram (mg/kg), although this result is anecdotal. The highest documented concentration of PCBs was 45,470 mg/kg (as Aroclor-1260). The cleanup objective established by the ACHCSA for this removal action was 1 mg/kg total PCBs. PCBs were not detected at concentrations at or above the laboratory reporting limit in a Hydropunch™ groundwater sample collected from the area. Following remediation activities, PEM received a "No Further Action" letter for PCBs from the ACHCSA.

Removal of UST and Excavation of Petroleum Hydrocarbon-Affected Soil

PEM removed the 2,000-gallon gasoline UST, and associated pump island, piping, storage shed and appurtenances in 1995. The UST was reportedly in good condition with no holes evident; however, free phase gasoline product was observed on the water surface in the tank excavation. Gasoline at a maximum concentration of 10,000 mg/kg and benzene at a maximum concentration of 73 mg/kg were detected in soil samples collected from the excavation stockpile. Analysis of groundwater samples collected in 1995 revealed the presence of gasoline at concentrations up to 81 milligrams per liter (mg/L) and benzene at a maximum concentration of 3,100 micrograms per liter (μg/L).

PEM performed a number of subsequent investigations and removal actions for soil and groundwater under the lead of the ACHCSA. Subsequent investigations and removal actions included:

- 1995 – Approximately 1,500 cubic yards of soil was removed in two excavation iterations and stockpiled on the northwestern portion of the Site. Approximately 116,000 gallons of petroleum hydrocarbon impacted groundwater was pumped from the excavation. Site investigation work during this time also included advancing direct push borings (between excavation iterations) in an attempt to define the lateral and vertical extent of gasoline constituents. A dewatering sump used during soil excavation was later converted to an 8-inch diameter well during backfilling operations (thought to be WAC-1). Backfill reportedly consisted of clean imported material. Reports indicate that the stockpiled excavated soils were removed for disposal in 1997 (W.A. Craig, various reports).

- June 1997 – A soil and groundwater investigation was completed and included the installation of groundwater monitoring wells MW-1 through MW-3 as shown on Figure 2 (Environ July 17, 1997).

- September 1998 – Additional soil and groundwater investigation was performed and included advancing two soil borings within the backfill of the former UST excavation area and installing groundwater monitoring well MW-4 (PES Environmental 1998).

- April 2002 – A 30 feet by 70 feet by 9 feet deep excavation for the remediation of petroleum hydrocarbon-affected soils was completed to the southwest of the original UST remedial excavation (Decon Environmental Services 2002a).

- May 2002 – Approximately 65,000 gallons of petroleum hydrocarbon-affected groundwater was removed from the excavation. Additional over-excavation was performed southeast of the 30 feet by 70 feet excavation. During backfill operations, an 8-inch diameter extraction well was installed (EW-1). The excavation was backfilled with an unspecified depth of drain rock. Approximately

250 pounds of oxygen releasing compound (ORC) slurry was mixed into the gravel fill. Clean excavated native soil and imported Class II base rock comprised the balance of backfill. Approximately 219 tons of petroleum hydrocarbon-affected soil was disposed of at an off-site facility (Decon Environmental Services 2002b)

- June 2002 – A total of 25 soil borings were advanced to a depth of 13 feet in the area of the former gasoline UST. Each of these borings was backfilled with 8 pounds of ORC followed by neat cement. ORC socks were also installed in wells MW-1 and WAC-1 (Decon Environmental Services 2002a and 2002b).

Periodic groundwater monitoring of wells MW-1 through MW-4 was performed between June 1997 to May 2003. Groundwater samples were collected from well EW-1 between December 2002 to May 2003 (PES Environmental 2003). Analysis of groundwater samples collected from well MW-4 in May 2003 revealed gasoline at concentrations up to 530 mg/L, benzene at a maximum concentration of 24,000 µg/L, and methyl tertiary-butyl ether (MTBE) at concentrations up to 42,000 µg/L.

Over the four most recent monitoring events, the only detected petroleum hydrocarbon compound in monitoring wells MW-2 and MW-3 has been MTBE at trace concentrations (maximum 16 µg/L).

The Site is currently listed as an open LUST case with the ACHCSA.

Preliminary Environmental Assessment and Initial Supplemental Site Investigation

The most recent site investigation was performed by CSS in 2005. The investigation consisted of collecting and analyzing soil vapor, soil, and groundwater samples for various COPCs. Tables prepared by CSS presenting analytical results are included in Appendix A of this Completion Report. LFR noted discrepancies between analytical data sheets provided for our review and the tables prepared by CSS. Therefore, LFR prepared corrected tables for soil samples (see Tables 1 and 2 in Appendix A). Groundwater data collected during the PEA and Initial SSI are presented in Table 3 in Appendix A. The PEA and Initial SSI sampling locations are shown on Figure 3. The results of the investigation are summarized below.

- **Soil Vapor:** In accordance with the PEA work plan, probes were advanced to a maximum depth of 5 feet below ground surface (bgs) at 17 locations to allow collection of soil vapor from target depths of 3 to 5 feet bgs. A soil vapor sample was not collected from location 2C due to shallow groundwater in the probe.

  The soil vapor samples were analyzed for VOCs by modified U.S. EPA Method 8260B. Methane and hydrogen sulfide were measured in the field using hand-held instruments.

  Analysis of the soil vapor samples revealed tetrachloroethene (PCE) in one sample (at the 3 feet bgs deep sample from probe 4B) at a concentration of 1.1 µg/L. This

probe was advanced in the former pressure wash equipment area inside the manufacturing building.

Benzene was detected in the sample collected from boring 2B at a concentration of 9.3 µg/L at 4 feet bgs, 0.14 µg/L in the sample from location 2A2 collected at 5 feet bgs, and 0.23 µg/L in the sample from location 2B2 collected at 5 feet bgs. Toluene was detected at 1.7 µg/L, ethylbenzene at 1.6 µg/L, total xylenes at 6.7 µg/L and MTBE at 1.3 µg/L in the sample from location 2B. MTBE was present at 1.3 µg/L in the soil vapor sample collected from location 2B2.

Methane was detected, by handheld field instruments, in sample 2A2 at 0.32 %v and at 0.25%v in sample 2B2. No detection for methane was found at the other soil vapor sample locations. Methane is considered hazardous solely based on its explosive property (i.e., it is non-toxic). The concentrations of methane detected at the Site were far below the lower explosive limit of 5 percent.

Hydrogen sulfide was not detected in any of the soil vapor samples.

- **Soil:** The soil investigation consisted of advancing probes across the Site to allow collection of soil samples. Soil samples were collected for chemical analysis from depths of 24 feet bgs or less.

  Chemicals detected in soil samples included petroleum hydrocarbons, various SVOCs and PAHs, various metals, various VOCs, PCBs, and dioxins. Tables 1 and 2 present the analytical results of the compounds detected in soil samples collected from the Site. Duplicate soil samples were collected from locations noted as 6A-0.5' (duplicate sample for 1A-0.5'), 6B-0.5' (duplicate sample for 1B-0.5'), 6C-0.5' (duplicate sample for 1C-0.5'), 7B-3.5' (duplicate sample for 2B-3.5'), 7B-5' (duplicate sample for 2B-5'), and 7B2-3.5' (duplicate sample for 2B2-3.5'). Compounds detected in on-site soil are noted below.

  Petroleum Hydrocarbons: Gasoline (carbon range C4-C12) was detected in soil at concentrations ranging up to 2,780 mg/kg (maximum concentration present in the sample from the 10 foot depth at boring 2BN(37'). Diesel (carbon range C13-C22) was detected in one soil sample at a concentration of 639 mg/kg. This sample was collected at the 5 foot depth from boring 5C, located near the stormwater collection sump near the southeastern corner of the Site. Motor oil (carbon range C23-C40) was detected at concentrations ranging up to 22,524 mg/kg. The highest motor oil concentration was detected in the 0.5 foot depth sample from boring 2B2N(20'). Additional information on distribution of petroleum hydrocarbons is presented below.

  - **Gasoline in Soil:** Gasoline-affected soil was identified at various sampling locations across the Site as noted below:

    o upper 1 foot as shown on Figure 4A

- 1 foot to 5 feet depth as shown on Figure 4B and 4C
- 5 feet to 15 feet depth as shown on Figure 4D and 4E
- 15 feet to 24 feet depth as shown on Figure 4F

Gasoline was detected at concentrations at or greater than 100 mg/kg at depths of 5 feet to 15 feet in the area adjacent to the south-southeast corner of the warehouse and at a depth of 5 feet in boring 4BS(20') located inside the manufacturing building.

- **Diesel in Soil:** Diesel-affected soil was identified at one location on the Site as noted above and shown on Figures 5A and 5B. The concentration of diesel (639 mg/kg) in this sample (5C at 5 feet bgs) was greater than 500 mg/kg. Diesel was not detected in the borings advanced around boring 5C.

- **Motor Oil in Soil:** Motor oil-affected soil was identified at several locations on the Site as noted below:

  - upper 1 foot as shown on Figure 6A and 6B
  - 1 foot to 5 feet depth as shown on Figure 6C
  - 5 feet to 24 feet depth as shown on Figure 6D

  Motor oil was detected in three on-site locations at concentrations greater than 500 mg/kg as follows:

  - upper 2 feet across the central portion of the Site and the 2 feet to 5 feet depth in the area of borings 2B and 2B2 near the center of the Site
  - the 2 feet to 5 feet depth below the concrete floor of the manufacturing building in the area of boring 4BS(20')
  - at the 5 foot depth in boring 5C (near the sump at the southeastern corner of the Site

SVOCs: SVOCs were detected in soil at a number of locations as presented in Table 2. The SVOCs benzo(a)pyrene, benzo(a)anthracene and benzo(k)fluoranthene were detected in the former UST soil excavation area (location 2B-2), immediately outside of the excavation limits (at location 2B) and near the stormwater collection sump located near 66th Avenue (at location 5C). Additional information on distribution of SVOCs in soil is presented below.

SVOCs-affected soil was identified at several locations on the Site as noted below:

- upper 1 foot as shown on Figure 7A
- 1 foot to 6 feet depth as shown on Figure 7B
- 6 feet to 24 feet depth as shown on Figure 7C

SVOCs were detected in shallow soil (surface to 2 feet) across the central portion of the Site at concentrations that pose a health risk to future occupants of the proposed school campus. The SVOCs are associated with the motor oil identified in these areas.

Metals: Title 22 metals detected in on-site soil include arsenic, barium, chromium, cobalt, copper, hexavalent chromium, lead, nickel, vanadium, and zinc.

Antimony, beryllium, cadmium, mercury, molybdenum, selenium, silver, and thallium were not detected in any of the samples analyzed for Title 22 metals.

Metals detected at concentrations of concern were limited to arsenic and lead, as discussed below.

- **Arsenic in Soil:** Arsenic-affected soil was identified at several locations on the Site. The maximum concentration of arsenic was 117 mg/kg detected in the shallow soil sample (0.5 foot depth) from boring 2AS(20') located inside the warehouse. Arsenic concentrations were generally less than 50 mg/kg; arsenic distribution across the Site are shown on the following figures:

  - upper 1 foot as shown on Figure 8A
  - 1 foot to 5 feet depth as shown on Figure 8B
  - 5 feet to 15 feet depth as shown on Figure 8C
  - 15 feet to 24 feet depth as shown on Figure 8D

  Arsenic was detected in shallow soil (surface to 2 feet) at several locations above the background level of 7 mg/kg, including:

  - upper 2 feet beneath the concrete floor of the warehouse, below the pavement in the area northwest of the warehouse, in the central portion of the Site in the area of boring 2B (motor oil-affected soil and SVOCs-affected soil also present at this location), and in the area of borings 2CN, 2CN(10') and 2CE located near the center of the Site's southern border
  - at the 5 foot depth beneath the concrete floor of the warehouse in the area of boring 2A

- **Lead in Soil:** Lead-affected soil was identified at several locations on the Site as noted below; the maximum concentration of lead detected in soil at the Site was 398 mg/kg (at 0.5 feet in boring 5C):

  - o upper 1 foot as shown on Figure 9A
  - o 1 foot to 5 feet depth as shown on Figure 9B
  - o 5 feet to 10 feet depth as shown on Figure 9C
  - o 10 feet to 24 feet depth as shown on Figure 9D

  Lead was detected at concentrations of greater than 255 mg/kg in shallow soil (surface to 2 feet) beneath the pavement at the eastern end of Site (borings 5A and 5C).

Organic Compounds (VOCs, PCBs, and Dioxins): Various VOCs, PCBs, and dioxins were detected in on-site soils as noted below.

VOCs: VOC detections were limited to benzene, toluene, ethylbenzene, and total xylenes (BTEX) compounds and the fuel oxygenates MTBE and tert butyl alcohol (TBA). No other VOCs were above the laboratories reporting limit by U.S. EPA Method 8260. BTEX compounds, MTBE and TBA were found at locations 2B and 2B3.

PCBs: PCBs (as PCB 1260) were detected at eight locations with concentrations ranging up to 69.7 mg/kg. The highest concentration was detected in the soil sample collected at the 0.5 foot depth in boring 4B, located immediately adjacent to the former equipment pressure wash room. The next highest concentration of PCBs was 21.3 mg/kg present in the soil sample collected at the 0.5 foot depth from boring 1C near the northwestern corner of the Site.

The distribution of PCBs in soil is as follows:

- o upper 1 foot as shown on Figure 10A
- o 1 foot to 5 feet depth as shown on Figure 10B
- o 5 foot to 24 feet depth as shown on Figure 10C

PCBs were detected in shallow soil (surface to 2 feet) at several locations above the proposed action level of 0.37 mg/kg, including:

- o upper 2 feet beneath the concrete floor of the manufacturing building in areas of borings 4B, 4BE(10') and 3BW(10')

- upper 2 feet and at 5 feet in area of the sump located at the center of the Site's southern border in the area of boring 2C

- upper 2 feet at the northwestern end of the Site near borings 1B and 1C

Dioxin: Dibenzodioxins and dibenzofurans were detected in the soil samples collected at the 0.5 foot depth from boring 4B2 and 4C.

Duplicate Samples: According to information provided by CSS, the soil sample designated 6A-0.5' is a duplicate of soil sample 1A-0.5'; 6B-0.5' is a duplicate of 1B-0.5'; 6C-0.5' is a duplicate for 1C-0.5'; 7B-3.5' is a duplicate for 2B-3.5'; 7B-5' is a duplicate for 2B-5' and 7B-2-3.5' is duplicate for 2B-2-3.5'.

- **Groundwater:** The groundwater investigation consisted of collecting water samples from soil borings and the five on-site groundwater monitoring wells.

  Chemicals detected in groundwater samples included petroleum hydrocarbons, various SVOCs and PAHs, various metals, various VOCs, and PCBs as shown in the tables prepared by CSS and included in Appendix A. In addition, tables showing analytical results for groundwater samples collected during routine groundwater sampling events are included in Appendix A. Selected compounds detected in groundwater at the Site during the PEA are shown on Figure 13 and compounds detected in groundwater samples collected from the Site are summarized below.

  Petroleum Hydrocarbons: Gasoline and motor oil were detected in groundwater samples collected from the Site; however, diesel was not detected in the groundwater samples at concentrations at or above the laboratory reporting limits.

  Gasoline was detected in groundwater samples collected from three of the on-site groundwater monitoring wells with the highest concentration reported as 152.2 mg/L in well MW-4. Gasoline was not detected in "grab" groundwater samples collected from soil borings advanced on the Site during the PEA and Initial SSI.

  Motor oil was detected at one location (2C) with a concentration of 2.2 mg/L. This location is near the stormwater collection and pumping sump.

  SVOCs: SVOCs were detected in the sample collected from monitoring well MW-4 and in the duplicate sample (designated MW-5) collected from well MW-4. Well MW-4, located adjacent to the former UST soil excavation area, has historically had the highest contaminate concentrations in groundwater. The SVOCs detected in the groundwater samples collected from MW-4 were naphthalene at 382 μg/L and 1-methylnaphthalene at 44 μg/L.

  Metals: Arsenic, barium, cobalt, chromium, molybdenum, nickel, vanadium, and zinc were detected in groundwater samples collected from the Site. Antimony,

beryllium, cadmium, mercury, selenium, silver, and thallium were not detected in any of the samples analyzed for Title 22 metals.

Organic Compounds (VOCs, PCBs, and Dioxins): Various VOCs, PCBs, and dioxins were detected in groundwater samples collected from the Site as noted below.

VOCs: VOC detections were limited to BTEX compounds and the fuel oxygenate MTBE. No other VOCs were above the laboratories reporting limit by U. S. EPA Method 8260. BTEX compounds were detected at MW-4. MTBE was also detected in the sample collected from well MW-2 at 12 µg/L and in the sample from well EW-1 at 8 µg/L. EW-1 is the 8-inch diameter polyvinyl chloride (PVC) conduit used to dewater the former UST tank pit soil excavation.

PCBs: PCBs (as PCB 1260) were detected in groundwater samples collected at two locations; 1A at a concentration of 2.0 µg/L and 1C at a concentration of 1.7 µg/L. Boring 1A was located in the former PCB remediation area. Boring 1C is located approximately 150 feet west of boring 1A.

Human Health Screening Evaluation

A human health screening evaluation was performed using the data collected during the PEA and Initial SSI. A conceptual site model developed during the human health screening evaluation is presented in Figure 12.

The human health screening evaluation identified various COPCs at the Site, including gasoline, diesel, motor oil, SVOCs (benzo(a)pyrene, benzo(a)anthracene and benzo(k)fluoranthene), arsenic, lead, and PCBs in soil, and benzene in groundwater.

Further investigation conducted at the Site to help delineate the lateral and vertical extent of affected soil and groundwater is detailed in Section 3.0 of this report.

Agency Determination

Based on their review of the draft SSI completion report, DTSC requested additional investigative work on the Site to help delineate the amount and extent of affected soil and groundwater in selected on-site areas.

3.0 SAMPLING ACTIVITIES AND RESULTS

3.1 Summary of Activities

This Additional SSI was conducted by LFR in accordance with LFR's Additional SSI Work Plan dated December 13, 2005. As described in the Additional SSI Work Plan, a

sampling and analysis program was implemented at the Site to help further delineate the amount and extent of chemically-affected soil and groundwater on the Site and provide information to aid in making a decision about any further action, if any, that may be necessary. Borings advanced by LFR during the Additional SSI are designated with a "SB" prefix (i.e. SB-3) on the figures included with this report.

On December 12, 2005, DTSC issued a letter with their comments on the draft SSI Additional SSI Work Plan dated November 18, 2005. DTSC's letter and responses to DTSC's comments are presented in Appendix B.

Pre-field work activities and field work activities for the Additional SSI are described below.

Pre-field work activities consisted of the following:

- Identifying underground utilities on and near the Site by notifying Underground Service Alert, a public utility locating service, and conducting a site visit with a private underground utility subcontractor, as described below in Section 3.1.1.
- Preparing a site-specific Health and Safety Plan (HSP) to address hazards associated with implementing the proposed sampling plan. Section 11.0 discusses implementation of the HSP.
- Obtaining a drilling permit from Alameda County Public Works Agency (ACPWA) for advancing the soil borings and installing the nested groundwater monitoring wells. The ACPWA permit numbers for this project are W2005-1151 through W2005-1154; a copy of the permit is presented in Appendix C.

Field work activities consisted of the following:

- Advancing direct-push borings between December 12, 2005 and December 15, 2005 and on January 5, 2006 and collecting soil and "reconnaissance" groundwater samples from selected depths for chemical analysis. Direct-push drilling rigs used during the Additional SSI are described in Appendix D.
- Advancing three hollow-stem auger borings on December 19 and 20, 2005 and installing three nested groundwater monitoring wells in the borings. The hollow-stem augered drilling rig used during the Additional SSI is described in Appendix D.
- Developing the nested groundwater monitoring wells on December 23, 2005 to allow collection of representative groundwater samples.
- Collecting groundwater samples from each of the three nested groundwater monitoring wells on December 27, 2005.
- Surveying the locations of the soil borings and groundwater monitoring wells.
- Collecting quality assurance (QA)/quality control (QC) samples as described in Section 3.2.2.3 of this report.

During the scoping meeting with DTSC on November 9, 2005, LFR presented a draft figure showing a total of 37 proposed borings. LFR's review of additional data following the scoping meeting indicated the need to place a boring at location 5C for a total of 38 proposed boring locations.

However, as discussed during the scoping meeting, a number of the proposed borings were located in areas that would likely be excavated to address affected soil (see Figure 16 for areas where affected soil will likely be excavated). However, cleanup goals will not be established until the Site has been fully characterized and contamination is delineated across all media. The actual limits of the proposed excavations may be revised based upon the results of investigations performed at the Site.

LFR retained Transglobal Environmental Geochemistry (TEG), Vironex, Inc. (Vironex) and Precision Sampling (Precision) to collect soil and groundwater samples using direct-push drill rigs. BC^2 Environmental, Inc. (BC^2) was retained by LFR to install three nested groundwater monitoring wells using a drill rig equipped with hollow-stem augers. Standard operating procedures for these drill rigs are presented in Appendix D. These companies are state-licensed drilling contractors.

Photographs documenting the Additional SSI and copies of pages from the field logbook for the Additional SSI are presented in Appendix E.

Laboratories used by LFR during this SSI included the following:

- **TEG** mobile laboratory for analysis of soil samples for gasoline, diesel and motor oil using U.S. EPA Method 8015 Modified, and BTEX and MTBE using U.S. EPA Method 8260. Samples to be analyzed for gasoline, BTEX and MTBE will be collected using U.S. EPA Method 5035.

- **Curtis and Tompkins, Ltd.** (Curtis and Tompkins) fixed laboratory for gasoline, diesel and motor oil using U.S. EPA Method 8015 Modified; BTEX and MTBE using U.S. EPA Method 8260; SVOCs and PAHs using U.S. EPA Method 8270C; arsenic and lead using EPA Method 6010B; and PCBs using U.S. EPA Method 8082A. Samples to be analyzed for gasoline, BTEX and MTBE will be collected using U.S. EPA Method 5035.

- **Chemical and Environmental Laboratories, Inc.** (C&E Laboratories) fixed laboratory for arsenic and lead using U.S. EPA Method 6010B.

Copies of analytical data sheets and chain-of-custody documents are presented in Appendix F.

LFR retained Tronoff Associates to survey the sampling locations and the nested groundwater monitoring wells included in this Additional SSI. Tronoff Associates also resurveyed sampling locations, where possible, and previously installed groundwater

monitoring wells since many of these locations appeared to be incorrectly located on sampling maps provided to LFR. Copies of survey data provided by Tronoff Associates are presented in Appendix G.

3.1.1 Boring Clearance

LFR marked the proposed boring locations on the Site using white marking paint as required by state and federal regulations. Underground Service Alert, a public utility locating service, was notified of the location and nature of the field work 48 hours before fieldwork began. In addition, LFR retained Subtronics, a private underground utility locating service, to identify underground utilities before fieldwork began.

3.2 Soil Matrix Sampling and Analysis

This section describes LFR's soil sampling and analysis procedures utilized during the Additional SSI.

Total sample recovery was not always achieved due to loose, gravely, or dry soil types, or very stiff or very soft clays. Therefore, soil samples from some proposed sampling depths were not collected for analysis (see Section 7.0 of this report for variances to the proposed sampling plan).

3.2.1 Sample Locations and Rationale

Sampling locations are shown on Figure 3. Soil boring identification numbers, sampling dates, and sample depths for those samples collected and analyzed during the Additional SSI are presented in Tables 1, 2 and 3.

In general, the sampling rationale for the Additional SSI performed at the Site is as follows:

- **Western Portion of the Site:** Soil samples were collected from this area of the Site to help evaluate the concentrations and distribution of arsenic

- **Footprint of Warehouse Building:** Soil samples were collected from borings advanced within and around the footprint of the warehouse building to help delineate the extent of arsenic-affected soil as well as petroleum hydrocarbons-affected soil (impacted by leakage from the UST formerly located adjacent to the east of this building)

- **Central Portion of the Site:** Soil and groundwater samples were collected from borings advanced across the central portion of the Site (i.e. south of the warehouse and west of the manufacturing/office building and encompassing the former fueling shed and UST location) to evaluate the extent of petroleum hydrocarbons, BTEX,

MTBE, naphthalene and/or arsenic in soil and groundwater

- **Southern Portion of the Site:** Soil samples were collected from borings along the southern border of the Site to help delineate PCBs detected in this area; a stormwater collection sump and pump are located near boring 2C

- **Manufacturing/Office Building:** Soil and groundwater samples were collected from boring inside this building to help delineate PCBs and motor oil in the area of the former equipment pressure wash room

3.2.2 Sample Collection Procedures

Soil samples were obtained in disposable acetate or butyrate sample tubes advanced beneath the subsurface inside a stainless-steel sample probe using the direct-push drilling rigs. Upon recovery from the sample probe, retrieved soil samples were cut to a desired length (typically 6 to 8 inches) using a clean knife or appropriate cutting device (see Section 3.2.2.2 of this report for decontamination procedures). The length selected for each tube was based the amount of soil needed for the specified analyses to be performed on that sample.

After recovery of the acetate tubes, the tubes were capped on both ends with Teflon sheets and plastic caps and labeled properly. Section 3.2.3 of this report describes the soil sample handling procedures.

Soil samples to be analyzed for VOCs were collected using an Encore sampling device and U.S. EPA Method 5035.

3.2.2.1 Soil Description

Collected soil samples and the soil cuttings brought to the ground surface (as drilling proceeded with the hollow-stem augered drill rig) were logged at the Site nearly continuously by an LFR geologist. The number of blows ("blow count") required to drive the sampler one vertical foot into the soil at the bottom of the boring at each sampling interval was recorded on the boring logs during installation of the nested groundwater monitoring wells using the hollow-stem augered drill rig.

Soil types were documented by CSS during the PEA and SSI and soils were classified according to the Unified Soil Classification System during the Additional SSI and LFR's geotechnical investigation (LFR April 2005). LFR's geotechnical investigation included drilling cone penetration test probes on the Site. The near-surface soils encountered in the borings completed consisted of very soft to medium-stiff, slightly plastic, silty clay, which extends to depths ranging from approximately 4 to 5 feet bgs. Fill material extending to depths of approximately 9 to 11 feet bgs was encountered in the central portion of the Site (in the area of the former UST excavation) and consisted of sandy to clayey gravel that is medium to very dense.

Soils underlying the near-surface soils and existing fill consist of silty clay and clayey silt with occasional layers of sandy clay or clayey sand. These soils were encountered to the maximum depth explored in borings (21.5 feet bgs) and CPT probes (50 feet bgs). Based on data collected during LFR's geotechnical investigation, the sediments are soft to very stiff. The clayey sediments are medium to very stiff. The predominantly granular layers, consisting of clayey sand units, are medium dense.

3.2.2.2 *Decontamination*

Non-disposable drilling and sampling equipment brought to the Site by drilling subcontractors was cleaned with high-pressure hot water (steam cleaned) prior to mobilizing to the Site.

Sampling equipment used during field work that had the potential to come into contact with affected media was properly decontaminated before and after each use to assure the quality of samples collected. Disposable equipment intended for one-time use will not be decontaminated, but will be packaged for appropriate disposal. Equipment decontamination was performed using the following procedures:

- non-phosphate detergent and tap water wash, in a 5-gallon plastic bucket, using a brush
- initial deionized/distilled water rinse, in a 5-gallon plastic bucket
- final deionized/distilled water rinse in a 5-gallon plastic bucket

3.2.2.3 *Collection of Field Blank Samples, Equipment Blank Samples and Duplicate Samples*

The QA/QC program was implemented in accordance with LFR's Additional SSI work plan. The QC samples collected during field work for this project included duplicate soil samples, equipment rinsate blanks, and field blanks. In addition, trip blanks (also referred to as travel blanks) were obtained from C&T and transported to and from the Site in ice-cooled chests when soil and/or groundwater samples were being collected for VOC analysis. The QC samples collected for this project are described below. Analytical results for the QC samples are presented in Section XX of this report and summarized

Field Blanks. Field blanks were collected by pouring distilled water into appropriate sample containers once per field day. Their purpose is to evaluate the presence of chemicals for which environmental samples are being analyzed in the water used for equipment decontamination. The field blank samples were stored and processed in the same manner as the other aqueous samples.

Field blanks were collected daily during sampling activities between December 12, 2005 and December 15, 2005, December 27, 2005 and on January 5, 2006.

Equipment Rinsate Blanks. Equipment rinsate blanks (equipment blanks) were collected from water rinsed over any reusable equipment (e.g., a sampling shoe or drive sampler) after decontamination was completed. Distilled water was poured over or through the sampling equipment and collected in the appropriate sample container. Equipment blank samples were labeled, stored, and submitted to the analytical laboratory using the same procedures as those for field samples.

Equipment rinsate blanks were collected daily during sampling activities between December 12, 2005 and December 15, 2005, December 27, 2005 and on January 5, 2006.

Duplicate Samples. The PEA work plan required that one field duplicate (or split) sample be collected for every 10 discrete samples. Such duplicates help evaluate the precision of analytical procedures and methods employed by the laboratory. Duplicate soil samples were collected immediately below the depth interval of the primary soil sample or from a boring located adjacent to the original boring.

Duplicate soil samples were collected from the Site during sampling activities between December 12, 2005 and December 15, 2005 and January 5, 2006.

3.2.3 Sample Handling Procedures

The sample tubes were sealed at each end with Teflon sheets and fitted with plastic end caps. After collection, each soil sample tube was labeled with the time and date of collection, depth, the collector's initials, the analytical method to be performed, LFR's project number and name, and a unique sample identification number.

Samples being analyzed by TEG in the on-site mobile laboratory were delivered directly to the analyst for processing; the remaining samples were placed in an ice-chilled cooler for transport to C&T. Both analytical laboratories are certified by the State of California to perform the requested analyses.

Additional information on sample handling procedures is presented in Appendix H.

3.2.4 Soil Matrix Analytical Procedures

Soil samples collected from the Site were analyzed in accordance with the Additional SSI Work Plan. The analytical methods and results for each sample are presented in Tables 1, 2 and 3. Soil samples were analyzed using one or more of the following methods:

- gasoline, diesel and motor oil using U.S. EPA Method 8015 Modified; samples analyzed for gasoline were collected using U.S. EPA Method 5035
- BTEX/MTBE using U.S. EPA Method 8260; samples analyzed for BTEX/MTBE were collected using U.S. EPA Method 5035

- PCBs using U.S. EPA Method 8082A
- SVOCs using U.S. EPA Method 8270C
- arsenic and lead using U.S. EPA Method 6010B

Soil samples collected during this Additional SSI and submitted to C&T are being held by C&T for possible future analysis.

3.2.5 Soil Matrix Analytical Results

Soil sample results are discussed below and presented in Tables 1 and 2.

3.2.5.1 Gasoline

Gasoline (carbon range C4-C12) was detected in soil at concentrations ranging up to 4,900 mg/kg (maximum concentration present in the sample from the 10 foot depth at boring SB-11). Gasoline was detected at a concentration of 1,700 mg/kg in the sample collected from the 15 foot depth from boring SB-11 with no deeper samples collected from this boring. However, concentrations of gasoline were less than 100 mg/kg in soil samples collected during the Additional SSI from nearby borings (SB-6, SB-8 and SB-9) at depths of 15 feet and/or 20 feet bgs.

- Gasoline-affected soil was identified at various sampling locations across the Site as noted below:
  - upper 1 foot as shown on Figure 4A
  - 1 foot to 5 feet depth as shown on Figures 4B and 4C
  - 5 feet to 15 feet depth as shown on Figures 4D and 4E
  - 15 feet to 24 feet depth as shown on Figure 4F

3.2.5.2 Diesel

Diesel (carbon range C10-C24) was detected in 15 soil samples collected during the Additional SSI. The diesel concentrations were below 500 mg/kg (with highest concentration reported at 170 mg/kg) except for the sample collected at the 15 foot depth from boring 4BS(20').

- Diesel-affected soil was identified at the locations shown on Figures 5A and 5B.
- Diesel was detected at a concentration of 1,200 mg/kg in the 15 foot depth from boring 4BS(20'), located inside the manufacturing/office building. Diesel concentrations were less than 79 mg/kg in the shallow soil samples (collected at

depths of 10 feet bgs and less) from this boring; deeper soil samples were not collected from this boring during the Additional SSI. This data was submitted informally to DTSC on January 13, 2005 with the recommendation that additional sampling (i.e. confirmation sampling) be performed in this area, as appropriate, during the removal action to address motor oil-affected soil in this area. DTSC concurred with our assessment in an email sent on January 17, 2005.

3.2.5.3 Motor Oil

Motor oil (carbon range C23-C40) was detected at concentrations ranging up to 5,500 mg/kg. The highest motor oil concentration was detected in the 0.5- to 1-foot depth sample from boring SB-28.

- Motor oil-affected soil was identified at several locations on the Site as noted below:
  - upper 1 foot as shown on Figure 6A and 6B
  - 1 foot to 5 feet depth as shown on Figure 6C
  - 5 feet to 24 feet depth as shown on Figure 6D

3.2.5.4 Semi-Volatile Organic Compounds

The SVOCs benzo(a)pyrene, benzo(a)anthracene and benzo(k)fluoranthene were detected in SB-27 and SB-29 with maximum concentrations of 110 µg/kg for benzo(a)pyrene, 95 µg/kg for benzo(a)anthracene and 140 µg/kg for benzo(k)fluoranthene.

SVOCs-affected soil was identified at several locations on the Site as noted below:

- upper 1 foot as shown on Figure 7A
- 1 foot to 6 feet depth as shown on Figure 7B
- 6 feet to 24 feet depth as shown on Figure 7C

3.2.5.5 Metals

Soil samples collected from the Site during the Additional SSI were analyzed for arsenic and lead, as discussed below.

- **Arsenic:** Arsenic was detected in a number of soil samples analyzed during the Additional SSI with the maximum concentration detected at 140 mg/kg in the

shallow samples (0.5- to 1-foot depth) from borings SB-18 and SB-19. Arsenic distribution across the Site are shown on the following figures:

- upper 1 foot as shown on Figure 8A
- 1 foot to 5 feet depth as shown on Figure 8B
- 5 feet to 15 feet depth as shown on Figure 8C
- 15 feet to 24 feet depth as shown on Figure 8D

- **Lead:** Two soil samples collected during the PEA and Initial SSI were analyzed for lead during the Additional SSI to evaluate the vertical extent of lead. These samples were collected from the 5 foot depth from borings 5ASE(10') and 5CESE(20'). Lead was detected in both of these samples at a concentration of 6 mg/kg. Lead-affected soils identified on the Site are shown on the following figures:

  - upper 1 foot as shown on Figure 9A
  - 1 foot to 5 feet depth as shown on Figure 9B
  - 5 feet to 10 feet depth as shown on Figure 9C
  - 10 feet to 24 feet depth as shown on Figure 9D

3.2.5.6 Polychlorinated Biphenyls

PCBs (as PCB 1260) were detected in a number of soil samples collected during the Additional SSI. The highest concentration was detected in the soil sample collected at the 0.5- to 1-foot depth in boring SB-49, located west of boring 2C and the stormwater collection sump.

The distribution of PCBs in soil is as follows:

- upper 1 foot as shown on Figure 10A
- 1 foot to 5 feet depth as shown on Figure 10B
- 5 foot to 24 feet depth as shown on Figure 10C
- inside the manufacturing/office building as shown on Figure 10D
- at and around boring 2C as shown on Figure 10E

3.2.5.7 *Volatile Organic Compounds*

Soil samples collected from various borings during the Additional SSI were analyzed for VOCs including BTEX and MTBE. The maximum concentrations were: benzene at 36,000 µg/kg, toluene at 170,000 µg/kg, ethylbenzene at 110,000 µg/kg, xylenes at 400,000 µg/kg and MTBE at 32,000 µg/kg.

- The distribution of benzene in soil is shown on the following figures:
  - upper 6 feet as shown on Figures 11A and 11B
  - 6 feet to 24 feet depth as shown on Figures 11C and 11D
- MTBE was detected in soil at several locations, including:
  - upper 6 feet as shown on Figures 12A and 12B
  - 6 feet to 24 feet depth as shown on Figures 12C and 12D

3.3 Groundwater Sampling and Analysis

This section describes groundwater sampling and analysis procedures utilized during the Additional SSI.

3.3.1 Sample Locations and Rationale

Groundwater affected with petroleum hydrocarbons and VOCs was identified in the area of the former UST. Additional borings were advanced by LFR to further delineate the extent of affected groundwater. "Reconnaissance" groundwater samples were collected from borings SB-19, SB-22, SB-33 and SB-35.

In addition, LFR installed three nested groundwater monitoring wells (designated NW-1, NW-2 and NW-3 on Figure 14) with screened casing placed at three separate depths to establish depths of free groundwater and zones of affected groundwater. Well construction details are shown on Figure 15 and well construction logs are presented in Appendix I.

The purpose of collecting the reconnaissance groundwater from soil borings and nested groundwater monitoring wells was to evaluate the extent of the petroleum hydrocarbons in groundwater.

3.3.2 Sample Collection Procedures and Collection of Duplicate Samples

Groundwater samples were collected using disposable bailers and decanting the groundwater from the bailer into laboratory supplied containers. After labeling, the

groundwater samples were sealed in plastic bags and placed in an ice-chilled cooler for transport to C&T. The three nested groundwater monitoring wells were developed on December 23, 2005 and groundwater samples were collected from the wells on December 27, 2005.

Section 3.3.3 of this report describes the groundwater sample handling procedures.

The QA/QC program was implemented in accordance with LFR's Additional SSI work plan. The QC samples collected during field work for this project included duplicate groundwater samples. Duplicate groundwater samples were collected from borings SB-19 (designated SB-19DUP), SB-22 (designated SB-22DUP), SB-35 (designated SB-35DUP) and from the deep zone from nested well NW-2 (DUP1/NW-2D). These duplicate samples were analyzed for petroleum hydrocarbons and VOCs (BTEX, MTBE and/or naphthalene).

In addition, field blank, equipment rinsate blank and trip blank samples were collected during the groundwater sampling event on December 27, 2005.

Analytical results for the QC samples are discussed in Section 5.0 of this report.

3.3.3 Sample Handling Procedures

Groundwater samples were decanted into laboratory supplied containers. The containers were sealed and each container was labeled with the time and date of collection, depth, the collector's initials, the analytical method to be performed, LFR's project number and name, and a unique sample identification number.

The groundwater samples collected during the Additional SSI were placed in an ice-chilled cooler for transport to C&T. C&T is certified by the State of California to perform the requested analyses.

Additional information on sample handling procedures is presented in Appendix H.

3.3.4 Groundwater Analytical Procedures

Groundwater samples collected from the Site were analyzed in accordance with the Additional SSI Work Plan. The analytical methods and results for each sample are presented in Table 3. Groundwater samples were analyzed using one or more of the following methods:

- gasoline, diesel and motor oil using U.S. EPA Method 8015 Modified; samples analyzed for gasoline were collected using U.S. EPA Method 5035
- BTEX/MTBE using U.S. EPA Method 8260; samples analyzed for BTEX/MTBE were collected using U.S. EPA Method 5035
- naphthalene (an SVOC) using U.S. EPA Method 8270C

3.3.5 Groundwater Analytical Results

The groundwater investigation consisted of collecting water samples from soil borings SB-19, SB-22, SB-33 and SB-35 and the three nested groundwater monitoring wells NW-1, NW-2 and NW-3.

Chemicals detected in groundwater samples included petroleum hydrocarbons, BTEX, MTBE and naphthalene as shown in Table 3. Compounds detected in groundwater at the Site during the Additional SSI are shown on Figures 14 and 15 and summarized below.

3.3.5.1 Gasoline

Gasoline (carbon range C5-C12) was detected in "reconnaissance" groundwater samples at a maximum concentration of 2.2 mg/l (in boring SB-19) and in the groundwater samples from the nested groundwater monitoring wells at a maximum concentration of 120 mg/l (in the intermediate zone of well NW-2).

3.3.5.2 Diesel

The maximum concentration of diesel (carbon range C10-C24) detected in the "reconnaissance" groundwater samples was 0.680 mg/l (in boring SB-19) and the maximum concentration of diesel detected in the groundwater samples from the nested groundwater monitoring wells was 7.3 mg/l (in the shallow zone of well NW-2).

3.3.5.3 Motor Oil

The "reconnaissance" groundwater sample from boring SB-22 contained the highest concentration of motor oil (carbon range C24-C36) at 1.8 mg/l and the groundwater sample from the shallow zone of nested well NW-2 contained the highest concentration of motor oil (2.6 mg/l).

3.3.5.4 Semi-Volatile Organic Compounds

Naphthalene was detected in only one of the "reconnaissance" groundwater samples. This sample, collected from boring SB-19, contained naphthalene at a concentration of 13 μg/l.

3.3.5.5 Volatile Organic Compounds

The highest concentrations of BTEX and MTBE were detected in the "reconnaissance" groundwater sample from SB-19. Analysis of the groundwater sample from this boring revealed the following: benzene at 25 μg/l, toluene at 120 μg/l, ethylbenzene at 69 μg/l, xylenes at 410 μg/l and MTBE at 1,100 μg/l.

The highest concentrations of BTEX and MTBE were detected in the groundwater sample from the intermediate zone of nested well NW-2. Analysis of groundwater samples from this zone revealed the following: benzene at 2,200 µg/l, toluene at 24,000 µg/l, ethylbenzene at 2,100 µg/l, xylenes at 8,600 µg/l and MTBE at 120,000 µg/l.

3.4 Disposal of Investigation-Derived Wastes

The waste produced during the Additional SSI is being stored on the Site in appropriately labeled 55-gallon drums pending completion of disposal arrangements. The waste, consisting of rinsate, soil cuttings and purged groundwater, will be disposed of at appropriate off-site facilities.

3.5 Discussion of Results

Data collected during the PEA, Initial SSI and Additional SSI are used in the following discussion of COCs identified on the Site.

3.5.1 Gasoline in Soil

Gasoline was not detected at concentrations above 100 mg/kg in soil samples collected from the Site at depths of less than 4.5 feet bgs. Soil with gasoline detected at concentrations at or above 100 mg/kg is present at two on-site locations, as noted below:

- inside the manufacturing/office building in the soil samples collected at the 5-foot bgs depth from boring 4BS(20'), at the 4.5 to 5-foot depth from boring SB-32, and at the 4.5 to 5-foot depth and the 9.5 to 10-foot depth from boring SB-34 as shown on Figures 4A through 4D
    - the lateral and vertical extent of gasoline-affected soil in this area appears to be defined by the following soil samples:
        - the 4.5 to 5-foot soil samples from borings SB-33, SB-35 and SB-37
        - the 9.5 to 10-foot soil samples from borings SB-33, SB-35 and SB-37
        - the 14.5 to 15-foot soil samples from borings SB-33, SB-35 and SB-37
- the central area of the Site (in the area around and south of the former UST); generally, the affected soil extended from a depth of approximately 5 feet bgs to a depth of approximately 10 feet bgs with one soil sample (taken at a depth of 15-feet bgs from boring 2B) also containing gasoline at a concentration above 100 mg/kg; see Figures 4E and 4F

- the lateral extent of gasoline-affected soil in this area appears to be defined by soil samples collected from the following borings:
  - northern edge: boring 2A
  - eastern edge: borings 2B2S(20'), 2B2E(20'), 2A2S(20') and 2A2W(20')
  - southern edge: borings 2CN(20'), 2CE(10') and 2CE(20')
  - western edge: borings 2B3, SB-41 and SB-22
- The vertical extent of gasoline-affected soil in this area appears to be defined by soil samples collected at the 15-foot depth from borings SB-7, SB-17, SB-19, SB-20, SB-21, SB-22 and SB-24 and at the 20-foot depth from borings 2B, SB-8 and SB-9.

3.5.2 Diesel in Soil

Diesel-affected soil (concentrations detected at or above 500 mg/kg) was identified in two on-site locations, as noted below:

- the southeastern corner of the Site in the soil sample collected at the 5-foot depth bgs from boring 5C as shown on Figure 5A
  - the lateral extent of diesel-affected soil in this area appears to be defined by soil samples collected from the following borings:
    - northeastern edge: boring 5CNE(4')
    - southeastern edge: boring 5CSE(10')
    - western edge: boring 5CW(10')
  - the vertical extent appears to be defined by the soil sample collected at the 10-foot depth bgs from boring SB-38
- inside the manufacturing/office building in the soil samples collected at the 14.5 to 15-foot bgs depth from boring 4BS(20') as shown on Figures 5A and 5B; diesel was not detected in shallower soil samples collected from this boring with the exception of the 9.5 to 10-foot depth bgs (diesel detected at a concentration of 79 mg/kg); deeper soil samples were not collected from this boring; the lateral and vertical extent to the southwest appears to be defined by soil samples collected from boring SB-32, located approximately 10 feet from boring 4BS(20'), at depths of 9.5 to 10-foot depth bgs and the 14.5 to 15-foot depth bgs

3.5.3 *Motor Oil in Soil*

Motor oil was detected at concentrations at or above 500 mg/kg in the areas noted below:

- the shallow soil (5 feet bgs and less) in the central portion of the Site (in the area west of the manufacturing/office building and south of the warehouse building) as shown on Figures 6A, 6B, 6C and 6D
  - the lateral extent of motor-oil-affected soil in this area appears to be defined by soil samples collected from the following borings:
    - northern edge: borings 2BN(37') and SB-10
    - eastern edge: borings SB-4, SB-45 and SB-46
    - southern edge: borings 2CE(20'), 2CN(20') and SB-24
    - western edge: borings 2B3, SB-19, SB-20, SB-21, SB-22
  - the vertical extent appears to be generally defined by the soil sample collected at the 5-foot depth bgs from borings located within the central portion of the Site
- the soil at the 3.5-foot depth bgs from boring 2B2 in the central portion of the Site as shown on Figure 6C
  - the lateral extent of motor-oil-affected soil in this area appears to be defined by soil samples collected from the following borings:
    - northern edge: boring 2B2N(20')
    - eastern edge: boring 2B2E(20')
    - southern edge: boring SB-27
    - western edge: boring 2BW(20')
  - the vertical extent appears to be generally defined by the soil sample collected at the 5-foot depth bgs from surrounding borings (2B2N(20'), 2B2E(20'), SB-27 and 2BW(20')
- the soil at the 5-foot depth bgs from boring 2B in the central portion of the Site as shown on Figures 6A, 6B, 6C and 6D

- the lateral extent of motor-oil-affected soil in this area appears to be defined by soil samples collected from the following borings:
  - northern edge: boring 2BN(20')
  - southern edge: boring 2BS(20')
  - western edge: boring 2BW(20')
- the vertical extent appears to be defined by the deeper soil samples collected from this boring (at the 10-, 15-, 20-, and 24-foot depth bgs

- inside the manufacturing/office building at boring 4BS(20') at 3.5 and 4-foot depths bgs as shown on Figure 6C
  - the lateral extent of motor-oil-affected soil in this area appears to be generally defined by soil samples collected from the following borings:
    - northeastern edge: boring SB-33
    - southeastern edge: borings SB-34 and SB-37
    - southwestern edge: boring SB-32 and SB-35
  - the vertical extent appears to be defined by the deeper soil samples collected from this boring at the 10- and 15-foot depth bgs

- the southeastern corner of the Site at boring 5C (the 5-foot depth bgs) as shown on Figure 6D
  - the lateral extent of motor-oil-affected soil in this area appears to be generally defined by soil samples collected from the following borings:
    - northeastern edge: boring 5CNE(4')
    - southeastern edge: boring 5CSE(10')
    - western edge: boring 5CW(10')
  - the vertical extent appears to be defined by the soil samples collected at the 10- and 15-foot depth bgs from boring SB-38

3.5.4 Semi-Volatile Organic Compounds in Soil

SVOCs, including benzo(a)pyrene, benzo(a)anthracene and benzo(k)fluoranthene, were primarily detected in two on-site locations as noted below:

- the shallow soil (5 feet bgs and less) in the central portion of the Site and appeared to be associated with the petroleum hydrocarbons detected in this area as shown on Figures 7A, 7B and 7C

  - the lateral extent of SVOC-affected soil in this area appears to be defined by soil samples collected from the following borings:

    - northern edge: borings 2BN(37') and SB-11
    - eastern edge: borings SB-3, SB-4, SB-13, SB-14 and SB-27
    - southern edge: borings SB-24, SB-29 and 2C
    - western edge: borings SB-20, SB-21 and 2BN(20')

  - the vertical extent of SVOC-affected soil appears to be defined by deeper soil samples collected from the borings within the central portion of the Site

- the shallow soil (5 feet bgs and less) at the southeastern corner of the Site as shown on Figures 7A, 7B and 7C

  - the lateral extent of SVOC-affected soil in this area appears to be defined by soil samples collected from the following borings:

    - northern edge: boring 5CNE(4')
    - southeastern edge: boring 5CSE(10')
    - southwestern edge: boring 5CW(10')

  - the vertical extent of SVOC-affected soil at this location is defined by the 10- and 15-foot deep soil samples collected from this boring

3.5.5 Metals in Soil

Metals detected at concentrations of concern were limited to arsenic (background level at 7 mg/kg) and lead (cleanup goal for school sites at 255 mg/kg), as discussed below.

Arsenic: The majority of the soil samples in which arsenic was detected at concentrations greater than 7 mg/kg were collected from a depth of 1 foot bgs at the following locations:

- within the footprint of the warehouse as shown on Figures 8A, 8B and 8C

  - the lateral extent is within the perimeter of the warehouse

- the vertical extent of arsenic-affected soil appears to limited to the fill material/native soil interface as samples of native soil collected at depths of approximately 4- to 5-feet bgs generally contained arsenic at concentrations less than 7 mg/kg except at 2A where the sample from the 5-foot depth contained arsenic at 66 mg/kg (no deeper samples were collected from this boring)

- the shallow soil (less than 4.5 feet to 5 feet bgs) in the central portion of the Site (outside the footprints of the on-site buildings) as shown on Figures 8A through 8D

  - the lateral extent of arsenic-affected soil appears to be defined by soil samples collected from the following borings:

    - northern edge: boring 2BN(20')
    - eastern edge: boring SB-4
    - southern edge: extends to southern border of the Site
    - western edge: borings 2B3 and SB-40

  - the vertical extent of arsenic-affected soil is generally defined by the 4.5- to 5-foot depth bgs soil samples from this area except at 2C where the sample from the 5-foot depth contained arsenic at 31 mg/kg (no deeper samples were collected from this boring)

- the shallow soil (less than 4.5 feet to 5 feet bgs) at boring 1BS(10') located at the western portion of the Site as shown on Figures 8A and 8C

  - the lateral extent of arsenic-affected soil appears to be defined to the north by soil samples collected from boring 1B

  - the vertical extent of arsenic-affected soil is defined by the 5-foot soil sample collected from boring 1BS(10')

- the shallow soil (less than 4.5 feet to 5 feet bgs) at boring 1C located at the western portion of the Site as shown on Figures 8A and 8C

  - the lateral extent of arsenic-affected soil appears to be defined by the following borings:

    - northern edge: boring 1CN(10')
    - southeastern edge: boring 1CSE(10')

- southwestern edge: boring 1CSW(10')

- the vertical extent of arsenic-affected soil is defined by the 5-foot soil sample collected from boring 1C

Lead: Lead-affected soil was identified at two locations as noted below:

- at the northeastern corner of the Site at borings 5A and 5ASE(10') as shown on Figures 9A and 9C
  - the lateral extent is defined by the following borings:
    - northern edge: boring 5AN(10')
    - southeastern edge: boring 5ASE(20')
    - southwestern edge: boring 5ASW(10')
  - the vertical extent of lead-affected soil appears to limited to the upper 5 feet at this location based on soil samples collected at a depth of 5 feet bgs from borings 5A and 5ASE(10')
- at the southeastern corner of the Site at borings 5C and 5CESE(20') as shown on Figures 9A and 9C
  - the lateral extent is defined by the following borings:
    - northern edge: boring 5CNE(4')
    - southeastern edge: boring 5CSE(10')
    - southwestern edge: boring 5CW(10')
  - the vertical extent of lead-affected soil appears to limited to the upper 5 feet at this location based on soil samples collected at a depth of 5 feet bgs from borings 5C and 5CESE(20')

3.5.6 *Polychlorinated Biphenyls in Soil*

PCBs were detected at concentrations greater than 0.37 mg/kg (total PCBs) at several locations as noted below:

- the shallow soil (5 feet bgs and less) at boring 1B on the western portion of the Site as shown on Figures 10A and 10C

- the lateral extent of PCB-affected soil in this area appears to be defined by soil samples collected from the following borings:
  - northeastern edge: boring 1BNE(10')
  - southern edge: boring 1BS(10')
  - northwestern edge: boring 1BNW(10')
- the vertical extent of PCB-affected soil at this location appears to be defined by the 5 foot soil sample collected from boring 1B

- the shallow soil (5 feet bgs and less) at boring 1C on the western portion of the Site as shown on Figures 10A and 10C
  - the lateral extent of PCB-affected soil in this area appears to be defined by soil samples collected from the following borings:
    - northern edge: boring 1CN(10')
    - southeastern edge: boring 1CSE(10')
    - southwestern edge: boring 1CSW(10')
  - the vertical extent of PCB-affected soil at this location appears to be defined by the 5 foot soil sample collected from boring 1C

- the shallow soil (5 feet bgs and less) at boring 3B on the inside the manufacturing/office building as shown on Figures 10A and 10C
  - the lateral and vertical extent of PCB-affected soil in this area appears to be defined by soil samples collected from the following borings:
    - northern edge: boring 3BN(10')
    - eastern edge: borings 3BE(10') and 3BE(20')
    - southern edge: borings 3BS(10') and 3BS(20')
    - western edge: boring 3BW(10')

- the shallow soil (5 feet bgs and less) at boring 4B located inside the manufacturing/office building as shown on Figure 10D
  - the lateral and vertical extent of PCB-affected soil in this area appears to be defined by soil samples collected from the following borings:

- northern edge: borings 4BN(10'), 4BE(10') and 4BE(20')
- eastern edge: boring SB-36
- southern edge: borings 4BS(10') and 4BS(20')
- western edge: boring 4BW(10')

- the vertical extent of PCB-affected soil at this location appears to be defined by the 5 foot soil sample collected from boring 4B

- the shallow soil (5 feet bgs and less) at boring 2C located on the southern border of the Site at a stormwater collection sump as shown on Figure 10E
  - the lateral and vertical extent of PCB-affected soil in this area appears to be defined by soil samples collected from the following borings:
    - northern edge: boring 2CN(10')
    - eastern edge: boring 2CE(10')
    - southern edge: southern border of the Site
    - western edge: not defined
  - the vertical extent of PCB-affected soil at this location appears to be between 5 feet bgs and 14 feet bgs since a 10-foot sample was not recovered from this location due to poor soil conditions

3.5.7 Volatile Organic Compounds in Soil

The VOCs benzene and MTBE were detected in the central portion of the Site and appeared to be associated with the petroleum hydrocarbons detected in this area (generally benzene and MTBE were detected in soil samples that also contained gasoline). The distribution of benzene is shown on Figures 11A through 11D and the distribution of MTBE is shown on Figures 12A through 12D.

3.5.8 Petroleum Hydrocarbons and Volatile Organic Compounds in Groundwater

Petroleum hydrocarbons (gasoline, diesel and motor oil) and VOCs (BTEX, MTBE and naphthalene) were detected in "reconnaissance" groundwater samples collected from two areas during the PEA at the Site as shown on Figure 13 and in groundwater samples collected from nested groundwater monitoring wells installed during the Additional SSI as shown on Figure 14. These results are discussed below.

Reconnaissance Groundwater Samples: Petroleum hydrocarbons and VOCs were detected in reconnaissance groundwater samples collected from the central area of the Site. The highest concentrations of petroleum hydrocarbons and VOCs are noted below:

- gasoline and BTEX were detected at the highest concentrations in boring 2BN(20')-GW-1, located just south of the warehouse and downgradient of the former UST
- MTBE was present at the highest concentration in boring 2BN(37')-GW-1, located adjacent to the southern wall of the warehouse and downgradient of the former UST
- diesel was detected at the highest concentration in boring SB-19, located to the southwest of boring 2BN(20')-GW-1
- motor oil was detected at the highest concentration in boring SB-22, located to the southwest of boring 2BN(20')-GW-1
- the VOC naphthalene was detected at the highest concentration in boring 2BN(20')-GW-1

Nested Well Groundwater Samples: Gasoline, diesel, motor oil, BTEX and/or MTBE were detected in groundwater samples collected from the nested groundwater monitoring wells. The highest concentrations of petroleum hydrocarbons and VOCs were present in the groundwater samples collected from the intermediate zone in nested well NW-2. This well is located on the western edge of the area excavated to remove petroleum hydrocarbon-affected soil. The intermediate zone in nested well NW-2 corresponds to the depth interval (approximately 7.5- to 10-feet bgs) in which the highest concentrations of petroleum hydrocarbons were detected in soil.

4.0 RISK EVALUATION

A health risk evaluation was first performed following the guidance presented in *Preliminary Endangerment Assessment Guidance Manual* (CalEPA 1994) using the data collected as part of the site characterization. These sampling events were conducted at the Site in March 2005, August 2005, December 2005 and January 2006.

The PEA risk evaluation process included assessing exposure and toxicity assessment considering the maximum concentration of each selected COPC and quantifying estimates of potential health risks, assuming residential conditions. Consistent with CalEPA and USEPA risk assessment policy, the potential for exposures to produce carcinogenic and noncarcinogenic health effects were each characterized.

After the initial site characterization, additional soil samples were collected and analyzed. The risk evaluation was updated incorporating the additional data. The following presents a summary of the initial and updated risk evaluation.

Tables presenting the pre-SSI and post-SSI risk evaluation data are presented in Appendix J.

4.1 Pre-SSI Risk Evaluation and Endangerment Determination

The data from the initial evaluation was evaluated considering maximum detected concentrations in soil, groundwater and soil vapor. Each detected compound was evaluated with the exception of metals. Metals are naturally occurring and were only evaluated if present above background concentrations.

Carcinogenic Effects

An estimate of the potential excess incremental cancer risk associated with exposure to a carcinogen (i.e., the incremental probability that an individual will develop cancer over the course of a lifetime) is obtained by multiplying the estimated chronic daily intake of the carcinogen by the chemical-specific cancer slope factor (CSF) for the appropriate exposure route. The estimated excess cancer risks for each chemical and exposure route are then summed to estimate the total excess cancer risk for the exposed individual.

As indicated, the total excess cancer risk posed by the presence of chemicals in soil is 3×10^{-3}. The majority of this total risk is attributable to the presence of arsenic, chromium IV, benzene, PAHs, and PCBs at the Site.

Noncarcinogenic Effects

To assess the noncarcinogenic effects of chemicals, the estimated chronic daily intake of a chemical is divided by the oral or inhalation RfDs. The resulting ratio, referred to as the Hazard Quotient (HQ) is an estimate of the likelihood that noncarcinogenic effects will occur as a result of that specific chemical exposure. A hazard quotient less than or equal to 1 indicates that the predicted exposure to that chemical should not result in an adverse noncarcinogenic health effects (USEPA 1989). Consistent with CalEPA risk assessment guidance, the chemical-specific HQs are added together, to provide the Hazard Index (HI). A total, multichemical, multipathway HI of less than or equal to 1 indicates that potential noncancer health effects are not likely to occur.

Table J-6 presents the estimated noncancer HIs for future on-site residents, both children and adults. As indicated, the total HI is 117. The majority of the total noncancer hazard is attributable to PCBs. Other chemicals that contribute to the noncancer hazard include arsenic and vanadium.

Health Effects of Lead in Soil

As previously described, the reference dose approach, which is used for assessing potential noncarcinogenic effects, is not used to evaluate exposure to lead. Rather, the DTSC has developed specific guidance for evaluating exposure and the potential for adverse health effects resulting from exposure to lead in the environment using a model based on absorbed doses and estimated blood-lead concentrations. The guidance is implemented using a spreadsheet, obtained from DTSC, in which a multipathway algorithm is used for estimating blood-lead concentrations in children and adults.

Potential health affects associated with lead exposure was evaluated using LEADSPREAD. The maximum concentration of lead detected in soil (398 mg/kg) was used to represent lead exposure. The 99th percentile blood lead level associated with exposure to lead from both the Site and background sources in air, food and drinking water was 12.9 μg/dl for children (the most sensitive receptors), a level that is above the target concentration of 10 μg/dl. Therefore, the 99th percentile blood lead level associated with exposure to lead from both the Site and background sources in air, food and drinking water is at a level that above the target concentration of 10 μg/dl.

4.2 Post SSI Risk Assessment

The risk evaluation was updated incorporating the revised maximum detected COPCs, and per DTSC comment, a TPH risk evaluation. The data was first evaluated to select revised maximum concentrations and new COPCs if applicable. No additional COPCs were identified at the Site. However, the following COPCs had revised maximum concentrations in soil: benzene, ethylbenzene, xylenes, toluene, acenaphthylene, and arsenic. The risks and hazards for these compounds were revised. The maximum lead concentration did not change and the lead evaluation was not revised.

In addition to revising the risk and hazard index estimates, a TPH risk evaluation was performed. The TPH evaluation followed the methodology presented by the Massachusetts Department of Environmental Protection (MADEP, October 2002). TPH is evaluated for its non-carcinogenic adverse health affects considering carbon chain length fractions and presence of saturated bonds within the carbon chains. Gasoline is assumed to be represented by fractions containing 4 to 12 saturated carbon molecules. Diesel is assumed to be represented by 40 percent 12 to 22 saturated carbon molecules fraction and 60 percent 12 to 22 aromatic carbon molecule fractions. The maximum detected TPH as gasoline concentrations was 4,900 mg/kg and the maximum detected TPH as diesel concentration was 1,200 mg/kg. The maximum diesel concentration was assumed to be 720 mg/kg aromatic and 480 saturated or aliphatic carbon fractions. The results of the non-carcinogenic risk evaluation with the revised data and TPH evaluation are presented in the tables in Appendix J.

The total estimated risk using the post-SSI data is greater than the pre-SSI estimates. The revised cancer risk is 9 x 10^{-3}. As with the pre-SSI risk, the majority of this total

risk is attributable to the presence of arsenic, chromium IV, benzene, PAHs, and PCBs at the Site. The increase in the risk estimate is primarily due to the increase in the maximum detected arsenic concentration.

The revised hazard index is 128 (see Table J-13). Gasoline estimated hazard was 3, which is greater than the target of 1. Diesel hazard estimate, considering both the saturated and aromatic fractions, is 1.

Based on the results of both the pre and post SSI risk evaluation, maximum concentrations of both carcinogenic and non-carcinogenic COPCs are present at levels which could be a health concern.

4.3 Post SSI Ecological Risk Assessment

The Site is located at an elevation of approximately 15 feet above mean sea level and the surface topography in the site vicinity slopes gradually toward the south-southwest. The nearest body of surface water is Lion Creek, located approximately 250 feet south of the Site. San Leandro Bay, connected to San Francisco Bay, is located approximately 4,500 feet southwest of the Site.

The compounds detected in the Site's soil and groundwater would not be likely to impact ecological resources in Lion Creek or San Francisco Bay due to the relatively flat gradient of groundwater beneath the Site and site vicinity, the distances from the Site to these surface water bodies, and natural attenuation that is expected to occur for the petroleum hydrocarbons detected in soil and groundwater.

5.0 QUALITY ASSURANCE PROJECT PLAN (QAPP) IMPLEMENTATION

The QA/QC program was implemented in accordance with the Additional SSI work plan; collection of field blanks, equipment blanks, trip blanks, and duplicate samples are discussed above in Sections 3.2.2.3 and 3.3.2. The primary QC features of the QA/QC program include the collection and analysis of field quality control samples, field and laboratory audits, and data validation. QC samples collected in the field included field duplicate samples, field blanks, equipment rinsate blanks and duplicate soil and groundwater samples. In addition, trip blanks (also referred to as travel blanks) were included in the QA/QC program when soil and/or groundwater samples were collected for VOC analysis. The results of the field QA/QC procedures and the laboratory QA/QC procedures are described below.

Field Blanks. Field blanks collected during the Additional SSI were designated "FB" followed by the collection date (i.e. FB121205). Field blanks were collected during each day of field work (December 12 through 15, 2005, December 27, 2005, and January 5, 2005).

Gasoline, motor oil, SVOCs, VOCs, arsenic and PCBs were not detected in the field blank samples at concentrations at or above their respective laboratory reporting limits. Diesel was detected at a concentration of 0.075 mg/l in FB121305 (collected on December 13, 2005) and at a concentration of 0.053 mg/l in FB121505 (collected on December 15, 2005). The concentrations of diesel detected in these field blank samples are at and just slightly above the laboratory reporting limit.

The results of the field blank samples indicate that the deionized and/or distilled water used for equipment decontamination may have contained a trace amount of petroleum hydrocarbons quantified as diesel by the laboratory.

Equipment Rinsate Blanks. Equipment rinsate blanks collected during the Additional SSI were designated "EB" followed by the collection date (i.e. EB121205). Equipment rinsate blanks were collected during each day of field work (December 12 through 15, 2005, December 27, 2005, and January 5, 2005).

Gasoline, motor oil, SVOCs, VOCs, arsenic and PCBs were not detected in the equipment rinsate blank samples at concentrations at or above their respective laboratory reporting limits. Diesel was detected at a concentration of 0.052 mg/l in EB121505 (collected on December 15, 2005). The concentration of diesel detected in this equipment rinsate blank sample is just slightly above the laboratory reporting limit. As noted above, diesel was detected in the field blank sample collected on December 15, 2005 indicating that the deionized and/or distilled water used for equipment decontamination on this day may have contained petroleum hydrocarbons quantified as diesel by the laboratory.

The results of the equipment rinsate blank samples indicate that the decontamination procedures were adequate for the sampling program.

Duplicate Samples. The duplicate soil and groundwater samples collected during the Additional SSI are included on Tables 1, 2 and 3. The duplicate soil samples are denoted with a "D" suffix on Tables 1 and 2 and the duplicate groundwater samples are denoted with a "DUP" preffix on Table 3.

Consistent analytical data for the original and duplicate soil and groundwater samples indicate that laboratory analytical procedures were adequate for the sampling program.

Laboratory QA/QC Procedures. QA/QC procedures established by the analytical laboratory were employed for this project. LFR performed a data validation on the analytical results associated with this PEA using U.S. EPA Level III guidelines. No laboratory data validation issues were noted, and no data were rejected.

The data for these QC samples were reviewed as part of the data validation, along with laboratory QC results. Each sample was analyzed for the specified suite of analyses presented in the PEA work plan. Data from each of the analyses were evaluated in the following areas:

- data completeness
- holding times
- blanks
- system monitoring compounds (surrogates [organic analyses only])
- laboratory control standards
- matrix spike/matrix spike or sample duplicates
- field duplicates/confirmatory samples
- compound identification and quantification

6.0 HEALTH AND SAFETY PLAN IMPLEMENTATION

LFR prepared a site-specific Health and Safety Plan (HSP) for use during the Additional SSI. A copy of the HSP is presented in the Additional SSI Work Plan. The HSP addresses the following:

- identified and described potentially hazardous substances that may be encountered during field operations
- specified personal protective equipment (PPE) and clothing for site activities
- outlined measures that were to be implemented in the event of an emergency

LFR personnel reviewed the HSP before fieldwork began. All on-site personnel were required to sign the site safety briefing form.

During fieldwork, appropriate Level D PPE was worn by all personnel within the work zone. Operator breathing zone photoionization detector (PID) readings were obtained on a regular basis as required by the HSP. PID readings did not exceed ambient levels (1.0 parts per million). Based on these measurements, an upgrade to Level C PPE was not required.

No incidents or emergency actions occurred during fieldwork.

7.0 FIELD VARIANCES

The following is a summary of variances from the Additional SSI work plan that occurred during site activities:

- A soil sample was not collected from the 0.5- to 1-foot depth in boring SB-11 due to loose, gravely, or dry soil types; however, a sample was collected from immediately below the concrete floor slab (upper 6 inches of baserock below the concrete floor slab).

- A soil sample was not collected from the 10- to 10.5-foot depth bgs in boring SB-31 due to saturated soils. A sample was collected at the 14- to 14.5-foot depth bgs in this boring.

- A groundwater sample was not collected from SB-37 since no free groundwater was encountered in this boring. Groundwater samples were collected from nearby borings SB-33 and SB-35.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 Analytical Results

Analytical results of soil samples collected during the PEA, Initial SSI and Additional SSI indicate the presence of soil with gasoline, diesel, motor oil, SVOCs, arsenic, lead, PCBs, and VOCs at concentrations of concern. The areas of affected soil that will require remedial action (likely excavation) are shown on Figure 16 and include the following:

- the shallow soil (5 feet bgs and less) in the central portion of the Site (in the area west of the manufacturing/office building and south of the warehouse building); shallow soil in this area is affected with motor oil, SVOCs, arsenic and VOCs
- the deeper soil (approximately 5- to 15-foot depth interval) in the central portion of the Site (in the area west of the manufacturing/office building and south of the warehouse building); soil at this depth is affected with gasoline, motor oil and VOCs
- the deeper soil (approximately 5- to 15-foot depth interval) inside the manufacturing/office building at and around boring 4BS(20'); soil at this location is affected with gasoline, diesel and motor oil
- the deeper soil (approximately 5- to 10-foot depth interval) at the southeastern corner of the Site at and around boring 5C; soil at this location is affected with diesel, motor oil and SVOCS
- the shallow soil (generally from below the concrete slab to less than 4.5 feet) within the footprint of the warehouse; soil at this location is affected with arsenic; soil deeper than 5 feet at boring 2A is affected with arsenic
- the shallow soil (generally from the surface to less than 4.5 feet bgs) on the western portion of the Site at and around boring 1BS(10'); soil at this location is affected with arsenic
- the shallow soil (generally from the surface to less than 4.5 feet bgs) on the western portion of the Site at and around boring 1B; soil at this location is affected with PCBs

- the shallow soil (generally from the surface to less than 4.5 feet bgs) on the western portion of the Site at and around boring 1C; soil at this location is affected with arsenic and PCBs

- the shallow soil (generally from the surface to less than 4.5 feet bgs) on the eastern portion of the Site at and around borings 5A, 5ASE(10'), 5C and 5CESE(20'); soils at these locations are affected with lead

- the shallow soil (generally from the surface to less than 4.5 feet bgs) inside the manufacturing/office building at and around borings 3B and 4B; soils at these locations are affected with PCBs

- the shallow and deeper soil (generally from the surface to less than 14 feet bgs) along the southern border of the Site at the stormwater collection sump at and west of borings 2C, 2CW(10'), 2CW(20'), SB-48, SB-49 and SB-50; soils at these locations are affected with PCBs; soil at 5 feet in boring 2C is also affected with arsenic

In addition, analytical results of groundwater samples collected during the PEA and Additional SSI indicate the presence of gasoline, diesel, motor oil and PCBs beneath the Site. The petroleum hydrocarbons were detected in the central area of the Site and inside the manufacturing/office building. PCBs were detected in groundwater at the western end of the Site.

8.2 Human Health Screening Evaluation

Based on the analytical results of the soil sampling investigation, a human health screening evaluation was conducted for site COPCs. The total estimated cancer risk for all carcinogenic COPCs, considering all complete exposure pathways, is 9×10^{-3}. This is above the DTSC 1×10^{-6} threshold. The total estimated hazard index for all noncarcinogenic endpoints for the COPCs is 128, which is above the threshold of 1.0.

8.3 Conclusion

The purpose of the PEA, Initial SSI and Additional SSI was to evaluate whether a release or threatened release of hazardous substances, which pose a threat to human health or the environment, exists at the Site, and to evaluate that potential risk, if any, to human health or the environment. The current site conditions do appear to pose a health threat under unrestricted use redevelopment, based on the results of the site investigation conducted for the Site. Therefore, preparation of a removal action work plan is recommended to evaluate appropriate cleanup actions.

9.0 REFERENCES

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1A @ 0.5 PEA	March-05	ND	ND	84	ND	ND	ND	8	
1A @ 5 PEA	March-05	ND	ND	ND	0.203	ND	ND	37	
1A-N(10') 0.5'	August 12, 2005				ND				
1A-N(10') 5'	August 12, 2005				ND				
1A-SE(10') 0.5'	August 12, 2005				ND				
1A-SE(10') 5'	August 12, 2005				ND				
1A-SW(10') 0.5'	August 12, 2005				ND				
1A-SW(10') 5'	August 12, 2005				ND				
1B @ 0.5 PEA	March-05	ND	ND	ND	0.716	ND	2	ND	
1B @ 5 PEA	March-05	ND	ND	ND	ND	5	ND	51	
1B-NE(10') 0.5'	August 12, 2005				ND	<5			
1B-NE(10') 5'	August 12, 2005				ND	<5			
1B-NW(10') 0.5'	August 12, 2005				ND	7			
1B-NW(10') 5'	August 12, 2005				ND	<5			
1B-S(10') 0.5'	August 12, 2005				ND	11			
1B-S(10') 5'	August 12, 2005				ND	<5			
1C @ 0.5 PEA	March-05	ND	ND	133	21.34	8	2	ND	
1C @ 5 PEA	March-05	ND	ND	ND	ND	ND	3	32	
1C-N(10') 0.5'	August 12, 2005				ND	<5			
1C-N(10') 5'	August 12, 2005				ND	<5			
1C-SE(10') 0.5'	August 12, 2005				ND	<5			
1C-SE(10') 5'	August 12, 2005				ND	<5			
1C-SW(10') 0.5'	August 12, 2005				ND	<5			
1C-SW(10') 5'	August 12, 2005					<5			
1C-S(20') 0.5'	August 11, 2005					<5			
1C-S(20') 5'	August 11, 2005					12	3	24	3.02
2A @ 0.5' PEA	March-05	ND				66	3	21	
2A @ 5' PEA	March-05	0.4				11			
2A-N(10') 0.5'	August 11, 2005					ND			
2A-N(10') 5'	August 11, 2005					22			
2A-S(10') 0.5'	August 11, 2005					ND			
2A-S(10') 3'	August 11, 2005					27			
2A-E(10') 0.5'	August 11, 2005					ND			
2A-E(10') 3'	August 11, 2005					47			
2A-W(10') 0.5'	August 11, 2005					ND			
2A-W(10') 5'	August 11, 2005					37			
2A-N(20') 0.5'	August 11, 2005					<5			
2A-N(20') 5'	August 11, 2005					117			
2A-S(20') 0.5'	August 11, 2005					<5			
2A-S(20') 5'	August 11, 2005					10			
2A-E(20') 0.5'	August 11, 2005					<5			
2A-E(20') 5'	August 11, 2005					88			
2A-W(20') 0.5'	August 11, 2005					<5			
2A-W(20') 5'	August 11, 2005					35			
2AW(40') 0.5'	March-05					3.7			
2AW(40') 4.0'	March-05					31			
2ANW(40') 0.5'	March-05					3.1			
2ANW(40') 4.0'	March-05								
2AN(50') HOLD	March-05					13			
2AW(50') 0.5'	March-05					73			
2ANW(50') 0.5'	March-05								

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2A-2 @ 0.5 PEA	March-05	ND	ND	1,307	ND	5	30	17	
2A-2 @ 5 PEA	March-05	ND	ND	ND	ND	ND	ND	ND	
2A-2N(20') 0.5'	August 25, 2005	ND	ND	1,110					
2A-2N(20') 5'	August 25, 2005	ND	ND	ND					
2A-2N(20') 7.5'	August 25, 2005	ND	ND	ND					
2A-2S(20') 0.5'	August 25, 2005	ND	ND	893					
2A-2S(20') 5'	August 25, 2005	ND	ND	ND					
2A-2S(20') 7.5'	August 25, 2005	ND	ND	ND					
2A-2E(20') 0.5'	August 25, 2005	ND	ND	386					
2A-2E(20') 5'	August 25, 2005	ND	ND	ND					
2A-2E(20') 7.5'	August 25, 2005	ND	ND	ND					
2A-2W(20') 0.5'	August 25, 2005	ND	ND	1,212					
2A-2W(20') 5'	August 25, 2005	ND	ND	ND					
2A-2W(20') 7.5'	August 25, 2005	ND	ND	ND					
2B @ 0.5 PEA	March-05	ND	ND	1,560	ND	19	18	7	
2B @ 5 PEA	March-05	1.2	ND	847	ND	5	4	28	
2B @ 10 PEA	March-05	943.0	ND	ND	NA	6	2	81	
2B @ 15 PEA	March-05	544.0	ND	ND	NA	ND	ND	80	
2B @ 20 PEA	March-05	4.5	ND	ND	NA	NA	NA		
2B @ 24 PEA	March-05	12.0	ND	ND	0.068	ND	2	43	
2B-N(20') 0.5'	August 11, 2005	ND	ND	545		ND			
2B-N(20') 5'	August 11, 2005	0.6	ND	ND					
2B-N(20') 7.5'	August 11, 2005	1,040.8	ND	ND					
2B-N(20') 10'	August 11, 2005	877.4	ND	ND					
2B-S(20') 0.5'	August 25, 2005	ND	ND	798		ND			
2B-S(20') 5'	August 25, 2005	ND	ND	ND					
2B-S(20') 7.5'	August 25, 2005	ND	ND	ND					
2B-W(20') 0.5'	August 25, 2005	ND	ND	7,415		6			
2B-W(20') 5'	August 25, 2005	ND	ND	ND					
2B-W(20') 7.5'	August 25, 2005	2.8	ND	ND					
2B-W(20') 10'	August 25, 2005	926.6	ND	ND					
2B-N(37') 0.5'	August 24, 2005	ND	ND	ND		13			
2B-N(37') 5'	August 24, 2005	7.1	ND	ND					
2B-N(37') 7.5'	August 24, 2005	2,019.0	ND	ND					
2B-N(37') 10'	August 24, 2005	2,780.8	ND	ND					
2B-N(37') 15'	August 24, 2005	7.5	ND	ND					
2B2 @ 0.5 PEA	March-05	ND	ND	1,319	0.1	5	14	18	
2B2 @ 3.5 PEA	March-05	ND	ND	1,467	ND	5	10	21	
2B2-N(20') 0.5'	August 25, 2005	0.3	ND	22,524		ND			
2B2-N(20') 5'	August 25, 2005	979.5	ND	446					
2B2-N(20') 7.5'	August 25, 2005	2,507.4	ND	ND					
2B2-N(20') 10'	August 25, 2005	907.1	ND	ND					
2B2-S(20') 0.5'	August 25, 2005	ND	ND	1,139					
2B2-S(20') 5'	August 25, 2005	ND	ND	ND					
2B2-S(20') 7.5'	August 25, 2005	ND	ND	ND					
2B2-E(20') 0.5'	August 11, 2005	0.1	ND	1,386					
2B2-E(20') 5'	August 11, 2005	ND	ND	ND					
2B2-E(20') 7.5'	August 11, 2005	ND	ND	ND					1
2B-3S(0.5') 0.5'	August 12, 2005				0.051	4	ND	43	
2B3 @ 0.5 PEA	March-05	ND			ND	8	2	18	
2B3 @ 5 PEA	March-05	ND							
2B3 @ 15 PEA	March-05	125.0			0.428	17	11	8	
2C @ 0.5 PEA	March-05	ND	ND	1,346	2.1	31	ND	13	
2C @ 5 PEA	March-05	ND	ND	491					

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2C-N(10') 0.5'	August 25, 2005				0.19	17			
2C-N(10') 5'	August 25, 2005				ND	ND			
2C-N(10') 7.5'HOLD	August 25, 2005								
2C-N(10') 10'HOLD	August 25, 2005								
2C-E(10') 0.5'	August 11, 2005	ND	45	ND	ND	67			
2C-E(10') 5'	August 11, 2005	ND	ND	ND	ND	ND			
2C-E(10') 7.5'	August 11, 2005	ND	ND	ND					
2C-E(10') 10'	August 11, 2005	21.3	ND	ND		21			
2C-N(20') 0.5'	August 25, 2005	ND	ND	ND					
2C-N(20') 5'	August 25, 2005	ND	ND	ND					
2C-N(20') 7.5'	August 25, 2005	ND	ND	ND					
2C-N(20') 10'	August 25, 2005	11.2	ND	ND					
2CW(10') 0.5-1.0	December 13, 1995				4.2				
2CW(10') 4.5-5.0	December 13, 1995				3.2				
2CS(10') 9.5-10.0	January 5, 2006				0.089				
2C-W(20') 0.5'	August 25, 2005	ND	ND	ND	8.1	16			
2CW(20') 4.5-5.0	December 13, 1995				2.9	<5			
2CW(20') 9.5-10.0	January 5, 2006				6.2				
2C-W(20') 5'	August 25, 2005	ND	ND	ND					
2C-E(20') 0.5'	August 24, 2005	ND	93	ND		63			
2C-E(20') 5'	August 24, 2005	ND	ND	ND		<5			
2C-E(20') 10'	August 24, 2005	ND	ND	ND					
3A @ 0.5 PEA	March-05	ND							
3A @ 5 PEA	March-05	ND			0.063				
3B @ 0.5 PEA	March-05	ND	ND	ND	0.987	3	5	26	
3B @ 5 PEA	March-05	ND	ND	ND	0.720	ND	2	32	
3B-N(10') 0.5'	August 12, 2005				ND				
3B-N(10') 5'	August 12, 2005				ND				
3B-S(10') 0.5'	August 12, 2005				ND				
3B-S(10') 5'	August 12, 2005				ND				
3B-E(10') 0.5'	August 12, 2005				0.340				
3B-E(10') 5'	August 12, 2005				ND				
3B-W(10') 0.5'	August 12, 2005				ND				
3B-W(10') 5'	August 12, 2005				ND				
3B-N(20') 0.5'	August 23, 2005					ND			
3B-N(20') 5'HOLD	August 23, 2005								
3B-S(20') 0.5'HOLD	August 23, 2005								
3B-S(20') 2'HOLD	August 23, 2005								
3B-E(20') 0.5'	August 23, 2005				ND				
3B-E(20') 5'HOLD	August 23, 2005								
3B-W(20') 0.5'HOLD	August 23, 2005								
3B-W(20') 5'HOLD	August 23, 2005								
3C @ 0.5 PEA	March-05	ND	ND	ND		ND	9	ND	1.77
3C @ 5 PEA	March-05	ND	ND	ND	ND	ND	51	29	
4A @ 0.5 PEA	March-05	ND	ND	ND	ND	5	9	16	
4A @ 5 PEA	March-05	ND	ND	ND	ND	ND	ND	42	
4B @ 0.5 PEA	March-05	ND	ND	ND	69.68	ND	1	5	
4B @ 5 PEA	March-05	ND	ND	ND	0.108	5	ND	ND	

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4B-N(10') 0.5'	August 12, 2005				ND				
4B-N(10') 5'	August 12, 2005				ND				
4B-S(10') 0.5'	August 12, 2005				0.230				
4B-S(10') 5'	August 12, 2005				ND				
4B-E(10') 0.5'	August 12, 2005				0.840				
4B-E(10') 4.5'-5.0'	December 13, 1995				<0.0097/<0.019				
4B-W(10') 0.5'	August 12, 2005				0.040				
4B-W(10') 5'	August 12, 2005				ND				
4B-N(20') 0.5'HOLD	August 23, 2005								
4B-N(20') 5'HOLD	August 23, 2005								
4B-S(20') 0.5'	August 23, 2005	ND	ND	64	0.002				
4B-S(20') 3.5'	August 23, 2005	23.5	ND	2,679	0.0022				
4B-S(20') 4'	August 23, 2005	12.6	ND	890	0.0002				
4B-S(20') 5'	August 23, 2005	99.6	ND	2,499	0.0002				
4BS(20') 9.5-10.0'	January 5, 2006		79 H	17 LY					
4BS(20') 14.5-15.0	January 5, 2006		1,200 H	160 LY					
4B-E(20') 0.5'	August 23, 2005				ND				
4B-E(20') 5'HOLD	August 23, 2005								
4B-W(20') 0.5'	August 23, 2005				0.0001				
4B-W(20') 5'HOLD	August 23, 2005								
4C @ 0.5 PEA	March-05	ND	ND	ND	ND	ND	11	14	
4C @ 5 PEA	March-05	ND	ND	ND	ND	ND	ND	26	
5A @ 0.5 PEA	March-05	ND	ND	ND	ND	7	320	170	
5A @ 5 PEA	March-05	ND	ND	ND	ND	ND	3	44	
5A-N(10') 0.5'	August 24, 2005						90	178	
5A-N(10') 5' HOLD	August 24, 2005								ND
5A-S2 0.5'	August 24, 2005						301	184	
5A-SE(10') 0.5'	August 24, 2005						6		
5A-SE(10') 5'	August 24, 2005						154		
5A-SE(20') 0.5'	August 24, 2005								
5A-SE(20') 5' HOLD	August 24, 2005						159	176	
5A-SW(10') 0.5'	August 24, 2005								
5A-SW(10') 5' HOLD	August 24, 2005								
5A-N(20') 0.5'HOLD	August 24, 2005								
5A-N(20') 5' HOLD	August 24, 2005								
5A-SW(20') 0.5'HOLD	August 24, 2005								
5A-SW(20') 5' HOLD	August 24, 2005								
5C @ 0.5 PEA	March-05	ND	ND	ND	ND	4	398	179	
5C @ 5 PEA	March-05	ND	639	1,556	ND	ND	4		
5C-NE(4') 0.5'	August 24, 2005	ND	ND	ND			81	75	
5C-NE(4') 5'	August 24, 2005	ND	ND	ND					
5C-SE(10') 0.5'	August 24, 2005	ND	ND	ND			28	124	
5C-SE(10') 5'	August 24, 2005	ND	ND	ND					
5C-ESE(20') 0.5'HOLD	August 24, 2005						271		
5C-ESE(20') 5'	August 24, 2005						6		
5C-W(10') 0.5'	August 24, 2005	ND	ND	ND			191	227	
5C-W(10') 5'	August 24, 2005	ND	ND	ND					
5C-WNW(20') 0.5'HOLD	August 24, 2005								
5C-WNW(20') 5'HOLD	August 24, 2005								
5C-NE(23') 0.5'HOLD	August 24, 2005								
5C-NE(23') 5'HOLD	August 24, 2005								

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6A @ 0.5 PEA	March-05	ND	ND	ND	ND	19	19	18	
6B @ 0.5 PEA	March-05	ND	ND	ND	0.825	ND	12	ND	
6C @ 0.5 PEA	March-05	ND	ND	ND	1.51	ND	ND	ND	
7B @ 5 PEA	March-05				ND	3	2	24	
7B-2 @ 3.5 PEA	March-05				0.087	3	84	24	
7B-3 @ 5 PEA	March-05				ND	ND	ND	17	
Blank 12/12/05 (TEG)	December 12, 2005	<1.0	--	<50		<0.25			
Blank 12/13/05 (TEG)	December 13, 2005	<1.0	--	<50		<0.25			
Blank 12/13/05 (C&T)	December 13, 2005	<0.20			<0.0095/<0.019				
Blank 12/14/05 (TEG)	December 14, 2005	<1.0	<10	<50		<0.25			
Blank 12/15/05 (TEG)	December 15, 2005	<1.0		<50					
SB-3-0.5-1.0	December 12, 2005		--	3,400					
SB-3-4.5-5.0	December 12, 2005		3.2 HYJ	15 J					
SB-4-0.5-1.0	December 12, 2005		--	<50		4.8			
SB-4-1.0-1.5 dup	December 12, 2005		--	<50		3.5			
SB-4-4.5-5.0	December 12, 2005		--	<50		3.6			
SB-5-0.5-1.0	December 13, 2015					69			
SB-5-4.5-5.0	December 13, 2005					4.6			
SB-6-0.0-0.5	December 13, 1995					60			
SB-6-4.5-5.0	December 12, 2005	12							
SB-6-9.5-10.0	December 12, 2005	450							
SB-6-14.5-15.0	December 12, 2005	180							
SB-7-5.0-5.25	December 12, 2005	<1.0							
SB-7-dup-5.25-5.55	December 12, 2005	<1.0							
SB-7-9.5-10.0	December 12, 2005	1,000							
SB-7-14.5-15.0	December 12, 2005	49							
SB-8-0.0-0.5	December 13, 1995					3.9			
SB-8-4.5-5.0	December 12, 2005	<1.0							
SB-8-9.5-10.0	December 12, 2005	210							
SB-8-14.5-15.0	December 12, 2005	2,300	--	1,800					
SB-8-19.5-20.0	December 12, 2005	<1.0							
SB-9-0.5-1.0	December 12, 2005					130			
SB-9-4.5-5.0	December 12, 2005	84							
SB-9-9.5-10.0	December 12, 2005	3,700							
SB-9-14.5-15.0	December 12, 2005	370							
SB-9-19.5-20.0	December 12, 2005	11							
SB-10-0.0-0.5	December 13, 1995					7.3			
SB-10-0.5-1.0	December 12, 2005		--	180					
SB-10-4.5-5.0	December 12, 2005	55							
SB-10-9.5-10.0	December 12, 2005	3,200							
SB-10-14.5-15.0	December 12, 2005	2,300							
SB-10-19.5-20.0	December 12, 2005	1,500							
SB-11-5.0-5.5	December 12, 2005	54	--	70					
SB-11-9.5-10.0	December 12, 2005	4,900							
SB-11-14.5-15.0	December 12, 2005	1,700							
SB-13-0.5-1.0	December 12, 2005		--	1,700					
SB-13-4.5-5.0	December 12, 2005		2.4 HYJ	16 J					
SB-14-0.5-1.0	December 12, 2005			1,800					
SB-14-4.5-5.0	December 12, 2005		<1.0 J	<5.0 J					
SB-17-0.5-1.0	December 13, 1995		--	590		71			
SB-17-4.5-5.0	December 13, 1995	<0.19	<1.0 J	<5.0 J		3.9			
SB-17-9.5-10.0	December 13, 1995	200							
SB-17dup-10.0-10.5	December 13, 1995	150							
SB-17-14.5-15.0	December 13, 1995	68							
SB-18-0.5-1.0	December 13, 1995					140			
SB-18-4.5-5.0	December 13, 1995					5.5			
SB-19-0.5-1.0	December 13, 1995		--	81		140			

Table 1
SSI Analytical Results for Selected Compounds in Soil
Proposed Charter School Site
1009 66th Avenue, Oakland, California

Sample ID & Location	Date Sampled	TPH (gasoline range) C4-C12 RL = 0.1-10 mg/Kg	TPH (diesel range) C22-C23 RL = 5 mg/Kg	TPH (oil range) C24-C40 RL = 50 mg/Kg	PCB RL = 0.002-0.050 mg/Kg	Arsenic RL = 0.97-5 mg/Kg	Lead RL = 5 mg/Kg	Nickel RL = 1 mg/Kg	Hexavalent Chromium RL = 0.5 mg/Kg
SB-19-4.5-5.0	December 13, 1995	<1.0				6.9			
SB-19-9.5-10.0	December 13, 1995	3,100							
SB-19-14.5-15.0	December 13, 1995	<1.8							
SB-20-0.5-1.0	December 14, 2005		--	160		110			
SB-20dup-1.0-1.5	December 14, 2005		--	<50		11			
SB-20-4.5-5.0	December 14, 2005	<1.0				5.0			
SB-20dup-5.0-5.5	December 14, 2005	<1.0				5.2			
SB-20-9.5-10.0	December 14, 2005	600							
SB-20-14.5-15.0	December 14, 2005	<1.0							
SB-21-0.5-1.0	December 14, 2005		--	61					
SB-21-4.5-5.0	December 14, 2005	<1.0							
SB-21-9.5-10.0	December 14, 2005	1,200							
SB-21-14.5-15.0	December 14, 2005	<1.0							
SB-22-0.5-1.0	December 14, 2005		--	<50		98			
SB-22-4.5-5.0	December 14, 2005	<1.0				6.0			
SB-22-9.5-10.0	December 14, 2005	<1.0							
SB-22-14.5-15.0	December 14, 2005	<1.0							
SB-22dup-15.0-15.5	December 14, 2005	<1.0							
SB-24-0.5-1.0	December 12, 2005		--	80		4.9			
SB-24dup-1.0-1.5	December 12, 2005					3.4			
SB-24-4.5-5.0	December 12, 2005	<0.17				5.8			
SB-24-9.5-10.0	December 12, 2005	590.0							
SB-24-14.5-15.0	December 12, 2005	0.82							
SB-25-0.5-1.0	December 12, 2005		--	1,800					
SB-26-0.5-1.0	December 12, 2005		--	820		110			
SB-26-4.5-5.0	December 12, 2005		9.9 HY	7.0 L		5.7			
SB-27-0.5-1.0	December 12, 2005		--	3,100					
SB-27-4.5-5.0	December 12, 2005		12 HYJ	60					
SB-28-0.5-1.0	December 12, 2005		--	5,500					
SB-29-0.5-1.0	December 12, 2005		--	2,300					
SB-29-4.5-5.0	December 12, 2005		85 HYJ	140 LJ					
SB-30-0.5-1.0	December 12, 2005		--	3,700		3.5			
SB-30-4.5-5.0	December 12, 2005		33 HYJ	96 LJ		19			
SB-31-14.5-15.0	December 13, 1995				<0.0095/<0.019 J				
SB-31dup-14.0-14.5	December 13, 1995				<0.0096/<0.019 J				
SB-32-4.5-5.0	December 14, 2005	140 H Y							
SB-32-9.5-10.0 (TEG)	December 14, 2005	31 H Y							
SB-32-9.5-10.0 (C&T)	December 14, 2005	31 H Y	160 H L	52 L					
SB-32dup-10.0-10.5	December 14, 2005	30 H Y	100 H L	37 L					
SB-32-14.5-15.0	December 14, 2005	3.9 H Y	53 H L	22 L					
SB-33-4.5-5.0	December 15, 2005	<1.0							
SB-33-9.5-10.0	December 15, 2005	<1.0		<50					
SB-33-14.5-15.0	December 15, 2005	<1.0		<50					
SB-34-4.5-5.0	December 14, 2005	250							
SB-34-9.5-10.0	December 14, 2005	210	--	<50					
SB-34-14.5-15.0	December 14, 2005	27	--	<50					
SB-35-4.5-5.0	December 14, 2005	<1.1							
SB-35-9.5-10.0	December 14, 2005	<1.0	--	<50					
SB-35-14.5-15.0	December 14, 2005	<0.92	--	<50					
SB-36-0.5-1.0	December 15, 2005				0.022				
SB-36-4.5-5.0	December 15, 2005				<0.012/<0.024				
SB-37-4.5-5.0	December 15, 2005	<1.0							
SB-37-9.5-10.0	December 15, 2005	<1.0	--	<50					
SB-37-14.5-15.0	December 15, 2005	<1.0	--	<50					
SB-38-9.5-10.0 (TEG)	December 14, 2005		<10	58					
SB-38-9.5-10.0 (C&T)	December 14, 2005		<0.99	<4.9					
SB-38dup-10.0-10.5	December 14, 2005		<10	<50					

Table 1
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Proposed Charter School Site
1009 66th Avenue, Oakland, California

Sample ID & Location	Date Sampled	TPH (gasoline range) C4-C12 RL = 0.1-10 mg/Kg	TPH (diesel range) C22-C23 RL = 5 mg/Kg	TPH (oil range) C24-C40 RL = 50 mg/Kg	PCB RL = 0.002-0.050 mg/Kg	Arsenic RL = 0.97-5 mg/Kg	Lead RL = 5 mg/Kg	Nickel RL = 1 mg/Kg	Hexavalent Chromium RL = 0.5 mg/Kg
SB-38-14.5-15.0 (TEG)	December 14, 2005		11	<50					
SB-38-14.5-15.0 (C&T)	December 14, 2005		<1.0	<5.0					
SB-39-4.5-5.0	December 12, 2005	21							
SB-39-9.5-10.0	December 12, 2005	1,400							
SB-39-14.5-15.0	December 12, 2005	8.8							
SB-39-19.5-20.0	December 12, 2005	<1.0							
SB-40-0.5-1.0	December 13, 1995					1.9			
SB-40-4.5-5.0	December 13, 1995					5.7			
SB-41-9.5-10.0	December 15, 2005	<1.0							
SB-41-14.5-15.0	December 15, 2005	<1.0							
SB-42-0.5-1.0	December 15, 2005		--	910 J					
SB-42-4.5-5.0	December 15, 2005		--	78 J					
SB-43-0.5-1.0	December 15, 2005		--	1,600					
SB-43-4.5-5.0	December 15, 2005		--	<50					
SB-44-0.5-1.0 (01/01/06)	December 15, 2005		170 J	1200 J					
SB-44-0.5-1.0 (12/22/06)	December 15, 2005		23 H	3,300					
SB-44-4.5-5.0	December 15, 2005		27 J	58 LJ					
SB-45-0.5-1.0	December 15, 2005		39	170 L					
SB-45-4.5-5.0	December 15, 2005		<1.0	<5.0					
SB-46-0.5-1.0	December 15, 2005		<1.0	7					
SB-46-4.5-5.0	December 15, 2005		<1.0	<5.0					
SB-47-0.5-1.0	January 5, 2006				<0.0097/<0.019				
SB-47-4.5-5.0	January 5, 2006				0.021				
SB-47-5.0-5.5DUP	January 5, 2006				0.070				
SB-47-9.5-10.0	January 5, 2006				0.017				
SB-48-0.5-1.0	January 5, 2006				<9.5/<19				
SB-48-4.5-5.0	January 5, 2006				1.1				
SB-48-9.5-10.0	January 5, 2006				0.057				
SB-49-0.5-1.0	January 5, 2006				15 q				
SB-49-4.5-5.0	January 5, 2006				1.3				
SB-49-5.0-5.5DUB	January 5, 2006				1.3				
SB-49-9.5-10.0	January 5, 2006				0.190				
SB-50-0.5-1.0	January 5, 2006				9				
SB-50-4.5-5.0	January 5, 2006				1.400				
SB-50-9.5-10.0	January 5, 2006				0.490				

Notes:
mg/Kg - milligrams per kilogram
µg/Kg - micrograms per kilogram
NA - Not analyzed for constituent
ND - Not detected at the indicated reporting limit
PCB - Polychlorinated Biphenyls
PEA - Preliminary Environmental Assessment
RL - Reporting limit
TPH - Total Petroleum Hydrocarbons
-- = Analysis not requested
H = Heavier hydrocarbons contributed to the quantitation
Y = Sample exhibits chromatographic pattern which does not resemble standard
L = Lighter hydrocarbons contributed to the quantitation
J = Estimated concentration
q = draft result - ending instrument QC not yet analyzed

Table 2
SSI Analytical Results for Volatile and Semi-Volatile Organic Compounds in Soil
Proposed Charter School Site
1009 66th Avenue, Oakland, California

		VOCs								SVOCs												
Sample ID & Location	Date Sampled	Benzene RL = 2-200 µg/Kg	Toluene RL = 2 µg/Kg	Ethylbenzene RL = 2-200 µg/Kg	Xylene RL = 2-200 µg/Kg	MTBE RL = 2 µg/Kg	Isopropylbenzene RL = 2 µg/Kg	Chlorobenzene RL = 2 µg/Kg	1,4-Dichlorobenzene RL = 2 µg/Kg	Naphthalene RL = 250-2500 µg/Kg	1-Methylnaphthalene RL = 250-2500 µg/Kg	Acenaphthylene RL = 250-2500 µg/Kg	Acenaphthene RL = 250-2500 µg/Kg	Fluorene RL = 250-2500 µg/Kg	Phenanthrene RL = 250-2500 µg/Kg	Anthracene RL = 250-2500 µg/Kg	Fluoranthene RL = 250-2500 µg/Kg	Pyrene RL = 250-2500 µg/Kg	Benzo(a)Anthracene RL = 250-2500 mg/Kg	Chrysene RL = 250-2500 µg/Kg	Benzo(k)Fluoranthene RL = 250-2500 mg/Kg	Benzo(a)Pyrene RL = 250-2500 mg/Kg
1A @ 0.5 PEA	March-05									ND	ND	ND	ND	ND	924	ND	492	442	ND	ND	ND	ND
1A @ 5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1B @ 0.5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1B @ 5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1C @ 0.5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1C @ 5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2A @ 0.5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2A @ 5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2A-2 @ 0.5 PEA	March-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2A-2 @ 5 PEA	March-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,901	3,666	2.05	2,812	3.978	3.623
2A-2N(20') 0.5'	August 11, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2A-2N(20') 5'	August 11, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2A-2N(20') 7.5'	August 11, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,944	2,360	0.885	1,058	2.729	3.556
2A-2S(20') 0.5'	August 11, 2005	ND	ND	ND	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2A-2S(20') 5'	August 11, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2A-2S(20') 7.5'	August 11, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	629	ND	507	0.711	0.865
2A-2E(20') 0.5'	August 11, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2A-2E(20') 5'	August 11, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2A-2E(20') 7.5'	August 11, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,228	3,105	1.799	2,330	4.71	4.184
2A-2W(20') 0.5'	August 11, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2A-2W(20') 5'	August 11, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2A-2W(20') 7.5'	August 11, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.647	4.534
2B @ 0.5 PEA	March-05	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	428	744	ND	4,045	3.982	3.160
2B @ 5 PEA	March-05	139	13	31	101	19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B @ 10 PEA	March-05	7,622	37,378	14,044	52,141	206	ND	ND	ND	5,357	2,762	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B @ 15 PEA	March-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B @ 20 PEA	March-05	ND	ND	ND	ND	22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B @ 24 PEA	March-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B-N(20') 0.5'	August 11, 2005	ND	ND	6	70	ND	ND	ND	ND	2,925	2,049	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B-N(20') 5'	August 11, 2005	80	2	ND	43	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B-N(20') 7.5'	August 11, 2005	15,989	131,071	50,655	178,481	ND	5,630	ND	ND	13,279	11,123	338	58	274	ND	ND	ND	ND	ND	ND	ND	ND
2B-N(20') 10'	August 11, 2005	21,332	124,917	36,934	131,524	ND	3,644	ND	ND	3,699	4,290	ND	ND	ND	ND	ND	3,106	5,758	1.074	1,185	4.3	6.163
2B-S(20') 0.5'	August 25, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B-S(20') 5'	August 25, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B-S(20') 7.5'	August 25, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,784	ND	21,940	30,450	16.162	20,080	35.126	48.390
2B-W(20') 0.5'	August 25, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B-W(20') 5'	August 25, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B-W(20') 7.5'	August 25, 2005	ND	ND	22	4	ND	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B-W(20') 10'	August 25, 2005	6,897	36,448	20,217	75,610	ND	1,993	ND	ND	3,035	1,880	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B-N(37') 0.5'	August 25, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2
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Proposed Charter School Site
1009 66th Avenue, Oakland, California

		VOCs								SVOCs												
Sample ID & Location	Date Sampled	Benzene RL = 2-200 µg/Kg	Toluene RL = 2 µg/Kg	Ethylbenzene RL= 2-200 µg/Kg	Xylene RL = 2-200 µg/Kg	MTBE RL = 2 µg/Kg	Isopropylbenzene RL = 2 µg/Kg	Chlorobenzene RL = 2 µg/Kg	1,4-Dichlorobenzene RL = 2 µg/Kg	Naphthalene RL = 250-2500 µg/Kg	1-Methylnaphthalene RL = 250-2500 µg/Kg	Acenaphthylene RL = 250-2500 µg/Kg	Acenaphthene RL = 250-2500 µg/Kg	Fluorene RL = 250-2500 µg/Kg	Phenanthrene RL = 250-2500 µg/Kg	Anthracene RL = 250-2500 µg/Kg	Fluoranthene RL = 250-2500 µg/Kg	Pyrene RL = 250-2500 µg/Kg	Benzo(a)Anthracene RL = 250-2500 mg/Kg	Chrysene RL = 250-2500 µg/Kg	Benzo(k)Fluoranthene RL = 250-2500 mg/Kg	Benzo(a)Pyrene RL = 250-2500 mg/Kg
2B-N(37') 5'	August 25, 2005	338	248	103	258	369	4	ND	ND													
2B-N(37') 7.5'	August 25, 2005	4,491	56,239	32,215	114,565	10,928	4,035	ND	ND	9,124	4,420	ND	ND	ND	2,967	2,713	ND	5,390	ND	ND	ND	ND
2B-N(37') 10'	August 25, 2005	21,876	114,263	40,696	137,722	5,422	4,495	ND	ND	10,175	6,886	ND	ND	ND	3,815	3,566	ND	7,161	ND	ND	ND	ND
2B-N(37') 15'	August 25, 2005	1,306	813	235	762	4,439	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B2 @ 0.5 PEA	March-05	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	377	ND	4,485	9,455	2.5	ND	15.919	9.525
2B2 @ 3.5 PEA	March-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	666	ND	584	1,844	ND	ND	ND	ND
2B2-N(20') 0.5'	August 25, 2005	2	7	ND	6	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	46,416	59,680	32.864	46,152	63.542	66.928
2B2-N(20') 5'	August 25, 2005	7,682	49,063	19,817	73,228	3,357	1,851	ND	ND	2,430	1,556	ND	ND	ND	ND	ND	550	798	ND	631	0.504	0.729
2B2-N(20') 7.5'	August 25, 2005	22,361	130,173	51,813	175,229	12,897	5,550	ND	ND	5,656	4,008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B2-N(20') 10'	August 25, 2005	9,106	45,812	19,519	77,800	7,679	1,786	ND	ND	1,332	1,060	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B2-S(20') 0.5'	August 25, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	597	ND	2,734	6,890	2.122	3,458	7.05	8.341
2B2-S(20') 5'	August 25, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B2-S(20') 7.5'	August 25, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B2-E(20') 0.5'	August 11, 2005	29	94	13	47	ND	ND	ND	ND	5,017	3,230	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B2-E(20') 5'	August 11, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B2-E(20') 7.5'	August 11, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2B-3 @ 5 PEA	March-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,185	ND	ND	ND	ND	ND	ND	ND
2B-3 @ 15 PEA	March-05	ND	1,770	1,772	5,937	ND	ND	ND	ND													
2C @ 0.5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2C @ 5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3A @ 0.5 PEA	March-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3A @ 5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3B @ 0.5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3B @ 5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3C @ 0.5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3C @ 5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4B @ 0.5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4B @ 5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4B-S(20') 5'	August 23, 2005	ND	ND	ND	ND	ND	ND	12	128													
4C @ 0.5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4C @ 5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5A @ 0.5 PEA	March-05	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5A @ 5 PEA	March-05	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5C @ 0.5 PEA	March-05	NA	NA	NA	NA	NA	ND	ND	ND	1,146	ND	4,702	ND	6,474	55,310	10,046	28,320	26,074	10.21	9,572	4.868	3.316
5C @ 5 PEA	March-05	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5C-NE(4') 5'	August 24, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5C-SE(10') 5'	August 24, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5C-W(10') 5'	August 24, 2005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2
SSI Analytical Results for Volatile and Semi-Volatile Organic Compounds in Soil
Proposed Charter School Site
1009 66th Avenue, Oakland, California

		VOCs								SVOCs													
Sample ID & Location	Date Sampled	Benzene RL = 2-200 µg/Kg	Toluene RL = 2 µg/Kg	Ethylbenzene RL = 2-200 µg/Kg	Xylene RL = 2-200 µg/Kg	MTBE RL = 2 µg/Kg	Isopropylbenzene RL = 2 µg/Kg	Chlorobenzene RL = 2 µg/Kg	1,4-Dichlorobenzene RL = 2 µg/Kg	Naphthalene RL = 250-2500 µg/Kg	1-Methylnaphthalene RL = 250-2500 µg/Kg	Acenaphthylene RL = 250-2500 µg/Kg	Acenaphthene RL = 250-2500 µg/Kg	Fluorene RL = 250-2500 µg/Kg	Phenanthrene RL = 250-2500 µg/Kg	Anthracene RL = 250-2500 µg/Kg	Fluoranthene RL = 250-2500 µg/Kg	Pyrene RL = 250-2500 µg/Kg	Benzo(a)Anthracene RL = 250-2500 mg/Kg	Chrysene RL = 250-2500 µg/Kg	Benzo(k)Fluoranthene RL = 250-2500 mg/Kg	Benzo(a)Pyrene RL = 250-2500 mg/Kg
6A @ 0.5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6B @ 0.5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6C @ 0.5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7B @ 5 PEA	March-05	ND	19	41	122	19	ND	ND	ND	ND	ND	ND	ND	ND	318	ND	ND	480	ND	ND	3.561	2.531	
7B-2 @ 3.5 PEA	March-05									ND	ND	ND	ND	ND	382	ND	4,690	6,492	ND	ND	2.415	ND	
7B-3 @ 5 PEA	March-05									ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Blank 12/12/05 (TEG)	December 12, 2005	<5.0	<5.0	<5.0	<5.0	<5.0																	
Blank 12/13/05 (TEG)	December 13, 2005	<5.0	<5.0	<5.0	<5.0	<5.0																	
Blank 12/13/05 (C&T)	December 13, 2005	<1.0	<1.0	<1.0	<1.0	<4.0																	
Blank 12/14/05 (TEG)	December 14, 2005	<5.0	<5.0	<5.0	<5.0	<5.0			<340	<67		<67	<67	<67	<67	<67	<67	<67	<0.067	<67	<0.067	<0.067	
Blank 12/15/05 (TEG)	December 15, 2005	<5.0	<5.0	<5.0	<5.0	<5.0			<340	<67		<67	<67	<67	<67	<67	<67	<67	<0.067	<67	<0.067	<0.067	
SB-3-0.5-1.0	December 12, 2005								<17,000	<3,400		<3,400	<3,400	<3,400	<3,400	<3,400	<3,400	<3,400	<3.4	<3,400	<3.4	<3.4	
SB-3-4.5-5.0	December 12, 2005								<330	<67		<67	<67	<67	<67	<67	<67	<67	<0.067	<67	<0.067	<0.067	
SB-4-0.5-1.0	December 12, 2005								<660	<130		<130	<130	<130	<130	<130	<130	<130	<0.130	<130	<0.130	<0.130	
SB-4-0.5-1.0 dup	December 12, 2005								<340	<68		<68	<68	<68	<68	<68	<68	<68	<0.068	<68	<0.068	<0.068	
SB-4-4.5-5.0	December 12, 2005								<330	<67		<67	<67	<67	<67	<67	<67	<67	<0.067	<67	<0.067	<0.067	
SB-6-4.5-5.0	December 13, 1995	<5.0	<5.0	<5.0	440	<5.0																	
SB-6-9.5-10.0	December 12, 2005	<5.0	<5.0	1,000	45,000	<5.0																	
SB-6-14.5-15.0	December 12, 2005	4,600	1,300	3,900	20,000	<5.0																	
SB-7-5.0-5.25	December 12, 2005	20	<5.0	14	43	37																	
SB-7-dup-5.25-5.55	December 12, 2005	18	<5.0	13	48	28																	
SB-7-9.5-10.0	December 12, 2005	1,600	14,000	22,000	110,000	<5.0																	
SB-7-14.5-15.0	December 12, 2005	3,000	420	990	5,100	<5.0																	
SB-8-4.5-5.0	December 12, 2005	<5.0	89	81	320	<5.0																	
SB-8-9.5-10.0	December 12, 2005	230	<5.0	2,100	2,700	<5.0																	
SB-8-14.5-15.0	December 12, 2005	10,000	89,000	44,000	225,000	<5.0																	
SB-8-19.5-20.0	December 12, 2005	<5.0	<5.0	<5.0	190	<5.0																	
SB-9-4.5-5.0	December 12, 2005	2,300	<5.0	2,900	5,000	1,400																	
SB-9-9.5-10.0	December 12, 2005	23,000	170,000	63,000	370,000	<5.0																	
SB-9-14.5-15.0	December 12, 2005	5,400	19,000	6,200	36,000	2,600																	
SB-9-19.5-20.0	December 12, 2005	<5.0	290	130	620	1,100																	
SB-10-4.5-5.0	December 12, 2005	3,400	1,700	1,500	5,000	7,500																	
SB-10-9.5-10.0	December 12, 2005	5,800	72,000	59,000	370,000	3,200																	
SB-10-14.5-15.0	December 12, 2005	9,500	85,000	42,000	250,000	1,600																	
SB-10-19.5-20.0	December 12, 2005	9,200	50,000	27,000	140,000	7,900																	
SB-11-5.0-5.5	December 12, 2005	500	1,300	1,100	4,600	1,300			<330	<67		<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	
SB-11-9.5-10.0	December 12, 2005	36,000	140,000	110,000	400,000	32,000																	
SB-11-14.5-15.0	December 12, 2005	12,000	54,000	31,000	190,000	51,000			<670	<130		<130	<130	<130	<130	<130	<130	<130	<130	<130	<130	<130	
SB-13-0.5-1.0	December 12, 2005																						

Table 2
SSI Analytical Results for Volatile and Semi-Volatile Organic Compounds in Soil
Proposed Charter School Site
1009 66th Avenue, Oakland, California

		VOCs								SVOCs												
Sample ID & Location	Date Sampled	Benzene RL = 2-200 µg/Kg	Toluene RL = 2 µg/Kg	Ethylbenzene RL = 2-200 µg/Kg	Xylene RL = 2-200 µg/Kg	MTBE RL = 2 µg/Kg	Isopropylbenzene RL = 2 µg/Kg	Chlorobenzene RL = 2 µg/Kg	1,4-Dichlorobenzene RL = 2 µg/Kg	Naphthalene RL = 250-2500 µg/Kg	1-Methylnaphthalene RL = 250-2500 µg/Kg	Acenaphthylene RL = 250-2500 µg/Kg	Acenaphthene RL = 250-2500 µg/Kg	Fluorene RL = 250-2500 µg/Kg	Phenanthrene RL = 250-2500 µg/Kg	Anthracene RL = 250-2500 µg/Kg	Fluoranthene RL = 250-2500 µg/Kg	Pyrene RL = 250-2500 µg/Kg	Benzo(a)Anthracene RL = 250-2500 mg/Kg	Chrysene RL = 250-2500 µg/Kg	Benzo(k)Fluoranthene RL = 250-2500 mg/Kg	Benzo(a)Pyrene RL = 250-2500 mg/Kg
SB-13-4.5-5.0	December 12, 2005								<330	<66		<66	<66	<66	<66	<66	<66	<66	<66	<66	<66	<66
SB-14-0.5-1.0	December 12, 2005								<67,000	<13,000		<13,000	<13,000	<13,000	<13,000	<13,000	<13,000	<13,000	<13,000	<13,000	<13,000	<13,000
SB-14-4.5-5.0	December 12, 2005								<330	<66		<66	<66	<66	<66	<66	<66	<66	<66	<66	<66	<66
SB-17-4.5-5.0	December 13, 1995	1.5	<0.94	<0.94	22.7	<3.8																
SB-17dup-10.0-10.5	December 13, 1995	1,200 CJ	6,600	4,600	25,600	<500																
SB-17-9.5-10.0	December 13, 1995	1500 CJ	4,500	5,900	28,200	<500																
SB-17-14.5-15.0	December 13, 1995	800	4,200	1,300	8,700	<500																
SB-19-4.5-5.0	December 13, 1995	<5.0	53	41	140	<5.0																
SB-19-9.5-10.0	December 13, 1995	6,500	61,000	58,000	340,000	<5.0																
SB-19-14.5-15.0	December 13, 1995	<5.0	<5.0	<5.0	110	<5.0																
SB-20-0.5-1.0	December 14, 2005								<340	<67		<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67
SB-20dup-1.0-1.5	December 14, 2005								<340	<68		<68	<68	<68	<68	<68	<68	<68	<68	<68	<68	<68
SB-20-4.5-5.0	December 14, 2005	<5.0	27 J	27 J	59	<5.0			<330	<67		<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67
SB-20dup-5.0-5.5	December 14, 2005	<5.0	<5.0 J	<5.0 J	52	<5.0																
SB-20-9.5-10.0	December 14, 2005	4,300	7,700	11,000	65,000	<5.0																
SB-20-14.5-15.0	December 14, 2005	<5.0	29	29	60	<5.0																
SB-21-0.5-1.0	December 14, 2005								<330	<66		<66	<66	<66	<66	<66	<66	<66	<66	<66	<66	<66
SB-21-4.5-5.0	December 14, 2005	<5.0	25	69	300	<5.0			<340	<67		<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67
SB-21-9.5-10.0	December 14, 2005	4,600	<5.0	24,000	140,000	<5.0																
SB-21-14.5-15.0	December 14, 2005	<5.0	<5.0	<5.0	250	<5.0																
SB-22-4.5-5.0	December 14, 2005	<5.0	<5.0	<5.0	41	<5.0																
SB-22-9.5-10.0	December 14, 2005	<5.0	88	<5.0	200	<5.0																
SB-22-14.5-15.0	December 14, 2005	<5.0	<5.0	<5.0	36	<5.0																
SB-22dup-15.0-15.5	December 14, 2005	<5.0	<5.0	<5.0	37	<5.0																
SB-24-0.5-1.0	December 12, 2005								<330	<66		<66	<66	<66	<66	<66	<66	<66	<66	<66	<66	<66
SB-24-4.5-5.0	December 12, 2005	<0.85	<0.85	<0.85	<0.85	<3.4			<330	<67		<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67
SB-24-9.5-10.0	December 12, 2005	2,400 CJ	<250	22,000	55,700	<1,000																
SB-24-14.5-15.0	December 12, 2005	370	11	5.3	29.8	<3.1																
SB-27-0.5-1.0	December 12, 2005								<8,300	<1,700		<1,700	<1,700	<1,700	<1,700	<1,700	<1,700	<1,700	<1,700	<1,700	<1,700	<1,700
SB-27dup-1.0-1.5	December 12, 2005								<6,700	<1,300		<1,300	<1,300	<1,300	<1,300	<1,300	<1,300	<1,300	<1,300	<1,300	<1,300	<1,300
SB-27-4.5-5.0	December 12, 2005								<340	<67		<67	<67	<67	<67	<67	160	170	<67	100	86	69
SB-29-0.5-1.0	December 12, 2005								<8,300	<1,700		<1,700	<1,700	<1,700	<1,700	<1,700	<1,700	<1,700	<1,700	<1,700	<1,700	<1,700
SB-29-4.5-5.0	December 12, 2005								<330	<66		<66	<66	<66	<66	<66	190	190	95	150	140	110
SB-32-4.5-5.0	December 14, 2005	<100	<100	<100	<100	<400																
SB-32-9.5-10.0	December 14, 2005	<25	<25	<25	<25	<100																
SB-32dup-10.0-10.5	December 14, 2005	<25	<25	<25	<25	<100																
SB-32-14.5-15.0	December 14, 2005	<0.97	<0.97	<0.97	<0.97	<3.9																
SB-33-4.5-5.0	December 15, 2005	<5.0	<5.0	<5.0	<5.0	<5.0																
SB-33-9.5-10.0	December 15, 2005	<5.0	<5.0	<5.0	32	<5.0			<340	<68		<68	<68	<68	<68	<68	<68	<68	<68	<68	<68	<68

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Table 2
SSI Analytical Results for Volatile and Semi-Volatile Organic Compounds in Soil
Proposed Charter School Site
1009 66th Avenue, Oakland, California

		VOCs								SVOCs													
Sample ID & Location	Date Sampled	Benzene RL = 2-200 µg/Kg	Toluene RL = 2 µg/Kg	Ethylbenzene RL = 2-200 µg/Kg	Xylene RL = 2-200 µg/Kg	MTBE RL = 2 µg/Kg	Isopropylbenzene RL = 2 µg/Kg	Chlorobenzene RL = 2 µg/Kg	1,4-Dichlorobenzene RL = 2 µg/Kg	Naphthalene RL = 250-2500 µg/Kg	1-Methylnaphthalene RL = 250-2500 µg/Kg	Acenaphthylene RL = 250-2500 µg/Kg	Acenaphthene RL = 250-2500 µg/Kg	Fluorene RL = 250-2500 µg/Kg	Phenanthrene RL = 250-2500 µg/Kg	Anthracene RL = 250-2500 µg/Kg	Fluoranthene RL = 250-2500 µg/Kg	Pyrene RL = 250-2500 µg/Kg	Benzo(a)Anthracene RL = 250-2500 mg/Kg	Chrysene RL = 250-2500 µg/Kg	Benzo(b)Fluoranthene RL = 250-2500 mg/Kg	Benzo(a)Pyrene RL = 250-2500 mg/Kg
SB-33-14.5-15.0	December 15, 2005	<5.0	<5.0	<5.0	<5.0	<5.0																	
SB-34-4.5-5.0	December 14, 2005	<5.0	<5.0	<5.0	130	<5.0																	
SB-34-9.5-10.0	December 14, 2005	<5.0	<5.0	<5.0	54	<5.0																	
SB-34-14.5-15.0	December 14, 2005	<5.0	28	<5.0	42	<5.0																	
SB-35-4.5-5.0	December 14, 2005	<5.3	<5.3	<5.3	<5.3	<21																	
SB-35-9.5-10	December 14, 2005	<5.2	<5.2	<5.2	<5.2	<21																	
SB-35-14.5-15.0	December 14, 2005	<4.6	<4.6	<4.6	<4.6	<18																	
SB-37-4.5-5.0	December 15, 2005	<5.0	<5.0	<5.0	<5.0	<5.0																	
SB-37-9.5-10.0	December 15, 2005	<5.0	<5.0	<5.0	<5.0	<5.0																	
SB-37-14.5-15.0	December 15, 2005	<5.0	<5.0	<5.0	<5.0	<5.0			<340	<67		<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67
SB-38-9.5-10.0	December 14, 2005								<330	<67		<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67	<67
SB-38-14.5-15.0	December 14, 2005																						
SB-39-4.5-5.0	December 12, 2005	120	610	330	1,700	97																	
SB-39-9.5-10.0	December 12, 2005	1,100	50,000	23,000	150,000	<5.0																	
SB-39-14.5-15.0	December 12, 2005	<5.0	110	<5.0	300	<5.0																	
SB-39-19.5-20.0	December 12, 2005	<5.0	47	37	120	<5.0																	
SB-41-9.5-10.0	December 15, 2005	<5.0	<5.0	<5.0	<5.0	<5.0																	
SB-41-14.5-15.0	December 15, 2005	<5.0	<5.0	<5.0	<5.0	<5.0																	

NOTES:
mg/Kg - milligrams per kilogram
µg/Kg - micrograms per kilogram
NA - Not analyzed for constituent
ND - Not detected at the indicated reporting limit
PEA - Preliminary Environmental Assessment
RL - Reporting limit
C = Presence confirmed, but RPD between columns exceeds 40%
q = draft result - ending instrument QC not yet analyzed

Table 3
SSI Analytical Results
for Selected Compounds in Groundwater
Proposed Charter School Site
1009 66th Avenue, Oakland, California

Sample ID & Location	Date Sampled	VOCs						TPH			PCBs	SVOCs[2]					Arsenic
		VOCs RL = 0.010-0.100 mg/L	Benzene RL = 0.5-25 µg/L	Toluene RL = 0.005-0.025 mg/L	Ethylbenzene RL = 0.005-0.025 mg/L	Xylene RL = 0.005-0.025 mg/L	MTBE RL = 0.005 mg/L	TPH (gasoline range) C7-C12 RL = 0.1 mg/L	TPH (diesel range) C10-C24 RL = 0.5 mg/L	TPH (oil range) C24-C40 RL = 1.0 mg/L	PCBs RL = 0.2 - 0.0098 mg/L	Naphthalene RL = 0.010-0.100 mg/L	1-Methylnaphthalene RL = 0.010-0.100 mg/L	Acenaphthylene RL = 0.010 mg/L	Acenaphthene RL = 0.010 mg/L	Fluorene RL = 0.010 µg/L	
1A-N(42') GW1	August 11, 2005										0.0045						
1B-W(37') GW1	August 11, 2005										0.0071						
1C-W(68') GW1	August 11, 2005										ND						
1C-SW(20') GW2	August 24, 2005										ND						
2A-2W(4') GW1	August 12, 2005	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND	
2B-N(20') GW1	August 12, 2005	ND	28.496	29.456	4.719	15.529	ND	221.13	ND	ND		2.365	487	ND	ND	ND	
2B-N(37') GW1	August 25, 2005	ND[1]	10.754	13.534	3.428	9.903	7.007	146.57	ND	ND		0.293	57	ND	ND	ND	
2B-2E(20') GW1	August 12, 2005	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND	
2C-E(10') GW1	August 12, 2005	ND	ND	0.004	5	14		0.160	ND	ND		ND	ND	ND	ND	ND	
2C-W(20') GW2	August 24, 2005	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND	
SB-19-GW	December 14, 2015		0.025	0.120	69	410	1.1	2.2	0.680 L Y	<0.3 J		0.013					
SB-19-GWDUP	December 14, 2015		0.034	0.150	88	480	1.1	2.7	0.860 H L Y	0.430 J							
SB-22-GW	December 15, 2005		<0.005	<0.005	<0.005	<0.005	<0.002	<0.050	0.420 HJY	1.8 J		<0.0098					
SB-22-GWDUP	December 15, 2005		<0.005	<0.005	<0.005	<0.005	<0.002	<0.050	0.260 HJY	0.3 J		<0.0099					
SB-33-GW	December 15, 2005		<0.005	<0.005	<0.005	<0.005	<0.002	<0.050	0.560 HY	0.570 J		<0.017					
SB-35-GW	December 15, 2005		<0.005	0.0059	<0.50	1.1	<0.002	<0.050	0.570 HY	<0.3		<0.010					
SB-35-GWDUP	December 15, 2005		<0.005	<0.005	<.50	0.54	<0.002	<0.050	0.6 HY	<0.3							
SB-36-0.5-1.0	December 15, 2005										22						
SB-36-4.5-5.0	December 15, 2005										<12/<24						
NW-1 S	December 27, 2005		<0.005	<0.005	<0.005	<0.005	<0.002	<0.050	0.320	0.420							
NW-1 I	December 27, 2005		<0.005	<0.005	<0.005	<0.005	0.008	<0.050	0.089	<0.3							
NW-1 D	December 27, 2005		<0.005	<0.005	<0.005	<0.005	0.037	<0.050	<0.050	<0.3							
NW-2 S	December 27, 2005		0.570	0.570	0.062	1.2	1.6	7	7.3	2.6							
NW-2 I	December 27, 2005		2.2	24	2.1	8.6	120	120	7.2 HLY	1.6 LY							
NW-2 D	December 27, 2005		0.300	0.013	<0.0025	0.130	1.6	1.4	0.820 HLY	0.530 LY							
NW-3 S	December 27, 2005		<0.005	<0.005	<0.005	<0.005	<0.002	<0.050	0.970 HLY	0.870 LY							

Table 3
SSI Analytical Results
for Selected Compounds in Groundwater
Proposed Charter School Site
1009 66th Avenue, Oakland, California

Sample ID & Location	Date Sampled	VOCs						TPH			PCBs	SVOCs[2]					Arsenic
		VOCs RL = 0.010-0.100 mg/L	Benzene RL = 0.5-25 µg/L	Toluene RL = 0.005-0.025 mg/L	Ethylbenzene RL = 0.005-0.025 mg/L	Xylene RL = 0.005-0.025 mg/L	MTBE RL = 0.005 mg/L	TPH (gasoline range) C7-C12 RL = 0.1 mg/L	TPH (diesel range) C10-C24 RL = 0.5 mg/L	TPH (oil range) C24-C40 RL = 1.0 mg/L	PCBs RL = 0.2 - 0.0098 mg/L	Naphthalene RL = 0.010-0.100 mg/L	1-Methylnaphthalene RL = 0.010-0.100 mg/L	Acenaphthylene RL = 0.010 mg/L	Acenaphthene RL = 0.010 mg/L	Fluorene RL = 0.010 µg/L	
NW-3 I	December 27, 2005		<0.005	<0.005	<0.005	<0.005	<0.002	<0.050	0.095 Y	<0.3							
NW-3 D	December 27, 2005		<0.005	<0.005	<0.005	<0.005	<0.002	<0.050	0.910 HY	0.780 LY							
DUP-1 (NW-2D)	December 27, 2005		0.320	0.011	<0.005	0.160	1.5	1.6	0.820	0.460							

NOTES:

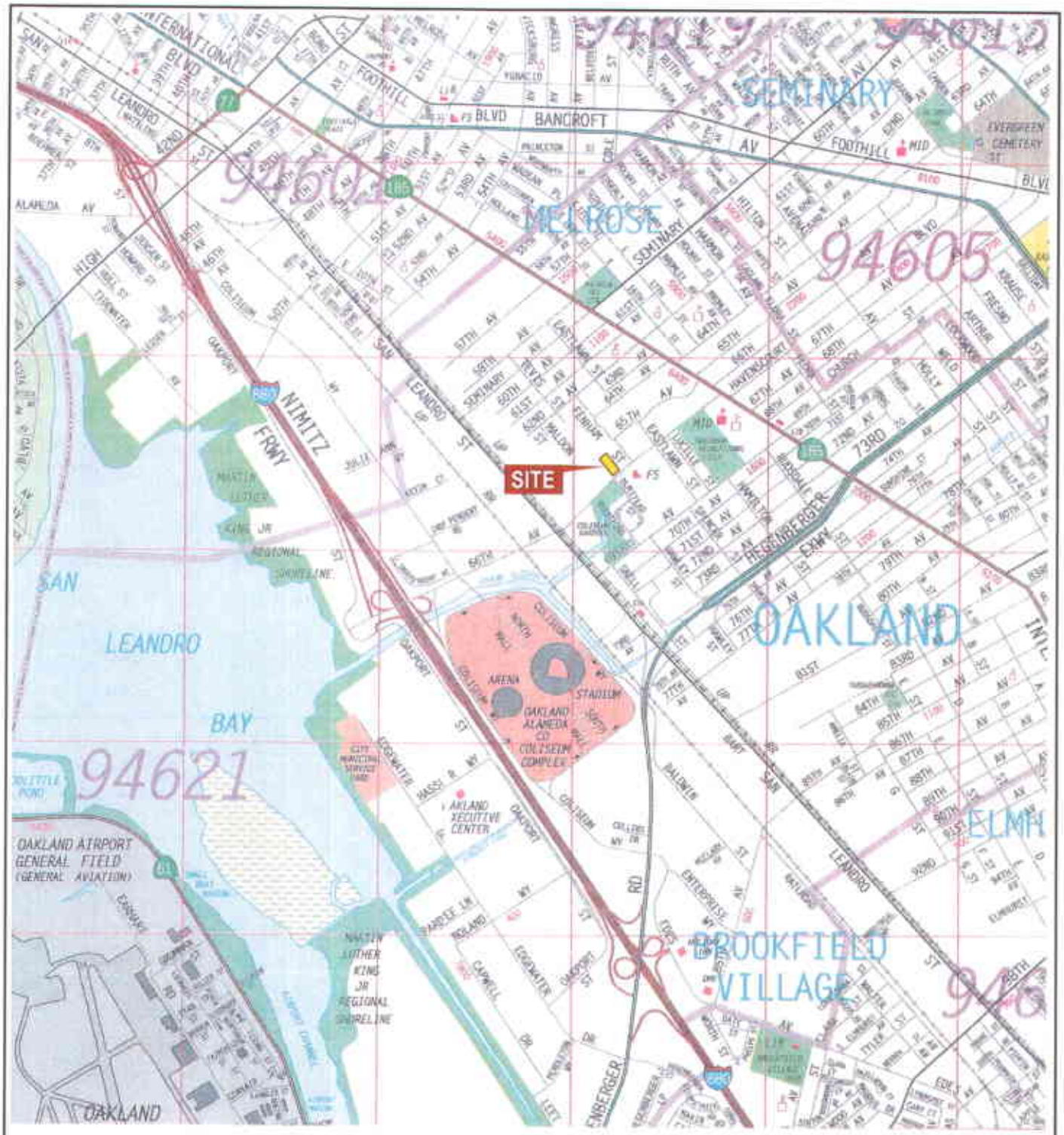
1. VOC Isopropylbenzene detected at 166.9 µg/L
2. Only SVOCs with detections are reported in this table; all other SVOCs ND.

mg/kg - milligrams per kilogram
µg/kg - micrograms per kilogram
ND - Not detected at the indicated reporting limit
PCB - Polychlorinated Biphenyls
PEA - Preliminary Environmental Assessment
RL - Reporting limit
SVOC - Semivolatile Organic Compound
TPH - Total Petroleum Hydrocarbons
VOC - Volatile Organic Compound
Y = Sample exhibits chromatographic pattern which does not resemble standard
L = Lighter hydrocarbons contributed to the quantitation
H = Heavier hydrocarbons contributed to the quantitation
J = Estimated concentration

Table 4
SSI Analytical Results for
Field Blanks
Proposed Charter School Site
1009 66th Avenue, Oakland, California

							VOCs					SVOCs											
Sample ID & Location	Date Sampled	TPH (gasoline range) C7-C12 RL = 0.1 ug/L	TPH (diesel range) C10-C24 RL = 0.5 ug/L	TPH (oil range) C24-C40 RL = 1.0 ug/L	PCBs RL = 0.2 - 0.0098 mg/L	Arsenic RL = 5.0 ug/L	Benzene RL = 2-200 µg/Kg	Toluene RL = 2 µg/Kg	Ethylbenzene RL = 2-200 µg/Kg	Xylene RL = 2-200 µg/Kg	MTBE RL = 2 µg/Kg	Naphthalene RL = 250-2500 µg/Kg	Acenaphthylene RL = 250-2500 µg/Kg	Acenaphthene RL = 250-2500 µg/Kg	Fluorene RL = 250-2500 µg/Kg	Phenanthrene RL = 250-2500 µg/Kg	Anthracene RL = 250-2500 µg/Kg	Fluoranthene RL = 250-2500 µg/Kg	Pyrene RL = 250-2500 µg/Kg	Benzo(a)Anthracene RL = 250-2500 mg/Kg	Chrysene RL = 250-2500 µg/Kg	Benzo(k)Fluoranthene RL = 250-2500 mg/Kg	Benzo(a)Pyrene RL = 250-2500 mg/Kg
FB121205	December 12, 2005	<50			<5.0		<.50	<.50	<.50	<.50	<2.0	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12
EB121205	December 12, 2005	<50			<5.0		<.50	<.50	<.50	<.50	<2.0	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
TB121205	December 12, 2005	<50					<.50	<.50	<.50	<.50	<2.0												
FB121305	December 13, 2005	<50	75 Y	<300	<.49/<.98	<5.0	<.50	<.50	<.50	<.50	<2.0												
EB121305	December 13, 2005		<50	<300	<.5/<1.0	<5.0	<.50	<.50	<.50	<.50	<2.0												
TB121305	December 13, 2005						<.50	<.50	<.50	<.50	<2.0												
FB121405	December 14, 2005	<50	<50	<300		<5.0	<.50	<.50	<.50	<.50	<2.0	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5
EB121505	December 14, 2005	<50	<50	<300		<5.0	<.50	<.50	<.50	<.50	<2.0	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
TB121405	December 14, 2005	<50					<.50	<.50	<.50	<.50	<2.0												
FB121505	December 15, 2005	<50	53 HY	<300	<.48/<.96		<.50	<.50	<.50	<.50	<2.0	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7
EB121505	December 15, 2005	<50	52 HY	<300	<.48/<.96		<.50	<.50	<.50	<.50	<2.0	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7
TB121505	December 15, 2005	<50					<.50	<.50	<.50	<.50	<2.0												
FB122705	December 27, 2005	<50	<50	<300			<.50	<.50	<.50	<.50	<2.0												
EB122705	December 27, 2005	<50	<50	<300			<.50	<.50	<.50	<.50	<2.0												
TB122705	December 27, 2005	<50					<.50	<.50	<.50	<.50	<2.0												
TB2 122705	December 27, 2005	<50					<.50	<.50	<.50	<.50	<2.0												
FB010506	January 3, 2006	<50		<300	<0.47/<0.94																		
EB010506	January 3, 2006	<50		<300	<0.47/<0.94																		

NOTES:
mg/Kg - milligrams per kilogram
µg/Kg - micrograms per kilogram
NA - Not analyzed for constituent
RL - Reporting limit
H = Heavier hydrocarbons contributed to the quantitation
Y = Sample exhibits chromatographic pattern which does not resemble standard



MAP SOURCE:
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ALAMEDA COUNTY
2002 Edition

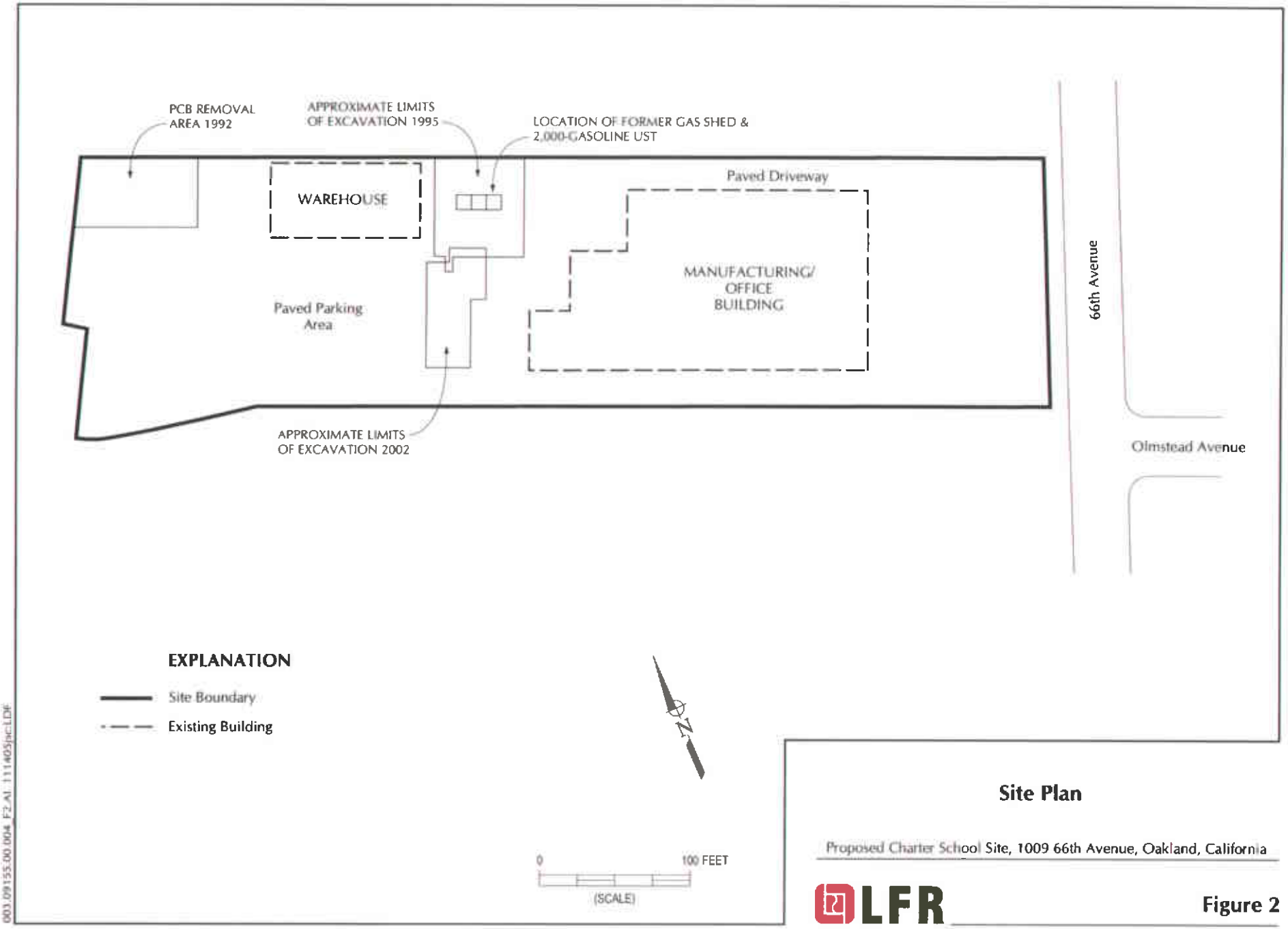
003.09155.00.000 F1.AI 042105jjc1.DF

Site Vicinity

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 1



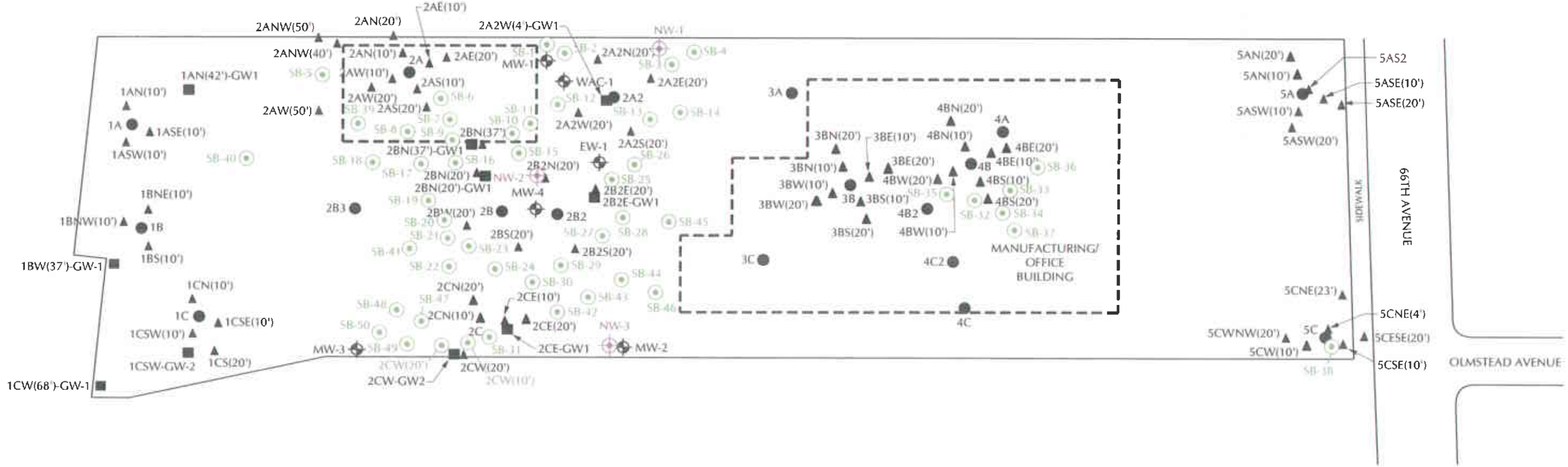
003.09155.00.004 F2 AI 111405|sc|.DF

Site Plan

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 2



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

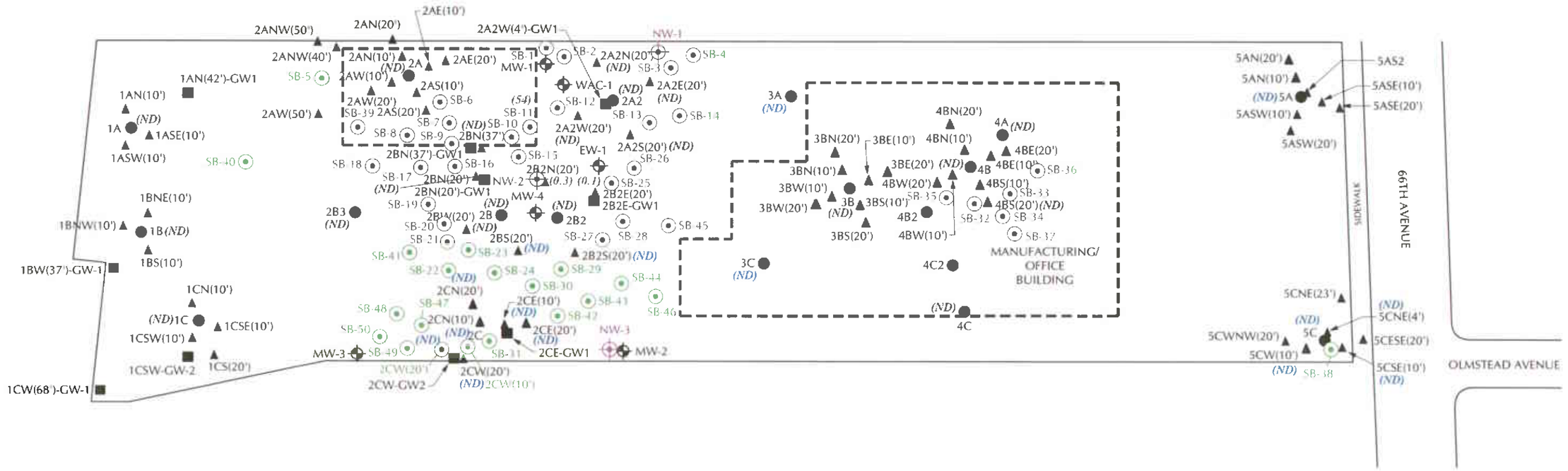
003.09155.00.006_F4-F3.AI 012406|sc:LDF|9XM

Site Plan with LFR SSI Sampling Locations

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 3



LEGEND

- MW-1 — MONITORING WELLS
- 1B — PEA SAMPLE LOCATIONS 2005
- 1C1 — SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
- 1AN-GW — SSI GW SAMPLE LOCATIONS - AUG 2005
- SB-1 — LFR SAMPLING LOCATION
- NW-1 — NESTED MONITORING WELL
- *(0.3)* — DETECTED ABOVE LABORATORY REPORTING LIMIT (10 mg/kg)
- *(ND)* — NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

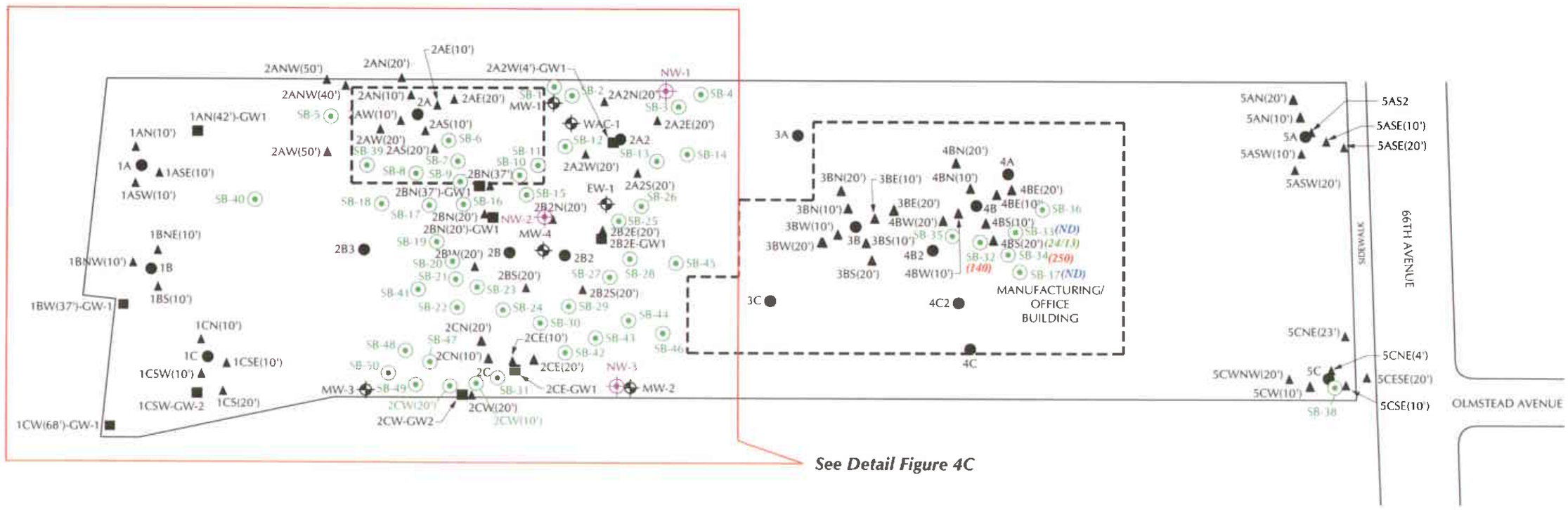
Gasoline-Affected Soil 0 - 1 Foot

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 4A

003.09155.00.006_F4-FIGS.AI 011706jct:DF/SXM



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(24/13)	DETECTED ABOVE LABORATORY REPORTING LIMIT (10 mg/kg)
(250)	DETECTED ABOVE ACTION LEVEL (100 mg/kg)
(ND)	NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

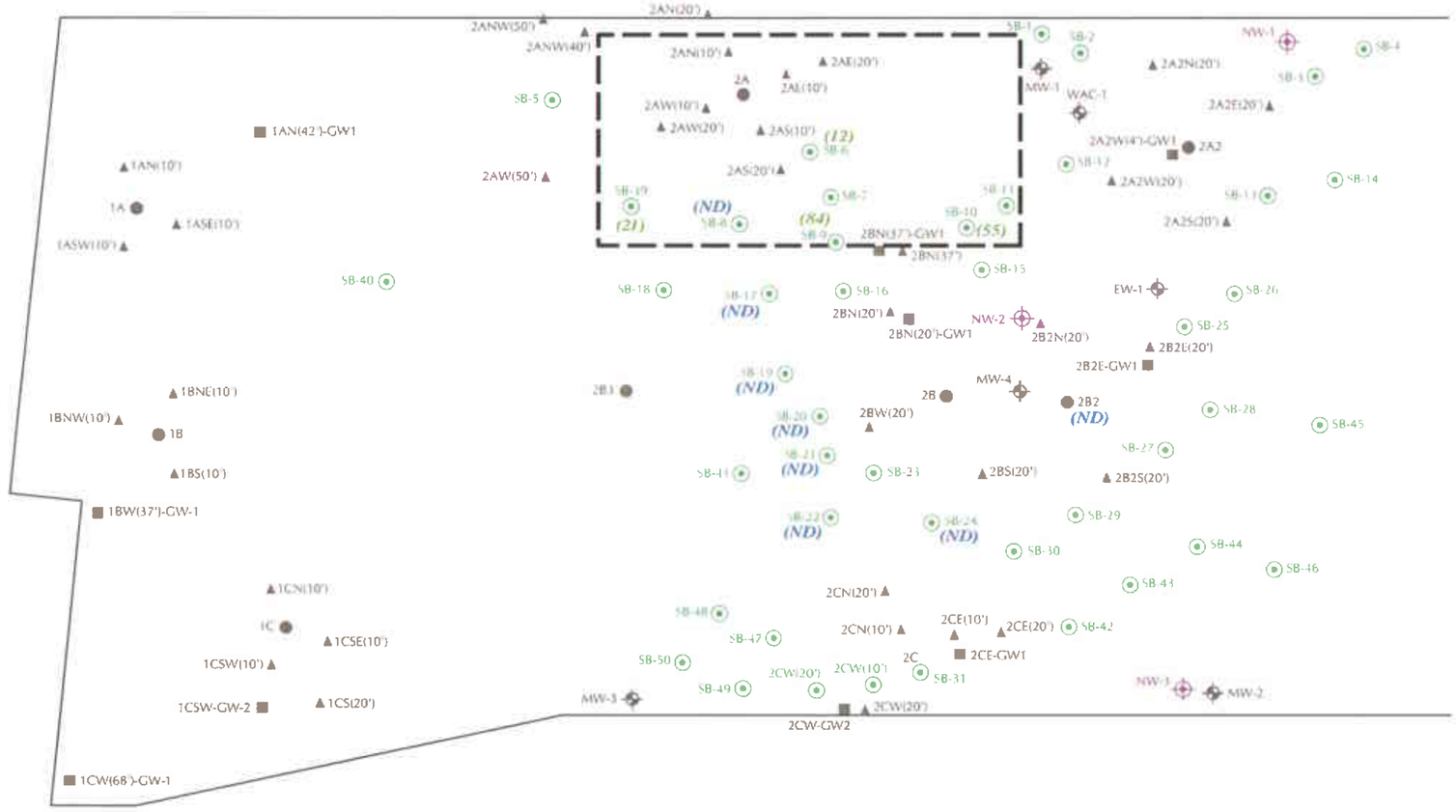
003.09153.00.006_F4-FIGS.AI 011706ivc-LDF/SXM

Gasoline-Affected Soil 1 - 5 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 4B



LEGEND

- MW-1 — MONITORING WELLS
- 1B — PEA SAMPLE LOCATIONS 2005
- 1C1 — SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
- 1AN-GW — SSI GW SAMPLE LOCATIONS - AUG 2005
- SB-1 — LFR PROPOSED SAMPLING LOCATION
- NW-1 — NESTED MONITORING WELL
- (21) — DETECTED ABOVE LABORATORY REPORTING LIMIT (10 mg/kg)
- (ND) — NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

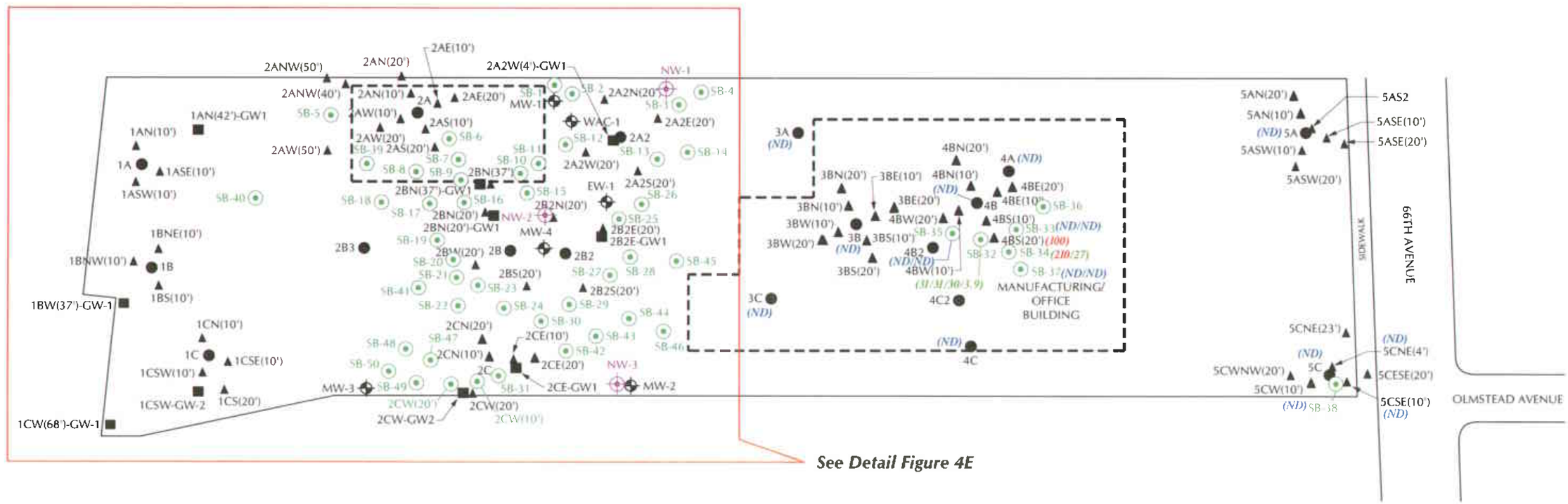
Detail Gasoline-Affected Soil
1-5 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 4C

003 09155.00.006 F4C.AI 011906[sc:LDF/SXM



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(27)	DETECTED ABOVE LABORATORY REPORTING LIMIT (10 mg/kg)
(100)	DETECTED ABOVE ACTION LEVEL (100 mg/kg)
(ND)	NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

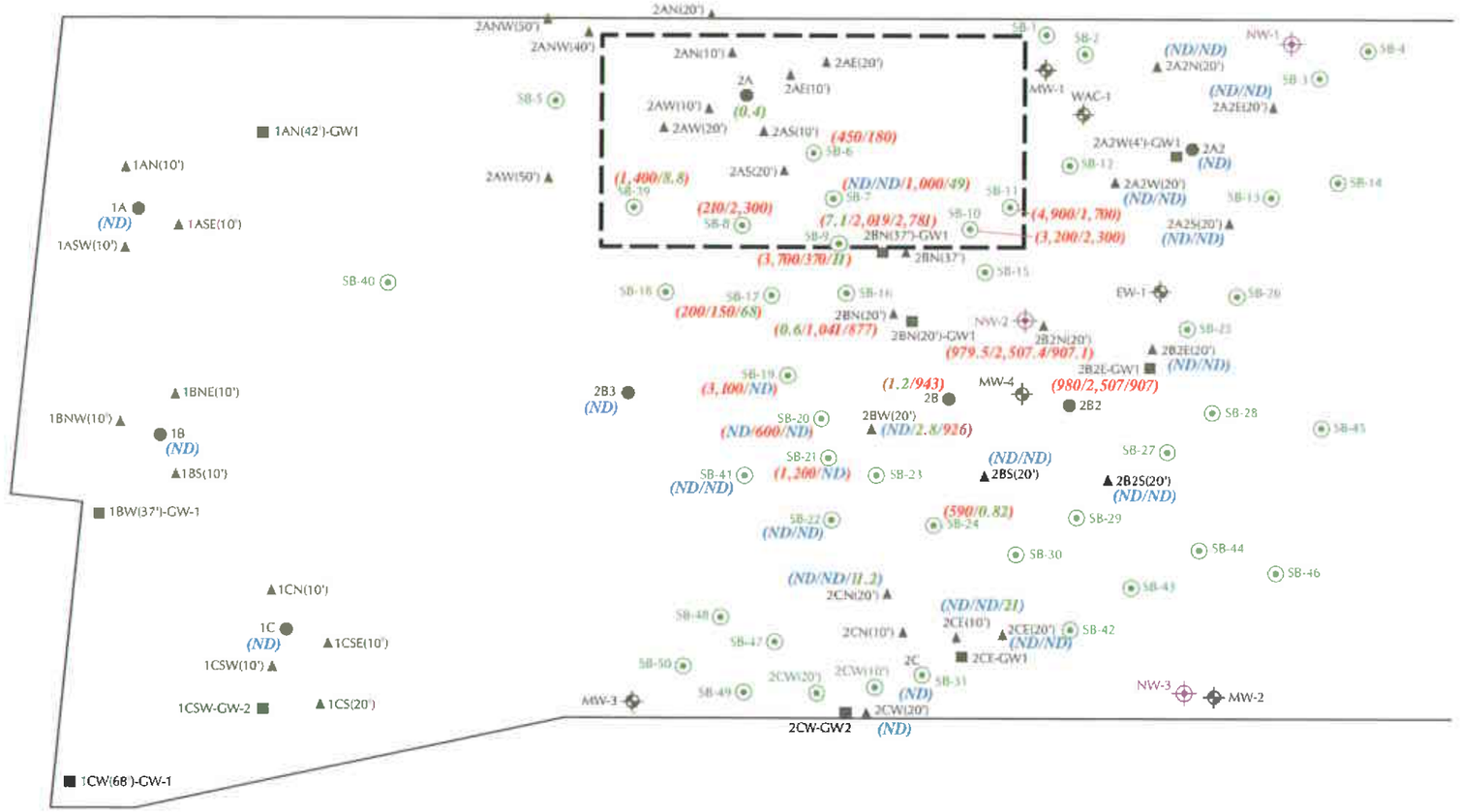
Gasoline-Affected Soil 5 - 15 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 4D

003 09155.00.006 F4-FIG5 AT 011706(HC-LDF/SXM



LEGEND

- MW-1 — MONITORING WELLS
- 1B — PEA SAMPLE LOCATIONS 2005
- 1C1 — SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
- 1AN-GW — SSI GW SAMPLE LOCATIONS - AUG 2005
- SB-1 — LFR PROPOSED SAMPLING LOCATION
- NW-1 — NESTED MONITORING WELL
- (II) — DETECTED ABOVE LABORATORY REPORTING LIMIT (0.1-10 mg/kg)
- (877) — DETECTED ABOVE ACTION LEVEL (100 mg/kg)
- (ND) — NOT DETECTED
- (ND/ND) — NOT DETECTED AT MULTIPLE DEPTHS

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

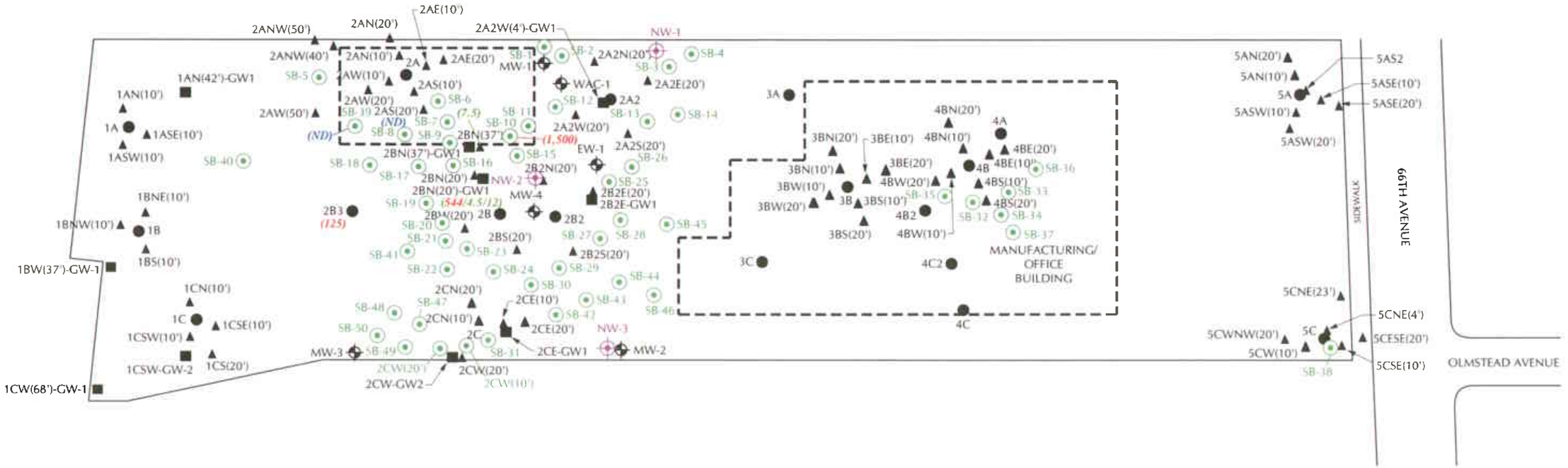
Detail Gasoline-Affected Soil
5-15 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 4E

003.091155.00.006 F4E.AI 01 2306(rc):LDF/SXM



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(7.5)	DETECTED ABOVE LABORATORY REPORTING LIMIT (10 mg/kg)
(544)	DETECTED ABOVE ACTION LEVEL (100 mg/kg)
(544/4.5/12)	ANALYTICAL RESULTS FOR MULTIPLE DEPTHS
(ND)	NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

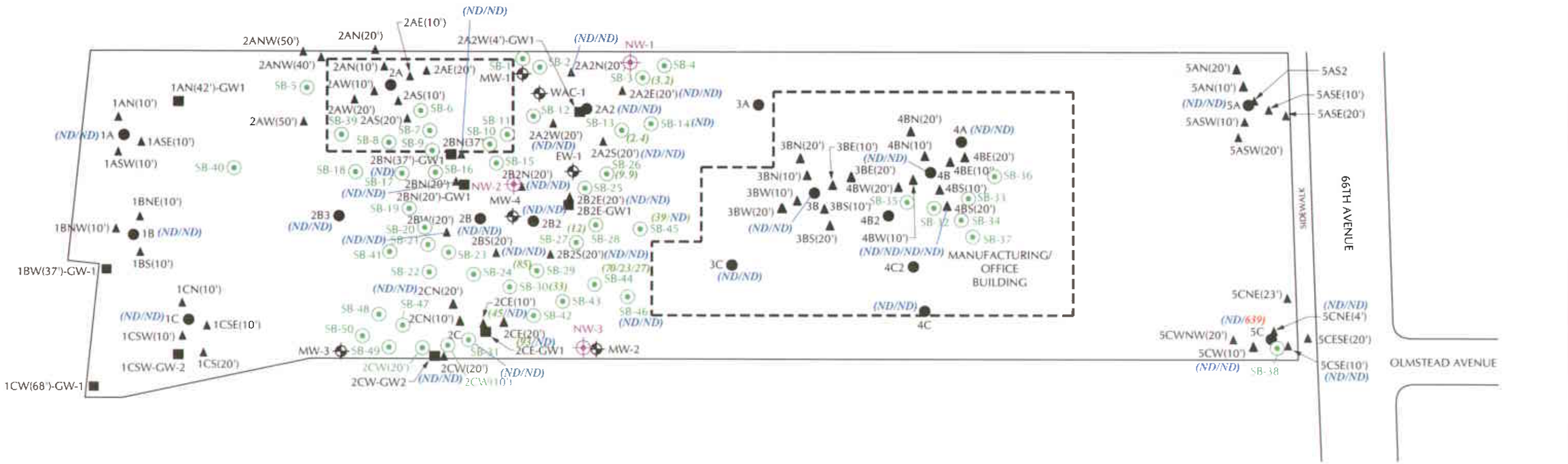
Gasoline-Affected Soil 15 - 24 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 4F

003.09155.00.006_F4-HGS.AI 01.17.06@c:LDF/SXM



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(45)	DETECTED ABOVE LABORATORY REPORTING LIMIT (mg/kg)
(639)	DETECTED ABOVE ACTION LEVEL (500 mg/kg)
(ND)	NOT DETECTED
(ND/ND)	NOT DETECTED AT MULTIPLE DEPTHS

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

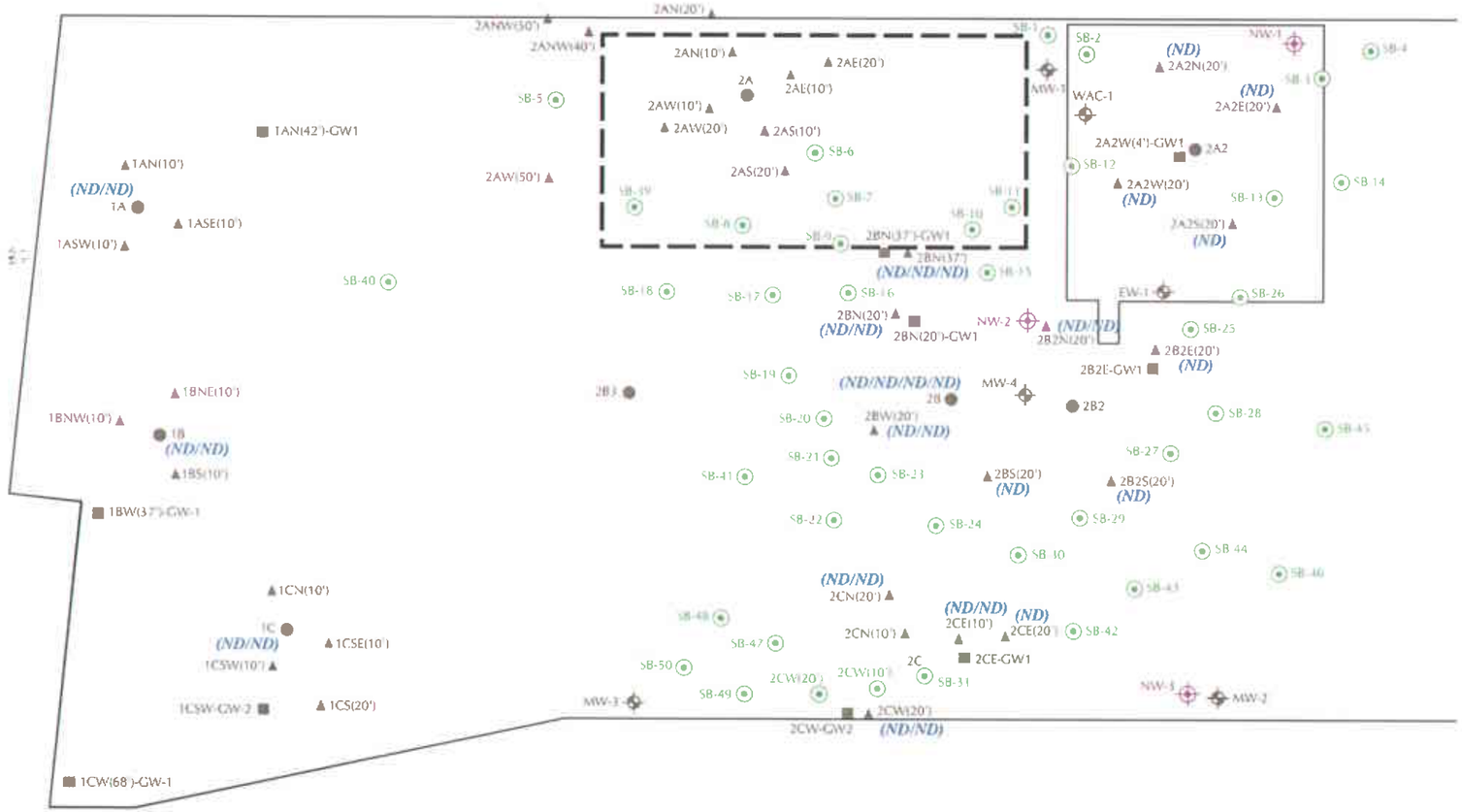
Diesel-Affected Soil 0 - 6 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 5A

003 09155.00.006 F5A.AI 011306jpc LDF/SXM



LEGEND

- MW-1 — MONITORING WELLS
- 1B — PEA SAMPLE LOCATIONS 2005
- 1C1 — SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
- 1AN-GW — SSI GW SAMPLE LOCATIONS - AUG 2005
- SB-1 — LFR PROPOSED SAMPLING LOCATION
- NW-1 — NESTED MONITORING WELL
- *ND* — NOT DETECTED
- *ND/ND* — NOT DETECTED AT MULTIPLE DEPTHS

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

NOTE:
NOT DEPICTED, SAMPLE NOS. 4BS(20') AND SB-38 LOCATED EAST-OFF MAP:

4BS(20')	9.5'-10.0'	= 79 mg/kg
	14.5'-15.0'	= 1,200 mg/kg
SB-38	9.5'-10.0'	= ND

NOT DEPICTED, SAMPLE NO. SB-32 LOCATED 10' SOUTHWEST OF 4BS(20'):

SB-32	9.5'-10.0'	= 160 mg/kg
	14.5'-15.0'	= 53 mg/kg

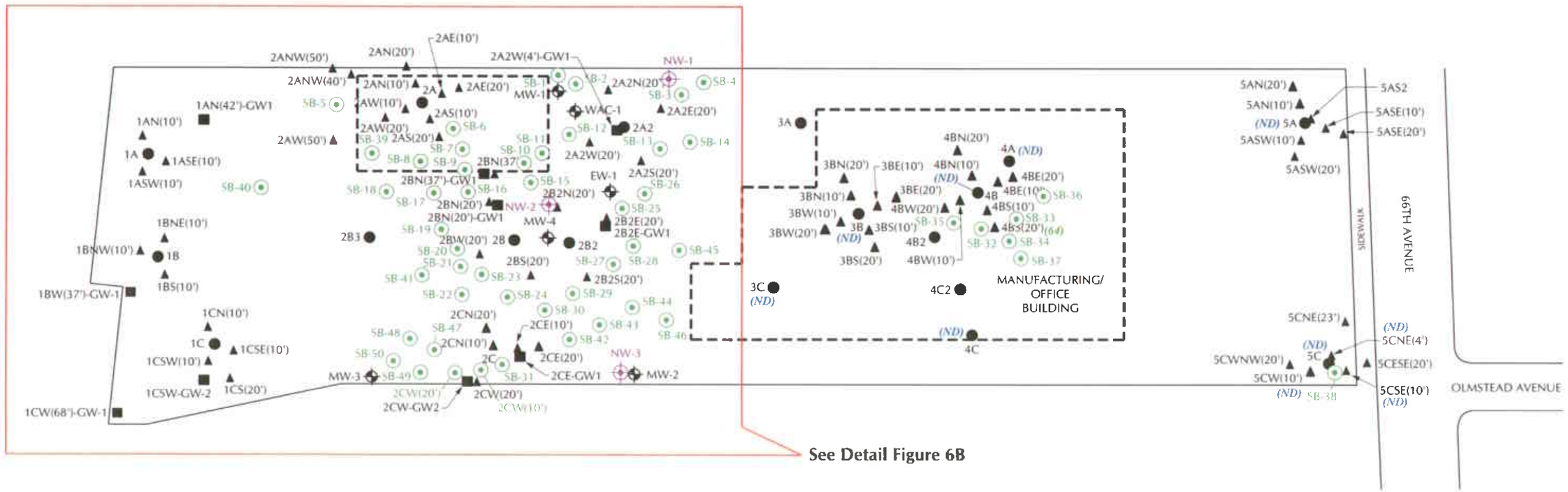
Detail Diesel-Affected Soil 6-24 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 5B

003.09155.00.006_F5B_AI_012006jsc-LDF/SXM



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(64)	DETECTED ABOVE LABORATORY REPORTING LIMIT (50 mg/kg)
(ND)	NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

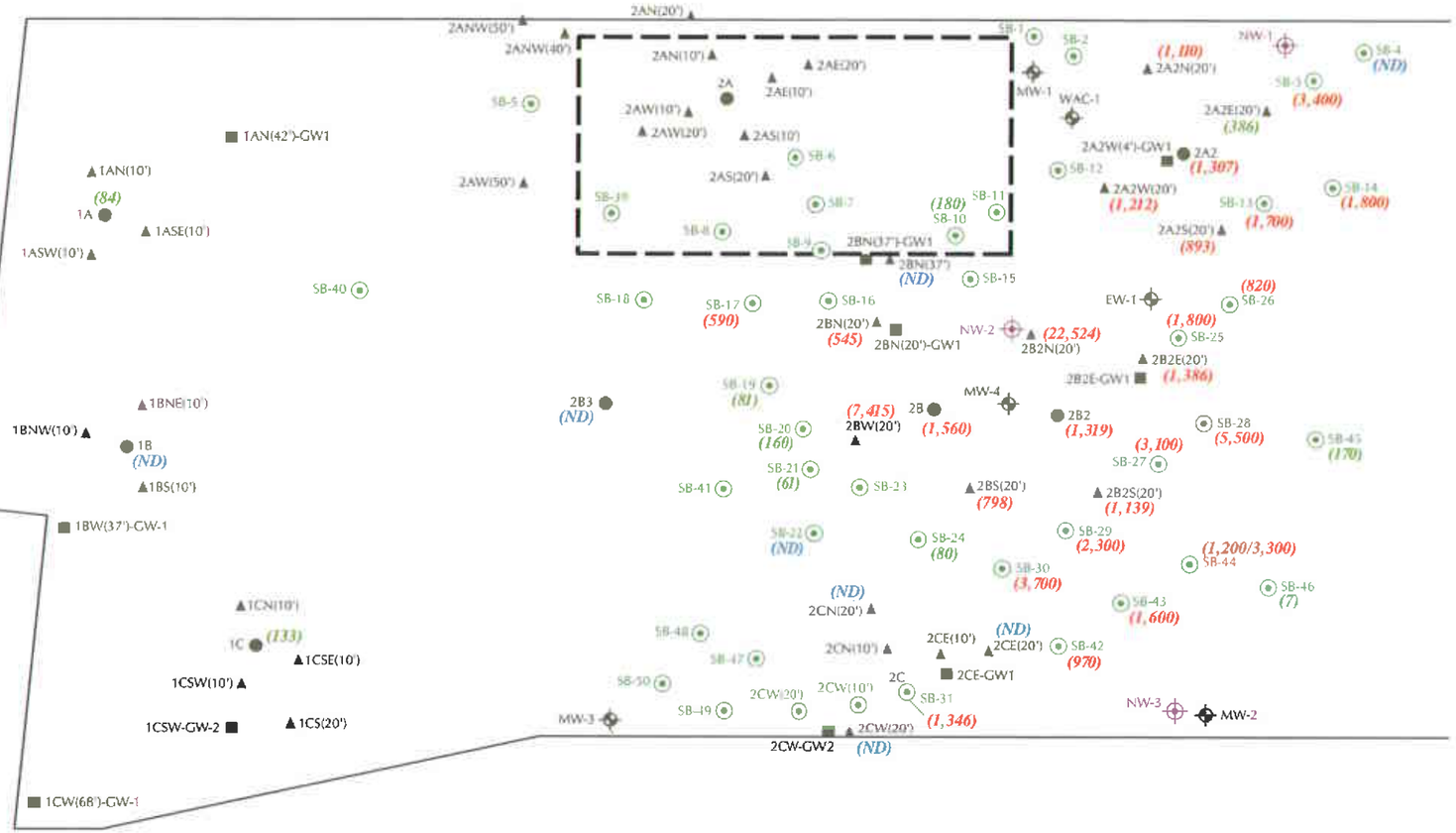
Motor Oil-Affected Soil 0 - 1 Foot

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 6A

003.09155.00.006_F6-FIGS.AI 012006|sc-LDF/SXM



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR PROPOSED SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(84)	DETECTED ABOVE LABORATORY REPORTING LIMIT (50 mg/kg)
(798)	DETECTED ABOVE ACTION LEVEL (500 mg/kg)
(ND)	NOT DETECTED

NOTE. BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

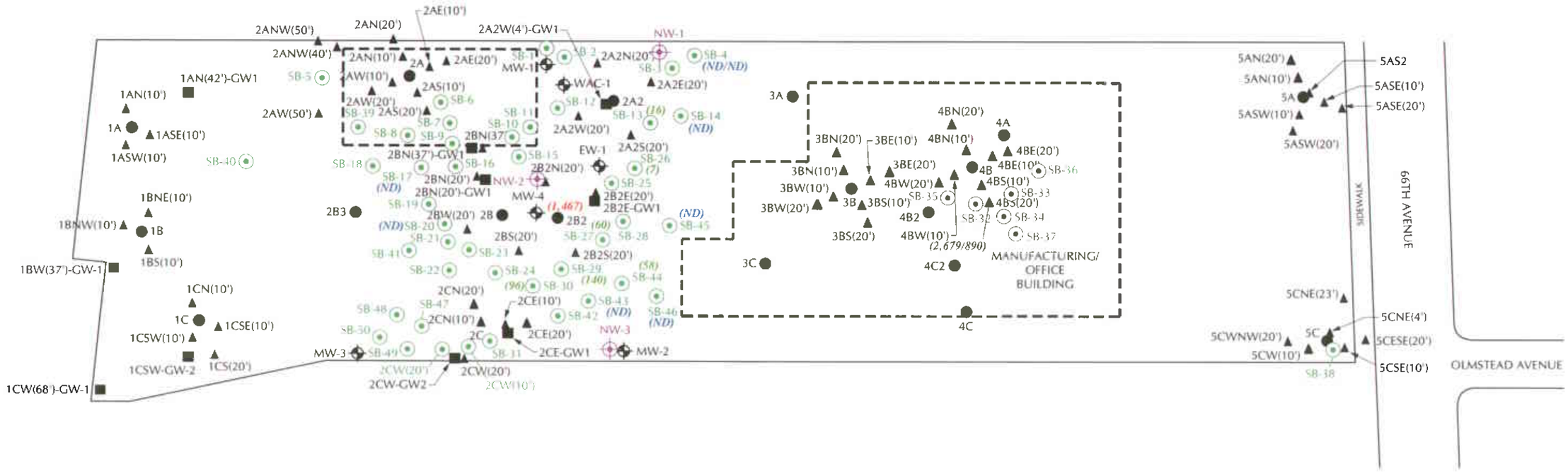
Detail Motor Oil-Affected Soil 0-1 Foot

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 6B

003.09155.00.006_F6B.AI 012306[sc1].DF/SAM



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(16)	DETECTED ABOVE LABORATORY REPORTING LIMIT (50 mg/kg)
(1,467)	DETECTED ABOVE ACTION LEVEL (500 mg/kg)
(ND)	NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

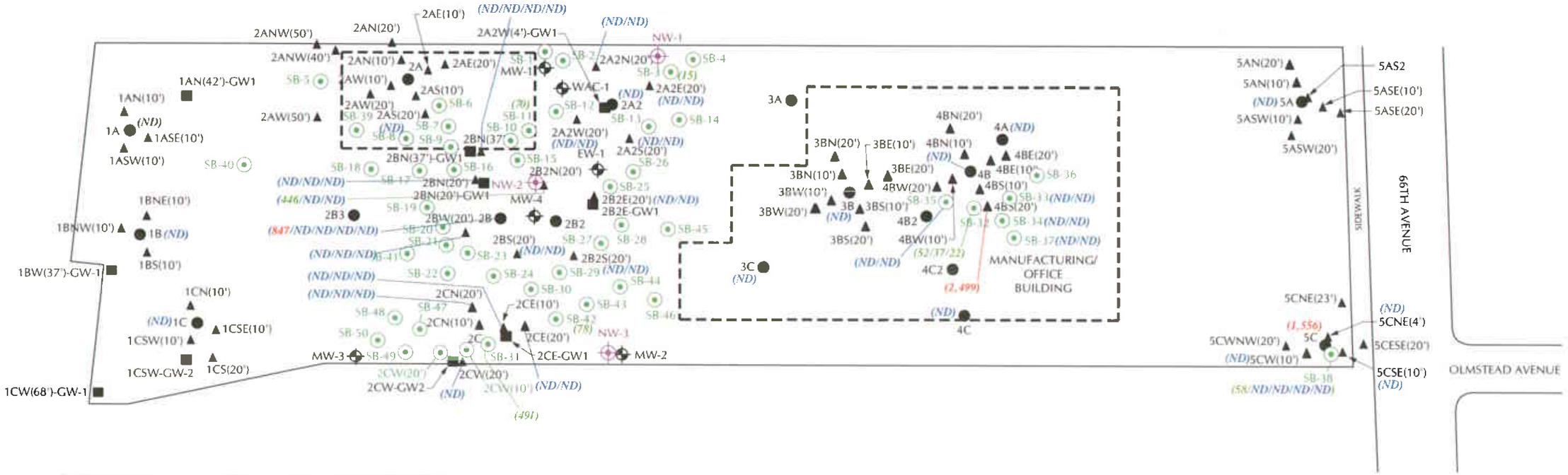
Motor Oil-Affected Soil 1 - 5 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 6C

003.09155.00.006_F6-FIG5-AI 01.2006|sc|LDF/SXM



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(491)	DETECTED ABOVE LABORATORY REPORTING LIMIT (50 mg/kg)
(847)	DETECTED ABOVE ACTION LEVEL (500 mg/kg)
(ND)	NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

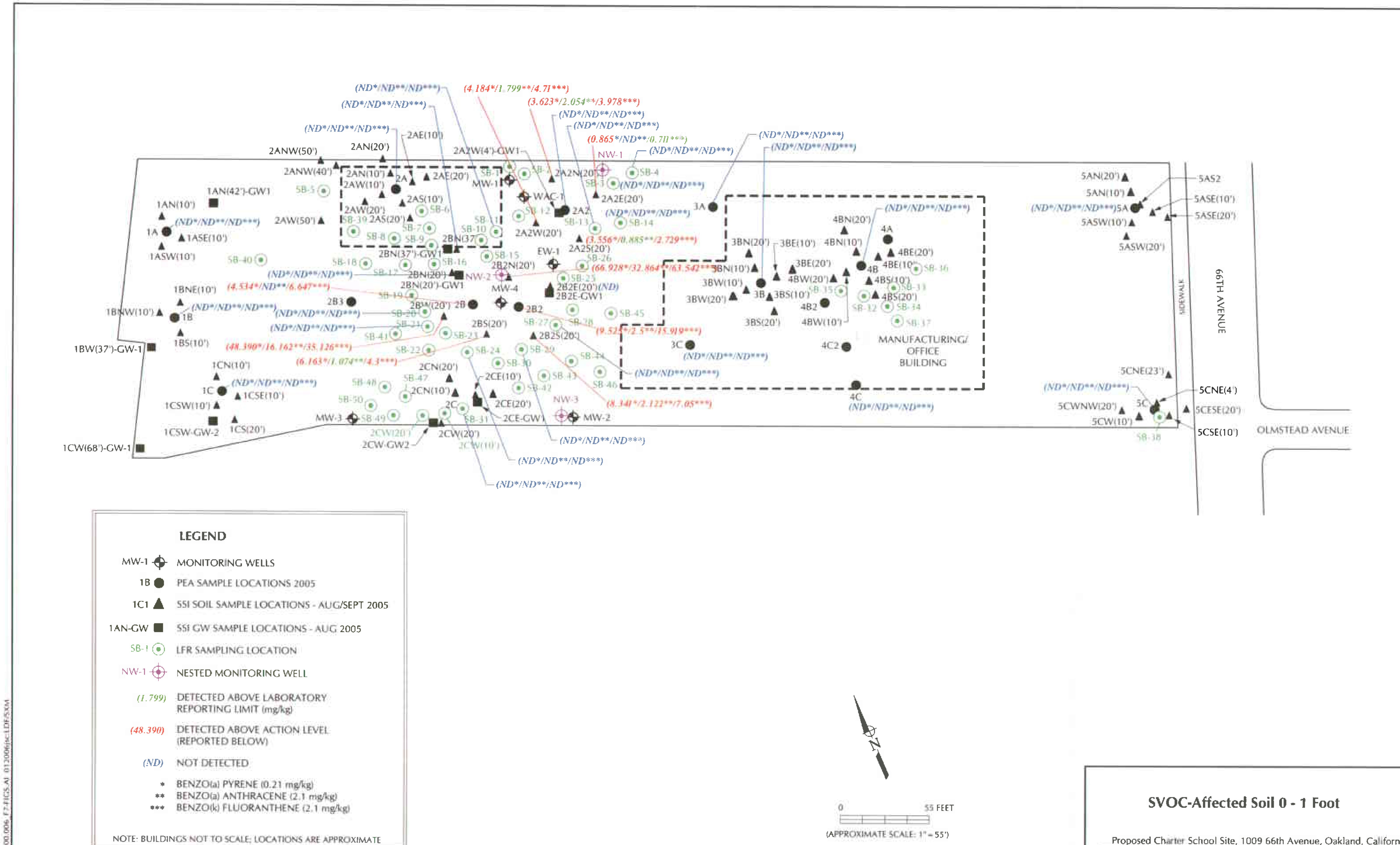
Motor Oil-Affected Soil 5 - 24 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 6D

003.09155.00.006 F6-FIGS A1 012006/jrc LDF/SXM



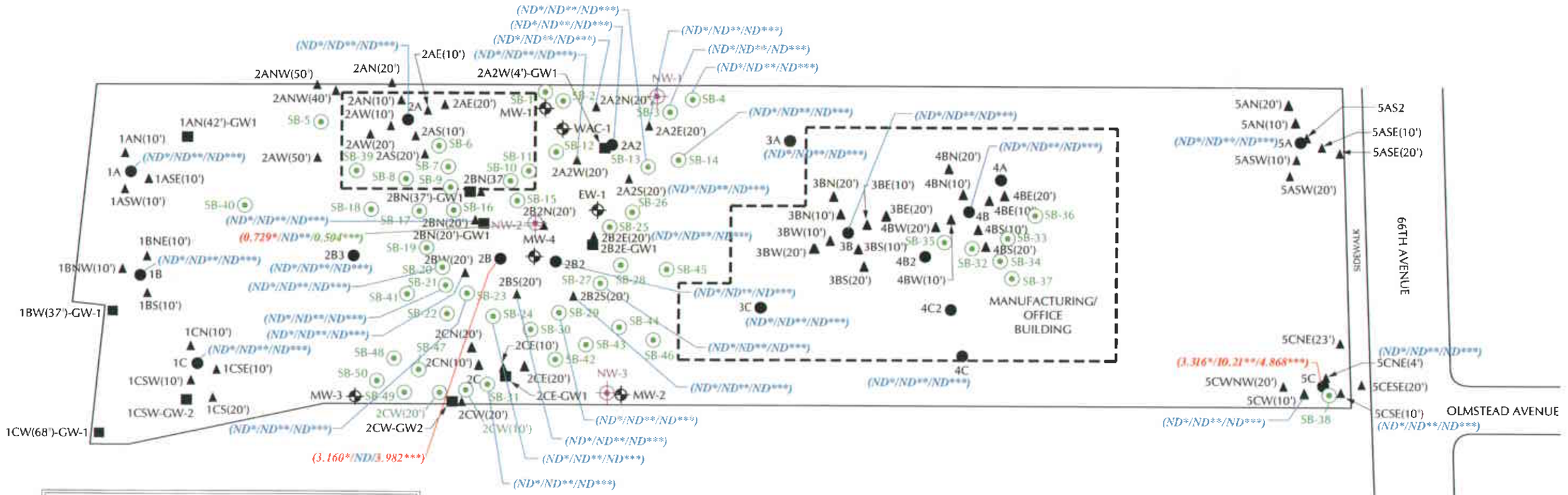
SVOC-Affected Soil 0 - 1 Foot

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 7A

003-09155-00-006_F7-FIGS.AI_012006(sc:LDF/SXM)



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(0.504)	DETECTED ABOVE LABORATORY REPORTING LIMIT (mg/kg)
(0.729)	DETECTED ABOVE ACTION LEVEL (REPORTED BELOW)
(ND)	NOT DETECTED
*	BENZO(a) PYRENE (0.21 mg/kg)
**	BENZO(a) ANTHRACENE (2.1 mg/kg)
***	BENZO(k) FLUORANTHENE (2.1 mg/kg)

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

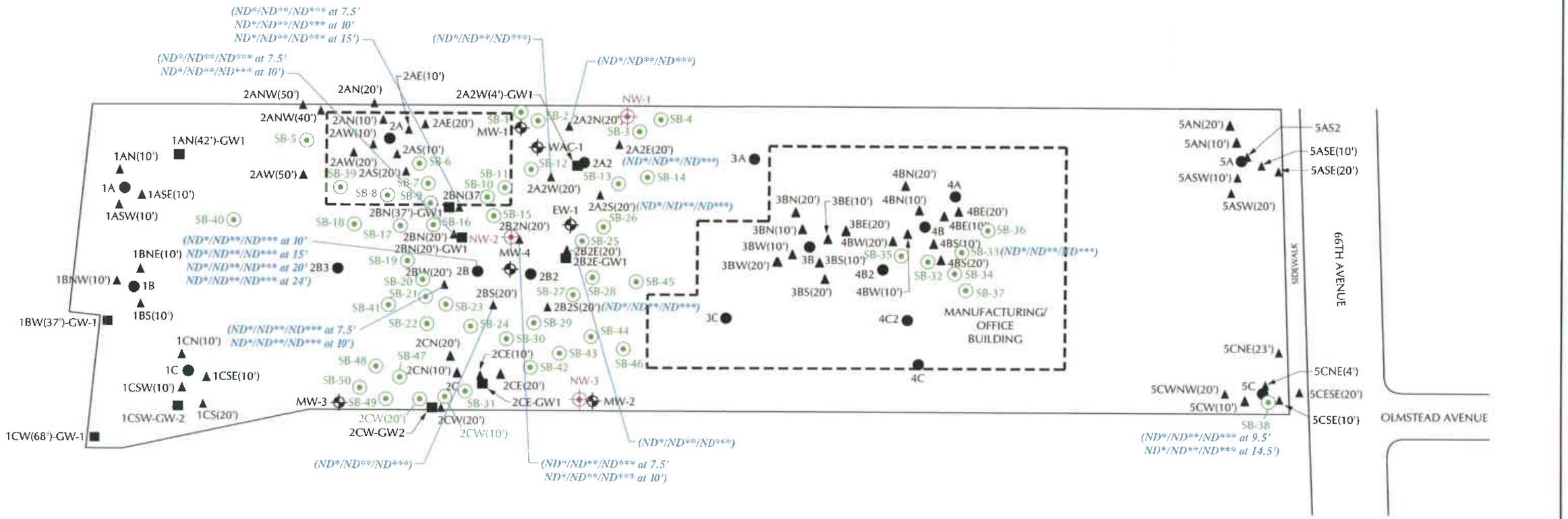
SVOC-Affected Soil 1 - 6 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 7B

003.09155.00.006 F7-FIGS.AI 012306jc:LDF/SXM



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(ND)	NOT DETECTED
*	BENZO(a) PYRENE (0.21 mg/kg)
**	BENZO(a) ANTHRACENE (2.1 mg/kg)
***	BENZO(k) FLUORANTHENE (2.1 mg/kg)

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

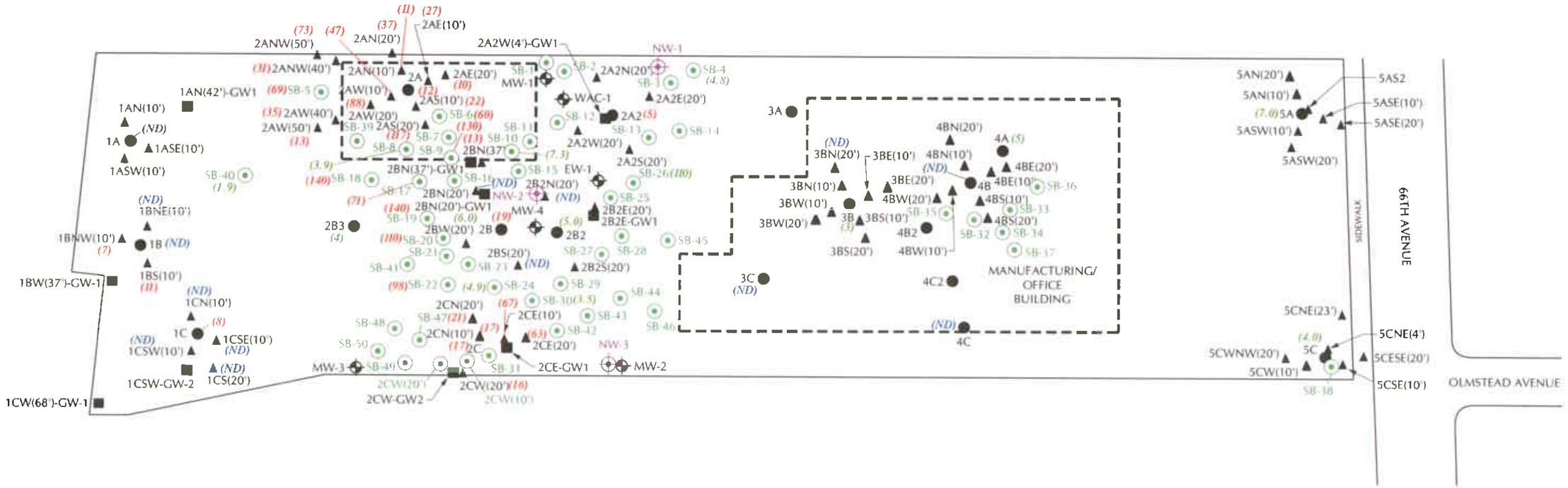
SVOC-Affected Soil 6 - 24 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 7C

003.09155.00.006 F7-FICS.AI 012306/ic:LDF/SXM



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(6.0)	DETECTED ABOVE LABORATORY REPORTING LIMIT (5 mg/kg)
(57)	DETECTED ABOVE ACTION LEVEL (7 mg/kg)
(ND)	NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

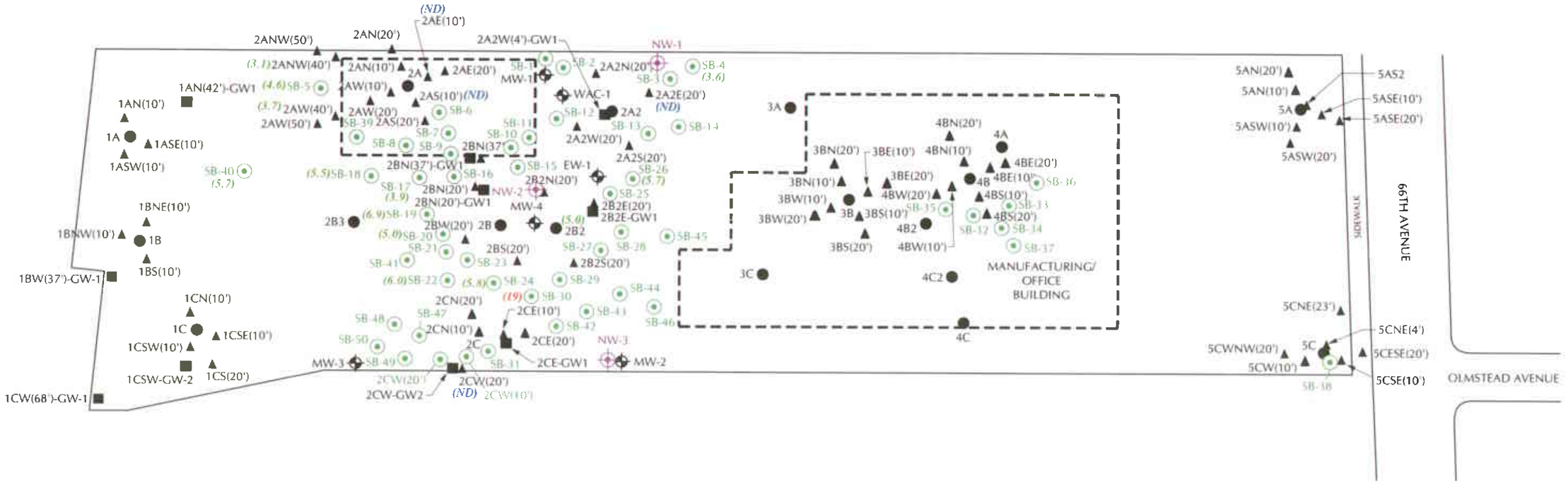
Arsenic-Affected Soil 0 - 1 Foot

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 8A

003.09155.00.004_ARSENIC FIGS.AI 01/2006/acLDF/KDZ



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(5.0)	DETECTED ABOVE LABORATORY REPORTING LIMIT (5 mg/kg)
(57)	DETECTED ABOVE ACTION LEVEL (7 mg/kg)
(ND)	NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

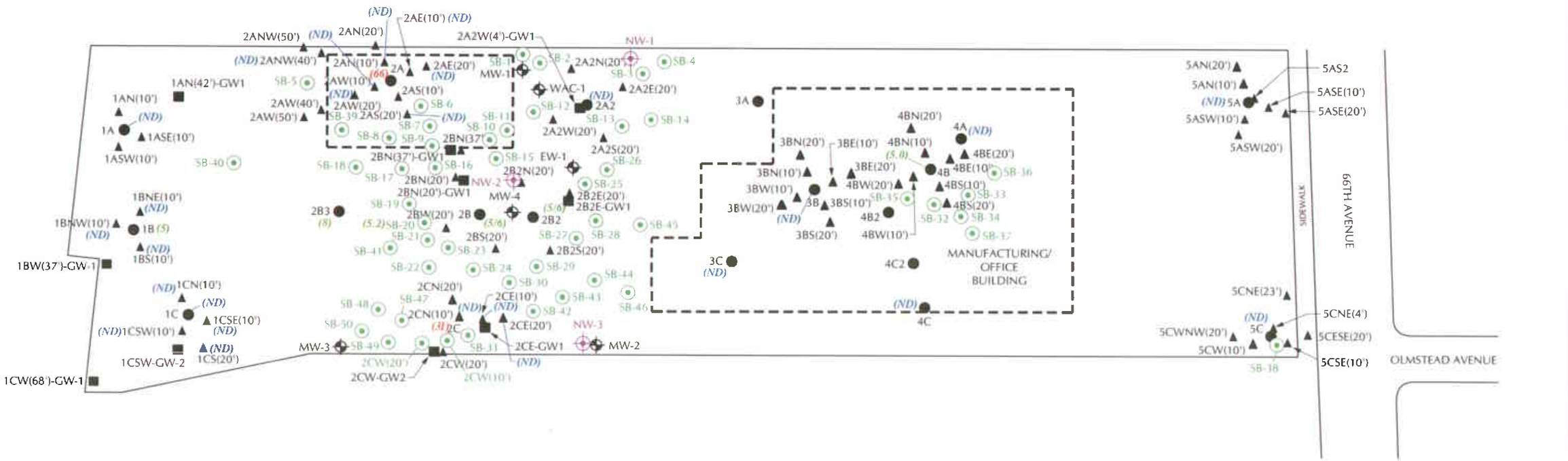
Arsenic-Affected Soil 1 - 5 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 8B

003.09153.00.004 ARSENIC FIGS AI 012006 kl-LDF/KDZ



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(5.0)	DETECTED ABOVE LABORATORY REPORTING LIMIT (5 mg/kg)
(66)	DETECTED ABOVE ACTION LEVEL (7 mg/kg)
(ND)	NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

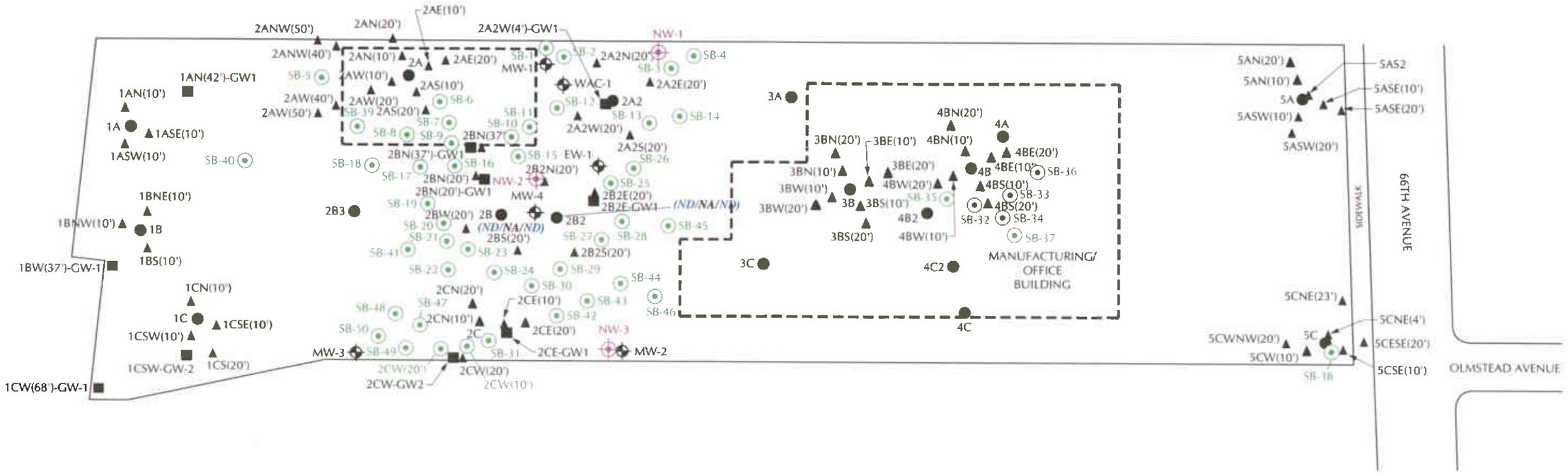
Arsenic-Affected Soil 5 - 15 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 8C

003.09155.00.004 ARSENIC FIG5.AI 01/2006psc1.DF/KDZ



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(ND)	NOT DETECTED
(NA)	NOT ANALYZED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

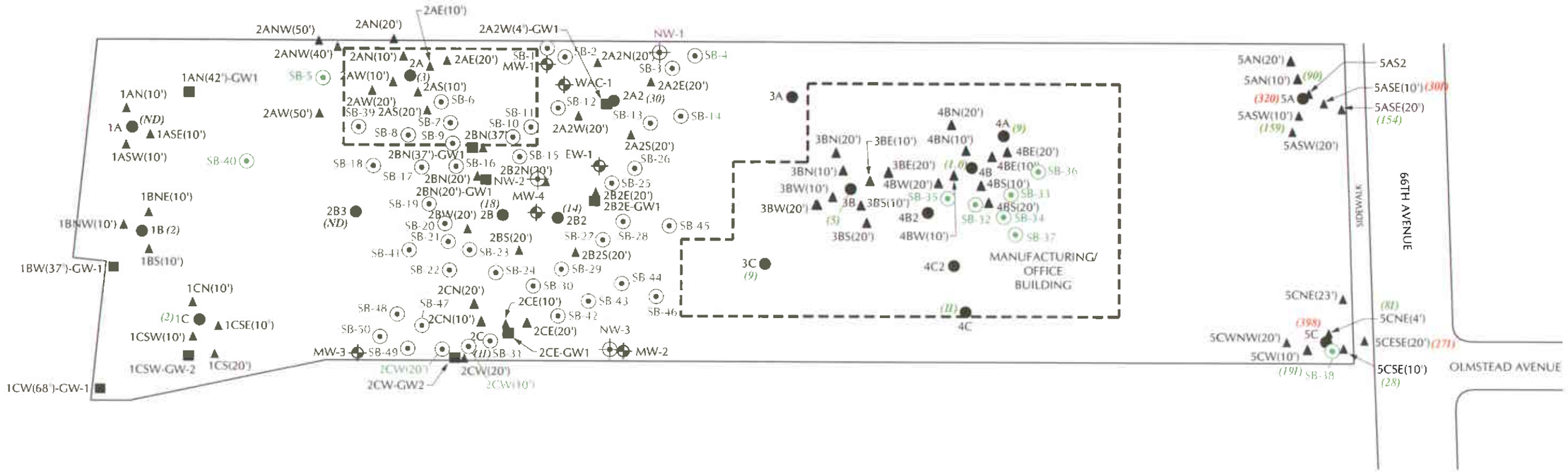
003.09155.00.004 ARSENIC FIGS.AI 01.2006inc.DF/KDZ

Arsenic-Affected Soil 15 - 24 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 8D



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(18)	DETECTED ABOVE LABORATORY REPORTING LIMIT (2-5 mg/kg)
(398)	DETECTED ABOVE ACTION LEVEL (255 mg/kg)
(ND)	NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

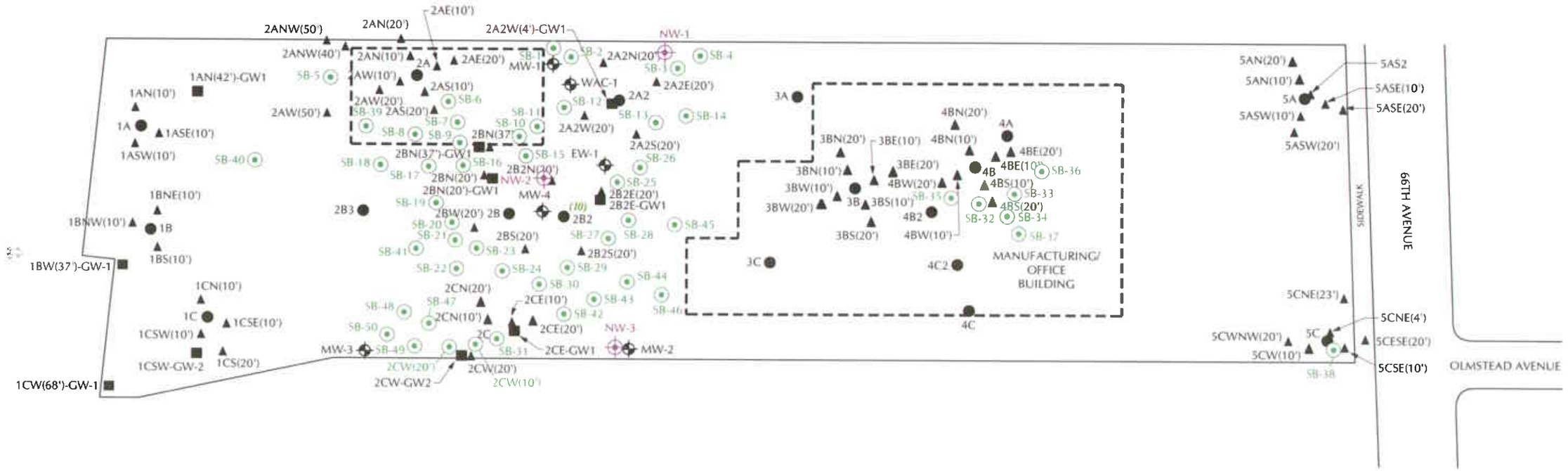
Lead-Affected Soil 0 - 1 Foot

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 9A

003.09155.00.006_F9-FIGS.AI 01.2006|rc-LDF/SXM



LEGEND

- MW-1 — MONITORING WELLS
- 1B — PEA SAMPLE LOCATIONS 2005
- 1C1 — SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
- 1AN-GW — SSI GW SAMPLE LOCATIONS - AUG 2005
- SB-1 — LFR SAMPLING LOCATION
- NW-1 — NESTED MONITORING WELL
- *(10)* — DETECTED ABOVE LABORATORY REPORTING LIMIT (5 mg/kg)

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

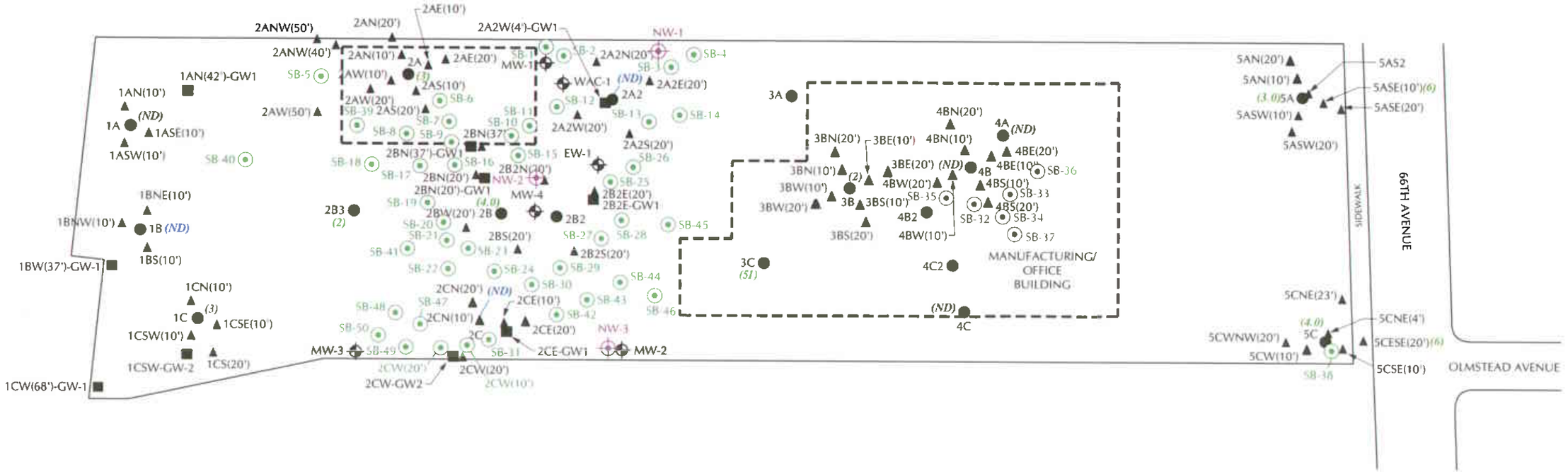
Lead-Affected Soil 1 - 5 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 9B

003.09155.00.006_F9-FIGS.AI 01/2006/nc-LDF/SXM



LEGEND

- MW-1 — MONITORING WELLS
- 1B — PEA SAMPLE LOCATIONS 2005
- 1C1 — SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
- 1AN-GW — SSI GW SAMPLE LOCATIONS - AUG 2005
- SB-1 — LFR SAMPLING LOCATION
- NW-1 — NESTED MONITORING WELL
- *(4.0)* — DETECTED ABOVE LABORATORY REPORTING LIMIT (2-5 mg/kg)
- *(ND)* — NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

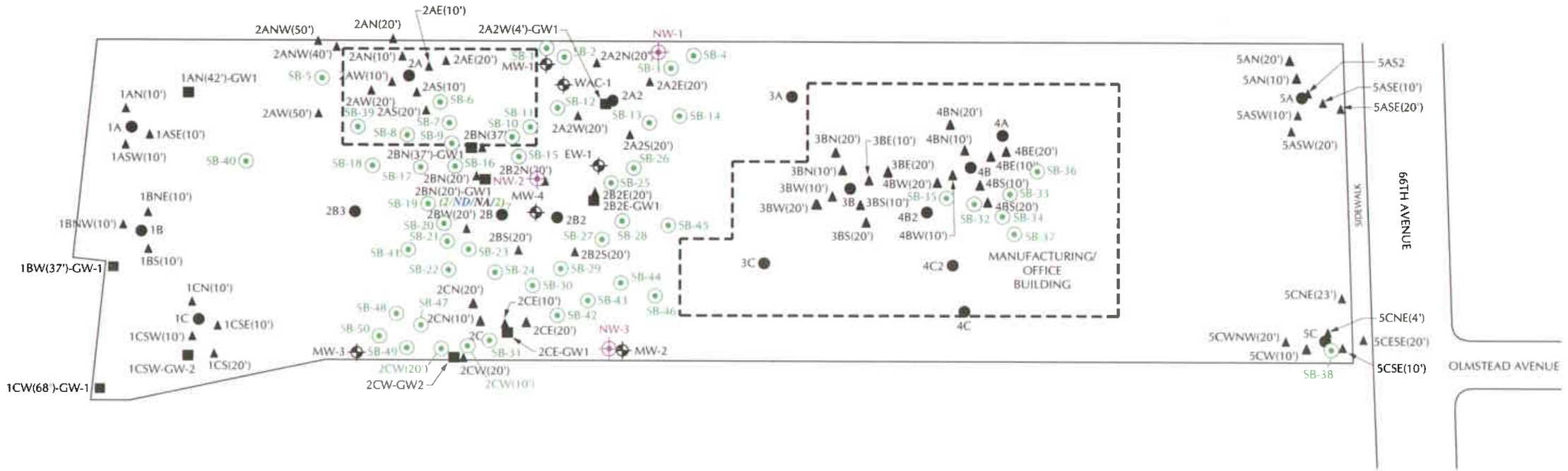
Lead-Affected Soil 5 - 10 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 9C

003.09155.00.006_PHFIGS.AI 012006|sc-LDF/SXM



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(2)	DETECTED ABOVE LABORATORY REPORTING LIMIT (2-5 mg/kg)
(ND)	NOT DETECTED
(NA)	NOT ANALYZED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

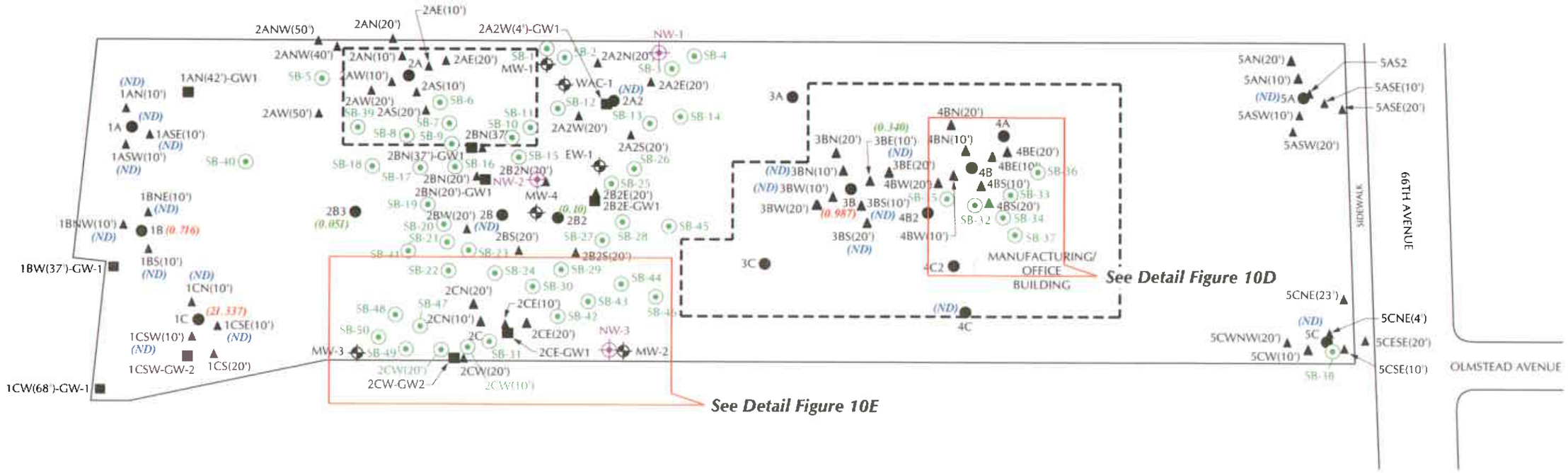
Lead-Affected Soil 10 - 24 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 9D

003.09155.00.006_FIGS.AI 012006rc-LDF/SXM



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(0.10)	DETECTED ABOVE LABORATORY REPORTING LIMIT (mg/kg)
(21.337)	DETECTED ABOVE ACTION LEVEL (0.37 mg/kg)
(ND)	NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

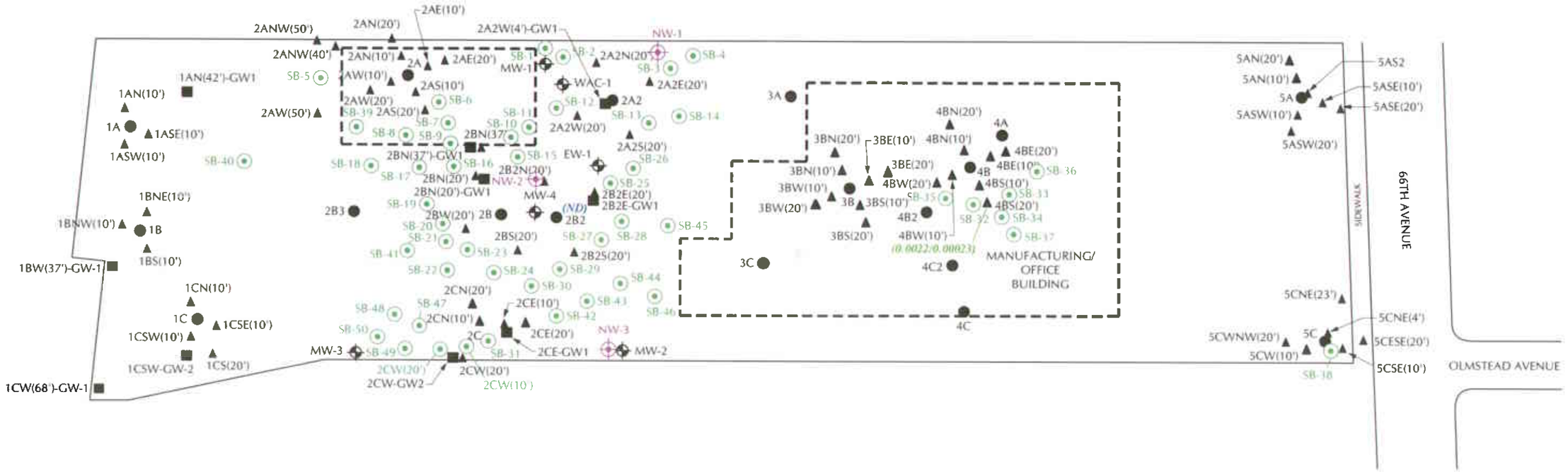
PCB-Affected Soil 0 - 1 Foot

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 10A

003.09155.00.006_F10-FIGS.AI 012006jac:LDF/SXM



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(0.0022/0.00023)	DETECTED ABOVE LABORATORY REPORTING LIMIT (mg/kg)
(ND)	NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

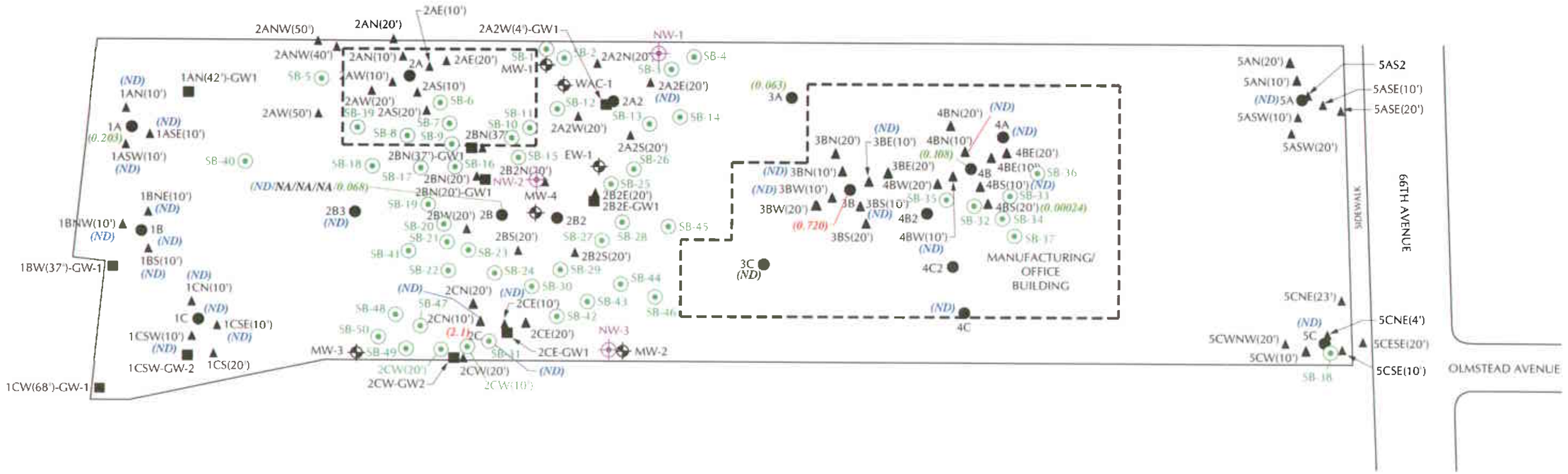
PCB-Affected Soil 1 - 5 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 10B

003.09155.00.006_F10-FIGS.AI 012006jac:LDF/SXM



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(0.203)	DETECTED ABOVE LABORATORY REPORTING LIMIT (mg/kg)
(2.1)	DETECTED ABOVE ACTION LEVEL (0.37 mg/kg)
(ND)	NOT DETECTED
(NA)	NOT ANALYZED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

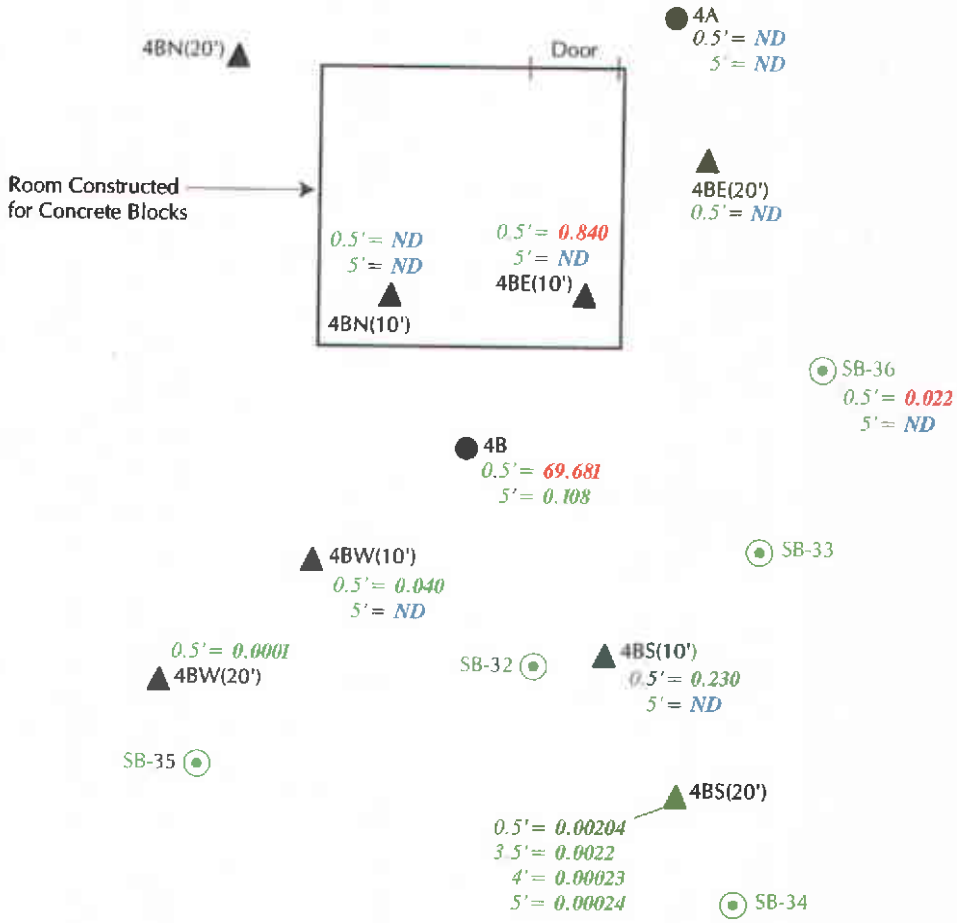
PCB-Affected Soil at 5-24 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 10C

003.09155.00.006 F10-FIG5.AI 012006jpc1.DF/SXM



LEGEND

4B ●	PEA SAMPLE LOCATIONS 2005
4BS ▲	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
SB-32 ⊙	LFR SAMPLING LOCATION
0.840	DETECTED ABOVE LABORATORY REPORTING LIMIT (mg/kg)
69.681	DETECTED ABOVE ACTION LEVEL (0.37 mg/kg)
ND	NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

0 10 FEET

(APPROXIMATE SCALE: 1" = 10')

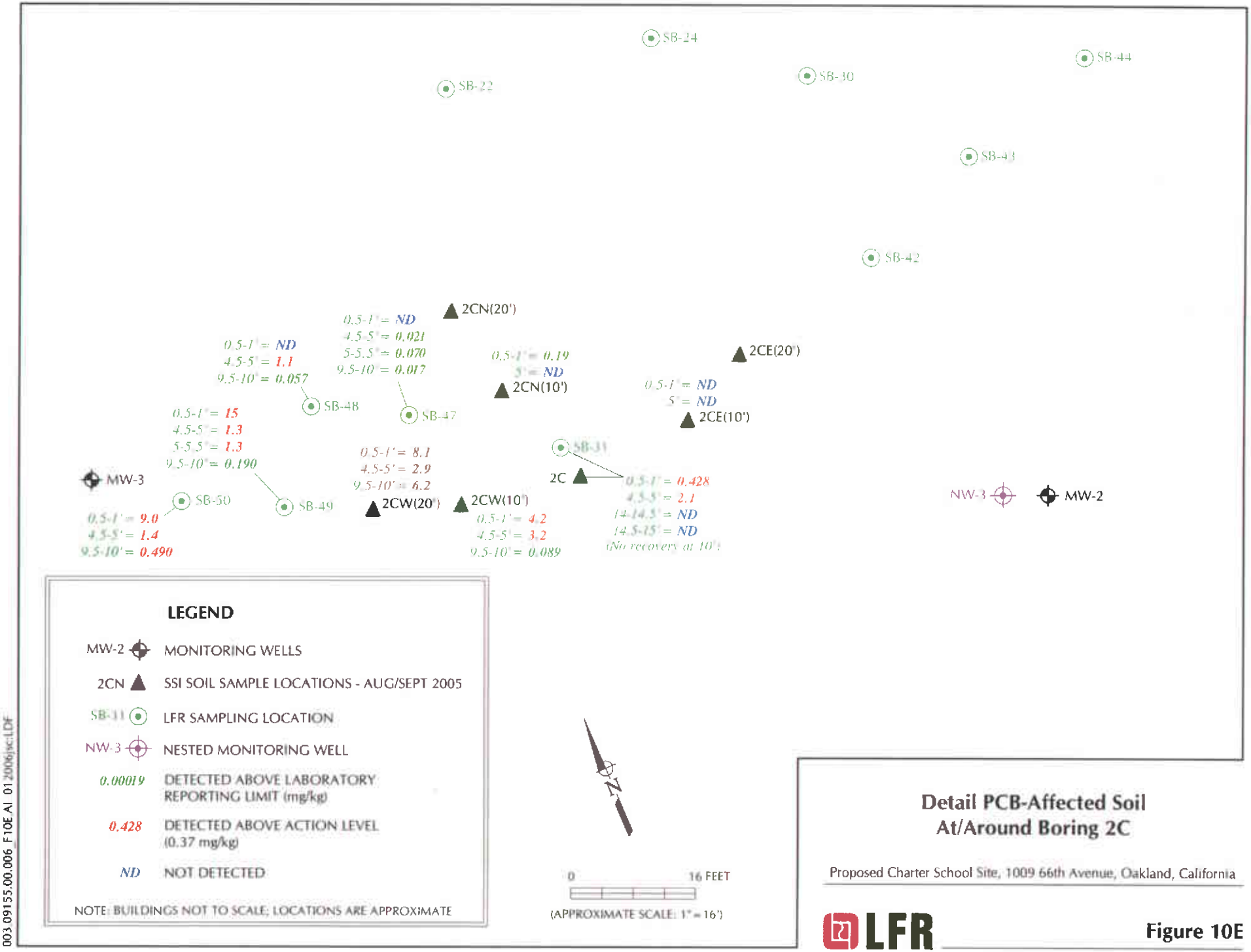
Detail PCB-Affected Soil
Manufacturing/Office Building

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 10D

003.09155.00.000 F10D.AI 012306jsc.LDF



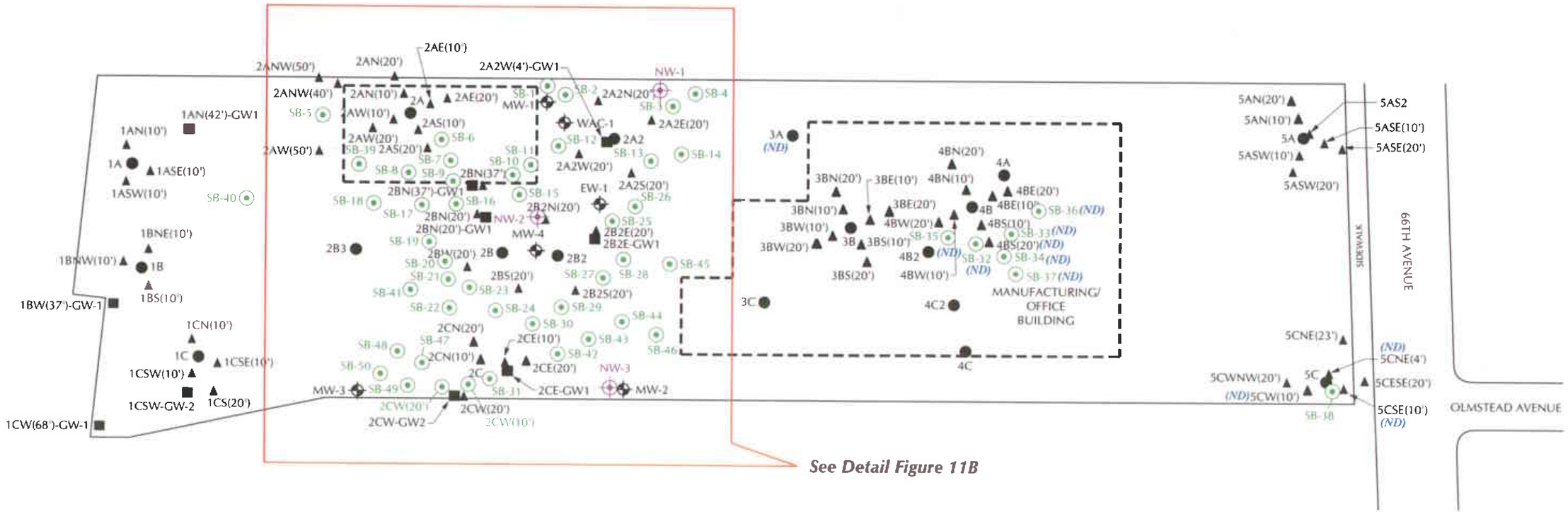
Detail PCB-Affected Soil At/Around Boring 2C

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 10E

003 09155.00.006_F10E AI 01 2006jjc:LDF



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(ND)	NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

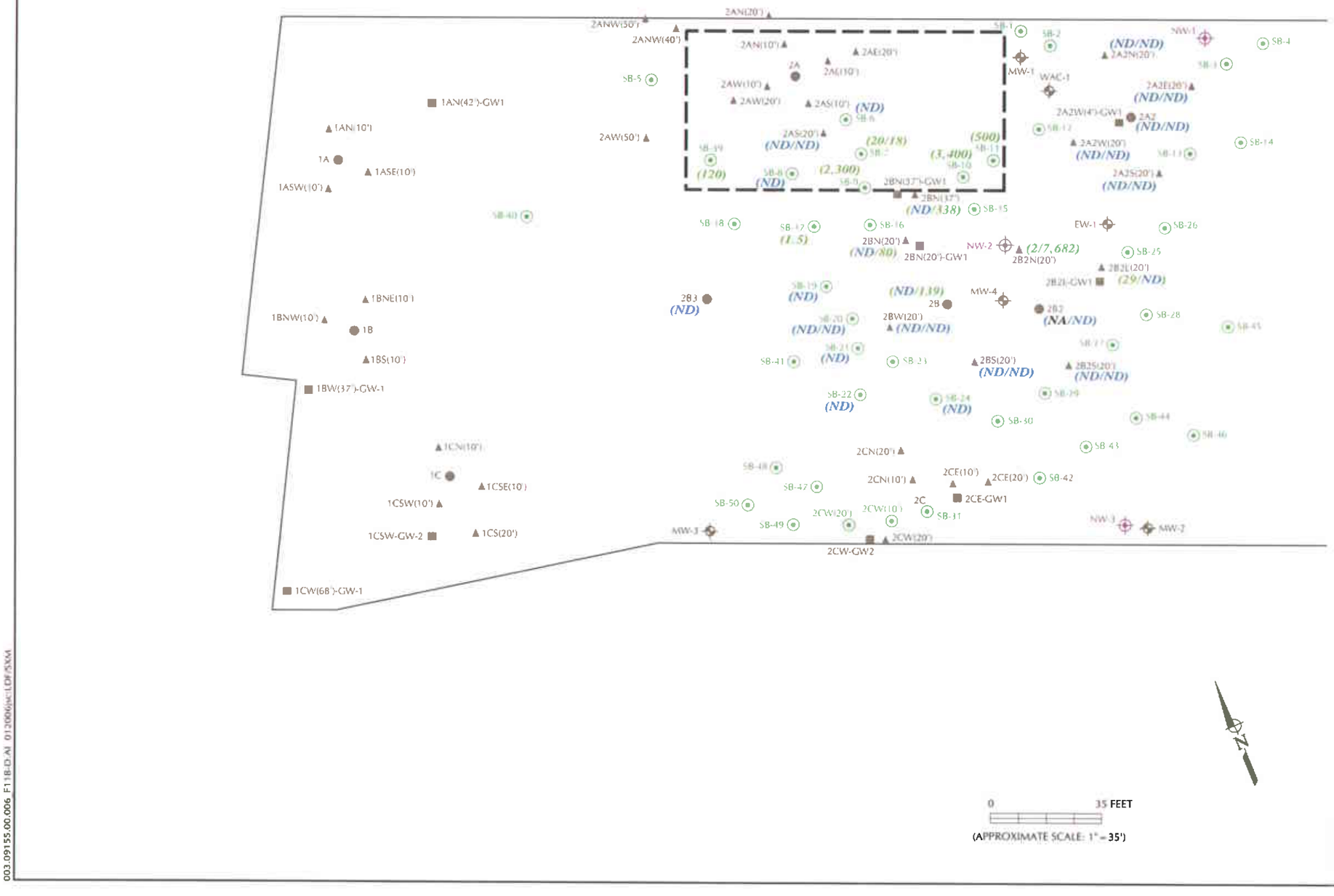
Benzene-Affected Soil 0 - 6 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 11A

001.09155.00.006_F11-FIGS.AI 01206isc:LDF/SXM



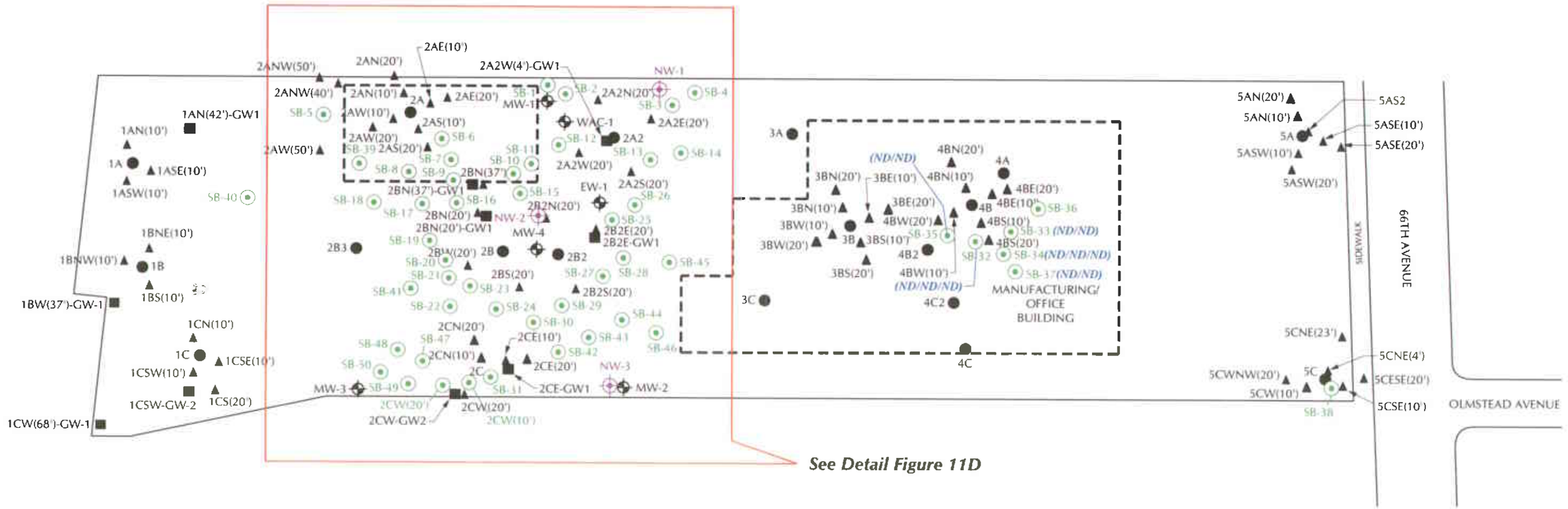
003.09155.00.006 F11B-ED-AI 012006[xc:LDF/SXM

Detail Benzene-Affected Soil
0-6 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 11B



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(ND)	NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

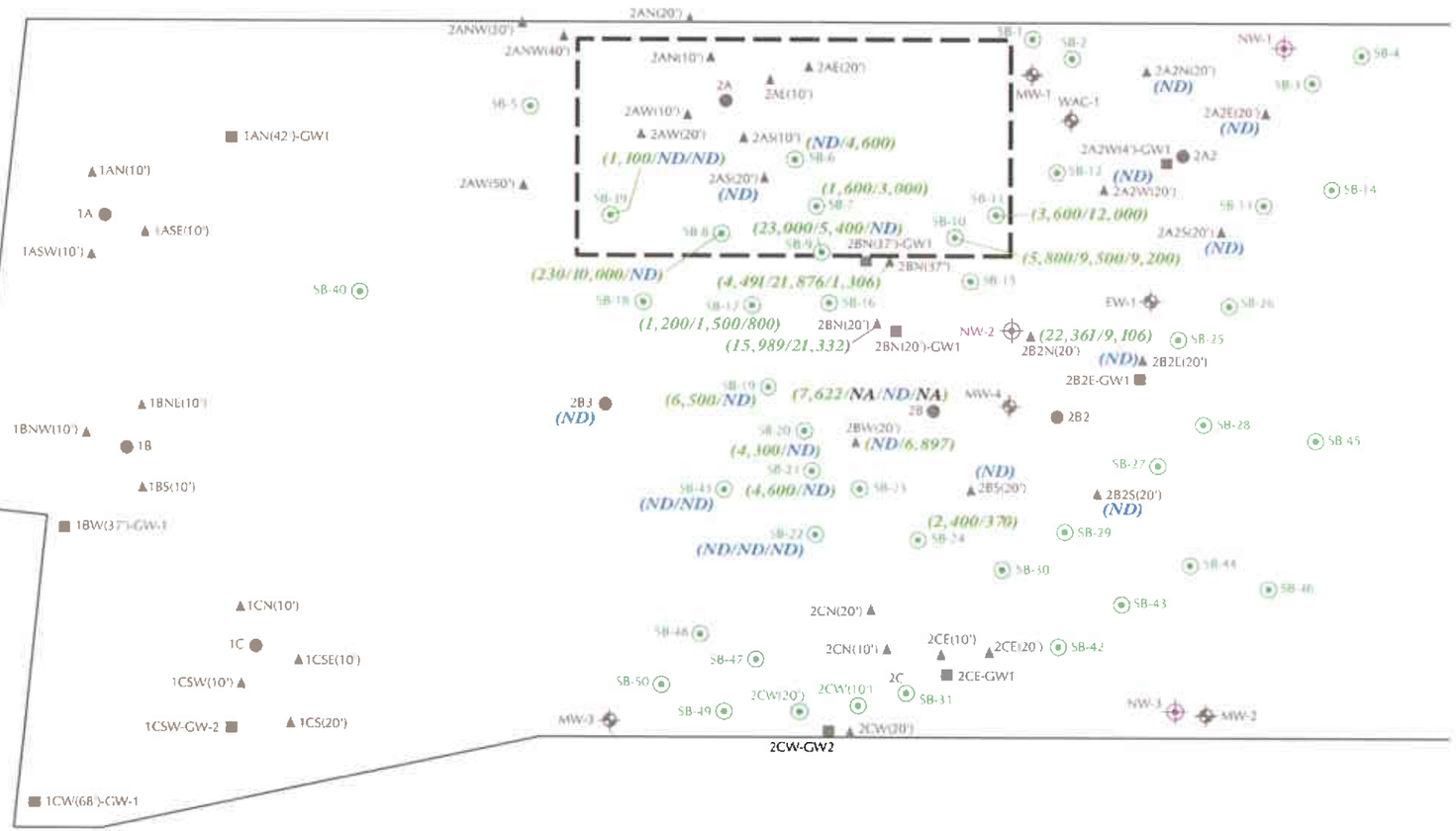
003.09155.00.006; F11-FIG5.AI 01/2006/sc:LDF/SAM

Benzene-Affected Soil 6 - 24 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 11C



LEGEND

MW-1	MONITORING WELLS
1B	PEA SAMPLE LOCATIONS 2005
1C1	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1	LFR PROPOSED SAMPLING LOCATION
NW-1	NESTED MONITORING WELL
(0..3)	DETECTED ABOVE LABORATORY REPORTING LIMIT (2-200 µg/kg)
(ND)	NOT DETECTED
(NA)	NOT ANALYZED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

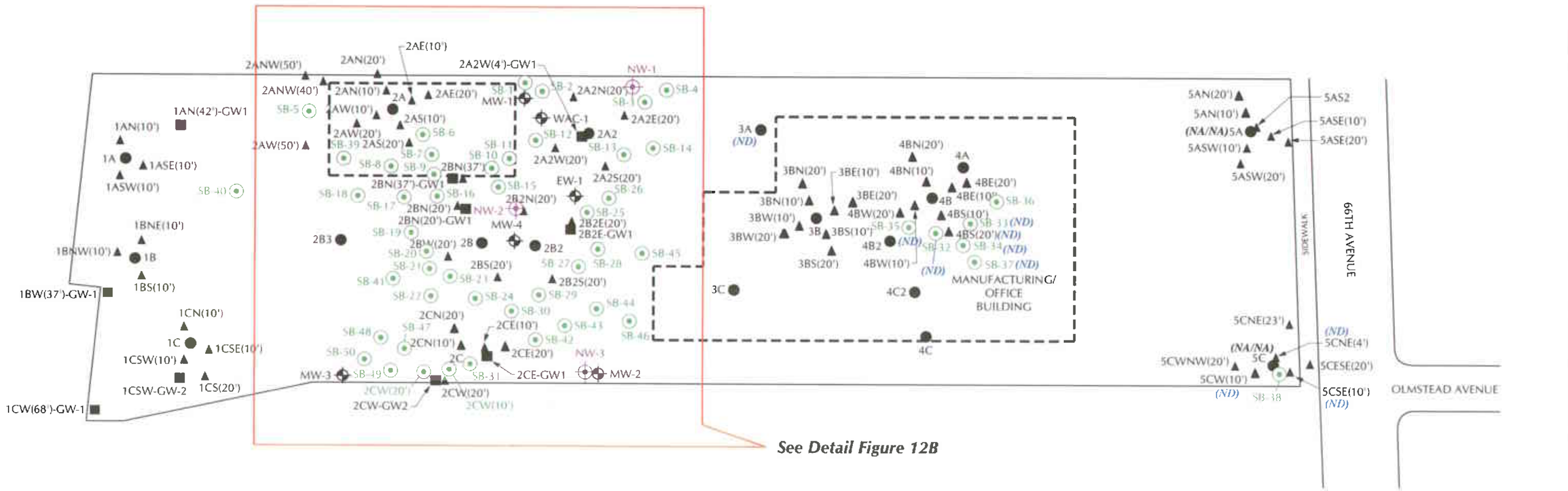
Detail Benzene-Affected Soil 6-24 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 11D

003.09155.00.006_F11B-D.AI 012006jnc LDF/SXM



LEGEND

MW-1 ⊕	MONITORING WELLS
1B ●	PEA SAMPLE LOCATIONS 2005
1C1 ▲	SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
1AN-GW ■	SSI GW SAMPLE LOCATIONS - AUG 2005
SB-1 ◉	LFR SAMPLING LOCATION
NW-1 ⊕	NESTED MONITORING WELL
(ND)	NOT DETECTED
(NA)	NOT ANALYZED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

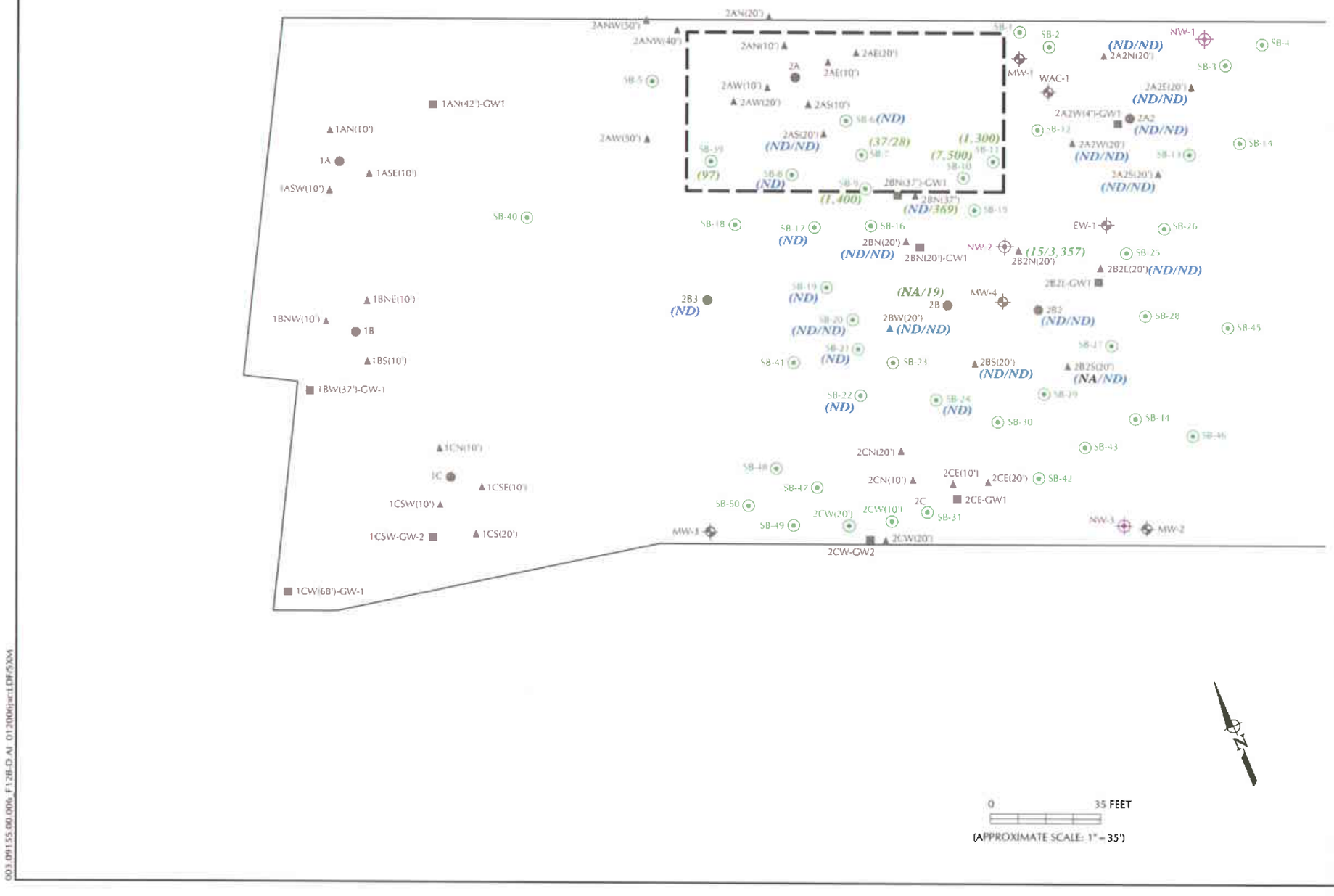
MTBE-Affected Soil 0 - 6 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 12A

003.09155.00.006 F11-FIGS AI 012006inc LDF/SXM



LEGEND

- MW-1 — MONITORING WELLS
- 1B — PEA SAMPLE LOCATIONS 2005
- 1C1 — SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
- 1AN-GW — SSI GW SAMPLE LOCATIONS - AUG 2005
- SB-1 — LFR PROPOSED SAMPLING LOCATION
- NW-1 — NESTED MONITORING WELL
- (1,400) — DETECTED ABOVE LABORATORY REPORTING LIMIT (µg/kg)
- (ND) — NOT DETECTED
- (NA) — NOT ANALYZED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

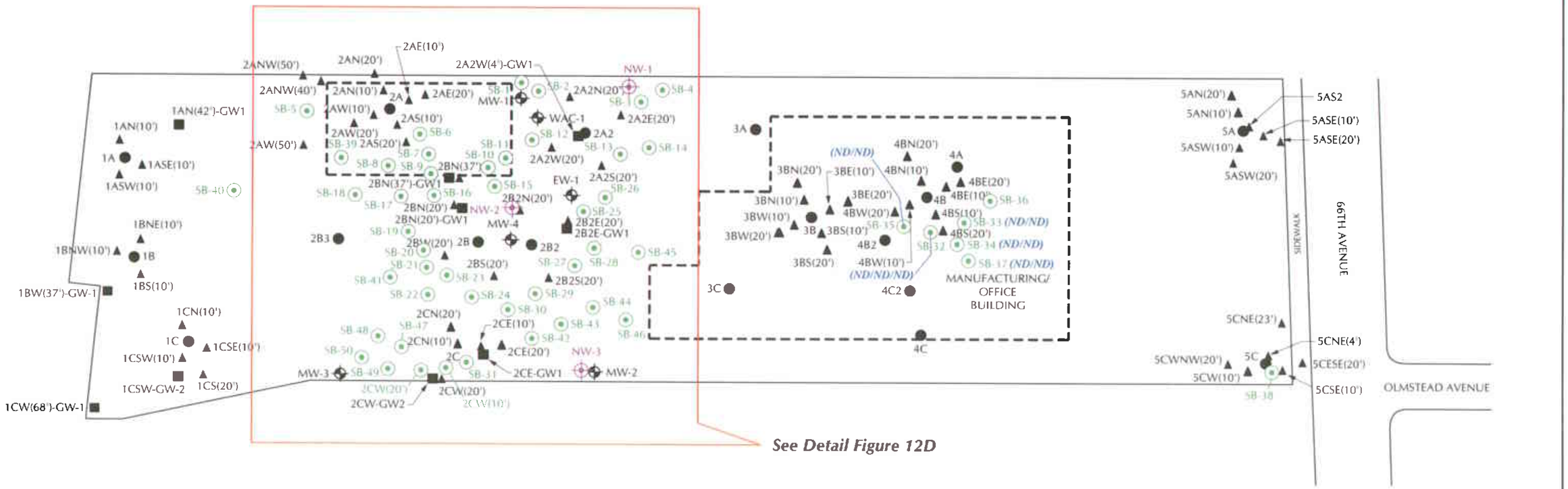
Detail MTBE-Affected Soil
0-6 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 12B

003.09155.00.006 F12B-D.AI 01/2006jac1.DP/SXM



LEGEND

- MW-1 — MONITORING WELLS
- 1B — PEA SAMPLE LOCATIONS 2005
- 1C1 — SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
- 1AN-GW — SSI GW SAMPLE LOCATIONS - AUG 2005
- SB-1 — LFR SAMPLING LOCATION
- NW-1 — NESTED MONITORING WELL
- (ND) — NOT DETECTED

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

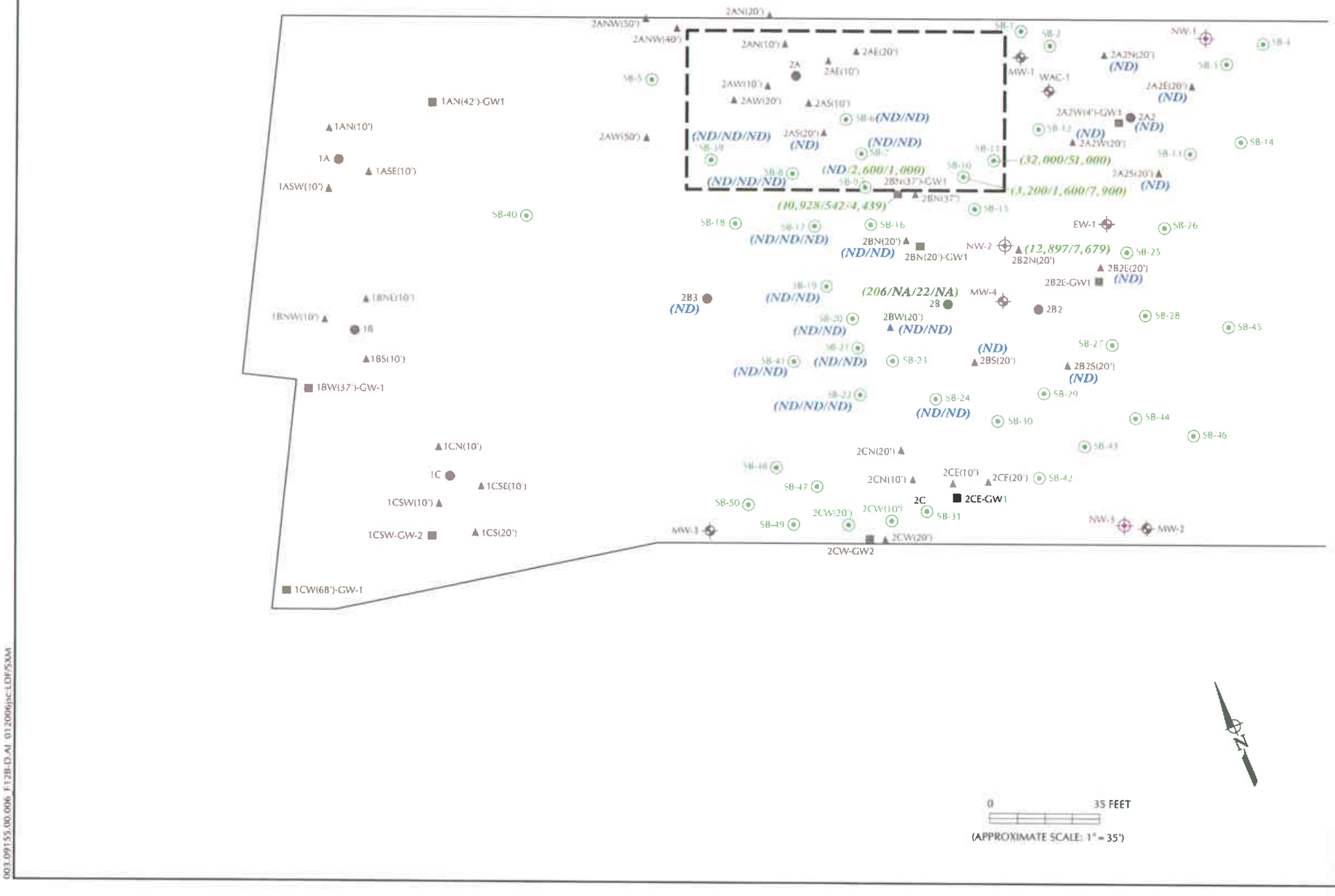
003.09155.00.006 F11-FIGS.AI 012006|jc|LDF/SAM

MTBE-Affected Soil 6 - 24 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 12C



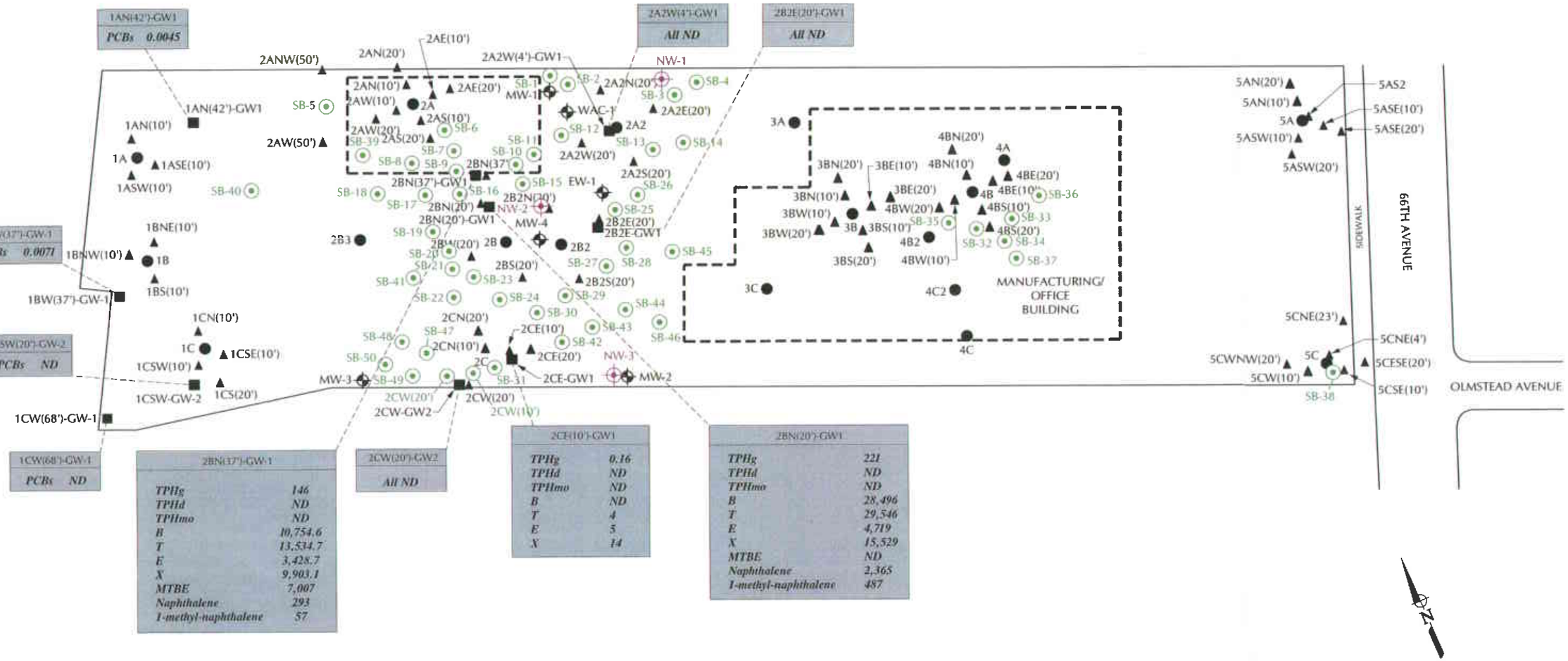
003.09155.00.006_F12B-D.AI 012006jnc LDF/SXM

Detail MTBE-Affected Soil 6-24 Feet

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 12D



PEA Groundwater Data

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 13

003.09155.00.006_F13.AI 012308jc-LDF/SXM

NW-2	(S)	(I)	(D)
TPHg	7	120	1.4
TPHd	7.3	7.2	0.820
TPHmo	2.6	1.6	0.530
B	570	2,200	300
T	570	2,400	13
E	62	2,100	ND
X	1,200	8,600	130
MTBE	1,600	120,000	1,600

NW-1	(S)	(I)	(D)
TPHd	0.320	0.089	ND
TPHmo	0.420	ND	ND
MTBE	<2.0	8	37

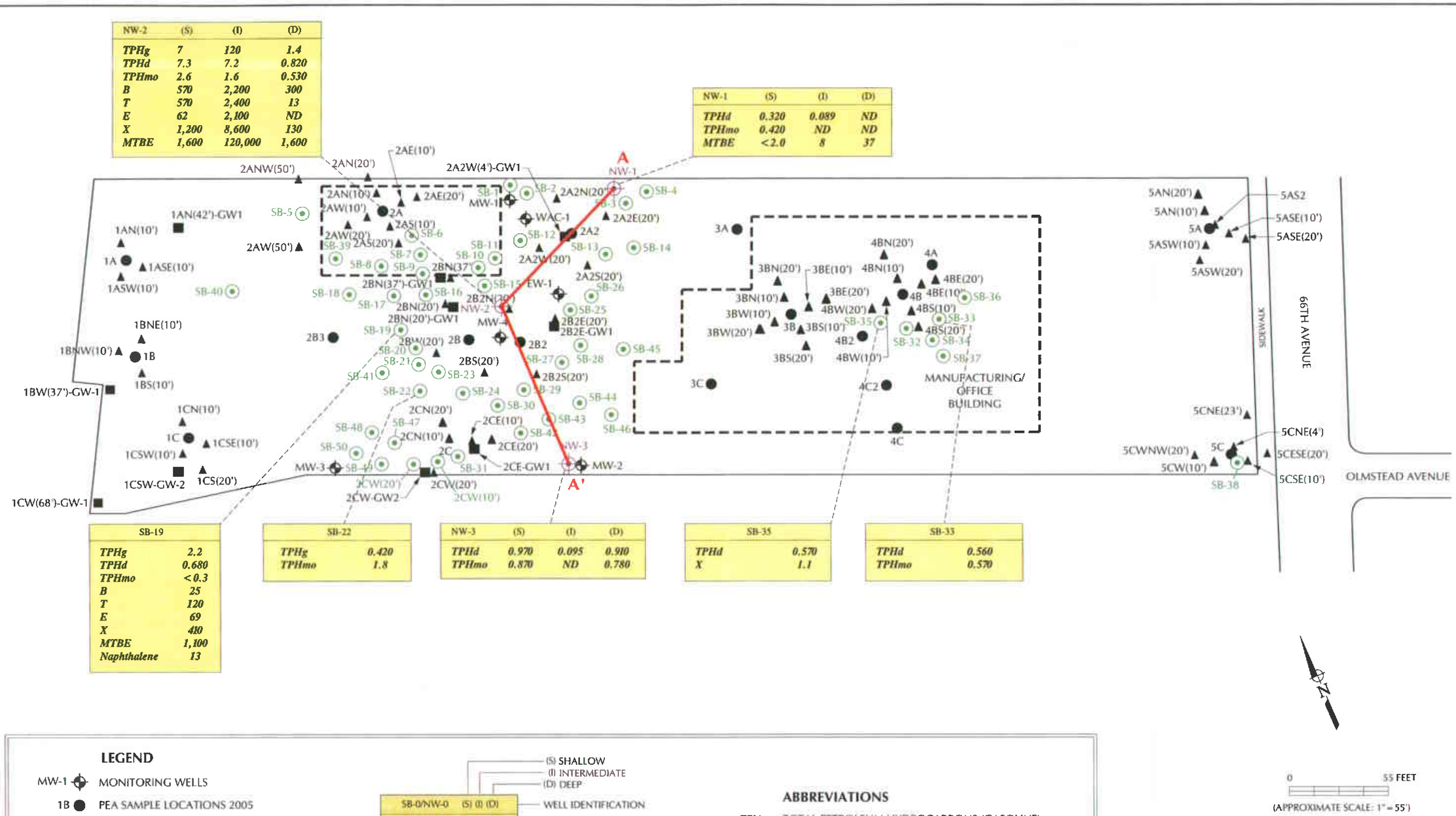
SB-19	
TPHg	2.2
TPHd	0.680
TPHmo	<0.3
B	25
T	120
E	69
X	410
MTBE	1,100
Naphthalene	13

SB-22	
TPHg	0.420
TPHmo	1.8

NW-3	(S)	(I)	(D)
TPHd	0.970	0.095	0.910
TPHmo	0.870	ND	0.780

SB-35	
TPHd	0.570
X	1.1

SB-33	
TPHd	0.560
TPHmo	0.570



LEGEND

- MW-1 — MONITORING WELLS
- 1B — PEA SAMPLE LOCATIONS 2005
- 1C1 — SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
- 1AN-GW — SSI GW SAMPLE LOCATIONS - AUG 2005
- SB-1 — LFR SAMPLING LOCATION
- NW-1 — NESTED MONITORING WELL
- A — A' NESTED WELLS CROSS SECTION

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

SB-0/NW-0	(S)	(I)	(D)
TPHg	7		
TPHd	7.3		
TPHmo	2.6		
B	25		
T	120		
E	69		
X	410		
MTBE	1,100		
Naphthalene	13		

(S) SHALLOW
(I) INTERMEDIATE
(D) DEEP
WELL IDENTIFICATION
REPORTED IN MILLIGRAMS PER LITER (mg/l)
REPORTED IN MICROGRAMS PER LITER (µg/l)

ABBREVIATIONS

TPHg - TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
TPHd - TOTAL PETROLEUM HYDROCARBONS (DIESEL)
TPHmo - TOTAL PETROLEUM HYDROCARB ONS (MOTOR OIL)
B - BENZENE
E - ETHYLBENZENE
X - TOTAL XYLENES
MTBE - METHYL TERTIARY-BUTYL ETHER

SSI Groundwater Data

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 14

003.09155.060.006 F14.AI 012306jc-LDF/SXM

A

A'

NW-1 SB-3 NW-2 NW-3

Ground Surface

FILL MATERIAL

FINE SANDS

SILTY CLAY

CLAYEY SILT

FINE SANDS

SILTY CLAY

ELEVATION, FEET MSL

0 10 20 30 40

NW-1 (S)	
TPHg	<0.05
TPHd	0.32
TPHmo	0.42
B	<0.5
T	<0.5
E	<0.5
X	<0.5
MTBE	<2.0

NW-1 (I)	
TPHg	<0.05
TPHd	0.009
TPHmo	<0.3
B	<0.5
T	<0.5
E	<0.5
X	<0.5
MTBE	8

NW-1 (D)	
TPHg	<0.05
TPHd	<0.05
TPHmo	<0.3
B	<0.5
T	<0.5
E	<0.5
X	<0.5
MTBE	37

NW-2 (S)	
TPHg	7
TPHd	7.3
TPHmo	2.6
B	570
T	570
E	62
X	1,200
MTBE	1,600

NW-2 (I)	
TPHg	120
TPHd	7.2
TPHmo	1.6
B	2,200
T	24,000
E	2,100
X	8,600
MTBE	120,000

NW-2 (D)	
TPHg	1.4
TPHd	0.820
TPHmo	0.530
B	300
T	13
E	<2.5
X	130
MTBE	1,600

NW-3 (S)	
TPHg	<0.05
TPHd	0.970
TPHmo	0.870
B	<0.5
T	<0.5
E	<0.5
X	<0.5
MTBE	<2.0

NW-3 (I)	
TPHg	<0.05
TPHd	0.095
TPHmo	<0.3
B	<0.5
T	<0.5
E	<0.5
X	<0.5
MTBE	<2.0

NW-3 (D)	
TPHg	<0.05
TPHd	0.910
TPHmo	0.780
B	<0.5
T	<0.5
E	<0.5
X	<0.5
MTBE	<2.0

10

(SCALE IN FEET)

0 32

LEGEND

NW-1 — WELL IDENTIFICATION

SCREENED INTERVAL

SB-3 — BORING IDENTIFICATION

(S) SHALLOW
(I) INTERMEDIATE
(D) DEEP

NW-2 (S) (I) (D)	
TPHg	7
TPHd	7.3
TPHm	2.6
B	570
T	570
E	62
X	1,200
MTBE	1,600

WELL IDENTIFICATION

REPORTED IN MILLIGRAMS PER LITER (mg/l)

REPORTED IN MICROGRAMS PER LITER (µg/l)

ABBREVIATIONS

TPHg – TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
TPHd – TOTAL PETROLEUM HYDROCARBONS AS DIESEL
TPHm – TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL
B – BENZENE
T – TOLUENE
E – ETHYLBENZENE
X – TOTAL XYLENES
MTBE – METYL-TERTIARY BUTYL ETHER

FILL MATERIAL
SILT/CLAY
CLAY/SILT
FINE SAND

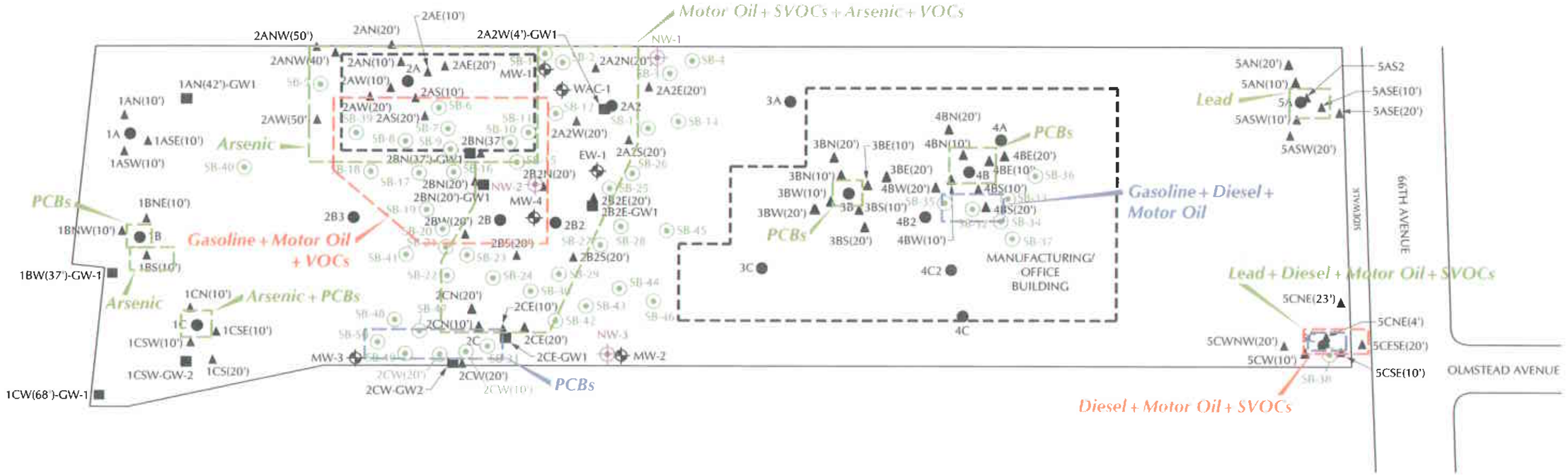
003.09155.00.006_F15.AI 01180esc:SXM

Geologic Cross-Section A-A' with Groundwater Analytical Results

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 15



LEGEND

- MW-1 — MONITORING WELLS
- 1B — PEA SAMPLE LOCATIONS 2005
- 1C1 — SSI SOIL SAMPLE LOCATIONS - AUG/SEPT 2005
- 1AN-GW — SSI GW SAMPLE LOCATIONS - AUG 2005
- SB-3 — SOIL SAMPLE LOCATIONS - DEC 2005
- 0-2' DEEP EXCAVATION
- 0-14' DEEP EXCAVATION
- 5'-15' DEEP EXCAVATION

NOTE: BUILDINGS NOT TO SCALE; LOCATIONS ARE APPROXIMATE

N

0 55 FEET

(APPROXIMATE SCALE: 1" = 55')

Apparent Boundaries of Impacted Soil

Proposed Charter School Site, 1009 66th Avenue, Oakland, California

LFR

Figure 16

003 09155 00 006 F16A-AJ 012406/acl-LDF/SKM

APPENDIX A

Analytical Results Tables from Preliminary Environmental Assessment and Supplemental Site Investigation by CSS Environmental Services, Inc.

Table 1. SSI Soil Matrix Chemical Analytical Results.

	TPH			PCBs	As	Pb		Cr**
Sample ID & Location	TPH, C4-C12 RL = 0.1-10 mg/kg Gasoline Range	TPH, C22-C23 RL = 5 mg/kg Diesel Range	TPH, C24-C40 RL = 50 mg/kg Oil Range	PCBs RL = 2-50 µg/kg	Arsenic RL = 0.97 - 5 mg/kg	Lead RL = 5 mg/kg	Nickel RL 1 mg/kg	Hexavalent Chromium RL= 0.5 mg/kg
1A @ 0.5 PEA				*ND (ND)*				
1A @ 5 PEA				*203*				
1A-N(10') 0.5'				ND				
1A-N(10') 5'				ND				
1A-SE(10') 0.5'				ND				
1A-SE(10') 5'				ND				
1A-SW(10') 0.5'				ND				
1A-SW(10') 5'				ND				
1B @ 0.5 PEA				*716*				
1B @ 5 PEA				*ND*				
1B-NE(10') 0.5'				ND				
1B-NE(10') 5'				ND				
1B-NW(10') 0.5'				ND				
1B-NW(10') 5'				ND				
1B-S(10') 0.5'				ND				
1B-S(10') 5'				ND				
1C @ 0.5 PEA				*21,337*				
1C @ 5 PEA				*ND*				
1C-N(10') 0.5'				ND				
1C-N(10') 5'				ND				
1C-SE(10') 0.5'				ND				
1C-SE(10') 5'				ND				
1C-SW(10') 0.5'				ND				
1C-SW(10') 5'				ND				
1C-S(20') 0.5'HOLD								
1C-S(20') 5'HOLD								
2A @ 0.5' PEA					*12*			
2A @ 5' PEA					*66*			
2A-N(10') 0.5'					11			
2A-N(10') 5'					ND			
2A-S(10') 0.5'					22			
2A-S(10') 3'					ND			
2A-E(10') 0.5'					27			
2A-E(10') 3'					ND			
2A-W(10') 0.5'					47			
2A-W(10') 5'					ND			
2A-N(20') 0.5'					37			
2A-N(20') 5'HOLD								
2A-S(20') 0.5'					117			
2A-S(20') 5'HOLD								
2A-E(20') 0.5'					10			
2A-E(20') 5'HOLD								
2A-W(20') 0.5'					88			
2A-W(20') 5'HOLD								
09285-2AW(50') 0.5'					13			
09285-2ANW(50') 0.5'					73			
2A-2 @ 0.5 PEA	*ND*	*ND*	*1,307*					
2A-2 @ 5 PEA	*ND*	*ND*	*ND*					
2A-2N(20') 0.5'	ND	ND	1,110					
2A-2N(20') 5'	ND	ND	ND					
2A-2N(20') 7.5'	ND	ND	ND					
2A-2S(20') 0.5'	ND	ND	693					
2A-2S(20') 5'	ND	ND	ND					
2A-2S(20') 7.5'	ND	ND	ND					
2A-2E(20') 0.5'	ND	ND	386					
2A-2E(20') 5'	ND	ND	ND					
2A-2E(20') 7.5'	ND	ND	ND					
2A-2W(20') 0.5'	ND	ND	1,212					
2A-2W(20') 5'	ND	ND	ND					
2A-2W(20') 7.5'	ND	ND	ND					
2B @ 0.5 PEA	*ND*	*ND*	*1,580*	*ND*	*19*	*18*		
2B @ 5 PEA	*1*	*ND*	*947*	*ND*	*5*	*4*		
2B @ 10 PEA	*943*	*ND*	*ND*	*NA*	*6*	*2*		
2B @ 15 PEA	*544*	*ND*	*ND*	*NA*	*ND*	*ND*		
2B @ 20 PEA	*5*	*ND*	*ND*	*NA*	*NA*	*NA*		
2B @ 24 PEA	*12*	*ND*	*ND*	*NA*	*ND*	*2*		
2B-N(20') 0.5'	ND	ND	545		ND			
2B-N(20') 5'	0.6	ND	ND					
2B-N(20') 7.5'	1,040.8	ND	ND					
2B-N(20') 10'	877.4	ND	ND					
2B-S(20') 0.5'	ND	ND	798		ND			
2B-S(20') 5'	ND	ND	ND					
2B-S(20') 7.5'	ND	ND	ND					
2B-W(20') 0.5'	ND	ND	7,415		6			

Table 1. SSI Soil Matrix Chemical Analytical Results.

	TPH			PCBs	As	Pb		Cr**
Sample ID & Location	TPH, C4-C12 RL = 0.1-10 mg/kg Gasoline Range	TPH, C22-C23 RL = 5 mg/kg Diesel Range	TPH, C24-C40 RL = 50 mg/kg Oil Range	PCBs RL = 2-50 µg/kg	Arsenic RL = 0.97 - 5 mg/kg	Lead RL = 5 mg/kg	Nickel RL 1 mg/kg	Natural Chromium RL= 0.5 mg/kg
2B-W(20') 5'	ND	ND	ND					
2B-W(20') 7.5'	2.8	ND	ND					
2B-W(20') 10'	926.6	ND	ND					
2B-N(37') 0.5'	ND	ND	ND		13			
2B-N(37') 5'	7.1	ND	ND					
2B-N(37') 7.5'	2,019	ND	ND					
2B-N(37') 10'	2,780.8	ND	ND					
2B-N(37') 15'	7.5	ND	ND					
2B2 @ 0.5 PEA	ND	ND	1,319	100	5	14		
2B2 @ 2.5 PEA	ND	ND	1,467	ND	5	10		
2B2-N(20') 0.5'	0.3	ND	22,524					
2B2-N(20') 5'	979.5	ND	446					
2B2-N(20') 7.5'	2,507.4	ND	ND					
2B2-N(20') 10'	907.1	ND	ND					
2B2-S(20') 0.5'	ND	ND	1,139					
2B2-S(20') 5'	ND	ND	ND					
2B2-S(20') 7.5'	ND	ND	ND					
2B2-E(20') 0.5'	0.1	ND	1,388					
2B2-E(20') 5'	ND	ND	ND					
2B2-E(20') 7.5'	ND	ND	ND					
2B-3S(0.5') 0.5'								1.14
2C @ 0.5 PEA	ND	ND	1,346	428	ND	11		
2C @ 5 PEA	ND	ND	491	2,100	ND	ND		
2C-N(10') 0.5'				0.19	17			
2C-N(10') 5'				ND	ND			
2C-N(10') 7.5'HOLD								
2C-N(10') 10'HOLD								
2C-E(10') 0.5'	ND	45	ND	ND	57			
2C-E(10') 5'	ND	ND	ND	ND	ND			
2C-E(10') 7.5'	ND	ND	ND					
2C-E(10') 10'	21.3	ND	ND					
2C-N(20') 0.5'	ND	ND	ND		21			
2C-N(20') 5'	ND	ND	ND					
2C-N(20') 7.5'	ND	ND	ND					
2C-N(20') 10'	11.2	ND	ND					
2C-W(20') 0.5'	ND	ND	ND					
2C-W(20') 5'	ND	ND	ND					
2C-E(20') 0.5'	ND	93	ND					
2C-E(20') 5'	ND	ND	ND					
2C-E(20') 10'	ND	ND	ND					
3B @ 0.5 PEA	ND	ND	ND	987				
3B @ 5 PEA	ND	ND	ND	ND				
3B-N(10') 0.5'				ND				
3B-N(10') 5'				ND				
3B-S(10') 0.5'				ND				
3B-S(10') 5'				ND				
3B-E(10') 0.5'				340				
3B-E(10') 5'				ND				
3B-W(10') 0.5'				ND				
3B-W(10') 5'				ND				
3B-N(20') 0.5'					ND			
3B-N(20') 5'HOLD								
3B-S(20') 0.5'HOLD								
3B-S(20') 2'HOLD								
3B-E(20') 0.5'				ND				
3B-E(20') 5'HOLD								
3B-W(20') 0.5'HOLD								
3B-W(20') 5'HOLD								
4B @ 0.5 PEA	ND	ND	ND	69,881	ND	1		
4B @ 5 PEA	ND	ND	ND	108	5	ND		
4B-N(10') 0.5'				ND				
4B-N(10') 5'				ND				

Table 1. SSI Soil Matrix Chemical Analytical Results.

	TPH			PCBs	As	Pb		Cr
Sample ID & Location	TPH, C4-C12 RL = 0.1-10 mg/kg Gasoline Range	TPH, C22-C23 RL = 5 mg/kg Diesel Range	TPH, C24-C40 RL = 50 mg/kg Oil Range	PCBs RL = 2-50 µg/kg	Arsenic RL = 0.57 - 5 mg/kg	Lead RL = 5 mg/kg	Nickel RL 1 mg/kg	Hexavalent Chromium RL= 0.5 mg/kg
4B-S(10') 0.5'				230				
4B-S(10') 5'				ND				
4B-E(10') 0.5'				840				
4B-W(10') 0.5'				40				
4B-W(10') 5'				ND				
4B-N(20') 0.5'HOLD								
4B-N(20') 5'HOLD								
4B-S(20') 0.5'	ND	ND	64	2.04				
4B-S(20') 3.5'	23.5	ND	2,679	2.20				
4B-S(20') 4'	12.8	ND	890	0.23				
4B-S(20') 5'	99.6	ND	2,499	0.24				
4B-E(20') 0.5'				ND				
4B-E(20') 5'HOLD								
4B-W(20') 0.5'				0.1				
4B-W(20') 5'HOLD								
5A @ 0.5 PEA	*ND*	*ND*	*ND*	*ND*	*7*	*320*		
5A @ 5 PEA	*ND*	*ND*	*ND*	*ND*	*ND*	*3*		
5A-N(10') 0.5'						90	178	
5A-N(10') 5' HOLD								
5A-S2 0.5'								ND
5A-SE(10') 0.5'						301	194	
5A-SE(10') 5' HOLD								
5A-SE(20') 0.5'HOLD						154		
5A-SE(20') 5' HOLD								
5A-SW(10') 0.5'						159	176	
5A-SW(10') 5' HOLD								
5A-N(20') 0.5'HOLD								
5A-N(20') 5' HOLD								
5A-SW(20') 0.5'HOLD								
5A-SW(20') 5' HOLD								
5C @ 0.5 PEA	*ND*	*ND*	*ND*	*ND*	*4*	*398*		
5C @ 5 PEA	*ND*	*ND*	*ND*	*ND*	*ND*	*4*		
5C-NE(4') 0.5'	ND	ND	ND			81	75	
5C-NE(4') 5'	ND	ND	ND					
5C-SE(10') 0.5'	ND	ND	ND			28	124	
5C-SE(10') 5'	ND	ND	ND					
5C-ESE(20') 0.5'HOLD						271		
5C-ESE(20') 5'HOLD								
5C-W(10') 0.5'	ND	ND	ND			191	227	
5C-W(10') 5'	ND	ND	ND					
5C-WNW(20') 0.5'HOLD								
5C-WNW(20') 5'HOLD								
5C-NE(23') 0.5'HOLD								
5C-NE(23') 5'HOLD								

Table 2. SSI SVOCs Soil Matrix Chemical Analytical Results.

	VOCs								SVOCs													
Sample ID & Location	Benzene RL = 0.200 µg/kg	Toluene RL = 2 µg/kg	Ethylbenzene RL = 0.200 µg/kg	Xylene RL = 0.200 µg/kg	MTBE RL = 2 µg/kg	Isopropylbenzene RL = 2 µg/kg	Chlorobenzene RL = 2 µg/kg	1,4- Dichlorobenzene RL = 2 µg/kg	Naphthalene RL = 250-2500 µg/kg	1-Methylnaphthalene RL = 250-2500 µg/kg	Acenaphthylene RL = 250-2500 µg/kg	Acenaphthene RL = 250-2500 µg/kg	Fluorene RL = 250-2500 µg/kg	Phenanthrene RL = 250-2500 µg/kg	Anthracene RL = 250-2500 µg/kg	Fluoranthene RL = 250-2500 µg/kg	Pyrene RL = 250-2500 µg/kg	Benzo(a)Anthracene RL = 250-2500 µg/kg	Chrysene RL = 250-2500 µg/kg	Benzo(b)Fluoranthene RL = 250-2500 µg/kg	Benzo(a)Pyrene RL = 250-2500 µg/kg
3A-2 @ 0.5 PEA	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
3A-2 @ 3 PEA	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
3A-3N(20') 0.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,981	3,666	2,864	2,812	3,978	3,623	
3A-3N(20') 5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
3A-3N(20') 7.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
3A-2S(20') 0.5'	ND	ND	ND	19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,944	2,360	885	1,056	2,729	3,556	
3A-2S(20') 5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
3A-2S(20') 7.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
3A-3E(20') 0.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	529	ND	597	711	965	
3A-3E(20') 5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
3A-3E(20') 7.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
3A-2W(20') 0.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,228	3,105	1,799	2,336	4,719	4,184	
3A-2W(20') 5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
3A-2W(20') 7.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
3B @ 0.5 PEA	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	
3B @ 3 PEA	*139*	*12*	*31*	*101*	*19*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	
3B @ 10 PEA	*7,633*	*37,378*	*14,044*	*53,141*	*206*	*ND*	*ND*	*ND*	*3,527*	*3,702*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	
3B @ 11 PEA	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	
3B @ 20 PEA	*ND*	*ND*	*ND*	*ND*	*33*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	
3B @ 24 PEA	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	
3B-N(20') 0.5'	ND	ND	6	70	ND	ND	ND	ND	2,928	2,949	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
3B-N(20') 5'	60	2	ND	43	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
3B-N(20') 7.5'	15,589	131,071	20,686	178,461	ND	5,836	ND	ND	13,279	11,123	336	58	274	ND	ND	ND	ND	ND	ND	ND	ND	
3B-N(20') 10'	21,332	134,917	36,934	131,536	ND	3,944	ND	ND	3,889	4,290	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2B-S(20') 0.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,106	5,759	1,074	1,165	4,300	5,153	
2B-S(20') 5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2B-S(20') 7.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2B-W(20') 0.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,764	ND	21,949	30,450	19,162	20,098	35,126	48,390	
2B-W(20') 5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2B-W(20') 7.5'	ND	ND	22	4	ND	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2B-W(20') 10'	6,897	26,446	20,217	75,610	ND	1,983	ND	ND	3,038	1,890	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2B-N(37') 0.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2B-N(37') 5'	338	248	103	288	366	4	ND	ND														
2B-N(37') 7.5'	4,491	50,239	32,215	114,065	10,928	4,035	ND	ND	8,124	4,428	ND	ND	ND	2,957	2,713	ND	5,296	ND	ND	ND	ND	
2B-N(37') 10'	21,676	114,383	40,696	137,722	5,422	4,490	ND	ND	10,175	6,898	ND	ND	ND	3,915	3,986	ND	7,161	ND	ND	ND	ND	
2B-N(37') 15'	1,309	813	236	762	4,439	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2B2 @ 0.5 PEA	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	
2B2 @ 3.5 PEA	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	
2B2-N(20') 0.5'	2	7	ND	6	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	48,416	59,680	32,864	46,152	63,542	66,928	
2B2-N(20') 5'	7,662	46,063	19,817	73,228	3,267	1,851	ND	ND	2,430	1,556	ND	ND	ND	ND	ND	599	798	ND	631	994	729	
2B2-N(20') 7.5'	22,361	139,173	51,812	178,228	12,897	5,556	ND	ND	5,656	4,056	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2B2-N(20') 10'	9,106	45,812	19,919	77,800	7,879	1,786	ND	ND	1,332	1,269	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2B2-S(20') 0.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	597	ND	2,734	6,899	2,122	3,458	7,066	6,341	
2B2-S(20') 5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2B2-S(20') 7.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2B2-S(20') 9.5'	29	94	18	47	ND	ND	ND	ND	5,017	3,230	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2B2-S(20') 5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2B2-S(20') 7.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2C @ 0.5 PEA									*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
2C @ 3 PEA									*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
4B @ 0.5 PEA																						
4B @ 3 PEA																						
4B-S(30') 5'	ND	ND	ND	ND	ND	ND	12	128														
5A @ 0.5 PEA	*NA*	*NA*	*NA*	*NA*	*NA*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	
5A @ 3 PEA	*NA*	*NA*	*NA*	*NA*	*NA*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	
5C @ 0.5 PEA	*NA*	*NA*	*NA*	*NA*	*NA*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	
5C @ 3 PEA	*NA*	*NA*	*NA*	*NA*	*NA*	*ND*	*ND*	*ND*	*1,146*	*ND*	*4,702*	*ND*	*ND*	*55,210*	*10,646*	*38,330*	*26,074*	*10,219*	*9,572*	*ND*	*2,216*	
5C-W(4') 5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
5C-W(18') 5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
5C-W(16') 5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Table 3. SSI Groundwater Matrix Chemical Analytical Results.

	VOCs									PCBs	SVOCs				
Sample ID & Location	VOCs RL = 10-100 µg/L	Benzene RL = 0.5-25 µg/L	Toluene RL = 0.5-25 µg/L	Ethylbenzene RL = 0.5-25 µg/L	Xylene RL = 0.5-25 µg/L	MTBE RL = 0.5 µg/L	TPH, C6-C12 RL = 100 µg/L Gasoline Range	TPH, C13-C23 RL = 500 µg/L Diesel Range	TPH, C24-C40 RL = 1000 µg/L Oil Range	PCBs RL = 0.2 µg/L	Naphthalene RL = 10-100 µg/L	1-Methylnaphthalene RL = 10-100 µg/L	Acenaphthylene RL = 10 µg/L	Acenaphthene RL = 10 µg/L	Fluorene RL = 10 µg/L
1A-N(42') GW1										4.5					
1B-W(37') GW1										7.1					
1C-W(65') GW1										ND					
1C-SW(20') GW2										ND					
2A-2W(4') GW1	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND
2B-N(20') GW1	ND	28,496	29,546	4,719	15,529	ND	221,129	ND	ND		2,365	487	ND	ND	ND
2B-N(37') GW1	ND[1]	10,784.6	13,534.7	3,428.7	9,903.1	7,007	148,570	ND	ND		393	57	ND	ND	ND
2B-2E(20') GW1	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND
2C-E(10') GW1	ND	ND	4	5	14		169	ND	ND		ND	ND	ND	ND	ND
2C-W(20') GW2	ND	ND	ND	ND	ND		ND	ND	ND		ND	ND	ND	ND	ND

1. VOC Isopropylbenzene detected at 166.9 µg/L
2. Detected SVOCs reported only, all other SVOCs ND.

Table 1
Monitoring Well Completion Details
Groundwater Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

Well Number	Date Installed	Installed By	Top of Casing Elevation (feet MSL)	Boring Diameter (inches)	Casing Diameter (inches)	Total Depth Boring (feet bgs)	Total Depth of Casing (feet bgs)	Screened Interval Depth (feet bgs)	
								Top	Bottom
MW-1	6/10/1997	ENVIRON	10.87	8	2	26.5	25.5	5	25
MW-2	6/10/1997	ENVIRON	10.02	8	2	25.5	25.5	5	25
MW-3	6/10/1997	ENVIRON	10.12	8	2	25.5	25.5	5	25
MW-4	9/14/1998	PES	10.50	8	2	25.0	25.0	15	25
EW-1*	NP	Decon	10.26	NP	7	NP	8.77	NP	NP

Notes:
bgs = Below ground surface
NP = Information not provided to PES
* = Well completion information derived from December 2002 sampling event field notes

Table 2
Water-Level Elevation Data
Groundwater Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

Well Number	Date Measured	Measured By	Top of Casing Elevation (feet[1]/feet MSL[2])	Depth to Water (feet BTOC)	Water-level Elevation (feet[1]/feet MSL[2])
MW-1	6/19/1997	ENVIRON	100.67	5.87	94.80
	7/1/1997	ENVIRON	100.67	5.88	94.79
	9/29/1997	PES	100.67	6.45	94.22
	12/16/1997	PES	100.67	3.42	97.25
	3/10/1998	PES	100.67	3.06	97.61
	10/1/1998	PES	100.67	6.36	94.31
	1/19/1999	PES	100.67	5.33	95.34
	4/15/1999	PES	100.67	3.23	97.44
	5/6/1999	PES	100.67	4.36	96.31
	7/30/1999	PES	100.67	5.49	95.18
	11/15/1999	PES	100.67	6.30	94.37
	3/24/2000	PES	100.67	3.47	97.20
	5/18/2000	PES	100.67	4.34	96.33
	7/26/2000	PES	100.67	5.28	95.39
	10/30/2000	PES	100.67	5.68	94.99
	11/14/2000	PES	100.67	5.53	95.14
	7/24/2001	PES	100.67	5.52	95.15
	11/28/2001	PES	100.67	5.31	95.36
	2/18/2002	PES	100.67	3.69	96.98
	12/11/2002	PES	10.87	5.71	5.16
	2/26/2003	PES	10.87	3.90	6.97
	5/16/2003	**PES**	**10.87**	**3.61**	**7.26**
MW-2	6/19/1997	ENVIRON	99.85	5.30	94.55
	7/1/1997	ENVIRON	99.85	5.37	94.48
	9/29/1997	PES	99.85	6.05	93.80
	12/16/1997	PES	99.85	3.81	96.04
	3/10/1998	PES	99.85	2.89	96.96
	10/1/1998	PES	99.85	5.83	94.02
	1/19/1999	PES	99.85	5.26	94.59
	4/15/1999	PES	99.85	3.19	96.66
	5/6/1999	PES	99.85	3.91	95.94
	7/30/1999	PES	99.85	4.79	95.06
	11/15/1999	PES	99.85	5.92	93.93
	3/24/2000	PES	99.85	3.55	96.30
	5/18/2000	PES	99.85	4.04	95.81
	7/26/2000	PES	99.85	4.85	95.00
	10/30/2000	PES	99.85	5.31	94.54
	11/14/2000	PES	99.85	5.14	94.71
	7/24/2001	PES	99.85	5.12	94.73
	11/28/2001	PES	99.85	5.15	94.70
	2/18/2002	PES	99.85	3.73	96.12
	12/11/2002	PES	10.02	5.30	4.72
	2/26/2003	PES	10.02	3.55	6.47
	5/16/2003	**PES**	**10.02**	**3.37**	**6.65**
MW-3	6/19/1997	ENVIRON	99.93	5.50	94.43
	7/1/1997	ENVIRON	99.93	5.52	94.41
	9/29/1997	PES	99.93	6.16	93.77
	12/16/1997	PES	99.93	5.52	94.41
	3/10/1998	PES	99.93	3.11	96.82
	10/1/1998	PES	99.93	5.96	93.97
	1/19/1999	PES	99.93	5.45	94.48
	4/15/1999	PES	99.93	3.85	96.08

Table 2
Water-Level Elevation Data
Groundwater Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

Well Number	Date Measured	Measured By	Top of Casing Elevation (feet[1]/feet MSL[2])	Depth to Water (feet BTOC)	Water-level Elevation (feet[1]/feet MSL[2])
MW-3	5/6/1999	PES	99.93	4.12	95.81
cont.	7/30/1999	PES	99.93	5.14	94.79
	11/15/1999	PES	99.93	6.35	93.58
	3/24/2000	PES	99.93	3.29	96.64
	5/18/2000	PES	99.93	4.16	95.77
	7/26/2000	PES	99.93	5.14	94.79
	10/30/2000	PES	99.93	5.43	94.50
	11/14/2000	PES	99.93	5.25	94.68
	7/24/2001	PES	99.93	5.29	94.64
	11/28/2001	PES	99.93	4.92	95.01
	2/18/2002	PES	99.93	3.88	96.05
	12/11/2002	PES	10.12	5.37	4.75
	2/26/2003	PES	10.12	3.71	6.41
	5/16/2003	**PES**	**10.12**	**3.55**	**6.57**
MW-4	10/1/1998	PES	100.32	6.32	94.00
	1/19/1999	PES	100.32	5.59	94.73
	4/15/1999	PES	100.32	7.71 #	92.61 #
	5/6/1999	PES	100.32	4.50	95.82
	7/30/1999	PES	100.32	5.18	95.14
	11/15/1999	PES	100.32	6.27	94.05
	3/24/2000	PES	100.32	3.59	96.73
	5/18/2000	PES	100.32	4.40	95.92
	7/26/2000	PES	100.32	5.65	94.67
	10/30/2000	PES	100.32	5.89	94.43
	11/14/2000	PES	100.32	5.61	94.71
	7/24/2001	PES	100.32	5.34	94.98
	11/28/2001	PES	100.32	5.67	94.65
	2/18/2002	PES	100.32	4.21	96.11
	12/11/2002	PES	10.50	5.77	4.73
	2/26/2003	PES	10.50	4.00	6.50
	5/16/2003	**PES**	**10.50**	**3.87**	**6.63**
EW-1	12/11/2002	PES	10.26	5.00	5.26
	2/26/2003	PES	10.26	3.10	7.16
	5/16/2003	**PES**	**10.26**	**2.73**	**7.53**

Notes:
[1] = Top of casing elevations referenced to site datum established by ENVIRON (1997), used through February 2002
[2] = Top of casing elevations resurveyed by Cross Land Surveying, Inc. on January 16, 2003; referenced to NGVD 1929
MSL = Mean sea level
BTOC = Below top of casing
# = Anomalous data, not used for water-level elevation contouring

Table 3
Summary of Analytical Results for Groundwater Samples
Groundwater Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

Well Number	Date Sampled	Sampled By	Dissolved Oxygen (mg/L)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE EPA 8020 (µg/L)	MTBE EPA 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDC (µg/L)	EDB (µg/L)
MW-1	6/19/1997	ENVIRON	na	18,000	3,300	200	1,100	4,900	<250	--	--	--	--	--	--	--
	9/29/1997	PES	na	29,000	4,800	<25	2,000	3,500	<250	--	--	--	--	--	--	--
	12/16/1997	PES	na	<50	1.3	<0.5	0.6	0.7	<5	--	--	--	--	--	--	--
	3/10/1998	PES	na	190	2.0	<0.5	5.7	1.7	<5	--	--	--	--	--	--	--
	1/19/1999	PES	na	1,000	40	<0.5	18	68	8.3	6.9	--	--	--	--	--	--
	4/15/1999	PES	na	<50	0.92	0.9	0.7	0.87	<5.0	--	--	--	--	--	--	--
	7/30/1999	PES	na	1,400	60	<0.5	63	120	13	<5.0	--	--	--	--	--	--
	11/15/1999	PES	na	3,600	120	<0.5	150	620	<5.0	--	--	--	--	--	--	--
	3/24/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	5/18/2000	PES	na	1,300	10	1.2	38	130	8.6	<5.0	--	--	--	--	--	--
	7/26/2000	PES	na	6,400	100	7.4	260	680	<5.0	--	--	--	--	--	--	--
	10/30/2000	PES	na	6,000	130	14	330	950	<100	--	--	--	--	--	--	--
	7/24/2001	PES	na	1,200	13	<0.5	70	39	13	--	--	--	--	--	--	--
	11/28/2001	PES	na	1,800	27	0.93	72	160	<5.0	--	--	--	--	--	--	--
	2/18/2002	PES	na	2,400	18	<2.5	89	200	<25	--	--	--	--	--	--	--
	12/11/2002	PES	0.7	8,400	83	9.2	320	640	--	<0.50	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50
	2/26/2003	PES	2.2*	8,300	12	<10	240	720	--	<10	<100	<20	<10	<10	<10	<10
	5/16/2003	PES	0.2	5,600	22	<5.0	240	490	--	<5.0	<50	<10	<5.0	<5.0	<5.0	<5.0
MW-2	6/19/1997	ENVIRON	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	9/29/1997	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--	--	--	--
	12/16/1997	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--	--	--	--
	3/10/1998	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	1/19/1999	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--	--	--	--	--	--
	4/15/1999	PES	na	<50	0.75	0.64	<0.5	0.74	<5.0	--	--	--	--	--	--	--
	7/30/1999	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	11/15/1999	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	3/24/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	5/18/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	7/26/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	10/30/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	7/24/2001	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	11/28/2001	PES	na	<50	<0.5	<0.5	<0.5	<0.5	7.6	--	--	--	--	--	--	--
	2/18/2002	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	12/11/2002	PES	1.4	<50	<0.50	<0.50	<0.50	<1.0	<5.0	--	--	--	--	--	--	--
	2/26/2003	PES	0.6	<50	<0.50	<0.50	<0.50	<1.0	--	5.8	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50
	5/16/2003	PES	2.7	<50	<0.50	<0.50	<0.50	<1.0	--	10	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50
										16	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50
MW-3	6/19/1997	ENVIRON	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	9/29/1997	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--	--	--	--
	12/16/1997	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--	--	--	--
	3/10/1998	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	1/19/1999	PES	na	<50	0.78	<0.5	<0.5	<0.5	8.7	<5.0	--	--	--	--	--	--
	4/15/1999	PES	na	<50	5.4	3.8	1.7	5.6	23	25	--	--	--	--	--	--
	7/30/1999	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	11/15/1999	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	3/24/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--

Table 3
Summary of Analytical Results for Groundwater Samples
Groundwater Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

Well Number	Date Sampled	Sampled By	Dissolved Oxygen (mg/L)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE EPA 8020 (µg/L)	MTBE EPA 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDC (µg/L)	EDB (µg/L)
MW-3	5/18/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
cont.	7/26/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	10/30/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	7/24/2001	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	11/28/2001	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	2/18/2002	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	12/11/2002	PES	1.9	<50	<0.50	<0.50	<0.50	<1.0	--	0.78	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50
	2/26/2003	PES	1.9	<50	<0.50	<0.50	<0.50	<1.0	--	<0.50	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50
	5/16/2003	PES	1.9	<50	<0.50	<0.50	<0.50	<1.0	--	2.6	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50
MW-4	9/15/1999	PES	na	170,000	28,000	32,000	2,900	18,000	26,000	--	--	--	--	--	--	--
	1/19/1999	PES	na	2,600	1,700	3.8	25	29	13,000	16,000	--	--	--	--	--	--
	4/15/1999	PES	na	210,000	28,000	15,000	3,700	19,000	52,000	67,000	--	--	--	--	--	--
	7/30/1999	PES	na	91,000	16,000	7,500	2,300	8,500	68,000	67,000	--	--	--	--	--	--
	11/15/1999	PES	na	63,000	8,500	2,400	1,400	4,000	57,000	58,000	--	--	--	--	--	--
	3/24/2000	PES	na	95,000	16,000	13,000	2,500	12,000	44,000	--	--	--	--	--	--	--
	5/18/2000	PES	na	91,000	15,000	10,000	2,200	9,600	64,000	77,000	--	--	--	--	--	--
	7/26/2000	PES	na	130,000	11,000	6,400	1,700	6,500	80,000	--	--	--	--	--	--	--
	10/30/2000	PES	na	59,000	6,700	2,200	750	3,100	68,000	68,000**	--	--	--	--	--	--
	7/24/2001	PES	na	180,000	25,000	23,000	3,500	20,000	44,000	44,000**	--	--	--	--	--	--
	11/28/2001	PES	na	67,000	8,100	3,300	1,400	5,600	57,000	57,000**	--	--	--	--	--	--
	2/18/2002	PES	na	98,000	20,000	12,000	2,300	15,000	47,000	47,000**	--	--	--	--	--	--
	12/11/2002	PES	0.8	200,000	340	<50	590	1,000	--	17,000	3,600	<100	<50	<50	<50	<50
	2/26/2003	PES	0.1	63,000	8,100	4,400	1,900	8,200	--	30,000	<1,300	<250	<130	<130	<130	<130
	5/16/2003	PES	0.4	530,000	24,000	20,000	12,000	63,000	--	42,000	<2,500	<500	<250	<250	<250	<250
EW-1	12/11/2002	PES	2.4	6,600	530	<50	87	<100	--	2,600	1,600	<100	<50	<50	<50	<50
	2/26/2003	PES	0.1	4,000	170	20	41	53		5,000	130	<25	<13	<13	<13	<13
	5/16/2003	PES	0.5	330	12	7.6	4.2	14	--	300	<25	<5.0	<2.5	<2.5	<2.5	<2.5

Notes:
TPH-g = Total petroleum hydrocarbons quantified as gasoline (EPA 8015M)
MTBE = Methyl tert-butyl ether (EPA 8020; detected concentrations were confirmed by EPA 8260)
TBA = tert-butyl alchohol
DIPE = di-isopropyl ether
ETBE = ethyl tert-butyl ether
TAME = tert-amyl methyl ether
EDC = ethylene dichloride (also known as 1,2-dichloroethane)
EDB = ethylene dibromide
mg/L = milligrams per liter
µg/L = micrograms per liter
na = not analyzed
* = Dissolved oxygen measurement collected following purging
** = MTBE results confirmed but not requantified by EPA Method 8260
<50 = Not detected at or above the indicated laboratory reporting limit
-- = Not analyzed

APPENDIX B

California Environmental Protection Agency, Department of Toxic Substances Control Additional SSI Work Plan Approval Letter and LFR's Responses

Department of Toxic Substances Control

Alan C. Lloyd, Ph.D.
Agency Secretary
Cal/EPA

5796 Corporate Avenue
Cypress, California 90630

Arnold Schwarzenegge
Governor

December 12, 2005

Mr. Charles Robitaille
Director of Real Estate
Aspire Public Schools
426 17th Street, Suite 200
Oakland, California 94612-2820

REVIEW OF SUPPLEMENTAL SITE INVESTIGATION WORKPLAN,
ASPIRE SCHOOL, 1006 66th AVENUE, OAKLAND, ALAMEDA COUNTY
(SITE CODE: 204147-11)

Dear Mr. Robitaille:

The Department of Toxic Substances Control (DTSC) has reviewed the Draft Supplemental Site Investigation Workplan (Workplan) prepared by LFR Levine Fricke (LFR) for the proposed Aspire School (Site), and submitted on behalf of Aspire Public Schools (APS). The Workplan is dated November 18, 2005 and was received by DTSC on November 22, 2005. The Workplan documents the proposed investigation activities for the property located at the subject Site.

The Site consists of 2.51 acres and is owned by Modad Properties, LLC. Historically, the Site was developed in 1948 by Pacific Electric Manufacturing. Operations included manufacturing of specialty magnets, power supplies and components, the repair of motors, generators, transformers, and magnets. In 1975, a 2,000 gallon gasoline underground storage tank was installed on the property. The Site was recently operated by Bay Area Powder Coatings and Landeros Iron Works. Between 1992 and 1993, a soil removal action for polychlorinated biphenyls was conducted under the oversight of the Alameda County Health Care Services Agency (ACHSCA). From 1995 through 2002, the UST was removed and remedial activities were conducted for soil and groundwater contaminated with petroleum hydrocarbons under ACHSCA oversight.

On June 30, 2005, DTSC concurred with the findings of a Preliminary Endangerment Assessment (PEA) conducted at the Site, that further action is necessary due to polychlorinated biphenyls (PCBs), metals, total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) detected in soil and/or groundwater. Subsequently, a Supplemental Site Investigation (SSI) was conducted to delineate contamination at the Site, and an SSI report was submitted to DTSC on October 6, 2005. On October 26, 2005, DTSC determined that, due to major

discrepancies, the SSI report could not be approved. Based upon a scoping meeting held on November 9, 2005, between DTSC, APS, and LFR representatives, an additional SSI Workplan was submitted to address these deficiencies.

The purpose of this SSI Workplan is to delineate the extent of PCBs, metals, TPH, VOCs, SVOCs as detected in soil and/or groundwater during the PEA and previous SSI conducted at the Site. DTSC has identified discrepancies in the SSI Workplan that require clarification or modification. Enclosed are comments identifying the discrepancies. However, based upon the condition that the Workplan is revised and the enclosed comments are addressed through the sampling program, DTSC hereby approves the Workplan. Please submit your response to comments in a table form, and necessary revisions to the Workplan, to DTSC by December 16, 2005. Additionally, DTSC recognizes that, due to the scheduling needs of APS, fieldwork at the site will begin on December 12, 2005. Upon completion of the fieldwork and resolution of the comments, APS should submit an SSI Report.

If you have any questions please contact me at (714) 484-5305.

Sincerely,

Tawfiq S. Deek
Unit Chief
Cypress Branch
School Property Evaluation and Cleanup Division

Enclosure

cc: Mr. Terry Carter
CSS Environmental Services, Inc.
95 Belvedere Street
San Rafael, California 94901

Mr. John Dominguez
Project Manager
School Site Solutions
1130 K Street, Suite LL70
Sacramento, California 95814

cc: Ms. Dawn Richmond
Brownfields Coordinator
EPA region 9
75 Hawthorne Street
San Francisco, California 94105

DTSC COMMENTS
SUPPLEMENTAL SITE INVESTIGATION WORK PLAN
ASPIRE CHARTER SCHOOL SITE
OAKLAND

The following DTSC staff reviewed and provided comments herein to the Draft Supplemental Site Investigation (SSI) Workplan. Please contact the Project Manager if you have any questions on the comments. Original Comments from the Project Geologist and DTSCs Human and Ecological Risk Division (HERD) are available for review in DTSC project files.

Ryan M. Atencio
Project Manager
Schools Unit - Cypress Office
Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, California 90630
714-484-5340
ratencio@dtsc.ca.gov

GENERAL AND SPECIFIC COMMENTS

1) While DTSC recognizes that Figure #14 shows the proposed excavation areas, the SSI Workplan should note that cleanup goals have yet to be established, and can only be considered after the Site is fully characterized, and the contamination is delineated across all media. Therefore, actual limits of any excavation may be revised based upon the outcome of the SSI and any necessary further investigation.

2) The SSI Workplan document title should indicate that this is a second or additional Workplan for the Supplemental Site Investigation, or otherwise distinguish itself from previous SSI Workplans.

3) The SSI Workplan should include a sampling table listing each proposed sample, rationale, matrix, and corresponding parameters.

4) The SSI workplan should indicate Method 8260 analysis holding times. Also, please indicate field preservation method or collection method for soil samples to be analyzed for VOCs using Method 8260.

5) The SSI workplan should indicate the analytical method for PCBs, and list the corresponding holding time.

6) The SSI Workplan should discuss and make clear the plan to analyze archived samples to meet holding time limits for all parameters.

7) The SSI workplan should include a list of all laboratories used for all analysis. Also, drill rig SOPs should be included in the SSI Workplan and a diagram of the nested probe design should be included as well.

8) Soil samples should be analyzed for arsenic at and between the previous 2A and 1A locations. The SSI Workplan proposes that a "baserock" is source of the arsenic concentrations at this area, and assumes that this area will require removal. However, for purposes of Site characterization and human health risk decision making, soil samples should be taken here and analyzed for arsenic.

9) The SSI Workplan proposes not sample for arsenic at 2A, 2B, 2NC because this area is impacted with SVOC and /or TPH and will be remediated for these COCs. However, the extent of arsenic contamination in these areas is still not defined. As a result, site specific, risk based, clean up goals have yet to be developed for arsenic. Additionally, it is not known if the potential arsenic cleanup area is equal to the proposed cleanup area for TPH, SVOCs or other COCs. Therefore, for the purposes of site characterization, arsenic should be sampled for, and delineated, in these areas.

10) Lead does not appear to be delineated in the areas at 5CESE and 5ASE. These areas should include sampling locations for lead where it has been detected above 255 mg/kg. The SSI should define, laterally and vertically, lead contamination in soil. Results above 255 mg/kg should be carried forth as COCs in the risk evaluation. Based upon laboratory results, additional sampling may become necessary.

11) TPH results over 1000 mg/kg should be specieated by carbon chain range for the purposes of risk evaluation, in accordance with HERD guidelines. Please consult project toxicologist for methods of evaluation.

12) Page 24, Section 8.5, Preparation of SSI Report
The final recommendation cannot be made based upon screening levels. The final recommendation should be made based upon the results of the investigation and associated human health risk assessment. A No-Further-Action recommendation is not appropriate if the site is poses a significant risk to human health.

Joe T. Hwong, R.G., C.HG.
Senior Engineering Geologist
Schools Unit - Cypress Office
Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, California 90630
714-484-5406
jhwong@dtsc.ca.gov

GENERAL AND SPECIFIC COMMENTS

1) Page 6, Section 2.2 Prior Assessment and Agency Determination - All activities performed by Pacific Electric Motors should also be listed in this section.

2) Page 9, Soil vapor - Soil samples were collected from 3' to 5' bgs, not 1' and 5' bgs. Please revise accordingly.

3) Sample collection and analytical methods described in the text are unclear. DTSC recommends a table listing all proposed borings, sample depths, and analysis for each sample be prepared and included in the SSI Workplan.

Thomas Booze, Ph.D.
Staff Toxicologist
Human and Ecological Risk Division
Department of Toxic Substance Control
8810 Cal Center Drive
Sacramento, California 95826
916-255-6628
tbooze@dtsc.ca.gov

GENERAL AND SPECIFIC COMMENTS

1) PCB data is necessary from west and east of former location 2C since the sample from 2C is just over a probable cleanup concentration. LFR proposes that we do not collect samples for PCB in the area of former locations 4B and

4BE(10') because the extent of PCBs has been defined in this area. The concentrations of PCBs found in both samples was higher than likely cleanup levels which indicates the need for additional sampling. For 4B (PCBs = 69.7 ppm) this would be a sample from the subsurface and from the surface to the north. For sample 4BE-10' (PCB= 0.84 ppm) this would mean additional deeper and lateral samples.

2) Groundwater – Naphthalene should be on the list of analytes.

3) The SSI Workplan indicates that the oral cancer slope factor for PCBs is 5. However, HERD recommends the use of 2.

4) Appendix D- HERD can provide guidelines for determining background metals concentrations (See attached).

5) SVOCs in soil – Add a sample or two from the grouping of SB-32 through 34 since that's around the location of a TPH motor oil detection that is the subject of further sampling.

LFR Levine·Fricke (LFR) prepared a work plan for the additional supplemental site investigation (SSI) titled "Supplemental Site Investigation Work Plan, Proposed Aspire Charter High School Site, 1009 66th Avenue, Oakland, Alameda County, California," dated November 18, 2005. The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) presented comments on the additional SSI work plan in a letter dated December 8, 2005. DTSC's comments and LFR's responses are presented below.

Ryan Atencio's General Comments	***LFR Response***
1. While DTSC recognizes that Figure #14 shows the proposed excavation areas, the SSI Workplan should note that cleanup goals have yet to be established, and can only be considered after the Site is fully characterized, and the contamination is delineated across all media. Therefore, actual limits of any excavation may be revised based upon the outcome of the SSI and any necessary further investigation.	LFR has noted in Section 3.1 of the work plan (Page 16) that the limits of any proposed excavation could change after the Site has been fully characterized across all media.
2. The SSI Workplan document title should indicate that this is a second or additional Workplan for the Supplemental Site Investigation, or otherwise distinguish itself from previous SSI Workplans.	LFR will title the work plan as the "Additional Supplemental Site Investigation Work Plan."
3. The SSI Workplan should include a sampling table listing each proposed sample, rationale, matrix, and corresponding parameters.	LFR has prepared a table presenting the boring ID number, the rational for collecting the sample, the sample depth interval, the matrix, and the analytes. This table is presented as Table 4 in the Additional Supplemental Site Investigation. The analytical methods are presented at the end of the table.
4. The SSI Workplan should indicate Method 8260 analysis holding times. Also, please indicate field preservation method or collection method for soil samples to be analyzed for VOCs using Method 8260.	LFR has noted the holding times for U.S. EPA Method 8260 and field preservation method for samples to be submitted for VOC analysis in the project Quality Assurance Project Plan (QAPP).
5. The SSI Workplan should indicate the analytical method for PCBs and list the corresponding holding time.	LFR has noted the analytical method and holding time for PCBs using U.S. EPA Method 8082A in Section 3.1 of the work plan (Page 22) and in the QAPP.
6. The SSI Workplan should discuss and make clear the plan to analyze archived samples to meet holding time limits for all parameters.	LFR presents a discussion of plans to analyze archived samples to meet holding times in Section 3.1 of the work plan (Page 21).

7. The SSI Workplan should include a list of all laboratories used for all analysis. Also, drill rig SOPs should be included in the SSI Workplan and a diagram of the nested probe design should be included as well.	A list of laboratories that will be used to perform analysis and SOPs for drill rigs to be used for soil and groundwater sample collection on this project is presented in Section 3.1 (Pages 15 through 18) of the work plan. A diagram showing the construction of a nested well to be installed at the Site is presented as Figure 15.
8. Soil samples should be analyzed for arsenic at and between the previous 2A and 1A locations. The SSI Workplan proposes that a "baserock" is source of the arsenic concentrations at this area, and assumes that this area will require removal. However, for purposes of Site characterization and human health risk decision making, soil samples should be taken here and analyzed for arsenic.	A discussion of sampling proposed to address delineation of arsenic-affected soil in the area between 1A and 2A is presented in Section 3.1 (Pages 20 and 21) of LFR's Additional SSI Work Plan.
9. The SSI Workplan proposes not sample for arsenic at 2A, 2B, 2NC because this area is impacted with SVOC and/or TPH and will be remediated for these COCs. However, the extent of arsenic contamination in these areas is still not defined. As a result, site specific, risk based, clean up goals have yet to be developed for arsenic. Additionally, it is not known if the potential arsenic cleanup area is equal to the proposed cleanup area for TPH, SVOCs or other COCs. Therefore, for the purposes of site characterization, arsenic should be sampled for, and delineated, in these areas.	A discussion of sampling proposed to address delineation of arsenic-affected soil in these areas is presented in Section 3.1 (Pages 20 and 21) of LFR's Additional SSI Work Plan.
10. Lead does not appear to be delineated in the areas at 5CESE and 5ASE. These areas should include sampling locations for lead where it has been detected above 255 mg/kg. The SSI should define, laterally and vertically, lead contamination in soil. Results above 255 mg/kg should be carried forth as COCs in the risk evaluation. Based upon laboratory results, additional sampling may become necessary.	A discussion of sampling proposed to address delineation of lead-affected soil in these areas is presented in Section 3.1 (Page 23) of LFR's Additional SSI Work Plan.
Ryan Atencio's Specific Comments	
11. **Page 24, Section 8.0, Preparation of SSI Report** - The final recommendation cannot be made based upon screening levels. The final recommendation should be made based upon the results of the investigation and associated human health risk assessment. A No-Further-Action recommendation is not appropriate if the site is poses a significant risk to human health.	Section 8.0 of LFR's Additional SSI Work Plan has been revised.

Joe Hwong's General and Specific Comments	
1. **Page 6, Section 2.2 Prior Assessment and Agency Determination** – All activities performed by Pacific Electric Motors should also be listed in this section.	Site activities performed by PEM are presented in Section 2.2.1 of LFR's Additional SSI Work Plan. Additional information on site history is presented in Section 2.1 of LFR's Additional SSI Work Plan.
2. **Page 9, Soil vapor** – Soil samples were collected from 3' to 5' bgs, not 1' and 5' bgs. Please revise accordingly.	The depth from which soil vapor samples were collected has been corrected.
3. Sample collection and analytical methods described in the text are unclear. DTSC recommends a table listing all proposed borings, sample depths, and analysis for each sample be prepared and included in the SSI Workplan.	LFR has prepared a table presenting the boring ID number, the rational for collecting the sample, the sample depth interval, the matrix, and the analytes. This table is presented as Table 4 in the Additional Supplemental Site Investigation. The analytical methods are presented at the end of the table.
Tom Booze's General Comments	
1. PCB data is necessary from west and east of former location 2C since the sample from 2C is just over a probable cleanup concentration. LFR proposes that we do not collect samples for PDB in the area of former locations 4B and 4BE (10') because the extent of PCBs has been defined in this area. The concentrations of PCBs found in both samples was higher that likely cleanup levels which indicates the need for additional sampling. For 4B (PCBs = 69.7 ppm) this would be a sample from the subsurface and from the surface to the north. For sample 4BE-10' (PCB = 0.84 ppm) this would mean additional deeper and lateral samples.	A discussion of the extent of PCBs-affected soil is presented in Section 3.1 (Pages 21 through 23) of LFR's Additional SSI Work Plan.
2. Groundwater - Naphthalene should be on the list of analytes.	Analysis for naphthalene, a SVOC, has been added to the analytes for groundwater samples collected from borings SB-19, SB-22, SB-33, SB-35 and SB-37 (see Section 3.1, Page 23 of LFR's Additional SSI Work Plan).
3. The SSI Workplan indicates that the oral cancer slope factor for PCBs is 5. However, HERD recommends the use of 2.	LFR's responses to DTSC's comments on the SSI report by CSS have been revised to note use of 2 as the oral cancer slope factor for PCBs.
4. Appendix D – HERD can provide guidelines for determining background metals concentrations.	LFR will use guidelines provided by HERD to evaluate background metals concentrations.

5. SVOCs in soil – add a sample or two from the grouping of SB-32 through 34 since that's around the location of a TPH motor oil detection that is the subject of further sampling.	As noted in Section 3.1 (Page 17) and on Table 4, the soil sample from the 5-foot depth from SB-32 and the soil sample from the 10-foot depth from SB-33 will be submitted for SVOC analysis.

APPENDIX C

Alameda County Public Works Agency
Drilling Permits

Alameda County Public Works Agency - Water Resources Well Permit

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 12/01/2005 By jamesy
Permits Issued: W2005-1151 to W2005-1154

Receipt Number: WR2005-2223
Permits Valid from 12/12/2005 to 12/22/2005

Application Id: 1133478728703
Site Location: 1009 66th Avenue, Oakland, CA 94621
Project Start Date: 12/12/2005

City of Project Site: Oakland

Completion Date:12/22/2005

Applicant: LFR Levine Fricke - Lita Freeman
4190 Douglas Blvd, #200, Granite Bay, Granite Bay, CA 95746
Phone: 916-786-2456

Property Owner: Modad Properties Llc
561 4th St., Oakalnd, CA 94607
Phone: --

Client: ** same as Property Owner **

Total Due: $1100.00
Total Amount Paid: $1100.00
Paid By: VISA **PAID IN FULL**

Works Requesting Permits:

Well Construction-Monitoring-Monitoring - 3 Wells
Driller: Vironex, TEG, BC2 Environmental - Lic #: 705927 - Method: DP

Work Total: $900.00

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2005-1151	12/01/2005	03/12/2006	NW1	12.00 in.	2.00 in.	2.00 ft	25.00 ft
W2005-1152	12/01/2005	03/12/2006	NW2	12.00 in.	2.00 in.	2.00 ft	25.00 ft
W2005-1153	12/01/2005	03/12/2006	NW3	12.00 in.	2.00 in.	2.00 ft	25.00 ft

Specific Work Permit Conditions

1. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

2. Permitte, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained.

4. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the

Alameda County Public Works Agency, Water Resources Section, within 60 days. Including permit number and site map.

5. Applicant shall contact James Yoo for an inspection time at 510-670-6633 at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

6. Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.

7. Minimum surface seal thickness is two inches of cement grout placed by tremie

8. Minimum seal depth for monitoring wells is 5 feet below ground surface(BGS) or the maximum depth practicable or 20 feet.

9. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

Borehole(s) for Investigation-Contamination Study - 38 Boreholes
Driller: Vironex, TEG, BC2 Environmental - Lic #: 705927 - Method: DP **Work Total: $200.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2005-1154	12/01/2005	03/12/2006	38	2.00 in.	15.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact James Yoo for an inspection time at 510-670-6633 at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

6. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

PROGRAMS AND SERVICES

Well Standards Program

The Alameda County Public Works Agency, Water Resources is located at:
399 Elmhurst Street
Hayward, CA 94544
For Driving Directions or General Info, Please Contact 510-670-5480 or wells@acpwa.org
For Drilling Permit information and process contact James Yoo at
Phone: 510-670-6633
FAX: 510-782-1939
Email: Jamesy@acpwa.org

Alameda County Public Works is the administering agency of General Ordinance Code, Chapter 6.88 . The purpose of this chapter is to provide for the regulation of groundwater wells and exploratory holes as required by California Water Code. The provisions of these laws are administered and enforced by Alameda County Public Works Agency through its Well Standards Program.

Drilling Permit Jurisdictions in Alameda County: There are four jurisdictions in Alameda County.

Location:	Agency with Jurisdiction	Contact Number
Berkeley	City of Berkeley	Ph: 510-981-7460 Fax: 510-540-5672
Fremont, Newark, Union City	Alameda County Water District	Ph: 510-668-4460 Fax: 510-651-1760
Pleasanton, Dublin, Livermore, Sunol	Zone 7 Water Agency	Ph: 925-454-5000 Fax: 510-454-5728

The Alameda County Public Works Agency, Water Resources has the responsibility and authority to issue drilling permits and to enforce the County Water Well Ordinance 73-68. This jurisdiction covers the western Alameda County area of **Oakland**, **Alameda**, **Piedmont**, **Emeryville**, **Albany**, **San Leandro**, **San Lorenzo**, **Castro Valley**, and **Hayward** . The purpose of the drilling permits are to ensure that any new well or the destruction of wells, including geotechnical investigations and environmental sampling within the above jurisdiction and within Alameda County will not cause pollution or contamination of ground water or otherwise jeopardize the health, safety or welfare of the people of Alameda County.

Permits are required for all work pertaining to wells and exploratory holes at any depth within the jurisdiction of the Well Standards Program. A completed permit application *(30 Kb)** , along with a site map, should be submitted at least **ten (10) working days prior to the planned start of work**. Submittals should be sent to the address or fax number provided on the application form. When submitting an application via fax, please use a high resolution scan to retain legibility.

Complete Permit Application Check List *(24 Kb)**

Fees
Beginning April 11, 2005 , the following fees shall apply:

A permit to construct, rehabilitate, or destroy wells, including cathodic protection wells, but excluding dewatering wells, shall cost $300.00 per well.

A permit to bore exploratory holes, including temporary test wells, shall cost $200 per site. A site includes the project parcel as well as any adjoining parcels.

Please make checks payable to: **Treasurer, County of Alameda**

Permit Fees are exempt to State & Federal Projects

Applicants shall submit a letter from the agency requesting the fee exemption.

Scheduling Work/Inspections:
Alameda County Public Works Agency (ACPWA), Water Resources Section requires scheduling and inspection of permitted work. All drilling activities must be scheduled in advance. Availability of inspections will vary from week to week and will come on a first come, first served bases. To ensure inspection availability on your desired or driller scheduled date, the following procedures are required:

Please contact **George Bolton at 510-670-5594** to schedule the inspection date and time (You must have drilling permit approved prior to scheduling).

Schedule the work as far in advance as possible (at least 5 days in advance); and confirm the scheduled drilling date(s) at least 24 hours prior to drilling.

Once the work has been scheduled, an ACPWA Inspector will coordinate the inspection requirements as well as how the Inspector can be reached if they are not at the site when Inspection is required. Expect for special circumstances given, all work will require the inspection to be conducted during the working hours of 8:30am to 2:30pm., Monday to Friday, excluding holidays.

Request for Permit Extension:
Permits are only valid from the start date to the completion date as stated on the drilling permit application and Conditions of Approval. To request an extension of a drilling permit application, applicants must request in writing prior to the completion date as set forth in the Conditions of Approval of the drilling permit application. Please send fax or email to Water Resources Section, Fax 510-782-1939 or email at wells@acpwa.org. There are no additional fees for permit extensions or for re-scheduling inspection dates. You may not extend your drilling permit dates beyond 90 days from the approval date of the permit application. **NO refunds** shall be given back after 90 days and the permit shall be deemed voided.

Cancel a Drilling Permit:
Applicants may cancel a drilling permit only in writing by mail, fax or email to Water Resources Section, Fax 510-782-1939 or email at wells@acpwa.org. If you do not cancel your drilling permit application before the drilling completion date or notify in writing within 90 days, Alameda County Public Works Agency, Water Resources Section may void the permit and No refunds may be given back.

Refunds/Service Charge:

A service charge of $25.00 dollars for the first check returned and $35.00 dollars for each subsequent check returned.

Applicants who cancel a drilling permit application **before** we issue the approved permit(s), will receive a **FULL** refund (at any amount) and will be mailed back within two weeks.

Applicants who cancel a drilling permit application **after** a permit has been issued will then be charged a service fee of $50.00 (fifty Dollars). To collect the remaining funds will be determined by the amount of the refund to be refunded (see process below).

Board of Supervisors Minute Order, File No. 9763, dated January 9, 1996, gives blanket authority to the Auditor-Controller to process claims, from all County departments for the refund of fees which do not exceed $500 (Five Hundred Dollars)(with the exception of the County Clerk whose limit is $1,500).

Refunds over the amounts must be authorized by the Board of Supervisors Minute Order, File No. 9763 require specific approval by the Board of Supervisors.

The forms to request for refunds under $500.00 (Five Hundred Dollars) are available at this office or any County Offices.

If the amount is exceeded, a Board letter and Minute Order must accompany the claim. Applicant shall fill out the request form and the County Fiscal department will process the request.

Enforcement

Penalty. Any person who does any work for which a permit is required by this chapter and who fails to obtain a permit shall be guilty of a misdemeanor punishable by fine not exceeding Five Hundred Dollars ($500.00) or by imprisonment not exceeding six months, or by both such fine and imprisonment, and such person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any such violation is committed, continued, or permitted, and shall be subject to the same punishment as for the original offense. (Prior gen. code §3-160.6)

Enforcement actions will be determined by this office on a case-by-case basis

Drilling without a permit shall be the cost of the permit(s) and a fine of $500.00 (Five Hundred Dollars).

Well Completion Reports (State DWR-188 forms) must be filed with the Well Standards Program within 60 days of completing work. Staff will review the report, assign a state well number, and then forward it to the California Department of Water Resources (DWR). Drillers should not send completed reports to DWR directly. Failure to file a Well Completion Report or deliberate falsification of the information is a misdemeanor; it is also grounds for disciplinary action by the Contractors' State License Board. Also note that filed Well Completion Reports are considered private record protected by state law and can only be released to the well owner or those specifically authorized by government agencies. Links to pertinent forms are provided below.

Well Completion Report Form*
Well Owner's Request Form for Previously Filed Forms *(41Kb)**
Government Authorization Form for the Release of Forms *(46 Kb)**
Site Hazard Information Form *(51 Kb)**

* Adobe PDF Reader is Required.

APPENDIX D

Standard Operating Procedures for Drill Rigs

Standard Operating Procedures for Drill Rigs

LFR Inc. (LFR) described the sampling and analysis program proposed at the Proposed Aspire Charter High School located at 1009 66th Avenue in Oakland, Alameda County, California in our work plan titled "Additional Supplemental Site Investigation Work Plan, Proposed Aspire Charter High School, 1009 66th Avenue, Oakland, Alameda County, California, DTSC Site Code: 204147-11" and dated December 13, 2005. To implement this work plan, LFR retained Transglobal Environmental Geochemistry (TEG), Vironex, Inc. (Vironex) and Precision Sampling (Precision) to collect soil and groundwater samples using direct-push drill rigs. BC^2 Environmental, Inc. (BC^2) was retained by LFR to install three nested groundwater monitoring wells using a drill rig equipped with hollow-stem augers. Standard operating procedures for these drill rigs are presented below.

- **TEG:** TEG utilized the STRATAPROBE™ technology for the borings they advanced on the Site. The STRATAPROBE™ sampling system is a hydraulic and percussion drive-point unit. Applications for STRATAPROBE™ include collection of soil, soil vapor, and groundwater samples and installation of small diameter water wells, vapor wells and sparge points. The sampling unit is mounted on a four wheel drive, low profile truck. A 12-foot mast height and compact overall size allows sampling in previously inaccessible locations. STRATAPROBE™ is a quicker and more powerful than other direct-push systems, and is more cost effective and cleaner than conventional drilling methods.

  The most common samplers used are the split spoon sampler and the solid core barrel. Both samplers are available in lengths ranging from 18 inches to 4 feet with a typical diameter of 2 inches. This allows for the use of 1.5-inch diameter sample tubes, yielding approximately 175 cubic centimeters of sample matrix per 6-inches of tube. Each sample can be fitted with a variety of cutting shoe profiles to accommodate changing lithologic units and subsurface conditions.

  Groundwater samples are recovered by pumping or bailing the water collected with the sampler. Alternately, depending on analysis required, etc., tubing from the surface may be used to recover samples using a peristaltic pump, vacuum source or a giggle tube. For volatile organic compounds, a disposable bailer is preferred, yielding the highest quality sample with the least amount of disturbance.

- **Vironex:** Vironex utilized limited access rigs (the 6610DT track-mounted rig and the Badger) to advance the soil borings proposed within the on-site structures.

  The 6610DT is on a track-mounted vehicle with outriggers on opposite ends of the vehicle to ensure that the maximum weight possible is placed over the tool string. Because it is track-mounted and has a narrow profile, the 6610DT easily maneuvers into tight areas. The 6610DT has a larger hammer than the 5400 system and a beefed-up hydraulic system, allowing it to advance larger diameter tooling to greater depths at faster rates. Lithological conditions, such as caliche lenses, that

would normally inhibit the use of direct push rigs generally pose no problem for the 6610DT. Using this powerhouse, Vironex has pushed 3.25-inch casing and installed 2-inch diameter wells.

Specifications for the 6610DT track-mounted rig are as follows:

- Dimensions: 6.2'H x 4'W x 7.6'L
- Weight: 4,900 lbs.
- Clearance: 13 Feet
- Typical Depth: 60 to 80 feet
- Pulling Force: 46,000 lbs.
- Pushing Force: 34,000 lbs.
- Boring Angle: 45 Degrees

The Badger is a direct-push system that is mounted on a truck dolly, which makes it ideal for accessing sites through narrow openings, such as a standard doorframe. The Badger is capable of pushing sampling tools to fairly significant depths. Furthermore, the Badger can be bolted to many flooring surfaces for additional stability and leverage.

Specifications for the Badger are as follows:

- Dimensions: 5.1'H x 2.1'W x 2.6'L
- Weight: 660 lbs
- Clearance: 8 Feet
- Typical Depth: 30 to 40 feet
- Pulling Force: 18,000 lbs.
- Pushing Force: 16,000 lbs.
- Boring Angle: 15 Degrees

- **BC^2**: BC^2 utilized a CME 85 drill rig for the installation of the nested groundwater monitoring wells. This rig is truck mounted and equipped for mud rotary, hollow-stem auger or rotary drilling with augers up to 17-inch diameter outside diameter (12-inch diameter inside diameter). All rigs can be converted to high torque configuration for hard drilling conditions, some rigs have 140# and 300# auto hammers, several rigs are equipped for angle holes. This rig has the advantage of taking borings to depths greater than 150 feet when needed to chase contaminates on an environmental project.

  Specifications for the CME 85 drill rig are as follows:

  - Powered by Cummins 6BT turbo charged diesel engine
  - Rotary torque.....20,000 ft. lbs.
  - Rotary speed.....465 RPM
  - Retract Force.....48,000 lbs.
  - Pulldown force.....28,000lbs.
  - Safety driver hoist for down-hole-hammer
  - Hydraulic rod holder and breakout wrench (rotary drilling)

- 140 lb. Automatic SPT hammer

Capabilities for the CME 85 drill rig are as follows:

- Angle drilling
- Augers to 10.25-inches inside diameter
- CME continuous dry core system

Photo 1: Soil borings along western edge of gasoline-affected soil (SB-22 in foreground and SB-21 and SB-20 in middle background).

Photo 2: Soil borings along western edge of gasoline-affected soil (SB-41 in foreground and SB-19 and SB-20 in background).

Photo 3: Soil borings 2CW(10') and 2CW(20') located west of stormwater collection sump and pump along southern border of the Site.

Photo 4: Soil boring SB-40 located in unpaved area immediately west of paved parking area.

Photo 5: Boring 4BE(10') 4.5-5' at southeastern corner of the pressure wash room inside the manufacturing/office building.

Photo 6: Boring SB-34 located inside the manufacturing/office building.

Photo 7: Nested well (NW-1) located along northern border of Site before installation of traffic box.

Photo 8: Nested well (NW-3) located along southern border of the Site after installation of traffic box.

Photo 9: TEG's mobile laboratory shown on the Site in December 2005.

Photo 10: BC^2 Environmental drill rig and support truck during installation of nested well NW-2.

Photo 11: BC[2] Environmental crew during installation of nested well NW-2.

Photo 12: BC[2] Environmental crew during installation of nested well NW-3.

Photo 13: BC^2 Environmental crew steam cleaning augers used for drilling nested wells.

Photo 14: Sampling equipment used during collection of groundwater samples from nested wells.

Property of LFR,

Address 1900 Powell St 12th floor
Emeryville, CA 94608

Telephone (510) 652-4500

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12/12/05 Aspire Oakland

1009 66th Avenue
Oakland, CA

Morning overcast - 40°F 730am

LFR- Lee
Shelby
Lita Freeman

Vironex - track mounted direct push
TEG - truck mounted direct push and mobile lab

Shelby - inside warehouse w/ Vironex
Lee - East of warehouse w/ TEG

8:30 setup and sample SB-4
0.5 - 1.0 - SVOC/PAH / TPHmo/AS
4.5 - 5.0 - SVOC/PAH / TPHmo/AS
- grout SB-4 Duplicate 1.0-1.5
setup and sample SB-3
9:55 0.5 - 1.0 - SVOC/PAH/TPHmo
4.5 - 5.0 SVOC/PAH/TPHmo
- grout SB-3
9:25 - setup and sample SB-13 to 5ft bgs

CM 12/12/05

SB-13	0.5-1.0 TPHmo/SVOC/PAH	
	4.5-5.0 SVOC/PAH	
	grout SB-13	
10:05	Setup and sample SB-14 to 5ft bgs	
	0.5-1.0 TPHmo SVOC/PAH	
	4.5-5.0 SVOC/PAH	
	grout SB-14	
10:35	Setup and sample SB-26 to 5ft bgs	
	10:46 0.5-1.0	
	10:53 4.5-5.0	
	- grout SB-26	
11:15	Setup and sample SB-25 to 2ft bgs	
11:16	- 0.5-1.0 only TPHtmo to mobile lab only	
	- grout SB-25	
11:16	Setup and Sample SB-28	
	0.5-1.0 only TPHtmo to mobile lab	
	move to SB-27	
	Setup and Sample SB-27	
1156	0.5-1.0 - TPHtmo/SVOC	
1158	1.0-1.5dup SVOC	
1208	4.5-5.0 SVOC	
	- Quick lunch break for TEG driller to allow LM to log samples	CLM 12/12/05

1220	- move to SB-29
	- poor recovery
	- 2nd attempt, poor recovery
	- 3rd attempt, better recovery
1231	0.5-1.0 TPHtmo/SVOCs
1253	4.5-5.0 SVOCs
	move to SB-30
	Setup and Sample SB-30 to 5ft bgs
1315	samples 0.5-1.0 TPHtmo/As
1326	4.5-5.0 As only
	Call to Lita report progress, check with mobile lab, no more samples today, have enough to run already
	- Additional samples will be submitted to Fixed Laboratory C$T
	Check with Selby working w/ Vironex inside iron works shop w/ limited access rig.
	Borings inside completed include
	SB-7, 8 to 15ft bgs
	SB-8 to 20ft bgs
	SB-11 to 15ft bgs
	SB-9 to 20ft bgs
	SB-6 to 15ft bgs
	according to Selby these locations show

CLM
12/12/05

CLM 12/12/05

elevated PID readings, some off-scale at 10 and 15 ft bgs - still elevated at borings to 20 ft bg.

1355 Move over to SB-24 setup and sample SB-24 Soil and Grab GW location

1359	Sample (Soil)	0.5 - 1.0
1401		1.0 - 1.5 dup
1414		4.5 - 5.0
1441		9.5 - 10.0
1501		14.5 - 15.0

~~install temporary 1" PVC well at 25 ft bgs, no water at 15 ft or 20 ft, none of water at 25 ft bgs~~

see SB-9 on 12/13

~~not enough water to collect Grab GW sample, wait~~

- ~~secure temporary well and will sample 12/13 AM before removal and grouting~~ ← ~~24 hrs after install as per permit NEWP~~

1515 Collect Field blank (FB121205) with laboratory provided DI water for TPHg, BTEX, MTBE SVOCs, Arsenic

CLM 12/12/05

1520 - Collect Equipment blank (EB121205) by poring DI water over sampling (SS) shoe after Decon + rinse
Sample EB121205 for TPHg, BTEX MTBE, SVOCs, Arsenic

1615 ~~still not enough GW in temporary well point in SB-24 will wait overnight~~

- ~~clean up site + equipment~~ 1 drum of soil cuttings started today.

1630 - TEG offsite (Geoprobe)

- TEG mobile lab - still running samples, will continue to run remaining samples tonight in parking lot of hotel prepare to depart site

1700 TEG mobile lab off-site CLM and Shelby Stach off-site back to Oakland Shed with cooler of samples on ice

- CLM to QA/QC samples vs. Chain and analysis will submit samples to laboratory on 12/13 early AM

C. Lee CLM Stach 12/12/05

6

Aspire Charter High School Site
Oakland, CA - partly cloudy 40's going to 50's

0700 CLM delivers samples from 12/12. to C&T Laboratory in Berkeley - cooler w/ samples on ice, COC + custody seal - mob to oakland office/shed then to site

0730 CLM onsite, TEG geoprobe + mobile lab onsite
- Vironex w/ concrete corer and limited access rig onsite
CLM conducts daily tool box HSP meeting
- Vironex to Concrete Core 6 locations inside building for TEG geoprobe soil + GW locations
- Vironex to Core room inside building and collect sample from 5ft bgs for PCBs
- location 4BE10
TEG mobile lab still has a few samples ~~easi~~ to run after generator stopped running last night, will complete TPH-mo samples in AM

CLM 12/13/05

815- TEG geoprobe setup on SB-5 on side of metal works building
Sample SB-5 to 5 ft-bgs
830 0.5 - 1.0 Arsenic only
838 4.5 - 5.0 Arsenic only
- Joe Hwang from DTSC onsite, review sampling locations w/ him, update on progress
855- move over to new boring location SB-40 in soil, near debris piles off asphalt in NW portion of site
Samples (Soil) - 24hr TAT
900 0.5 - 1.0 - Arsenic only
908 4.5 - 5.0 Arsenic only
decon core & shoe with alconox & DI, as always between locations
- move to SB-31 near storm water sump pump
- Sample SB-31 to 15 ft bgs
- saturated soil ~1 ft bgs
- poor recovery 0-4 retry, same result
no recovery 4-8, retry, same result
no recovery 8-12, re-try same result
9:45 Sample 14.0-14.5 - PCBs
9:47 Sample 14.5-15.0 PCBs

CLM 12/13/05

Aspire, Oakland

Vironex completes room sample location (4BE10) inside building

1001 Sample 4BE10 (4.5-5.0) - PCBs

- Vironex to move to Metal Works building if tenant shows up to unlock door to get additional samples sub slab
- Joe Wong off-site
- Vironex loads equipment

1015 TEG geoprobe moves to SB-18
Setup and sample SB-18 to 6ft bgs
1026 Sample 0.5-1.0 - Arsenic Only
1035 4.5-5.0 Arsenic Only
Decon core & shoe, move TEG to SB-17
1120 TEG setup and sample SB-17 to 15 ft bgs
1131 Samples 0.5-1.0 - TPHg BTEX, MTBE
1154 4.5-5.0 " " "
1227 9.5-10.0 " " "
1231 10.0-10.5 dup " " "
1243 14.5-15.0 " " "
PID & odor in sample at 10ft and 15 ft bgs

CLM 12/13/05

Aspire, Oakland

- Decon geoprobe sampler & shoe
- Metal works returns, opens access to building Vironex to go back to building and core concrete to collect sub slab material for arsenic analysis

1246 Sample SB-8 (0.0-0.5) (CLM) Arsenic below slab (Vironex)
1257 Sample SB-6 (0.0-0.5) (below slab) (Vironex) Arsenic
1320 Sample SB-10 (0.0-0.5) below slab Arsenic
1322 Sample SB-10 (0.5-1.0) TPHmo
TEG setup and Sample SB-19
1337 Sample SB-10 (4.5-5.0) TPHg/BTEX/MTBE
mobile lab, PID = 89.6 ppm odor
TEG - SB-19
1350 Sample - (0.5-1.0) TPHmo
1401 SB-19 - Sample (4.5-5.0) TPHg/BTEX/MTBE
1410 SB-9 - Sample (9.5-10.0) TPHg/BTEX/MTBE
Vironex - SB-10 - continues to push down
1418 TEG - SB-19
Sample 14.5-15.0 - TPHg/BTEX/MTBE
- no PID response, no odor
TEG pushes to 20 ft bgs install 1" PVC temporary well (5ft screen)

for Grab GW sample

1430 no GW @ 20ft bgs in
remove temporary well,
push to 24 ft bgs, re-install
temporary well point
- let GW accumulate in
well before sampling

1505 Vironex - SB-10 - collect Field Blank (FB 121305)

1514 Sample SB-10 (9.5-10.0) TPHg/BTEX/MTBE
- PID - 820ppm, petroleum odor to soil

1537 Sample (14.5-15.0) TPHg/BTEX/MTBE
PID 376ppm, petroleum odor to soil

TEG moves to 2CW(10')
setup and sample to 5ft bgs

Vironex off-site sampling
1545 complete and packed up

1600 LM finishes logging SB-10

1603 Sample 19.5-20.0 BTEX/TPHg/MTBE

1605 - TEG sample 2CW(10') 4.5-5.0
- No recovery 0.5-1.0
Decon sampler & shoe
TEG setup and sample 2CW(20')

1610 Sample (4.5-5.0)
No recovery 0.5-1.0

CLM 12/13/05

TEG - hand augers at 2CW(10')

1655 - collect sample 2CW(10')(0.5-1.0)

TEG - hand augers at 2CW(20')

1700 - collect sample 2CW(20')(0.5-1.0)

1705 - LM collects Equipment Blank
EB121305 from sampler shoe
after decon
- wrap-up / clean-up, secure SB-19 temp GW

1730 TEG offsite / LM locks up
offsite with cooler containing
samples on ice
- back to Oakland office
- QA/QC samples before turning
into laboratory on 12/14 early AM

C. Lee Ohlman
12/13/05

Aspire Charter high School site
Oakland, CA 12/14/05
weather: partly cloudy 40's going into the 50's

7:10 LM delivers samples from 12/13 to C&T labs
7:30 LM onsite, TEG Lab ? geoprobe present
7:45 Conduct toolbox HSP meeting
- Calibrate PID to 100ppm isobutylene in air
8:00 - check GW in temporary well point SB-19 @ 24 ft GW is ~4-5 ft
8:10 Collect SB-19-GW for TPHg/BTEX/MtBE
8:12 Collect SB-19-GWdup for TPHg/BTEX/MtBE
8:30 - remove casing, grout SB-19 w/ tremie pipe from bottom to top
8:40 - move to SB-20
Setup to Sample to 16 ft bgs
8:45 Sample 0.5-1.0 - ~~TPHg~~ Measure TPHmo/SVOCs
8:48 Sample 1.0-1.5 dup Arsenic/SVOCs
9:02 Sample 4.5-5.0 BTEX/TPHg/MtBE/SVOC
9:04 Sample 5.0-5.5 TPHg/BTEX/MtBE/SVOC

CLM 12/14/05

SB-20 cont'd
9:20 Sample SB-20 (9.5-10.0)
mobile lab - TPHg/BTEX/MtBE
PID = 218ppm petroleum odor in soil
9:31 Sample SB-20 (14.5-15.0)
mobile lab - TPHg/BTEX/MtBE
PID = 0.3ppm no odor
End of Boring 16 ft bgs
Decon equipment
move to location SB-21
setup to sample to 16 ft bgs
9:39 Sample SB-21 (0.5-1.0) TPHmo/SVOCs mobile lab/C&T
9:53 Sample SB-21 (4.5-5.0) TPHg/BTEX/MtBE SVOCs - C&T
10:10 Sample SB-21 (9.5-10.0) TPHg/BTEX/MtBE - mobile Lab
10:22 Sample SB-21 (14.5-15.0) TPHg/BTEX/MtBE
End of Boring 16 ft bgs
- Decon Sampler + shoe
TEG moves ~~out front~~ to ~~complete~~ SB-~~22~~, set up and sample to 16 ft bgs
10:51 SB-22-Sample 0.5-1.0 TPHmo/SVOCs mobile lab/C&T
11:02 SB-22 Sample 4.5-5.0 TPHg/BTEX/MtBE

CLM 12/14/05

SB-22 cont'd

1116 SB-22 - Sample (9.5-10.0) TPHg/BTEX/MtBE

PID = 2-3 ppm

1122 SB-22 (14.5-15.0) TPHg/BTEX/MtBE

1124 SB-22 dup (15.0-15.5) TPHg/BTEX/MtBE

- End of soil boring
- push to 20ft for Grab GW collection, no GW measured
- install temporary well point at 24 ft bgs, let GW accumulate, will try to sample later.
- Decon w/ alconox & DI
- move inside building out near front of 66th Ave to SB-38

Setup and Sample SB-38 to 16 ft bgs

Begin pushing on SB-38

1215 Sample SB-38 (9.5-10.0) TPHd/SVOCs

~~1217 Sample SB-38 (10.0-10.5) dup TPHd (CLM)~~

1228 Sample SB-38 (14.5-15.0) TPHd/SVOCs

End of Boring 16 ft bgs

- Decon sampling equip and move inside by warehouse building

1310 - move to SB-32

CLM 12/14/05

SB-32 cont'd

Setup and Sample SB-32 to 16 ft bgs

1325 SB-32 Sample (4.5-5.0) TPHg/BTEX/MtBE

1340 SB-32 Sample (9.5-10.0) TPHg/BTEX/MtBE

1342 SB-32 dup Sample (10.0-10.5) TPHg/BTEX/MtBE

1352 SB-32 Sample (14.5-15.0) TPHg/BTEX/MtBE

End of Boring 16 ft bgs

Decon sampling equipment

move around to ~~other side of partition wall (down gradient) to location~~ (CLM)

SB-34 - Setup and prepare to sample

1405 Sample SB-34 (4.5-5.0) TPHg/BTEX/~~MtBE~~

1421 Sample SB-34 (9.5-10.0) TPHg/BTEX/MtBE + TPHmo (mobile lab)

1458 Sample SB-34 (14.5-15.0) TPHg/BTEX/MtBE and TPHmo (mobile lab)

End of Boring 16 ft bgs

Decon equipment, finish log

TG to move to SB-35 on other side of partition wall in building ~ down gradient of SB-32

- Sample from SB-33 will be held based on results of SB-32

Begin SB-35 near i-beam

CLM 12/14/05

12/14/05

SB-35 cont'd

1503 Sample SB-35 (4.5-5.0)
HOLD - TPHg/BTEX/MTBE

1515 Sample SB-35 (9.5-10.0)
HOLD - TPHg/BTEX/MTBE

1533 Sample SB-35 (14.5-15.0)
HOLD samples TPHg/BTEX/MTBE
End of soil boring
Push to 25ft bgs, install temporary well casing, to stay in overnight to allow GW to accumulate
TEG completes sampling for the day
LM, mobile lab has a few samples left to analyze, LM has cooler with samples and w/ QA/QC them before submittal to laboratory

1630 TEG mobile lab off-site
LM off-site with cooler and samples, LM will QA/QC sample before submittal to the Lab in AM tomorrow
C. Lee
12/14/05

Aspire Charter high School Site
Oakland, CA
Weather: mostly sunny 40's going to ~60°F
- LM to C&T labs to drop off 12/14/05 samples

705 - LM signs COC over to C&T Sample recieving
Mob to oakland office then to Site

730 - LM onsite, TEG geoprobe & mobile lab present
LM conducts toolbox HSP meeting w/ TEG
LM calibrates PID to 100ppm isobutylene in air
Calibration ok

800 check water level elevation in temporary wells SB-22 (outside) and SB-35 (inside)
- SB-22 DTW - 4.91 ft bgs

805 collect SB-22-GW - TPHg/BTEX/MTBE

810 collect SB-22 GWdup + Naphthalene

- move to SB-35 to collect GW/DTW 8.72

835 collect SB-35GW TPHg/BTEX/MTBE TPHd/mo + Naphthalene

838 collect SB-35GWdup TPHg/BTEX/MTBE TPHd/mo

CLM 12/15/05

Finish GW sampling at SB-35

9:00 – abandoned SB-22 & grout w/ tremie pipe

9:35 abandoned SB-35 & grout w/ tremie pipe

10:03 move geoprobe to SB-33 setup and sample to 16ft bgs

10:10 - No sample/recovery 0-4
Collect sample SB-33 (4.5-5.0) for TPHg/BTEX/MTBE

10:17 Collect sample SB-33 (9.5-10.0) for TPHg/BTEX/MTBE TPHmo & SVOCs (CAT)

10:26 Collect sample SB-33 (14.5-15.0) - TPHg/BTEX/MTBE TPHmo & SVOCs

10:49 – install temporary well point at 13.5 ft bgs, running sand, difficult, water in well

11:00 - Decon stove/sampling equipment
- move to SB-36 and setup to sample to 16ft bgs

1:30 Collect sample SB-36 (0.5-1.0) for PCBs only

CLM 12/15/05

Aspire

SB-36 cont'd

1141 collect sample SB-36 (4.5-5.0) for PCBs only
Hold - TPHg/BTEX/MTBE

1153 collect sample SB-36 (9.5-10.0)
Hold for TPHg/BTEX/MTBE & TPHmo based on results for SB-33

1201 Collect sample SB-36 (14.5-15.0)
Hold - same as above
End of Boring SB-36 @ 16ft bgs

1230 - Collect grab GW sample from SB-33 - TPHg/BTEX/MTBE & TPHmo and Naphthalene + CAT

1245 Remove temporary well point and grout w/ tremie pipe

1300 - take quick lunch break, CLM office will also pick up ice to replenish ice in sample cooler

1330 CLM back onsite
- TEG geoprobe setup on SB-37 prepare to sample to 16 ft bg
- 0-4 ft bgs no sample

1345 Collect sample SB-37-(4.5-5.0)
Hold for TPHg/BTEX/MTBE & pending results from SB-34

CLM 12/15/05

SB-37 cont'd

1356 Collect sample for SB-37 (9.5-10.0)
Hold TPHg/BTEX/mtBE & TPHmo

1407 Collect SB-37 (14.5-15.0)
Hold TPHg/BTEX/mtBE & TPHmo
- End of Boring
- No groundwater present in borehole
- abort grab GW sample @ SB-37
Decon equipment

1433 LM collects Field blank FB121505 for TPHg/BTEX/MTBE TPHd/mo SVOCs and PCBs
- Call Lita leave message to discuss step-out
- Setup and move geoprobe to SB-41, new location west of SB-19 and SB-20 which show impact at 10' and 15'
Collect sample SB-41 (9.5-10.0) TPHg/BTEX/mtBE
Collect sample SB-41 (14.5-15.0) TPHg/BTEX/mtBE
- End of Boring 16ft bgs
- grout boring
- briefly discuss step outs w/ Lita on phone. CLM 12/15/05

LM desides to step out from SB-28, SB-27, SB-29 and SB-30 all detected TPHmo in shallow soil
- step outs SB-42, SB-43 and SB-44 are south of above borings
- stepouts are south of storm sewer line and are within first excavation area
SB-42 - setup and push to 5ft bgs
collect SB-42- 0.5-1.0 for TPHmo } mobile lab
collect SB-42- 4.5-5.0 for TPHmo }
- move to SB-43, decon equipment between locations
SB-43 - setup and push to 5ft bgs
collect SB-43- 0.5-1.0 TPHmo - mobile lab
collect SB-43 4.5-5.0 TPHmo - mobile lab
End of Boring, Decon, move to SB-44 - mobile lab has enough samples to finish today
1545 collect SB-44 0.5-1.0 - TPHmo - C&T
collect SB-44 4.5-5.0 - " "
End of Boring, Decon shoe & equipment
- additional, last two step outs SB-45 and SB-46 are east of SB-28 SB-29 and SB-44
CLM 12/15/05

SB-45
- location is north of storm drain by a few feet
- setup and sample SB-45 to 5ft bgs

1550 Collect SB-45 (0.5-1.0) TPHmo
Collect SB-45 (4.5-5.0) TPHmo
End of Boring
Decon shoe
- relocate to SB-46, next to mobile lab, outside excavation cut area in asphalt

1600 Collect SB-46 (0.5-1.0) TPHmo
Collect SB-46 (4.5-5.0) TPHmo
- grout SB-45 & SB-46
- top off others

1630 LM collect equipment blank DI pored over Decned Sample shoe
- TPHg/BTEX/MtBE, PCBs, SVOCs TPHmo/d
- TEG packs up and prepares to de-mob

1700 TEG offsite, LM locks up and mobs offside with Sample Cooker
- Back to oakland office w/ equipment

CLM 12/15/05

LM will QA/QC samples before delivering to Laboratory on AM 12/16

1745 leaves oakland office w/ samples in cooler on ice

C. Joe McShane
12/15/05

12/16/05

LM delivers samples to lab on 12/16 at 10:20AM
C&J signs for COC

Aspire Charter School Site 12/19/2005
Oakland, CA
Weather: cloudy, chance of rain later, 50's

7:30 LM onsite to meet driller BC² to install 3 2" diameter triple-nested wells - 9 wells total
- BC² arrives onsite w/ CME-85

7:45 - LM conducts HSP meeting & toolbox safety meeting
- well install will be NW-3, NW-1 and then NW-1 - clean to dirty based on anticipated impact of GW

8:00 - BC² sets up on NW-3 near existing (mw-2)
- LM calibrates PID to 100ppm isobutylene in air - cal ok

8:15 - BC² hand clears NW-3 to 5 ft bgs
- find 1.5" diameter tree branch (horizontal) at 2.5ft bgs

8:30 Begin continuous SS sampling from 5ft to 25ft bgs

CLM 12/19/05

NW-3 cont'd
- seepage noted shallow @ 1.5ft bgs
BC² using 12" O.D. HSA w/CME-85

9:05 - sampling completed to 13 ft bgs
- no impacts measured
- into clay and silt and SILT
- Sampling w/ both 18" and 24" SS samplers

10:15 - SS sampling completed to 28 ft bgs augers at 26.5ft in clay since 20ft bgs

10:25 Prepare to install triple nested well NW-3

NW-3d - screen 20-25 ft bgs
#2/12 monterey sand to 19ft
Bentonite 3/8" chips to 16 ft bgs
- let hydrate - 30minutes

NW-3i - screen 10-15 ft bgs
#2/12 monterey sand~16 ft bgs to 9 ft bgs
Bentonite ~6.5 to 9 ft bgs

- take lunch break to let bentonite hydrate

NW-3s - screen 3-6 ft bgs
#2/12 monterey sand to 2 ft bgs - use SS screws to secure end cap on casing
- Cement & grout to surface

CLM 12/19/05

Aspire

NW-3' continued

- finish w/ flush mount manhole cover, tint concrete to black to match asphalt
- Decon augers in Decon bin on back of BC2 trailer
- tower down, load up move over to NW-1, relocate outside of excavation area which was as deep as 28ft - relocate due east
- NW-1 is near SB-4

1315 Begin continuous sampling at NW-1 w/ 12" o.d. HSA using CME-85 rig

- hand auger 0-5 ft, some seepage, Fill 0-2 ft
- primarily silt and clay bay mud to 14ft
- small sand layer 14-15.5
- small sand/gravel layer 17.5-18.0
- adjust intermediate screen if ok'd by Lita to cover both zones

CLM 12/19/05

NW-1 cont'd

- lithology remains Silt & Clay no PID response above background stiff, wet, light olive-brown
- Reach 28ft bgs
- Install NW-1d screen 23 to 28 ft bgs
  2" PVC 0.020 slot screen (20 slot)
  #2/12 monterey sand to 21 ft bgs
  Bentonite 18 to 21 ft bgs

NW-1i 5ft screen 20 slot, threaded end cap, places 13 to 18 ft bgs to catch 2 sand layers @ 14 & 17 ft
#2/12 Monterey sand 18 up to 11 ft bgs
Bentonite 5/8" chips 7 to 11 ft bgs

NW-1s 3ft screen 3-6 ft bgs (20 slot)
#2/12 monterey Sand from 2 to 7 ft bgs

1700 - Grout/Cement will be added on 12/20 AM - secure wells with gripper plugs and cover over open borehole & plastic since precipitation is forcast for 12/20
cone off area & caution tape

CLM 12/19/05

- BC² - tower down, secure rig and equipment on tender truck
- cone off NW-3 to allow cement to cure, add plastic w/ precipitation expected 12/20

1730 BC² off-site
- LM locks up gate off-site, back to oakland offsite - charge equipment return company truck
- will return tomorrow to complete NW-1 and drill and complete NW-2

C: Joe Medrano 12/19/05

Aspire Charter School Site
Oakland, CA - 12/20/05
Weather: Overcast, precipitation expected in the pm's

7:30 - LM onsite, BC² rig + tender onsite
- LM conducts toolbox HSP meeting
LM calibrates PID to 100ppm isobutylene in air

8:00 BC² sets up drill rig on MW-2
- hand auger to 5ft bgs - clear

8:35 - begin continuous lithologic sampling from 5ft bgs
- sample at 5-6.5ft immediately has a petroleum odor
- shallow soil is moist no seepage
- primarily silt, little sand & gravel and clay down to 13ft bgs
- petroleum oder still persistant
At 13-15 core - wet, outside of SS is a sheen
- petroleum odor goes away at 15ft with change is lithology Silt w/sand to Silt w/ clay

CLM 12/20/05

NW-2 cont'd
- Silt w/ clay transitions to sandy silt and sand little silt by 20 ft bgs
23-25 - sand continues past target depth, continue deeper
25-26.5 - sand
26.5-28 - Sand
28-30 Sand
30-31.5 Sand & gravel - bottom 8" silt
31.5-33 - confirms silt (SS only)
- Based on lithology NW-2d will be screened 20-30 ft bgs
Begin installing NW-2d
2" dia. PVC screen 0.020 slot 20-30 ft bgs
#2/12 monterey sand 18-30 ft bgs
- Bentonite chips 3/8" seal 15 to 18 ft bgs
NW-2i -let hydrate
-Screen 10 to 15 ft bgs -
0.020 slot screen, threaded end cap.
#2/12 monterey sand 9 to 15 ft bgs
Bentonite 6 to 9 ft bgs
let hydrate
- Rig - lower down pull off NW-2 cm 12/20/05

Aspire
NW-2 cont'd
- finish NW-2 with grout & cement 0-2 12" flushmount cove
- use quick dry cement, tinted black to match asphalt
- BC² - drums all cuttings and places them under roof of main building on side w/ other drums 1 geoprobe drum 9 Investigation Derived Waste
- Finish 12" flushmount manhole cover at NW-1 - quick dry concrete

13³⁰ BC² - decons augers, load up equipment trash etc
14⁰⁰ BC² offsite
16⁰⁰ LM offsite, will return for well development in 48hrs on 12/23

C. Lee McAfee
12/20/05

Aspire Charter high school Site

Oakland, CA

weather: partly cloudy, little sun 50°F

8⁰⁰ Lm & Michael Sullivan meet at Oakland office, load equipment mob to site

8³⁰ Lm ms at site, go over HSP w/ ms, show well locations

- task: well development 9 wells 3 nested x 3
- Start at NW-1
- use surge block to re-pack sand pack and suspend silt for removal by submersible pump 2" Gunfos Redi-flo
- use 2" pump & flow through cell to pump and monitor GW parameters

10²⁵ - water is clearing Turb <100 NTUs

10³⁰ - final NTUs = 16

10³² Decon pump, begin development of NW-1s TD = 5.55 ft-bc

- well was surged prior to using pump and flow-cell yield is initial poor/fair

CLm 12/29/05

Aspire Charter High School Site

- very turbid w/ sediment

10⁴⁵ purged dry

- recharge is slow, poor/fair Decon pump,
- Use surge block on NW-1d TD

10⁵⁰ - Begin pumping from NW-1d = 27.79 ft bc

- yield is poor, worse than NW-1s and NW-1i
- pump rate unable to maintain steady flow rate, very muddy with silt (purge dry)
- let recharge will come back later and pump again
- Decon pump & hose move to NW-3 nested well
- use surge block on NW-3S NW-3S = 5.90 ft bc TD

11³⁵ - initial pumping purges dry

- Decon pump and place in
- NW-3i which was just surge blocked.

11⁴⁴ - Begin pumping NW-3i, purged dry by 11⁵³ - a lot of sediment

11⁵³ - Purged dry, stop wait, let recharge

- quick lunch break (Lm offsite)

MS Deons pump

1158 Begins pumping from NW-3i for second time
turbidity slowly comes into range
- yield is increasing as contact w/ formation increases and sediment/silt is removed

1236 - Turbidity down to 77 ntu
- Surge pump, increases sediment silt/turb, but recovers quickly

1241 Turbidity decreases to <100 NTU other parameters are stable
- Decon pump, return to NW-3i
- surge well NW-3i again

1248 - put down pump, begin 2nd development period
- better yield, still sediment, silt
- water level decreased slowly
- well will go dry again

1310 NW-3i almost dry
turbidity down to 354
- well dry
Decon pump
use surge block on NW-3d

NW-3d TD = 25.59 ft bc

1320 - Begin pumping NW-3d
- turbid, w/ sediment (silt) brown

1327 - begin collecting measurements w/ ~~flow thru cell~~ parameter meter

1345 parameters stable, Turbidity <100 NTUs, 48 gallons removed
- pull pump move to NW-2 nested well cluster
- begin by surging NW-2s
- put pump down well, begin pumping to remove sediment/silt
- well goes dry almost immediately
- pull pump, No parameters collected, poor to no recharge
- will use bailer & hand bail to remove sediment and develop well
- Decon, pump, move to NW-3i
- use surge block for sand pack adjustment and to suspend sediment for removal
- Begin pumping, turbid, brown, petroleum odor
- NW-2i - goes dry quickly
poor to no recharge
12/23/05 CLM

NW-2i cont'd
- pull pump, recharge rate very slow, will use bailer to help develop well because will be unable to sustain pumping rate.

Decon pump, prepare to Develop NW-2d
- use surge block on 10ft screen 20-30 in NW-3d

NW-3d 30.0 DTB ft bc

1400 Begin ~~Pumping~~ Pumping NW-2d
- intake in middle of screen
- Surge pump a few times

1408 - collect parameters
Turb. >1000 NTU, slowly clearing

1440 - Parameters stable, Turbidity <100 NTUs (57) and dropping
end pumping, pull pump in NW-2d.
- continue to use bailers in NW-2s and NW-2i near recharge, silty

CLM 12/23/05

Decon pump
- move back to NW-1d
- water level returned to static level in NW-1d
- use surge block, in screened zone 23-28,

1620 Begin pumping again at NW-1d
- try to maintain low flow rate
- turbidity >1000 NTUs

1635 - parameters stabilizing, turbidity out of range, silty >1000NTUs

1648 - 45 gallons purged, parameters stable, except Turbidity >1000 NTU's

1656 - 50 gallons purged
Turbidity >1000 NTU's
turbidity not clearing
End pumping, 10+ volumes removed
- secure wells, load equipment
stage 6 drum of purge water (2 per nested well)

1730 LM/MS offsite return to oakland office do return truck & equipment, MS will sample wells (GW) on 12/27/05

C. Yee McHenry 12/23/05

Aspire 12/27/05

Michael Sullivan

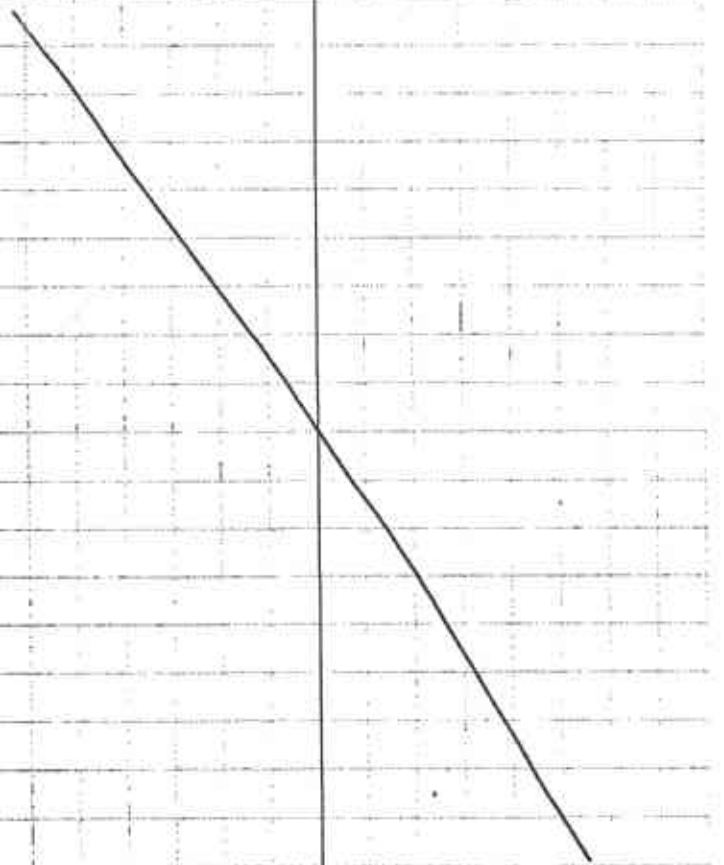
900	Load up Field Equipment
1000	water levels
1135	start Purge NW-2S
1210	Sample → NW-2S
	~~setup~~ ~~Mob~~ ~~to~~ on NW-2I
1220	start Purge
1250	Purge dry Return when Recharged
1300	start purge of NW 2D
1328	sample → NW 2D + ~~DUP~~ DUP-1
1340	Mob to NW-3S
~~1415~~ 1415	start Purge NW-3S
1455	Sample → NW-3S
1500	start Purge NW-3I
1520	Sample → NW-3I
1525	start Purge NW-3D
1555	sample → NW-3D
	Return to NW-2I
1615	Sample → NW-2I
1635	start Purge NW-1I
1700	Sample → NW-1I
1710	start Purge NW-1S
1740	sample → NW-1S FB 1227
1820	start NW-1D
1845	Sample ~~AFW~~ → NW-1D

Aspire 12/27/05

Pack up and return Equipment.

Drop off samples at Lab

Michael Sullivan



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Aspire Charter high School Site
Oakland, CA
Weather: partly cloudy 50's

800 meet precision Sampling (Israel)
Geoprobe rig onsite
for step-out locations
- conduct HSP tailgate meeting
- LM calibrates PID with
100 ppm isobutylene in air
- cut slab in big warehouse
building near 4BS(20') location
will sample deeper
- Geoprobe - push at 4BS(20')

900 Collect sample 4BS(20') (9.5-10.0)
- analysis - TPHmo
910 Collect sample 4BS(20')(14.5-15.0)
End boring - grout
- move outside, decon sampler & shoe
Setup and prepare to sample
2CW(10')
940 Collect sample 2CW(10') (9.5-10.0)
for PCBs analysis
- Decon sampler & shoe
950 Collect Field Blank (FB010506) for
PCBs and TPHmo
CLM 1/5/06

- Step-out boring SB-47

10:01 – collect samples

SB-47 (0.5-1.0) - PCBs

10:04 Sample (4.5-5.0) - PCBs

10:07 Duplicate Sample (5.0-5.5) - PCBs

10:16 Sample (9.5-10.0) - PCBs

- End of boring, grout boring

- Decon equipment

move to 2CW(20')

1040 Collect 2CW(20') (9.5-10.0) for PCBs

Decon equipment

Setup and Sample SB-48 Samples

10:50 SB-48 (0.5-1.0) - PCBs

10:57 SB-48 (4.5-5.0) - PCBs

11:14 SB-48 (9.5-10.0) - PCBs

- Decon Sampling equipment

11:30 Collect Equipment Blank pour DI over sampler into bottles (EB010506)

- move to SB-49 prepare to sample

1141 collect sample SB-49 (0.5-1.0) analysis PCBs

1150 collect sample SB-49 (4.5-5.0) - PCBs

CLM 1/5/06

SB-49 cont'd

1153 collect sample SB-49 (5.0-5.5) Duplicate sample for PCBs

1202 collect sample SB-49 (9.5-10.0) - PCBs

- End of Boring, grout boring

- Decon sampling equipment move to SB-50

1220 Sample SB-50 (0.5-1.0) - PCBs

1231 Sample SB-50 (4.5-5.0) PCBs

– Precision grouts SB-50, packs up and is off-site

1243 - LM samples SB-50 (9.5-10.0) for PCBs

- Sampling is complete, LM off-site LM to QA/QC samples and deliver samples to laboratory replenish ice sign COC to C&T labs regular TAT

C. Joe McManus 1/5/06

APPENDIX F

Laboratory Reports and Chain-of-Custody Documents
See Volume II

APPENDIX G

Tronoff Associates Survey Data

TRONOFF ASSOCIATES
LAND SURVEYING
EMERYSTATION
5858 HORTON STREET, SUITE 140, EMERYVILLE, CA 94608
TELEPHONE: (510) 428-1515 E-MAIL: bruce@tronoff.com FAX: (510) 428-0193

January 11, 2006

Alan D. Gibbs
LFR Levine Fricke
4190 Douglas Boulevard, Suite 200
Granite Bay, CA 95746-9460

Re: Aspire Charter School Site, 1009 66th Avenue, Oakland, CA.

Al,

Transmitted herewith are two signed and sealed blue line prints of our monitoring well and soil sampling location survey for the subject project. Also, enclosed are two sets of the soil sample and survey control point tabulation.

Please let me know if you have any questions or if we may be of additional assistance.

Sincerely,

Bruce T. Tronoff, PLS

73110111TRN

TRONOFF ASSOCIATES
LAND SURVEYING
EMERYSTATION
5858 HORTON STREET, SUITE 140, EMERYVILLE, CA 94608
TELEPHONE: (510) 428-1515 E-MAIL: bruce@tronoff.com FAX: (510) 428-0193

SURVEY NO. 7311 – LFR PROJECT NO. 003-09155-00
ASPIRE CHARTER SCHOOL – OAKLAND, CA.
SOIL SAMPLE AND SURVEY REFERENCE POINT LOCATIONS

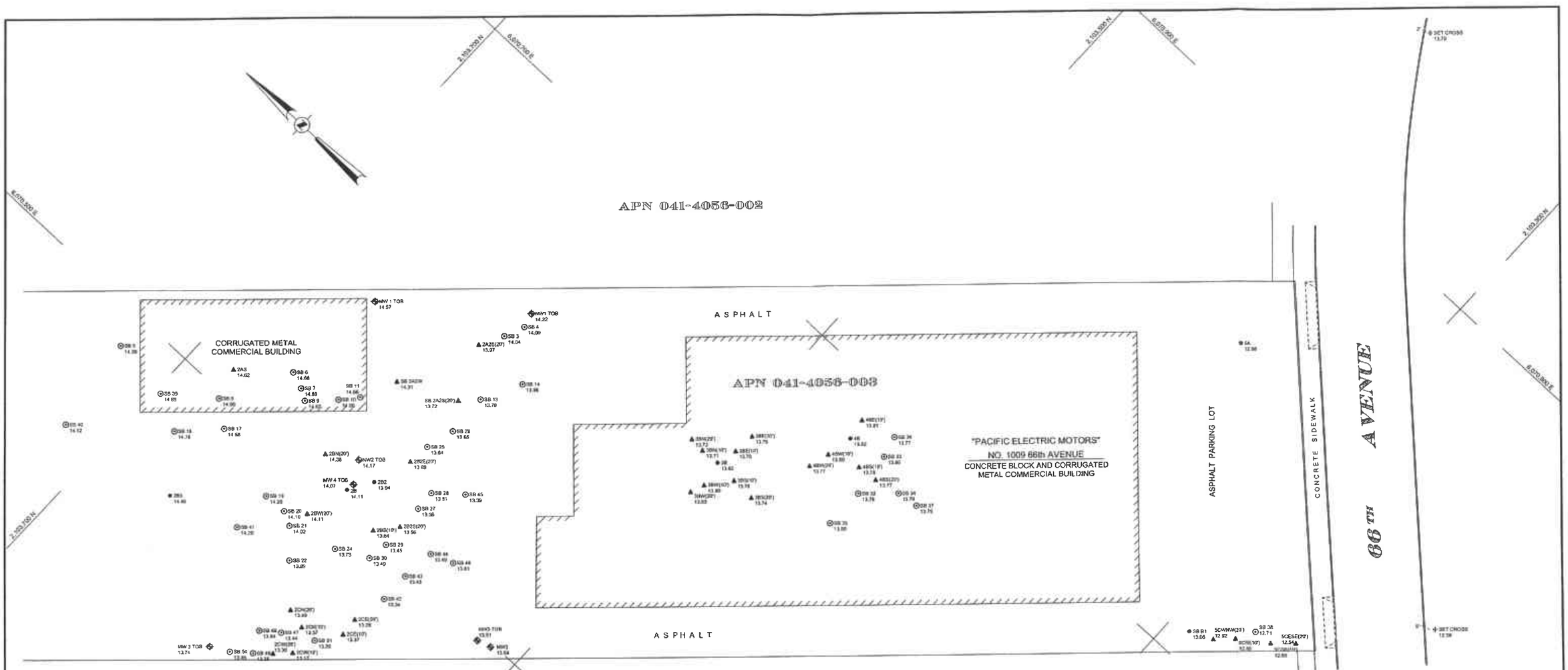
POINT NO.	NORTHING	EASTING	GROUND ELEV	DESCRIPTION
101	2,103,211.30	6,070,787.75	12.59	SET CROSS
105	2,103,393.24	6,070,980.66	13.70	SET CROSS
209	2,103,603.41	6,070,603.68	14.04	SB 3
210	2,103,599.74	6,070,612.75	14.09	SB 4
275	2,103,724.90	6,070,484.59	14.39	SB 5
270	2,103,660.83	6,070,528.23	14.66	SB 6
269	2,103,653.41	6,070,525.39	14.69	SB 7
272	2,103,676.66	6,070,497.48	14.66	SB 8
268	2,103,648.39	6,070,522.49	14.67	SB 9
267	2,103,637.82	6,070,532.95	14.66	SB 10
266	2,103,631.44	6,070,540.32	14.66	SB 11
212	2,103,591.64	6,070,575.93	13.78	SB 13
211	2,103,582.74	6,070,593.53	13.96	SB 14
230	2,103,665.63	6,070,489.21	14.58	SB 17
231	2,103,681.25	6,070,473.19	14.78	SB 18
233	2,103,631.69	6,070,479.98	14.20	SB 19
234	2,103,621.26	6,070,480.45	14.10	SB 20
238	2,103,615.10	6,070,477.30	14.02	SB 21

POINT NO.	NORTHING	EASTING	GROUND ELEV	DESCRIPTION
241	2,103,604.56	6,070,466.02	13.89	SB 22
237	2,103,593.30	6,070,483.55	13.73	SB 24
215	2,103,594.37	6,070,544.48	13.64	SB 25
214	2,103,590.99	6,070,557.40	13.65	SB 26
217	2,103,578.52	6,070,521.74	13.56	SB 27
218	2,103,578.92	6,070,530.80	13.51	SB 28
226	2,103,578.05	6,070,500.25	13.45	SB 29
225	2,103,579.35	6,070,490.92	13.49	SB 30
246	2,103,571.99	6,070,447.50	13.20	SB 31
293	2,103,439.99	6,070,659.28	13.76	SB 32
294	2,103,442.74	6,070,678.94	13.80	SB 33
296	2,103,426.99	6,070,671.34	13.79	SB 34
317	2,103,440.10	6,070,641.24	13.80	SB 35
295	2,103,445.36	6,070,688.41	13.77	SB 36
297	2,103,417.43	6,070,672.72	13.75	SB 37
260	2,103,268.48	6,070,733.24	12.71	SB 38
273	2,103,697.18	6,070,481.10	14.69	SB 39
253	2,103,718.65	6,070,442.32	14.12	SB 40
239	2,103,631.52	6,070,461.15	14.20	SB 41
224	2,103,562.24	6,070,482.06	13.34	SB 42
223	2,103,562.21	6,070,495.90	13.43	SB 43
221	2,103,560.66	6,070,510.87	13.49	SB 44
219	2,103,567.48	6,070,540.61	13.39	SB 45
222	2,103,550.67	6,070,514.77	13.61	SB 46

POINT NO.	NORTHING	EASTING	GROUND ELEV	DESCRIPTION
244	2,103,585.24	6,070,440.03	13.44	SB 47
243	2,103,592.89	6,070,434.06	13.64	SB 48
251	2,103,588.00	6,070,424.84	13.35	SB 49
252	2,103,595.80	6,070,418.48	13.45	SB 50
271	2,103,680.93	6,070,511.30	14.62	2AS(10')
207	2,103,624.45	6,070,556.56	14.31	2A-2W
208	2,103,609.28	6,070,593.34	13.97	2A-2E(20')
213	2,103,598.54	6,070,568.96	13.72	2A-2S(20')
314	2,103,360.77	6,070,823.14	12.98	5A
259	2,103,290.32	6,070,713.30	13.06	1B
236	2,103,607.48	6,070,506.37	14.11	2B
229	2,103,625.34	6,070,511.49	14.36	2BN(20')
227	2,103,586.66	6,070,501.13	13.64	2BS(20')
235	2,103,613.09	6,070,486.73	14.11	2BW(20')
228	2,103,601.08	6,070,517.02	13.94	2B-2
220	2,103,579.05	6,070,510.51	13.56	2B-2S(20')
216	2,103,595.47	6,070,534.65	13.69	2B-2E(20')
232	2,103,663.03	6,070,450.97	14.46	2B-3
278	2,103,495.48	6,070,626.71	13.62	3B
279	2,103,504.09	6,070,626.41	13.71	3BN(10')
280	2,103,511.05	6,070,626.85	13.72	3BN(20')
283	2,103,484.69	6,070,625.99	13.78	3BS(10')
284	2,103,473.74	6,070,625.84	13.74	3BS(20')

POINT NO.	NORTHING	EASTING	GROUND ELEV	DESCRIPTION
285	2,103,493.13	6,070,636.07	13.70	3BE(10')
286	2,103,492.14	6,070,646.00	13.79	3BE(20')
281	2,103,493.03	6,070,615.61	13.80	3BW(10')
282	2,103,495.40	6,070,609.34	13.83	3BW(20')
287	2,103,459.28	6,070,674.77	13.82	4B
290	2,103,447.79	6,070,668.18	13.78	4BS(10')
291	2,103,438.55	6,070,669.00	13.77	4BS(20')
316	2,103,461.13	6,070,684.34	13.81	4BE(10')
288	2,103,461.68	6,070,663.16	13.80	4BW(10')
289	2,103,464.40	6,070,653.69	13.77	4BW(20')
245	2,103,580.33	6,070,448.02	13.37	2CN(10')
242	2,103,589.16	6,070,450.34	13.49	2CN(20')
247	2,103,564.78	6,070,458.19	13.37	2CE(10')
248	2,103,565.48	6,070,466.49	13.28	2CE(20')
249	2,103,575.47	6,070,437.02	13.17	2CW(10')
250	2,103,581.61	6,070,430.81	13.30	2CW(20')
261	2,103,280.23	6,070,718.16	12.92	5CWNW(20')
262	2,103,273.17	6,070,724.96	12.80	5CW(10')
263	2,103,260.22	6,070,734.06	12.68	5CSE(10')
264	2,103,252.15	6,070,741.56	12.54	5CESE(20')

Bruce T. Tronoff - California Licensed Land Surveyor No. 6415



NESTED MONITORING WELLS (LFR)

WELL	NORTHING	EASTING	ELEV TOB	ELEV TOC
MW-1	2,103,656.09	6,070,575.86	14.57	14.19
MW-2	2,103,513.08	6,070,496.49	13.56	13.31
MW-3	2,103,603.80	6,070,414.13	13.74	13.43
MW-4	2,103,602.00	6,070,510.91	14.07	13.78

NESTED MONITORING WELLS (LFR)

WELL	NORTHING	EASTING	ELEV TOB	ELEV TOC
NW-1	2,103,651.47	6,070,819.21	14.22	13.88S 13.83I 13.84D
NW-2	2,103,612.63	6,070,519.60	14.17	13.77S 13.80I 13.79D
NW-3	2,103,518.33	6,070,496.67	13.51	13.19S 13.11I 13.16D

NOTES

1. THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY. ASSESSOR'S PARCEL DELINEATIONS ARE APPROXIMATE AND ARE FOR GENERAL INFORMATIONAL PURPOSES ONLY.
2. HORIZONTAL DATUM: CALIFORNIA STATE PLANE ZONE 3, NORTH AMERICAN DATUM 1983 OBTAINED BY "BEST FIT" TO PREVIOUS SURVEY PREPARED FOR CSS ENVIRONMENTAL.
3. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM 1988 OBTAINED BY "BEST FIT" TO PREVIOUS SURVEY PREPARED FOR CSS ENVIRONMENTAL.

1"=20' 0 5 10 20 30 40 60 80 GRAPHIC SCALE

LEGEND

APN ____ ASSESSOR'S PARCEL NUMBER
TOB ____ TOP OF BOX
TOC ____ TOP OF CASING

SYMBOLS

⊕MW ____ MONITORING WELLS
⊕NW ____ NESTED MONITORING WELLS
⊙SB ____ LFR SOIL BORINGS
● ____ PREVIOUS SOIL BORINGS
▲ ____ PREVIOUS "STEP OFF" SOIL BORINGS

GROUNDWATER MONITORING WELL AND SAMPLING LOCATION SURVEY

ASPIRE CHARTER SCHOOL SITE

1009 66th AVENUE
LFR PROJECT NO. 003-09155-00
CITY OF OAKLAND, ALAMEDA COUNTY, CALIFORNIA

PREPARED FOR

LFR LEVINE FRICKE

BY

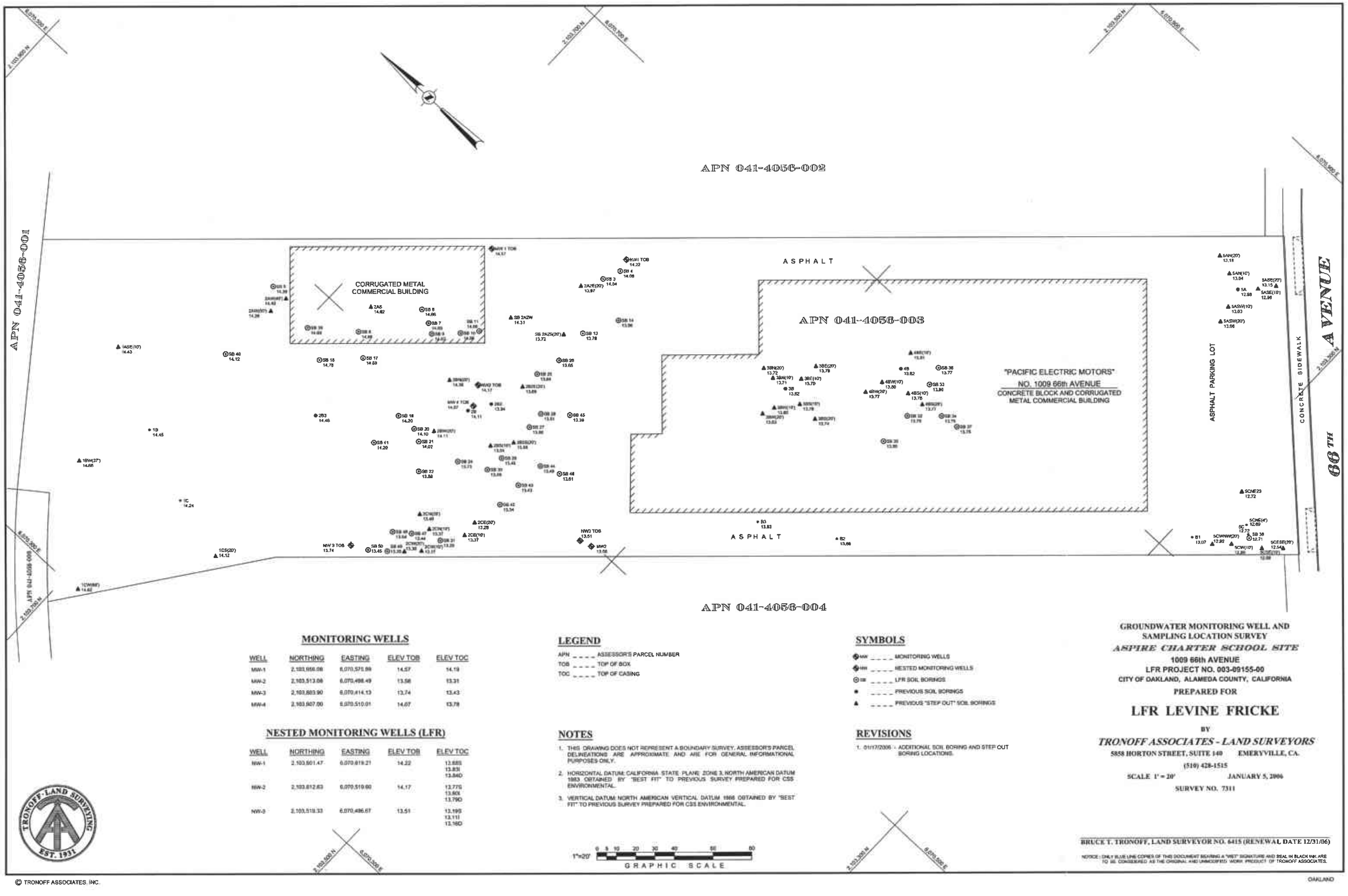
TRONOFF ASSOCIATES - LAND SURVEYORS

5858 HORTON STREET, SUITE 140 EMERYVILLE, CA.
(510) 428-1515
SCALE 1" = 20' JANUARY 5, 2006
SURVEY NO. 7311

BRUCE T. TRONOFF, LAND SURVEYOR NO. 6415 (RENEWAL DATE 12/31/06)

NOTICE: ONLY BLUE LINE COPIES OF THIS DOCUMENT BEARING A "WET" SIGNATURE AND SEAL IN BLACK INK ARE TO BE CONSIDERED AS THE ORIGINAL AND UNMODIFIED WORK PRODUCT OF TRONOFF ASSOCIATES

OAKLAND



MONITORING WELLS

WELL	NORTHING	EASTING	ELEV TOB	ELEV TOC
MW-1	2,103,656.08	6,070,575.89	14.57	14.19
MW-2	2,103,513.08	6,070,498.49	13.58	13.31
MW-3	2,103,803.90	6,070,414.13	13.74	13.43
MW-4	2,103,907.00	6,070,510.01	14.07	13.78

NESTED MONITORING WELLS (LFR)

WELL	NORTHING	EASTING	ELEV TOB	ELEV TOC
NW-1	2,103,501.47	6,070,619.21	14.22	13.885 13.831 13.840
NW-2	2,103,612.63	6,070,519.60	14.17	13.775 13.805 13.790
NW-3	2,103,519.33	6,070,496.67	13.51	13.195 13.111 13.160

LEGEND

APN ____ ASSESSOR'S PARCEL NUMBER
TOB ____ TOP OF BOX
TOC ____ TOP OF CASING

NOTES

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1"=20' 0 5 10 20 30 40 60 80 GRAPHIC SCALE

SYMBOLS

- ⊕MW ____ MONITORING WELLS
- ⊕NW ____ NESTED MONITORING WELLS
- ⊙SB ____ LFR SOIL BORINGS
- ● ____ PREVIOUS SOIL BORINGS
- ▲ ____ PREVIOUS "STEP OUT" SOIL BORINGS

REVISIONS

1. 01/17/2006 - ADDITIONAL SOIL BORING AND STEP OUT BORING LOCATIONS.

GROUNDWATER MONITORING WELL AND SAMPLING LOCATION SURVEY

ASPIRE CHARTER SCHOOL SITE

1009 66th AVENUE
LFR PROJECT NO. 003-09155-00
CITY OF OAKLAND, ALAMEDA COUNTY, CALIFORNIA

PREPARED FOR

LFR LEVINE FRICKE

BY

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5858 HORTON STREET, SUITE 140 EMERYVILLE, CA.
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SCALE 1" = 20' JANUARY 5, 2006

SURVEY NO. 7311

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TRONOFF LAND SURVEYING EST. 1931

OAKLAND

APPENDIX H

Sample Handling Procedures

Sample Handling Procedures

Sample handling procedures employed by LFR Inc. (LFR) during the Additional Supplemental Site Investigation at the Proposed Aspire Charter High School located at 1009 66th Avenue in Oakland, Alameda County, California are described below. These procedures were described in our work plan titled "Additional Supplemental Site Investigation Work Plan, Proposed Aspire Charter High School, 1009 66th Avenue, Oakland, Alameda County, California, DTSC Site Code: 204147-11" and dated December 13, 2005.

1.0 Sample Containers, Preservation, and Holding Times

Table 3 lists appropriate containers, preservation methods, and holding times for the analysis for the chemicals of potential concern that will be analyzed for during this project.

Soil samples will be placed in coolers and chilled to approximately 4°C. Regular ice used in the coolers will be sealed in a plastic bag other than the one in which it was purchased. Reusable "blue ice" packets may also be used.

Sample analyzed after the recommended holding time has been exceeded will be appropriately flagged in data summary tables. These data can be used for quantitative purposes only with appropriate disclosure and qualification.

2.0 Documentation and Sample Custody

Sample custody and documentation procedures link each reported datum with its associated sample. Documentation and custody procedures cover field, office, and laboratory activities. COCs, which are central to these procedures, will travel with all samples and their associated data throughout the tracking process.

Field documentation consists of sample labels, sampling information forms, a field activities logbook, and COCs. These documents will be completed using indelible ink. Any corrections to a document will be made by drawing a line through the error and entering the correct value, without obliterating the original entry. Anyone correcting an original document will initial and date all changes. Field documentation is described in detail below.

Sample Labels

Sample labels will be completed and attached to the sample container for every sample collected. Labels are made of a waterproof material backed with a water-resistant adhesive. Labels will be filled out using waterproof ink and will include (at least) the

sample name, the sampling date, the sampling location, the sampler's name, and the analyses to be conducted.

Field Activities Logbook

A field activities logbook will be used to record daily field activities. Each logbook entry will include the following, as necessary, for each activity undertaken:

- name of person making entry
- date and time of entry
- location of activity
- equipment calibration status
- personnel present at the Site
- sampling and measurement methods
- total number of samples collected
- sample numbers
- laboratory to perform analysis
- field observations and comments

Chain-of-Custody Forms

COCs will be prepared for groups of samples collected at a given location on a given day. Each COC will be prepared in quadruplicate. Two of the four copies (white and green) will accompany each shipment of samples to the laboratory. The yellow copy is kept in LFR's QA/QC file, and the pink copy is kept in the project file. The COC documents the identity of all personnel involved in sample transfer. Information entered on the COC consists of the following:

- project name and number
- field activities logbook number
- COC serial number
- project location
- sample numbers
- sampler's/recorder's signature
- date and time of collection
- number of containers
- sample type
- analyses requested

- inclusive dates of possession
- name of person receiving the sample
- laboratory sample number
- date and time of receipt of sample
- address of laboratory
- miscellaneous remarks

Samples will be shipped so that no more than 24 hours elapse from the time of shipment to the time the laboratory receives the samples. The method of shipment may be hand delivery by field personnel, laboratory courier, or commercial shipping services (such as UPS or Federal Express). The method of sample shipment will be noted on the COC. Strict COC procedures will be maintained during sample handling.

Office Documentation

Samples will be tracked and data archived at LFR's office in Granite Bay, California. LFR's QA/QC Officer will be responsible for ensuring that documentation is in order and that all results are obtained for the analyses requested on the COC and that sample identifications on the laboratory reports match those on the COCs. The project file will be used in data tracking and documentation, as discussed below.

The project file is the common location for all information required in data evaluation and report preparation. It contains documents including work plans, sampling plans, assessment reports, correspondence, field activities logbooks, COCs, and sampling information forms. The file is organized for easy retrieval and long-term storage of information (two years or more). The LFR project manager will direct the maintenance of the project file.

Laboratory Custody

The laboratory will designate a sample custodian who will accept custody of the shipped samples and check that the information on the sample labels matches that on the COC. The custodian will then enter the appropriate data into the laboratory's sample tracking system. The custodian will use the sample number on the sample label or will assign a unique laboratory number to each sample. As a record of sample receipt, the analytical laboratory will return a copy of the COC, with the assigned laboratory numbers, to the sampler. The custodian will then transfer the sample(s) to the proper analyst(s) or store the sample(s) under refrigeration until they are analyzed.

Laboratory personnel are responsible for the care and custody of samples from the time they are received until the sample is exhausted or disposed. Disposal of unused samples must comply with all applicable federal, state, and local environmental regulations. All data sheets and laboratory records will be retained as permanent documentation.

3.0 Sample Packaging and Transport

Each soil sample will be packaged and transported according to the following procedure:

- Attach completed label to each sample.
- Properly seal and package sample containers (package samples so the potential for shipping damage is minimized).
- Complete COCs.
- Seal the top two copies of the COC inside a reclosable plastic bag.
- Seal the shipping container with several strips of strapping tape.
- Arrange for appropriate shipment to the analytical laboratory.

Samples will be transported to the laboratory by LFR or by courier pickup, following the COC and documentation protocols outlined above.

Table 1
Sample Quantitation Limits
From Curtis and Tompkins, Ltd.

EPA 8015m - Extractable Hydrocarbons

CAS #	Target Compound	Reporting Limit (ug/L)	Reporting Limit (mg/Kg)
68334-30-5	Diesel	50	1
Additional Compounds (may be added to target list):			
	Motor Oil	300	5
	Hydraulic Fluid	300	5
Surrogate:			
630-01-3	Hexacosane		

EPA 8015m - Purgeable Hydrocarbons

CAS #	Target Compound	Reporting Limit (ug/L)	Reporting Limit (mg/Kg)
8006-61-9	Gasoline	50	1
Additional Compounds (may be added to target list):			
	Mineral Spirits	50	1
	Stoddard Solvent	50	1
Surrogates:			
98-08-8	Trifluorotoluene		
460-00-4	Bromofluorobenzene		

Table 1
Sample Quantitation Limits
From Curtis and Tompkins, Ltd.

EPA 8082 - PCBs

CAS #	Target Compound	Reporting Limit (ug/L)	Reporting Limit (ug/Kg)
12674-11-2	Aroclor-1016	0.5	12
11104-28-2	Aroclor-1221	1	24
11141-16-5	Aroclor-1232	0.5	12
53469-21-9	Aroclor-1242	0.5	12
12672-29-6	Aroclor-1248	0.5	12
11097-69-1	Aroclor-1254	0.5	12
11096-82-5	Aroclor-1260	0.5	12

Recommended Surrogates:

2051-24-3	Decachlorobiphenyl (DCB)
877-35-2	Tetrachloro-m-xylene (TCMX)

Table 1
Sample Quantitation Limits
From Curtis and Tompkins, Ltd.

EPA 8270 - Semivolatile Organic Compounds

CAS #	Target Compound	Reporting Limit (ug/L)	Reporting Limit (ug/Kg)	CAS #	Target Compound	Reporting Limit (ug/L)	Reporting Limit (ug/Kg)
83-32-9	Acenaphthene	10	330	118-74-1	Hexachlorobenzene	10	330
208-96-8	Acenaphthylene	10	330	87-68-3	Hexachlorobutadiene	10	330
120-12-7	Anthracene	10	330	77-47-4	Hexachlorocyclopentadiene	50	1,700
103-33-3	Azobenzene	10	330	67-72-1	Hexachloroethane	10	330
56-55-3	Benzo(a)anthracene	10	330	193-39-5	Indeno(1,2,3-cd)pyrene	10	330
50-32-8	Benzo(a)pyrene	10	330	78-59-1	Isophorone	10	330
205-99-2	Benzo(b)fluoranthene	10	330	91-57-6	2-Methylnaphthalene	10	330
207-08-9	Benzo(k)fluoranthene	10	330	95-48-7	2-Methylphenol	10	330
191-24-2	Benzo(g,h,i)perylene	10	330	1319-77-3	3-,4-Methylphenol	10	330
65-85-0	Benzoic acid	50	1,700	88-74-4	2-Nitroaniline	50	1,700
100-51-6	Benzyl alcohol	10	330	99-09-2	3-Nitroaniline	50	1,700
111-91-1	bis(2-Chloroethoxy)methane	10	330	100-01-6	4-Nitroaniline	50	1,700
111-44-4	bis(2-Chloroethyl)ether	10	330	88-75-5	2-Nitrophenol	50	1,700
108-60-1	bis(2-Chloroisopropyl)ether	10	330	100-02-7	4-Nitrophenol	50	1,700
117-81-7	bis(2-Ethylhexyl)phthalate	10	330	621-64-7	N-Nitroso-di-n-propylamine	10	330
101-55-3	4-Bromophenyl-phenylether	10	330	62-75-9	N-Nitrosodimethylamine	10	330
85-68-7	Butylbenzylphthalate	10	330	86-30-6	N-Nitrosodiphenylamine	10	330
106-47-8	4-Chloroaniline	10	330	91-20-3	Naphthalene	10	330
59-50-7	4-Chloro-3-methylphenol	10	330	98-95-3	Nitrobenzene	10	330
91-58-7	2-Chloronaphthalene	10	330	87-86-5	Pentachlorophenol	50	1,700
95-57-8	2-Chlorophenol	10	330	85-01-8	Phenanthrene	10	330
7005-72-3	4-Chlorophenyl-phenylether	10	330	108-95-2	Phenol	10	330
218-01-9	Chrysene	10	330	129-00-0	Pyrene	10	330
53-70-3	Dibenz(a,h)anthracene	10	330	120-82-1	1,2,4-Trichlorobenzene	10	330
132-64-9	Dibenzofuran	10	330	95-95-4	2,4,5-Trichlorophenol	10	1,700
95-50-1	1,2-Dichlorobenzene	10	330	88-06-2	2,4,6-Trichlorophenol	10	330
541-73-1	1,3-Dichlorobenzene	10	330				
106-46-7	1,4-Dichlorobenzene	10	330				
91-94-1	3,3'-Dichlorobenzidine	50	1,700				
120-83-2	2,4-Dichlorophenol	10	330	Recommended Surrogates:			
84-66-2	Diethylphthalate	10	330	321-60-8	2-Fluorobiphenyl		
105-67-9	2,4-Dimethylphenol	10	330	367-12-4	2-Fluorophenol		
131-11-3	Dimethylphthalate	10	330	4165-60-0	Nitrobenzene-d5		
84-74-2	Di-n-butylphthalate	10	330	13127-88-3	Phenol-d5		
534-52-1	4,6-Dinitro-2-methylphenol	50	1,700	1718-51-0	Terphenyl-d14		
51-28-5	2,4-Dinitrophenol	50	1,700	118-79-6	2,4,6-Tribromophenol		
121-14-2	2,4-Dinitrotoluene	10	330				
606-20-2	2,6-Dinitrotoluene	10	330				
117-84-0	Di-n-octylphthalate	10	330				
206-44-0	Fluoranthene	10	330				
86-73-7	Fluorene	10	330				

Table 1
Sample Quantitation Limits
From Curtis and Tompkins, Ltd.

Polyaromatic Hydrocarbons by GCMS Method EPA 8270

CAS #	Target Compound	Reporting Limit (ug/L)	Reporting Limit (ug/Kg)
83-32-9	Acenaphthene	10	50
208-96-8	Acenaphthylene	10	50
120-12-7	Anthracene	10	50
56-55-3	Benzo(a)anthracene	10	50
50-32-8	Benzo(a)pyrene	10	50
205-99-2	Benzo(b)fluoranthene	10	50
207-08-9	Benzo(k)fluoranthene	10	50
191-24-2	Benzo(g,h,i)perylene	10	50
218-01-9	Chrysene	10	50
53-70-3	Dibenz(a,h)anthracene	10	50
206-44-0	Fluoranthene	10	50
86-73-7	Fluorene	10	50
193-39-5	Indeno(1,2,3-cd)pyrene	10	50
91-20-3	Naphthalene	10	50
85-01-8	Phenanthrene	10	50
129-00-0	Pyrene	10	50

Surrogates:

321-60-8	2-Fluorobiphenyl
4165-60-0	Nitrobenzene-d5
1718-51-0	Terphenyl-d14

Table 1
Sample Quantitation Limits
From Curtis and Tompkins, Ltd.

California Title 26 Metals (6010B/ 7000)				ICP-MS Reporting Limits			
CAS#	Element	Reporting Limit (ug/L)	(mg/Kg)	CAS#	Element	Reporting Limit (ug/L)	(mg/Kg)
7440-36-0	Antimony	60	3	7440-36-0	Antimony	1	0.25
7440-38-2	Arsenic	5	0.25	7440-38-2	Arsenic	1	0.25
7440-39-3	Barium	10	0.5	7440-39-3	Barium	1	0.25
7440-41-7	Beryllium	2	0.1	7440-41-7	Beryllium	1	0.25
7440-43-9	Cadmium	5	0.25	7440-43-9	Cadmium	1	0.25
7440-47-3	Chromium	10	0.5	7440-47-3	Chromium	1	0.50
7440-48-4	Cobalt	20	1	7440-48-4	Cobalt	1	0.25
7440-50-8	Copper	10	0.5	7440-50-8	Copper	1	0.25
7439-92-1	Lead	3	0.15	7439-92-1	Lead	1	0.25
7439-97-6	Mercury	0.2	0.04				
7439-98-7	Molybdenum	20	1	7439-98-7	Molybdenum	1	0.25
7440-02-0	Nickel	20	1	7440-02-0	Nickel	1	0.25
7782-49-2	Selenium	5	0.25	7782-49-2	Selenium	1	0.25
7440-22-4	Silver	5	0.25	7440-22-4	Silver	1	0.25
7440-28-0	Thallium	5	0.25	7440-28-0	Thallium	1	0.25
7440-62-2	Vanadium	10	0.5	7440-62-2	Vanadium	1	0.25
7440-66-6	Zinc	20	1	7440-66-6	Zinc	10	1.0

Table 2
Quality Control Limits
from Curtis and Tompkins, Ltd.

6010B QC Limits

Matrix	Compound	LCS/BS/BSD Recovery	BS/BSD RPD	MS/MSD Recovery	MS/MSD RPD
Water	Antimony	75 - 126	20	62 - 135	20
	Arsenic	79 - 123	20	66 - 134	29
	Barium	80 - 120	20	66 - 123	20
	Beryllium	80 - 120	20	65 - 128	20
	Cadmium	80 - 120	20	61 - 124	20
	Chromium	79 - 120	20	64 - 123	20
	Cobalt	80 - 120	20	65 - 120	20
	Copper	80 - 120	20	62 - 130	20
	Lead	78 - 120	20	58 - 129	28
	Molybdenum	80 - 120	20	68 - 122	20
	Nickel	78 - 120	20	60 - 126	20
	Selenium	72 - 121	20	62 - 131	23
	Silver	80 - 120	20	47 - 138	20
	Thallium	70 - 121	20	57 - 126	29
	Vanadium	80 - 120	20	59 - 132	20
	Zinc	78 - 120	20	49 - 139	31
	Aluminum	80 - 126	20	59 - 145	25
	Calcium	76 - 120	20	44 - 137	20
	Iron	80 - 120	20	58 - 142	20
	Magnesium	80 - 120	20	58 - 135	20
	Manganese	77 - 120	20	46 - 136	20
	Potassium	80 - 120	20	51 - 147	22
	Sodium	80 - 123	20	58 - 141	20
	Boron	77 - 120	20	69 - 122	25
	Tin	80 - 102	20	71 - 120	20
	Titanium	76 - 120	20	77 - 120	30

Table 2
Quality Control Limits
from Curtis and Tompkins, Ltd.

6010B QC Limits

Matrix	Compound	LCS/BS/BSD Recovery	BS/BSD RPD	MS/MSD Recovery	MS/MSD RPD
Soil	Antimony	70 - 120	20	50 - 120	47
	Arsenic	72 - 120	20	48 - 120	32
	Barium	73 - 120	20	63 - 142	34
	Beryllium	73 - 120	20	54 - 120	22
	Cadmium	69 - 120	20	43 - 120	26
	Chromium	72 - 120	20	62 - 145	33
	Cobalt	70 - 120	20	45 - 129	33
	Copper	72 - 120	20	62 - 150	40
	Lead	70 - 120	20	46 - 128	39
	Molybdenum	74 - 120	20	43 - 120	25
	Nickel	72 - 120	20	62 - 141	37
	Selenium	66 - 120	20	52 - 102	28
	Silver	69 - 120	20	58 - 120	21
	Thallium	68 - 120	20	51 - 120	26
	Vanadium	72 - 120	20	62 - 150	28
	Zinc	65 - 120	20	55 - 150	38
	Aluminum	67 - 120	20	57 - 150	38
	Calcium	69 - 120	20	59 - 150	41
	Iron	70 - 120	20	60 - 150	38
	Magnesium	69 - 120	20	59 - 150	36
	Manganese	69 - 120	20	59 - 150	45
	Potassium	72 - 120	20	62 - 142	34
	Sodium	61 - 129	20	47 - 146	34
	Boron	80 - 120	20	70 - 130	30
	Tin	80 - 120	20	70 - 130	30
	Titanium	76 - 120	20	66 - 150	42

Table 2
Quality Control Limits
from Curtis and Tompkins, Ltd.

6020A QC Limits

Matrix	Compound	LCS/BS/BSD Recovery	BS/BSD RPD	MS/MSD Recovery	MS/MSD RPD
Water	Antimony	80 - 120	20	66 - 127	30
	Arsenic	80 - 120	20	52 - 145	35
	Barium	80 - 120	20	61 - 138	20
	Beryllium	79 - 120	28	45 - 146	38
	Cadmium	80 - 120	20	47 - 136	30
	Chromium	80 - 120	20	57 - 139	42
	Cobalt	80 - 120	20	49 - 141	20
	Copper	80 - 120	20	57 - 134	47
	Lead	80 - 120	20	64 - 133	44
	Molybdenum	80 - 120	20	69 - 125	35
	Nickel	80 - 120	20	46 - 142	49
	Selenium	80 - 120	20	40 - 148	40
	Silver	80 - 120	20	22 - 127	30
	Thallium	78 - 120	20	59 - 129	30
	Vanadium	80 - 120	20	50 - 143	32
	Zinc	80 - 121	20	53 - 134	49
	Aluminum	80 - 121	20	52 - 138	30
	Calcium	61 - 143	20	41 - 149	24
	Iron	80 - 122	20	58 - 141	31
	Magnesium	80 - 120	20	45 - 137	20
	Manganese	80 - 120	20	57 - 135	20
	Potassium	80 - 120	20	58 - 131	21
	Sodium	80 - 120	20	52 - 131	26

Table 2
Quality Control Limits
from Curtis and Tompkins, Ltd.

6020A QC Limits

Matrix	Compound	LCS/BS/BSD Recovery	BS/BSD RPD	MS/MSD Recovery	MS/MSD RPD
Soil	Antimony	80 - 120	20	75 - 120	30
	Arsenic	80 - 120	20	75 - 125	30
	Barium	80 - 120	20	73 - 120	30
	Beryllium	75 - 124	20	55 - 134	30
	Cadmium	78 - 122	20	68 - 132	30
	Chromium	70 - 137	20	70 - 130	30
	Cobalt	80 - 120	20	70 - 126	30
	Copper	80 - 120	20	76 - 127	30
	Lead	80 - 120	20	76 - 123	30
	Molybdenum	80 - 120	20	73 - 123	30
	Nickel	80 - 120	20	73 - 125	30
	Selenium	80 - 120	20	73 - 123	30
	Silver	80 - 120	20	77 - 129	30
	Thallium	66 - 120	20	56 - 120	30
	Vanadium	70 - 122	20	60 - 132	30
	Zinc	78 - 124	20	68 - 134	30
	Aluminum	80 - 120	20	70 - 130	30
	Calcium	75 - 150	20	56 - 150	30
	Iron	76 - 125	20	66 - 135	30
	Magnesium	80 - 123	20	76 - 133	30
	Manganese	80 - 120	20	70 - 130	30
	Potassium	79 - 124	20	69 - 134	30
	Sodium	79 - 148	20	69 - 150	30

Table 2
Quality Control Limits
from Curtis and Tompkins, Ltd.

Mercury QC Limits

Matrix	Compound	LCS Recovery	LCS/LCSD RPD	MS/MSD Recovery	MS/MSD RPD
Water	Mercury	80-116	20	80-114	22
Soil	Mercury	80-114	20	62-130	27

Table 2
Quality Control Limits
from Curtis and Tompkins, Ltd.

8015M/ 8021 QC Limits

Matrix	Compound	LCS Recovery	LCS/LCSD RPD	MS/MSD Recovery	MS/MSD RPD
Water	Gasoline	79 - 120	20	67 - 120	20
	Trifluorotoluene (s)	68 - 145		68 - 145	
	Bromofluorobenzene (s)	66 - 143		66 - 143	
Soil	Gasoline	78 - 120	20	44 - 133	31
	Trifluorotoluene (s)	58 - 144		58 - 144	
	Bromofluorobenzene (s)	60 - 146		60 - 146	
Water	MTBE	59 - 135	20	56 - 146	30
	Benzene	65 - 122	20	52 - 149	30
	Toluene	67 - 121	20	69 - 130	30
	Ethylbenzene	70 - 121	20	70 - 131	30
	m,p-Xylenes	72 - 125	20	68 - 137	30
	o-Xylene	73 - 122	20	73 - 133	30
	Trifluorotoluene (s)	53 - 143		53 - 143	
	Bromofluorobenzene (s)	52 - 124		52 - 124	
Soil	MTBE	58 - 115	20	58 - 116	20
	Benzene	68 - 117	20	62 - 117	20
	Toluene	70 - 120	20	55 - 121	20
	Ethylbenzene	67 - 124	20	46 - 128	20
	m,p-Xylenes	72 - 124	20	33 - 141	20
	o-Xylene	72 - 123	20	40 - 136	20
	Trifluorotoluene (s)	65 - 134		65 - 134	
	Bromofluorobenzene (s)	55 - 138		55 - 138	

Table 2
Quality Control Limits
from Curtis and Tompkins, Ltd.

TPH-Extractable QC Limits

Matrix	Compound	LCS Recovery	LCS/LCSD RPD	MS/MSD Recovery	MS/MSD RPD
Water	Diesel	37 - 120	26	44 - 131	26
	Hexacosane (s)	39 - 137		39 - 137	
Soil	Diesel	56 - 121	20	37 - 128	37
	Hexacosane (s)	48 - 137		48 - 137	

8082 QC Limits

Matrix	Compound	LCS Recovery	LCS/LCSD RPD	MS/MSD Recovery	MS/MSD RPD
Water	Aroclor 1016	70 - 127	20	60 - 137	30
	Aroclor 1260	60 - 123	25	50 - 133	35
	TCMX (s)	37 - 140		37 - 140	
	DCBP (s)	17 - 150		17 - 150	
Soil	Aroclor 1016	76 - 123	20	57 - 139	20
	Aroclor 1260	69 - 125	20	47 - 143	38
	TCMX (s)	55 - 150		55 - 150	
	DCBP (s)	37 - 150		37 - 150	

Table 2
Quality Control Limits
from Curtis and Tompkins, Ltd.

8270C QC Limits

Matrix	Compound	LCS Recovery	LCS/LCSD RPD	MS/MSD Recovery	MS/MSD RPD
Water	Phenol	36 - 120	22	26 - 130	32
	2-Chlorophenol	40 - 120	23	30 - 130	33
	1,4-Dichlorobenzene	38 - 120	26	28 - 130	36
	N-Nitroso-di-n-propylamine	32 - 120	20	22 - 130	30
	1,2,4-Trichlorobenzene	40 - 120	23	30 - 130	33
	4-Chloro-3-methylphenol	42 - 120	20	32 - 130	30
	Acenaphthene	50 - 120	20	40 - 130	30
	4-Nitrophenol	38 - 120	20	28 - 130	30
	2,4-Dinitrotoluene	49 - 120	20	39 - 130	30
	Pentachlorophenol	22 - 120	20	12 - 130	30
	Pyrene	41 - 120	20	31 - 130	30
	2-Fluorophenol	28 - 120		28 - 120	
	Phenol-d5	34 - 120		34 - 120	
	2,4,6-Tribromophenol	32 - 123		32 - 123	
	Nitrobenzene-d5	38 - 120		38 - 120	
	2-Fluorobiphenyl	40 - 120		40 - 120	
	Terphenyl-d14	29 - 132		29 - 132	
Soil	Phenol	35 - 120	20	37 - 120	24
	2-Chlorophenol	35 - 120	20	40 - 120	25
	1,4-Dichlorobenzene	34 - 120	20	35 - 120	41
	N-Nitroso-di-n-propylamine	27 - 120	20	31 - 120	26
	1,2,4-Trichlorobenzene	34 - 122	20	36 - 125	26
	4-Chloro-3-methylphenol	38 - 120	20	41 - 120	24
	Acenaphthene	40 - 120	20	42 - 120	32
	4-Nitrophenol	24 - 120	20	20 - 120	31
	2,4-Dinitrotoluene	36 - 120	20	38 - 120	28
	Pentachlorophenol	24 - 120	20	17 - 120	47
	Pyrene	34 - 120	20	22 - 140	34
	2-Fluorophenol	34 - 120		34 - 120	
	Phenol-d5	37 - 120		37 - 120	
	2,4,6-Tribromophenol	24 - 120		24 - 120	
	Nitrobenzene-d5	35 - 120		35 - 120	
	2-Fluorobiphenyl	38 - 121		38 - 121	
	Terphenyl-d14	32 - 127		32 - 127	

Table 3
Analytical Methods, Container Types, and Preservatives

From Curtis and Tompkins, Ltd.

Analysis	Matrix	Analytical Method	Holding Time[a]	Minimum Volume	Container (water)	Preservative (water)[b]
TPHd and TPHmo[c]	Water Soil	EPA 8015 mod	14/40[d]	500 ml 50 g	1-l glass	None
TPHg[e]	Water Soil	EPA 8015 mod	14 days	40 ml 5 g	2 x 40mL VOA	HCl[f]
Polychlorinated Biphenyls	Water Soil	EPA 8082	7/40[d] 14/40[d]	1 l 30 g	1-l glass	None
Polynuclear Aromatic Hydrocarbons	Water Soil	EPA 8270	7/40[d] 14/40[d]	1 l 30 g	1-l glass	None[f]
CCR Title 26 Metals	Water Soil	EPA 6010/7470	6 mo/28 d[g]	100 ml 5 g	1-l poly	HNO_3

Notes:

a.) Holding times specified in 40 CFR 136.3 Table 2 (Clean Water Act/NPDES) and SW-846 Table 2-36 Revision 3, December 1996.

b.) Samples should be kept at 4^0C from time of collection until analysis.

c.) Total petroleum hydrocarbons as diesel and motor oil.

d.) X/Y: X days from sample collection to extraction, then Y days from extraction to analysis.

e.) Total petroleum hydrocarbons as gasoline

Reporting limits may be higher for fuels other than gasoline.

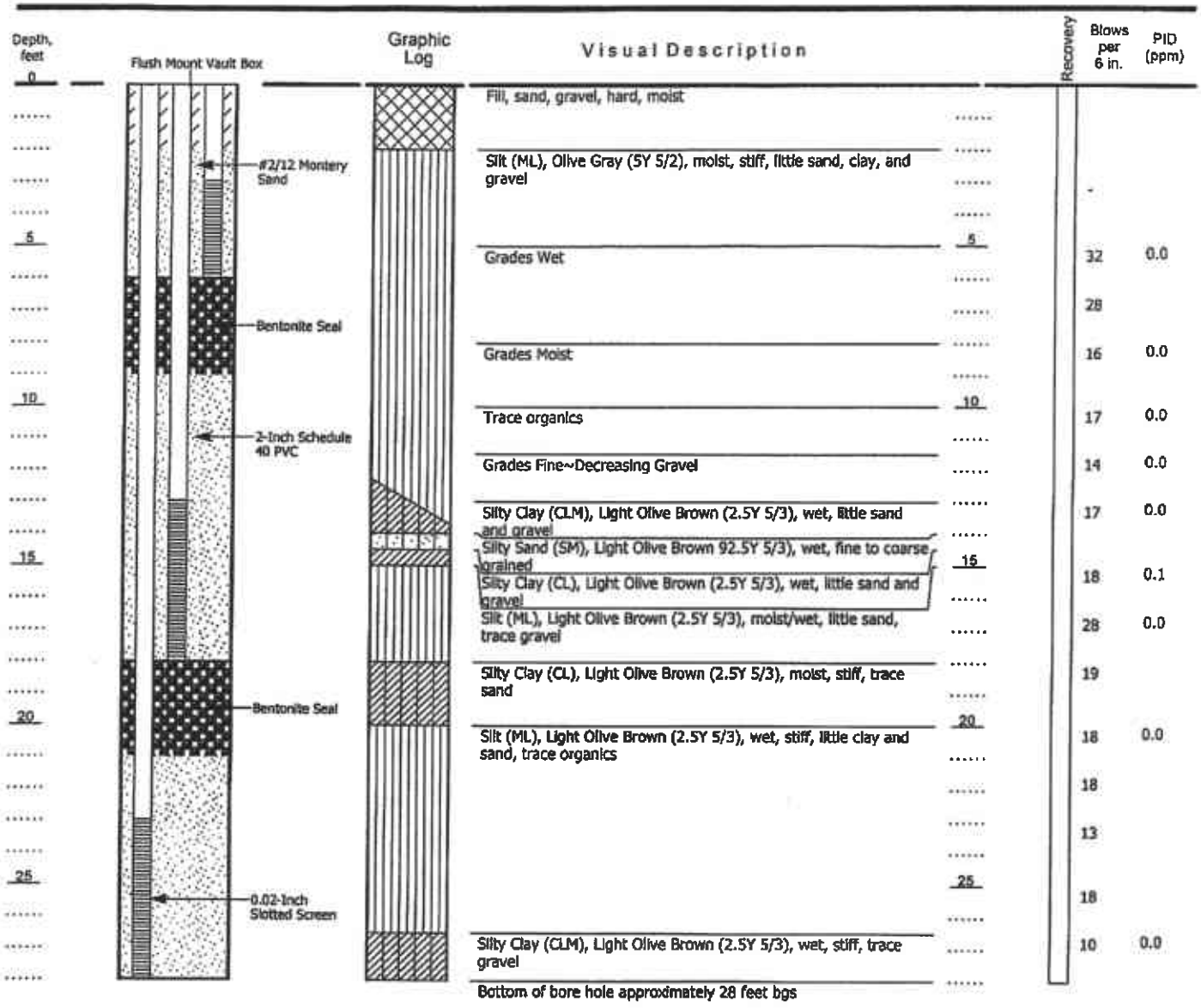
f.) Free chlorine should be neutralized with 0.008% $Na_2S_2O_3$.

g.) 28 day holding time for mercury; 6 month holding time for all other elements.

EPA = U.S. Environmental Protection Agency
m = months
mod = modified
(m)l = (milli)liters
CCR = California Code of Regulations
g = grams
VOA = volatile organic analysis vial
d = days
HCl = hydrochloric acid to pH < 2
HNO_3 = nitric acid to pH < 2

APPENDIX I

Boring Logs for Nested Groundwater Monitoring Wells



Well Permit Number:
Date Well Drilled: 12/19/05
Drilling Company: BC2
Driller:
Sampling Method:
LFR Geologist: Lee McIlvaine

Casing Elevation: Flush Mount Vault Box

EXPLANATION

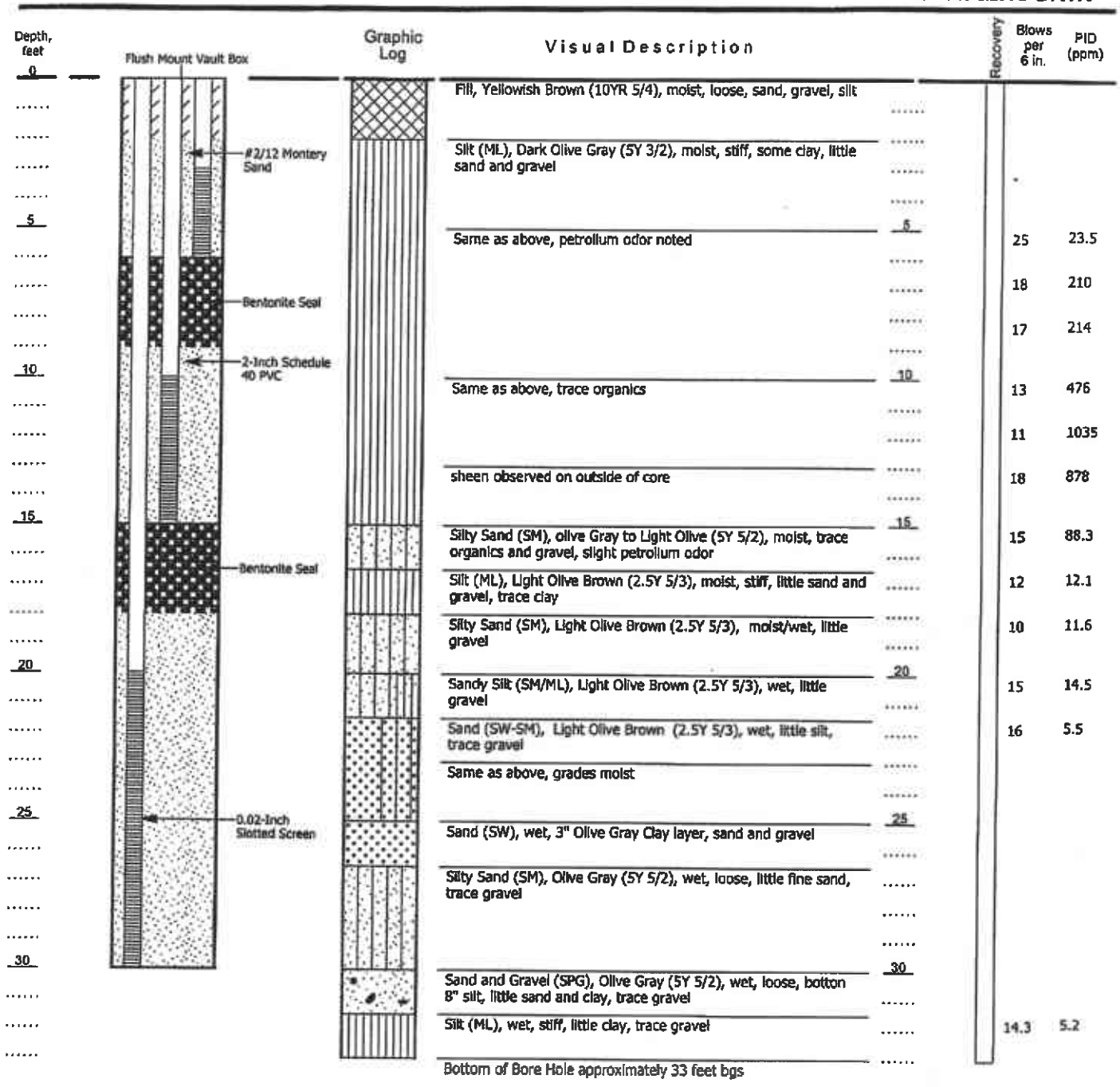
- Clay (CL/CH)
- Silt (ML/MH)
- Sand (SP/SW)
- Gravel (GP/GW)

WELL CONSTRUCTION AND LITHOLOGY FOR WELL NW-1

LFR LEVINE•FRICKE
003-09155-00

Aspire Charter High School

1/20/2006 CLH/DLB

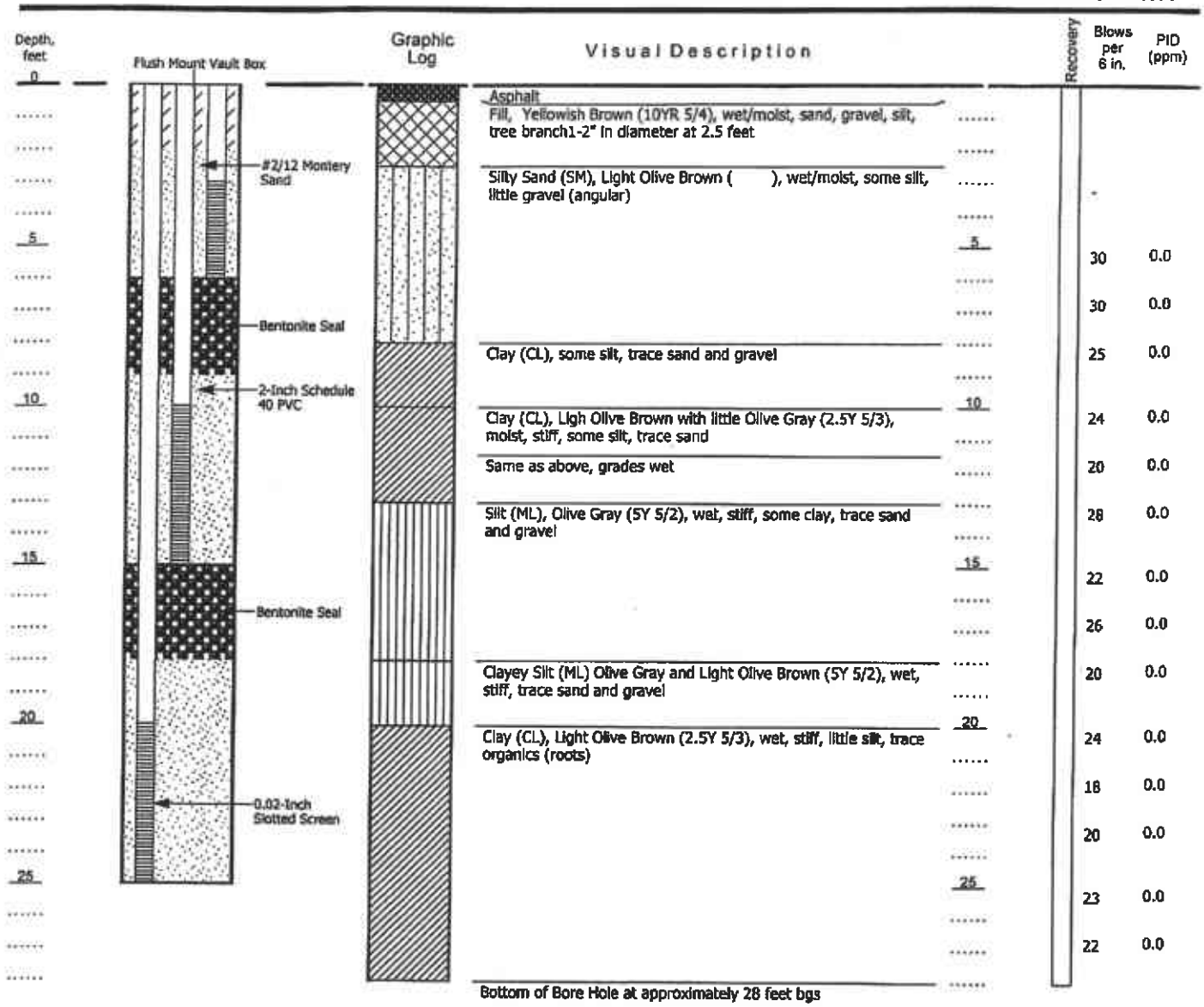


Well Permit Number:
Date Well Drilled: 12/26/05
Drilling Company: BC2
Driller:
Sampling Method:
LFR Geologist: Lee McIlvaine

EXPLANATION

- Clay (CL/CH)
- Silt (ML/MH)
- Sand (SP/SW)
- Gravel (GP/GW)

WELL CONSTRUCTION AND LITHOLOGY FOR WELL NW-2



Well Permit Number:
Date Well Drilled: 12/19/05
Drilling Company: BC2
Driller:
Sampling Method:
LFR Geologist: Lee McIlvaine

EXPLANATION

- Clay (CL/CH)
- Silt (ML/MH)
- Sand (SP/SW)
- Gravel (GP/GW)

WELL CONSTRUCTION AND LITHOLOGY FOR WELL NW-3

LFR LEVINE•FRICKE
003-09155-00

Aspire Charter High School

1/23/2006 CLM/DLB

ENVR SOIL + WELL (NO GW SMPL) OCT05 003-09155-00 ASPIRE.GPJ 1/23/06

APPENDIX J

Risk Evaluation Data Tables

Table J-1
Data Used for PEA Risk and Hazard Evaluation

Chemicals	Site Soil Data				Site Groundwater Data				Site Soil Vapor Data			Include in Risk Assessment
	Detection Frequency	Minimum (mg/kg)	Maximum (mg/kg)	95%UCL[1] (mg/kg)	Detection Frequency	Minimum (ug/l)	Maximum (ug/l)	95%UCL[1] (ug/L)	Detection Frequency	Minimum (ug/L)	Maximum (ug/L)	
Volatile Organic Compounds												
Benzene		nd	22.361				28,496			nd	9.3	yes
Ethylbenzene		nd	51.813				4,719			nd	1.6	yes
m,p-Xylenes		nd	178.481				15,529			nd	5.7	yes
Methyl-t-Butyl ether (MTBE)		nd	12.897				7,007			nd	1.3	yes
o-Xylene		nd	see m,p xylene				see m,p xylene			nd	1	yes
Tetrachloroethene		nd	nd			nd	nd			nd	1.1	yes
Toluene		nd	131.071			nd	29,546			nd	1.7	yes
Isopropylbenzene		nd	5.63									
Chlorobenzene		nd	0.012									
1,4-Dichlorobenzene		nd	0.128									
PCBs / Dioxins												
PCB 1260		nd	69.7	NC		nd	7.1					yes
Dioxins												yes
Polycyclic Aromatic Hydrocarbons[4]												
Acenaphthylene			7.788									yes
Acenaphthene		nd	0.058									
Anthracene			10.044									yes
Benzo(a)anthracene			32.864									yes
Benzo(a)pyrene			66.928									yes
Benzo(k)fluoranthene			63.542									yes
Chrysene			46.152									yes
Fluoranthene			46.416									yes
Fluorene		nd	6.474									
Phenanthrene			55.31									yes
Pyrene			59.68									yes
Semi-Volatile Organic Compounds												
1-Methylnaphthalene		nd	11.123			nd	487					yes
Naphthalene		nd	13.279			nd	2,365					yes
Dibenzofuran		nd	7.788									yes
Carbazole		nd	5.786									yes
Metals												
Antimony		nd	nd	na	0		nd					yes
Arsenic		nd	117.00	13.9	0		nd					yes
Barium		nd	246.00	129.9	7		298.00					yes
Beryllium		nd	nd	na	0		nd					yes
Cadmium		nd	nd	na	0		nd					yes
Chromium		nd	101.00	43.8	1		133.00					yes
Hexavalent Chromium			3.02		na		na					yes
Cobalt		nd	92.00	18.8	1		69.00					yes
Copper		nd	61.00	27.2	0		nd					yes

Table J-1
Data Used for PEA Risk and Hazard Evaluation

Chemicals	Site Soil Data				Site Groundwater Data				Site Soil Vapor Data			Include in Risk Assessment
	Detection Frequency	Minimum (mg/kg)	Maximum (mg/kg)	95%UCL[1] (mg/kg)	Detection Frequency	Minimum (ug/l)	Maximum (ug/l)	95%UCL[1] (ug/L)	Detection Frequency	Minimum (ug/L)	Maximum (ug/L)	
Volatile Organic Compounds												
Benzene		nd	22.361				28,496			nd	9.3	yes
Ethylbenzene		nd	51.813				4,719			nd	1.6	yes
m,p-Xylenes		nd	178.481				15,529			nd	5.7	yes
Methyl-t-Butyl ether (MTBE)		nd	12.897				7,007			nd	1.3	yes
o-Xylene		nd	see m,p xylene				see m,p xylene			nd	1	yes
Tetrachloroethene		nd	nd			nd	nd			nd	1.1	yes
Toluene		nd	131.071			nd	29,546			nd	1.7	yes
Isopropylbenzene		nd	5.63									
Chlorobenzene		nd	0.012									
1,4-Dichlorobenzene		nd	0.128									
PCBs / Dioxins												
PCB 1260		nd	69.7	NC		nd	7.1					yes
Dioxins												yes
Polycyclic Aromatic Hydrocarbons[a]												
Acenaphthylene			7.788									yes
Acenaphthene		nd	0.058									
Anthracene			10.044									yes
Benzo(a)anthracene			32.864									yes
Benzo(a)pyrene			66.928									yes
Benzo(k)fluoranthene			63.542									yes
Chrysene			46.152									yes
Fluoranthene			46.416									yes
Fluorene		nd	6.474									yes
Phenanthrene			55.31									
Pyrene			59.68									yes
Semi-Volatile Organic Compounds												yes
1-Methylnaphthalene		nd	11.123			nd	487					
Naphthalene		nd	13.279			nd	2,365					yes
Dibenzofuran		nd	7.788									yes
Carbazole		nd	5.786									yes
												yes
Metals												
Antimony		nd	nd	na	0		nd					yes
Arsenic		nd	117.00	13.9	0		nd					yes
Barium		nd	246.00	129.9	7		298.00					yes
Beryllium		nd	nd	na	0		nd					yes
Cadmium		nd	nd	na	0		nd					yes
Chromium		nd	101.00	43.8	1		133.00					yes
Hexavalent Chromium			3.02		na		na					yes
Cobalt		nd	92.00	18.8	1		69.00					yes
Copper		nd	61.00	27.2	0		nd					yes

Table J-1
Data Used for PEA Risk and Hazard Evaluation

Chemicals	Site Soil Data				Site Groundwater Data				Site Soil Vapor Data			Include in Risk Assessment
	Detection Frequency	Minimum (mg/kg)	Maximum (mg/kg)	95%UCL[1] (mg/kg)	Detection Frequency	Minimum (ug/l)	Maximum (ug/l)	95%UCL[1] (ug/L)	Detection Frequency	Minimum (ug/L)	Maximum (ug/L)	
Lead		nd	398.00	78.3	0		nd					yes
Mercury		nd	nd	na	0		nd					yes
Molybdenum		nd	nd	na	1		33.00					No
Nickel		nd	227.00	63.3	1		nd					yes
Selenium		nd	nd	na	0		nd					yes
Silver		nd	nd	na	0		nd					yes
Thallium		nd	nd	na	0		nd					yes
Vanadium		nd	86.00	35.1	1		6.00					yes
Zinc		26.00	221.00	84.9	5		29.00					yes
TPH												
Gasoline		nd	2,780			nd	162863					no
Diesel		nd	93			nd	nd					no
Oil		nd	22,524			nd	2184					no

NOTES:
95% UCL = Corresponds to the 95% Upper Confidence Limit calculated using USEPA's ProUCL (USEPA 2004b)
ND = Not detected.
NC = Not calculated. The maximum concentration was used as exposure point concentration.
NS = Not sampled.
[1] Includes non-detects at half the detection limit. As this is a SCREENING-LEVEL evaluation, discussion of risks are generally based on the maximum detected concentration.

Table J-2
Chemical Properties for Chemicals of Potential Concern

Chemical	CAS Number	Vapor Pressure[1] (mmHg @ 20-30C)	Solubility[1] (mg/l @ 20-30C)	Henry's Law Constant
Metals				
Arsenic	7440-38-2	NA	0	NA
Barium	7440-39-3	NA	0	NA
Chromium	16065-83-1	NA	0	NA
Chromium IV	18540-29-9	NA	0	NA
Cobalt	7440-48-4	NA	0	NA
Copper	7440-50-8	NA	0	NA
Lead	7439-92-1	NA	0	NA
Nickel	7440-02-0	NA	0	NA
Vanadium	7440-68-2	NA	0	NA
Zinc	7440-66-6	NA	0	NA
PCBs, SVOCs, and Furans				
Dibenzofuran	132-64-9	NA	1.00E-04	NA
Carbazole	86-74-8	NA	1.00E-04	NA
Aroclor 1260	11096-82-5	NA	slightly	NA
Polycyclic Aromatic Hydrocarbons (PAHs)				
Acenaphthene	83-32-9	NA	6.34E-03	6.36E-03
Anthracene	120-08-9	NA	4.00E-02	2.67E-03
Benzo(a)anthracene	56-55-3	NA	9.00E-03	1.37E-04
Benzo(a)pyrene	50-32-8	NA	1.00E-03	4.63E-05
Benzo(k)fluoranthene	207-08-9	NA	8.00E-04	3.40E-05
Chrysene	218-01-9	NA	2.00E-03	9.5E-05
Fluoranthene	206-44-0	NA	2.10E-01	2.1E-01
Fluorene	86-73-7	NA	2.00E+00	6.4E-05
Methylnaphthalene	91-57-6	NA	3.10E+01	1.98E-02
Naphthalene	91-20-3	NA	3.10E+01	1.98E-02
Phenanthrene	85-01-8	NA	1.15E+00	9.55E-04
Pyrene	129-00-0	NA	1.35E+00	4.51E-04
Volatile Organic Compounds (VOCs)				
Benzene	71-43-2	9.5E+01	1.79E+03	5.43E-03
Chlorobenzene	108-90-7	1.2E+00	4.72E+02	3.70E-03
1,4-Dichlorobenzene	106-46-7	1.7E+00	7.38E+01	2.40E-03
Ethylbenzene	100-41-4	9.5E+00	161	8.44E-03
Isopropylbenzene	98-82-8	4.5E+00	500	6.30E-05
mp-Xylenes	108-38-3	NA	200	5.30E-03
o-Xylene	95-47-6	NA	200	5.30E-03
MTBE	1634-04-4	2.5E+02	5.00E-03	6.23E-04
Tetrachloroethene	127-18-4	1.9E+01	150.3	1.49E-02
Toluene	108-88-3	2.8E+01	5.34E+02	5.94E-03

Notes:
[1] Values from DTSC Preliminary Endangerment Assessment Guidance Manual, June 1999.

mmHg = Millimeter of mercury
mg/l = Milligrams per liter
NA = Not applicable

Table J-3
Carcinogenic Toxicity Information for Chemicals of Potential Concern

Chemical	Oral Cancer Slope Factor (Sfo) $(mg/kg\text{-}day)^{-1}$	Inhalation Cancer Slope Factor (Sfi) $(mg/kg\text{-}day)^{-1}$	Weight-of Evidence Classification	Toxicity Information Reference Source[1]
Metals				
Arsenic	9.5E+00	1.2E+01	A	Cal/EPA
Barium	---	---	---	IRIS
Chromium	---	---	---	IRIS
Chromium IV	5.1E+02	1.5E-01	A	Cal/EPA
Cobalt	---	9.8E+00	B2	IRIS
Copper	---	---	---	Cal/EPA
Lead	---	---	---	Cal/EPA
Nickel	---	---	---	Cal/EPA
Vanadium	---	---	---	Cal/EPA
Zinc	---	---	---	Cal/EPA
PCBs, SVOCs, and Furans				
Dibenzofuran	5.5E+00	5.5E+00	B2	Cal/EPA
Carbazole	--	--	--	IRIS
Aroclor 1260	5.0E+00	2.0E+00	B2	Cal/EPA
Polycyclic Aromatic Hydrocarbons (PAHs)				
Acenaphthene	---	---	---	IRIS
Anthracene	---	---	---	IRIS
Benzo(a)anthracene	1.2E+00	3.9E-01	B2	Cal/EPA
Benzo(a)pyrene	1.2E+01	3.9E+00	B2	Cal/EPA
Benzo(k)fluoranthene	1.2E+00	3.9E-01	B2	Cal/EPA
Chrysene	1.2E+01	3.9E+00	B2	Cal/EPA
Fluoranthene	---	---	---	IRIS
Fluorene	---	---	---	IRIS
Methylnaphthalene	1.2E-01	1.2E-01	C	Cal/EPA
Naphthalene	1.2E-01	1.2E-01	C	Cal/EPA
Phenanthrene	---	---	---	IRIS
Pyrene	---	---	---	IRIS
Volatile Organic Compounds (VOCs)				
Benzene	1.00E-01	1.00E-01	A	Cal/EPA
Ethylbenzene	---	---	---	IRIS
mp-Xylenes	---	---	---	IRIS
Chlorobenzene	---	---	---	IRIS
1,4-Dichlorobenzene	5.4E-03	5.0E-02	B2	Cal/EPA
o-Xylene	---	---	---	IRIS
Isopropylbenzene	---	---	---	IRIS
MTBE	1.8E-03	9.1E-04	C	Cal/EPA
Tetrachloroethene	0.54	0.021	B2	Cal/EPA
Toluene	---	---	---	IRIS

Notes:
[1] California EPA OEHHA Cancer Potency Values, August 2005
U.S. EPA Integrated Risk Information System (IRIS) database, October 2004.

mg/kg-day = Milligrams per kilogram per day
--- = not applicable
Weight-of-Evidence Classification:
A - Human carcinogen
B1 - Probable human carcinogen - indicates that limited human data are available
B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans
C - Possible human carcinogen
D - Not classifiable as to human carcinogenicity

Table J-4
Noncarcinogenic Toxicity Information for Chemicals of Potential Concern

Chemical	Oral Reference Dose (RfDo) (mg/kg-day)	Inhalation Reference Dose (RfDi) (mg/kg-day)	Primary Target Organs	Toxicity Information Reference Source[1]
Metals				
Arsenic	3.0E-04	3.0E-04	Skin	IRIS
Barium	7.0E-02	1.4E-04	Development,	IRIS
Chromium	1.5E+00	1.5E+00	Skin	IRIS
Chromium IV	3.0E-03	2.2E-06	Respiratory	IRIS
Cobalt	2.0E-02	5.7E-06	Respiratory	IRIS
Copper	4.0E-02	4.0E-02	Respiratory	IRIS
Lead	---	---	CNS	IRIS
Nickel	2.0E-02	2.0E-02	Kidney, CNS, Respiratory	IRIS
Vanadium	1.0E-03	1.0E-03	Kidney, Respiratory	IRIS
Zinc	3.0E-01	3.0E-01	Blood	
PCBs, SVOCs, and Furans				
Dibenzofuran	--	--	Skin	IRIS
Carbazole	0.02	2.0E-02		IRIS
Aroclor 1260	2.00E-05	2.0E-05	GI, Development	IRIS
Polycyclic Aromatic Hydrocarbons (PAHs)				
Acenaphthene	6.00E-02	6.00E-02	Liver	IRIS
Anthracene	3.00E-01	3.00E-01	Liver	IRIS
Benzo(a)anthracene	3.00E-01	3.00E-01	NOEL	IRIS
Benzo(a)pyrene	3.00E-02	3.00E-02	Kidney	IRIS
Benzo(k)fluoranthene	4.00E-02	4.00E-02	Liver, Kidney, Blood	IRIS
Chrysene	7.30E-03	7.30E-03	NOEL	IRIS
Fluoranthene	4.00E-02	4.00E-02	Liver, Kidney, Blood	IRIS
Fluorene	4.00E-02	4.00E-02	Liver, Kidney, Blood	IRIS
Methylnaphthalene	2.00E-02	3.00E-03	Respiratory	IRIS
Naphthalene	2.00E-02	3.00E-03	Respiratory	IRIS
Phenanthrene	3.00E+00	3.00E+00	NOEL	IRIS
Pyrene	3.00E-02	3.00E-02	Kidney	IRIS
Volatile Organic Compounds (VOCs)				
Benzene	4.00E-03	8.60E-03	Liver	IRIS
Ethylbenzene	1.0E-01	2.9E-01	GI, Development, Kidney	IRIS
mp-Xylenes	2.0E-01	2.9E-01	CNS	IRIS
Chlorobenzene	2.0E-02	1.7E-02	GI, Kidney	IRIS
1,4-Dichlorobenzene	3.0E-02	2.3E-01	GI, Kidney, CNS	IRIS

Table J-4
Noncarcinogenic Toxicity Information for Chemicals of Potential Concern

Chemical	Oral Reference Dose (RfDo) (mg/kg-day)	Inhalation Reference Dose (RfDi) (mg/kg-day)	Primary Target Organs	Toxicity Information Reference Source[1]
o-Xylene	2.0E-01	2.9E-02	CNS	IRIS
Isopropylbenzene	1.0E-01	1.0E-01	CNS	IRIS
MTBE	8.6E-01	8.6E-01	GI	IRIS
Tetrachloroethene	0.01	0.021	GI, Kidney	IRIS
Toluene	2.0E-01	1.1E-01	CNS	IRIS

Notes:

[1] National Center for Environmental Assessment (NCEA) as cited in U.S. EPA Region 9 Preliminary U.S. EPA Integrated Risk Information System (IRIS) database, October 2004.

mg/kg-day = Milligrams per kilogram per day

--- = Not available

NOEL = No observed effects level

GI = Gastrointestinal

CNS = Central nervous system

Table J-5
Carcinogenic Risk Estimate for Chemicals of Potential Concern

Chemical	Oral Cancer Slope Factor (Sfo) $(mg/kg\text{-}day)^{-1}$	Inhalation Cancer Slope Factor (Sfi) $(mg/kg\text{-}day)^{-1}$	Dermal Absorption Fraction (ABS) (dimensionless)	Concentration in Soil[1] (Cs) (mg/kg)	Concentration in Air (Ca) (mg/m^3)	RISK for Soil Pathway	RISK for Air Pathway
Metals							
Arsenic	9.5E+00	1.2E+01	0.03	13.9	7.0E-07	3.E-04	1.E-06
Chromium IV	5.1E+02	1.5E-01	0.03	3.2	1.6E-07	3.E-03	4.E-09
Cobalt	—	9.8E+00	0.03	92.0	4.6E-06	–	7.E-06
PCBs, SVOCs, and Furans							
Dibenzofuran	5.5E+00	5.5E+00	0.03	7.8	3.9E-07	9.E-05	3.E-07
Aroclor 1260	5	2.0E+00	0.15	69.7	3.5E-06	2.E-03	1.E-06
Polycyclic Aromatic Hydrocarbons (PAHs)							
Benzo(a)anthracene	1.2E+00	3.9E-01	0.15	32.9	1.6E-06	2.E-04	1.E-07
Benzo(a)pyrene	1.2E+01	3.9E+00	0.15	66.9	3.3E-06	4.E-03	2.E-06
Benzo(k)fluoranthene	1.2E+00	3.9E-01	0.15	63.5	3.2E-06	3.E-04	2.E-07
Chrysene	1.2E+01	3.9E+00	0.15	46.2	2.3E-06	2.E-03	1.E-06
Methylnaphthalene	1.2E-01	1.2E-01	0.15	11.1	2.0E-04	6.E-06	4.E-06
Naphthalene	1.2E-01	1.2E-01	0.15	13.3	9.9E-04	7.E-06	2.E-05
Volatile Organic Compounds (VOCs)							
Benzene	1.00E-01	1.00E-01	0.1	22.4	8.6E-03	8.E-06	1.E-04
1,4-Dichlorobenzene	5.4E-03	5.0E-02	0.1	0.1	NA	2.E-09	–
MTBE	1.8E-03	9.1E-04	0.1	ND	1.3E-03	–	2.E-07
Tetrachloroethene	0.54	0.021	0.1	ND	8.9E-04	–	3.E-06
TOTAL RISK (across all chemicals and exposure routes):			1.E-02				

Notes:

[1] Maximum detected concentration in soil

mg/kg = Milligrams per kilogram

mg/kg-day = Milligrams per kilogram per day

cm/hr = Centimeters per hour

mg/l = Milligrams per liter

mg/m^3 = Milligrams per cubic meter

VOCs = Volatile organic compounds

For Soil Pathway (equation shown on Figure 2.3; Cal-EPA 1999):

$RISK = ((Cs \times SFo) \times (1.57 \times 10^{-6})) + ((Cs \times SFo) \times (1.87 \times 10^{-5}) \times ABS)$

For Air Pathway (equation shown on Figure 2.4; Cal-EPA 1999):

$RISK = (Ca \times SFi) \times 0.149$

where for non-VOCs (equation shown on Figure 2.8, Cal-EPA 1999):

$Ca = Cs \times (5.0 \times 10^{-6}\ kg/m^3)$

VOC Air concentration calculated using Department of Toxic Substances Control Johnson & Ettinger's vapor model

Table J-6
Noncarcinogenic Hazard Index Estimate for Chemicals of Potential Concern

Chemical	Oral Reference Dose (RfDo) (mg/kg-day)	Inhalation Reference Dose (RfDi) (mg/kg-day)	Dermal Absorption Fraction (ABS) (dimensionless)	Concentration in Soil[1] (Cs) (mg/kg)	Concentration in Air (Ca) (mg/m^3)	HAZARD QUOTIENT for Soil Pathway	HAZARD QUOTIENT for Air Pathway
Metals							
Arsenic	3.0E-04	3.0E-04	0.03	13.9	7.0E-07	8.E-01	1.E-03
Barium	7.0E-02	1.4E-04	0.03	246	1.2E-05	6.E-02	6.E-02
Chromium	1.5E+00	1.5E+00	0.03	101	5.1E-06	1.E-03	2.E-06
Chromium IV	3.0E-03	2.2E-06	0.03	3.02	1.5E-07	2.E-02	4.E-02
Cobalt	2.0E-02	5.7E-06	0.03	92	4.6E-06	6.E-02	5.E-01
Copper	4.0E-02	4.0E-02	0.03	61	3.1E-06	3.E-02	5.E-05
Nickel	2.0E-02	2.0E-02	0.03	227	1.1E-05	2.E-01	4.E-04
Vanadium	1.0E-03	1.0E-03	0.03	86	4.3E-06	1.E+00	3.E-03
Zinc	3.0E-01	3.0E-01	0.03	221	1.1E-05	1.E-02	2.E-05
PCBs, SVOCs, and Furans							
Carbazole	0.02	2.0E-02	0.1	5.8	2.9E-07	7.E-03	9.E-06
Aroclor 1260	2.00E-05	2.0E-05	0.15	69.7	3.5E-06	1.E+02	1.E-01
Polycyclic Aromatic Hydrocarbons (PAHs)							
Acenaphthene	6.00E-02	6.00E-02	0.15	7.788	3.9E-07	4.E-03	4.E-06
Anthracene	3.00E-01	3.00E-01	0.15	10.044	5.0E-07	1.E-03	1.E-06
Benzo(a)anthracene	3.00E-01	3.00E-01	0.15	32.864	1.6E-06	4.E-03	4.E-06
Benzo(a)pyrene	3.00E-02	3.00E-02	0.15	66.928	3.3E-06	7.E-02	7.E-05
Benzo(k)fluoranthene	4.00E-02	4.00E-02	0.15	63.542	3.2E-06	5.E-02	5.E-05
Chrysene	7.30E-03	7.30E-03	0.15	46.152	2.3E-06	2.E-01	2.E-04
Fluoranthene	4.00E-02	4.00E-02	0.15	46.416	2.3E-06	4.E-02	4.E-05
Fluorene	4.00E-02	4.00E-02	0.15	6.5	3.3E-07	5.E-03	5.E-06
Methylnaphthalene	2.00E-02	3.00E-03	0.15	11.1	2.0E-04	2.E-02	4.E-02
Naphthalene	2.00E-02	3.00E-03	0.15	13.1	9.9E-04	2.E-02	2.E-01
Phenanthrene	3.00E+00	3.00E+00	0.15	55.31	2.8E-06	6.E-04	6.E-07
Pyrene	3.00E-02	3.00E-02	0.15	59.68	3.0E-06	6.E-02	6.E-05
Volatile Organic Compounds (VOCs)							
Benzene	4.00E-03	8.60E-03	0.1	22.4	8.6E-03	1.E-01	6.E-01
Chlorobenzene	2.0E-02	1.7E-02	0.1	0.01	NA	2.E-05	--
Ethylbenzene	1.0E-01	2.9E-01	0.1	ND	1.3E-03	--	3.E-03
1,4-Dichlorobenzene	3.0E-02	2.3E-01	0.1	0.1	NA	1.E-04	--
Isopropylbenzene	1.0E-01	1.0E-01	0.1	5.6	NA	1.E-03	--
mp-Xylenes	2.0E-01	2.9E-01	0.1	ND	4.6E-03	--	1.E-02
o-Xylene	2.0E-01	2.9E-02	0.1	ND	9.2E-04	--	2.E-02
MTBE	8.6E-01	8.6E-01	0.1	ND	1.3E-03	--	1.E-03
Tetrachloroethene	0.01	0.021	0.1	ND	8.9E-04	--	3.E-02
Toluene	2.0E-01	1.1E-01	0.1	ND	1.6E-03	--	9.E-03
Hazard Index for Pathway						1.E+02	
TOTAL HAZARD INDEX (across all chemicals and expc			**116.43**				

Notes:

[1] Maximum detected concentration in soil or as the soil vapor source

mg/kg = Milligrams per kilogram
mg/kg-day = Milligrams per kilogram per day
mg/l = Milligrams per liter
cm/hr = Centimeters per hour
mg/m^3 = Milligrams per cubic meter
NA = Not applicable
VOCs = Volatile organic compounds

For Soil Pathway (equation shown on Figure 2.3; Cal-EPA 1999):
HAZARD = ((Cs/RfDo) x (1.28 x 10-5)) + ((Cs/RfDo) x (1.28 x 10-4) x ABS)

For Air Pathway (equation shown on Figure 2.4; Cal-EPA 1999):
HAZARD = (Ca/RfDi) x 0.639
where for non-VOCs (equation shown on Figure 2.8, Cal-EPA 1999):
Ca = Cs x (5.0×10^{-8} kg/m^3)
VOC Air concentration calculated using Department of Toxic Substances Control Johnson & Ettinger's vapor model

Table J-7
Lead Risk Assessment Spreadsheet

USER'S GUIDE to version 7

INPUT	
MEDIUM	LEVEL
Lead in Air (µg/m^3)	0.0044
Lead in Soil/Dust (µg/g)	398
Lead in Water (µg/l)	15
% Home-grown Produce	
Respirable Dust (µg/m^3)	1.5

OUTPUT							
	Percentile Estimate of Blood Pb (µg/dl)					PRG-99	PRG-95
	50th	90th	95th	98th	99th	(µg/g)	(µg/g)
BLOOD Pb, ADULT	1.4	2.6	3.1	3.8	4.3	2459	3851
BLOOD Pb, CHILD	4.3	7.9	9.4	11.4	12.9	259	440
BLOOD Pb, PICA CHILD	7.1	13.0	15.4	18.7	21.3	130	221
BLOOD Pb, OCCUPATIONAL	1.3	2.4	2.9	3.5	4.0	3518	5507

EXPOSURE PARAMETERS			
	units	adults	children
Days per week	days/wk	7	
Days per week, occupational		5	
Geometric Standard Deviation		1.6	
Blood lead level of concern (µg/dl)		10	
Skin area, residential	cm^2	5700	2900
Skin area occupational	cm^2	2900	
Soil adherence	µg/cm^2	70	200
Dermal uptake constant	(µg/dl)/(µg/day)	0.0001	
Soil ingestion	mg/day	50	100
Soil ingestion, pica	mg/day		200
Ingestion constant	(µg/dl)/(µg/day)	0.04	0.16
Bioavailability	unitless	0.44	
Breathing rate	m^3/day	20	6.8
Inhalation constant	(µg/dl)/(µg/day)	0.08	0.192
Water ingestion	l/day	1.4	0.4
Food ingestion	kg/day	1.9	1.1
Lead in market basket	µg/kg	3.1	
Lead in home-grown produce	µg/kg	179.1	

PATHWAYS

ADULTS	Residential			Occupational		
	Pathway contribution			Pathway contribution		
Pathway	PEF	µg/dl	percent	PEF	µg/dl	percent
Soil Contact	3.8E-5	0.02	1%	1.4E-5	0.01	0%
Soil Ingestion	8.8E-4	0.35	24%	6.3E-4	0.25	19%
Inhalation, bkgrnd		0.01	0%		0.01	0%
Inhalation	2.5E-6	0.00	0%	1.8E-6	0.00	0%
Water Ingestion		0.84	58%		0.84	63%
Food Ingestion, bkgrnd		0.23	16%		0.23	17%
Food Ingestion	0.0E+0	0.00	0%			0%

CHILDREN	typical			with pica		
	Pathway contribution			Pathway contribution		
Pathway	PEF	µg/dl	percent	PEF	µg/dl	percent
Soil Contact	5.6E-5	0.02	1%		0.02	0%
Soil Ingestion	7.0E-3	2.80	65%	1.4E-2	5.60	79%
Inhalation	2.0E-6	0.00	0%		0.00	0%
Inhalation, bkgrnd		0.01	0%		0.01	0%
Water Ingestion		0.96	22%		0.96	13%
Food Ingestion, bkgrnd		0.54	12%		0.54	8%
Food Ingestion	0.0E+0	0.00	0%		0.00	0%

Notes:

µg = microgram
m^3 = cubic meter
g = gram
l = liter
dl = deciliter
cm^2 = squared centimeter
mg = milligram
kg = kilogram

Table J-8

Data Used for the Additional SSI Risk and Hazard Evaluation

Chemicals	Site Soil Data				Site Groundwater Data				Site Soil Vapor Data			Include in Risk Assessment
	Detection Frequency	Minimum (mg/kg)	Maximum (mg/kg)	95%UCL[1] (mg/kg)	Detection Frequency	Minimum (ug/l)	Maximum (ug/l)	95%UCL[1] (ug/L)	Detection Frequency	Minimum (ug/L)	Maximum (ug/L)	
Volatile Organic Compounds												
Benzene			36				10,755					
Ethylbenzene			110				3,429					
m,p-Xylenes			400				15,529					
Methyl-t-Butyl ether (MTBE)			32				120,000					
o-Xylene			see m,p xylene				see m,p xylene					
Toluene			170				24,000					
1,4-Dichlorobenzene			0.128									
Chlorobenzene			0.012									
Isopropylbenzene			5.63									
Terachloroethene							nd					
PCBs / Dioxins												
PCB 1260			69.7				22					
Dioxins												
Polycyclic Aromatic Hydrocarbons[4]												
Acenaphthylene			4.7									
Anthracene			10.044									
Benzo(a)anthracene			32.864									
Benzo(a)pyrene			66.928									
Benzo(k)fluoranthene			63.542									
Chrysene			46.152									
Fluoranthene			46.416									
Phenanthrene			55.31									
Pyrene			59.68									
Semi-Volatile Organic Compounds												
Acenaphthylene			4.702									
Acenaphthene			0.058									
Anthracene			10.046									
1-Methylnaphthalene			11.123				487					
Naphthalene			13.279				2365					
Dibenzofuran			7.788									
Carbazole			5.786									
Benzo(a)anthracene			32.8									
Benzo(a)pyrene			66.9									
Benzo(b)fluoranthene			0.11									
Benzo(k)fluoranthene			63.542									
Chrysene			46.152									
Fluorene			6.474									
Fluoranthene			46.416									
Phenol			1.2									
Pyrene			59.68									
Phenanthrene			55.31									
Metals												
Antimony			nd				nd					

Table J-8

Data Used for the Additional SSI Risk and Hazard Evaluation

Chemicals	Site Soil Data				Site Groundwater Data				Site Soil Vapor Data			Include in Risk Assessment
	Detection Frequency	Minimum (mg/kg)	Maximum (mg/kg)	95%UCL[1] (mg/kg)	Detection Frequency	Minimum (ug/l)	Maximum (ug/l)	95%UCL[1] (ug/L)	Detection Frequency	Minimum (ug/L)	Maximum (ug/L)	
Arsenic			140.00				nd					
Barium			246.00				298.00					
Beryllium			nd				nd					
Cadmium			nd				nd					
Chromium			101.00				133.00					
Hexavalent Chromium			3.02				na					
Cobalt			92.00				69.00					
Copper			61.00				nd					
Lead			398.00				nd					
Mercury			nd				nd					
Molybdenum			nd				33.00					
Nickel			227.00				nd					
Selenium			nd				nd					
Silver			nd				nd					
Thallium			nd				nd					
Vanadium			86.00				6.00					
Zinc			221.00				29.00					
TPH												
Gasoline			4,900				221,129					
Diesel			1,200				7200					
Oil			22,524				3,600					

NOTES:

95% UCL = Corresponds to the 95% Upper Confidence Limit calculated using USEPA's ProUCL (USEPA 2004b)

ND = Not detected.

NC = Not calculated The maximum concentration was used as exposure point concentration

NS = Not sampled

[1] Includes non-detects at half the detection limit As this is a SCREENING-LEVEL evaluation, discussion of risks are generally based on the maximum detected concentration

Table J-9
Chemical Properties for Chemicals of Potential Concern

Chemical	CAS Number	Vapor Pressure[1] (mmHg @ 20-30C)	Solubility[1] (mg/l @ 20-30C)	Henry's Law Constant
Metals				
Arsenic	7440-38-2	NA	0	NA
Barium	7440-39-3	NA	0	NA
Chromium	16065-83-1	NA	0	NA
Chromium IV	18540-29-9	NA	0	NA
Cobalt	7440-48-4	NA	0	NA
Copper	7440-50-8	NA	0	NA
Lead	7439-92-1	NA	0	NA
Nickel	7440-02-0	NA	0	NA
Vanadium	7440-68-2	NA	0	NA
Zinc	7440-66-6	NA	0	NA
PCBs, SVOCs, and Furans				
Dibenzofuran	132-64-9	NA	1.00E-04	NA
Carbazole	86-74-8	NA	1.00E-04	NA
Aroclor 1260	11096-82-5	NA	slightly	NA
Polynuclear Aromatic Hydrocarbons (PAHs)				
Acenaphthene	83-32-9	NA	6.34E-03	6.36E-03
Anthracene	120-08-9	NA	4.00E-02	2.67E-03
Benzo(a)anthracene	56-55-3	NA	9.00E-03	1.37E-04
Benzo(a)pyrene	50-32-8	NA	1.00E-03	4.63E-05
Benzo(k)fluoranthene	207-08-9	NA	8.00E-04	3.40E-05
Chrysene	218-01-9	NA	2.00E-03	9.5E-05
Fluoranthene	206-44-0	NA	2.10E-01	2.1E-01
Fluorene	86-73-7	NA	2.00E+00	6.4E-05
Methylnaphthalene	91-57-6	NA	3.10E+01	1.98E-02
Naphthalene	91-20-3	NA	3.10E+01	1.98E-02
Phenanthrene	85-01-8	NA	1.15E+00	9.55E-04
Pyrene	129-00-0	NA	1.35E+00	4.51E-04
Volatile Organic Compounds (VOCs)				
Benzene	71-43-2	9.5E+01	1.79E+03	5.43E-03
Chlorobenzene	108-90-7	1.2E+00	4.72E+02	3.70E-03
1,4-Dichlorobenzene	106-46-7	1.7E+00	7.38E+01	2.40E-03
Ethylbenzene	100-41-4	9.5E+00	161	8.44E-03
Isopropylbenzene	98-82-8	4.5E+00	500	6.30E-05
mp-Xylenes	108-38-3	NA	200	5.30E-03
o-Xylene	95-47-6	NA	200	5.30E-03
MTBE	1634-04-4	2.5E+02	5.00E-03	6.23E-04
Tetrachloroethene	127-18-4	1.9E+01	150.3	1.49E-02
Toluene	108-88-3	2.8E+01	5.34E+02	5.94E-03

Notes:
[1] Values from DTSC Preliminary Endangerment Assessment Guidance Manual, June 1999.

mmHg = Millimeter of mercury
mg/l = Milligrams per liter
NA = Not applicable

Table J-10
Carcinogenic Toxicity Information for Chemicals of Potential Concern

Chemical	Oral Cancer Slope Factor (Sfo) $(mg/kg\text{-}day)^{-1}$	Inhalation Cancer Slope Factor (Sfi) $(mg/kg\text{-}day)^{-1}$	Weight-of Evidence Classification	Toxicity Information Reference Source[1]
Metals				
Arsenic	9.5E+00	1.2E+01	A	Cal/EPA
Barium	---	---	---	IRIS
Chromium	---	---	---	IRIS
Chromium IV	5.1E+02		A	Cal/EPA
Cobalt	---	9.8E+00	B2	IRIS
Copper	---	---	---	Cal/EPA
Lead	---	---	---	Cal/EPA
Nickel	---	---	---	Cal/EPA
Vanadium	---	---	---	Cal/EPA
Zinc	---	---	---	Cal/EPA
PCBs, SVOCs, and Furans				
Dibenzofuran	5.5E+00	5.5E+00	B2	Cal/EPA
Carbazole	--	--	--	IRIS
Aroclor 1260	5.0E+00	2.0E+00	B2	Cal/EPA
TPHd	---	---	---	IRIS
Polynuclear Aromatic Hydrocarbons (PAHs)				
Acenaphthene	---	---	---	IRIS
Anthracene	---	---	---	IRIS
Benzo(a)anthracene	1.2E+00	3.9E-01	B2	Cal/EPA
Benzo(a)pyrene	1.2E+01	3.9E+00	B2	Cal/EPA
Benzo(k)fluoranthene	1.2E+00	3.9E-01	B2	Cal/EPA
Chrysene	1.2E-01	3.9E-02	B2	Cal/EPA
Fluoranthene	---	---	---	IRIS
Fluorene	---	---	---	IRIS
Methylnaphthalene	---	---	C	Cal/EPA
Naphthalene	1.2E-01	1.2E-01	C	Cal/EPA
Phenanthrene	---	---	---	IRIS
Pyrene	---	---	---	IRIS
Volatile Organic Compounds (VOCs)				
Benzene	1.00E-01	1.00E-01	A	Cal/EPA
Ethylbenzene	---	---	---	IRIS
mp-Xylenes	---	---	---	IRIS
Chlorobenzene	---	---	---	IRIS
1,4-Dichlorobenzene	5.4E-03	5.0E-02	B2	Cal/EPA
o-Xylene	---	---	---	IRIS
Isopropylbenzene	---	---	---	IRIS
MTBE	1.8E-03	9.1E-04	C	Cal/EPA
Tetrachloroethene	0.54	0.021	B2	Cal/EPA
TPHg	---	---	---	IRIS
Toluene	---	---	---	IRIS

Notes:

[1] California EPA OEHHA Cancer Potency Values, August 2005

U.S. EPA Integrated Risk Information System (IRIS) database, October 2004.

mg/kg-day = Milligrams per kilogram per day

--- = not applicable

Weight-of-Evidence Classification:

A - Human carcinogen

B1 - Probable human carcinogen - indicates that limited human data are available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as to human carcinogenicity

Table J-11
Noncarcinogenic Toxicity Information for Chemicals of Potential Concern

Chemical	Oral Reference Dose (RfDo) (mg/kg-day)	Inhalation Reference Dose (RfDi) (mg/kg-day)	Primary Target Organs	Toxicity Information Reference Source[1]
Metals				
Arsenic	3.0E-04	3.0E-04	Skin	IRIS
Barium	7.0E-02	1.4E-04	Development,	IRIS
Chromium	1.5E+00	1.5E+00	Skin	IRIS
Chromium IV	3.0E-03	2.2E-06	Respiratory	IRIS
Cobalt	2.0E-02	5.7E-06	Respiratory	IRIS
Copper	4.0E-02	4.0E-02	Respiratory	IRIS
Lead	---	---	CNS	IRIS
Nickel	2.0E-02	2.0E-02	Kidney, CNS, Respiratory	IRIS
Vanadium	1.0E-03	1.0E-03	Kidney, Respiratory	IRIS
Zinc	3.0E-01	3.0E-01	Blood	
PCBs, SVOCs, and Furans				
Dibenzofuran	--	--	Skin	IRIS
Carbazole	0.02	2.0E-02		IRIS
Aroclor 1260	2.00E-05	2.0E-05	GI, Development	IRIS
TPHd aliphatic	1.00E-01	1.0E-01		MADEP
TPHd aromatic	3.00E-02	3.0E-02		MADEP
Polynuclear Aromatic Hydrocarbons (PAHs)				
Acenaphthene	6.00E-02	6.00E-02	Liver	IRIS
Anthracene	3.00E-01	3.00E-01	Liver	IRIS
Benzo(a)anthracene	3.00E-01	3.00E-01	NOEL	IRIS
Benzo(a)pyrene	3.00E-02	3.00E-02	Kidney	IRIS
Benzo(k)fluoranthene	4.00E-02	4.00E-02	Liver, Kidney, Blood	IRIS
Chrysene	7.30E-03	7.30E-03	NOEL	IRIS
Fluoranthene	4.00E-02	4.00E-02	Liver, Kidney, Blood	IRIS
Fluorene	4.00E-02	4.00E-02	Liver, Kidney, Blood	IRIS
Methylnaphthalene	2.00E-02	3.00E-03	Respiratory	IRIS
Naphthalene	2.00E-02	3.00E-03	Respiratory	IRIS
Phenanthrene	3.00E+00	3.00E+00	NOEL	IRIS
Pyrene	3.00E-02	3.00E-02	Kidney	IRIS
Volatile Organic Compounds (VOCs)				
Benzene	4.00E-03	8.60E-03	Liver	IRIS
Ethylbenzene	1.0E-01	2.9E-01	GI, Development, Kidney	IRIS
mp-Xylenes	2.0E-01	2.9E-01	CNS	IRIS
Chlorobenzene	2.0E-02	1.7E-02	GI, Kidney	IRIS

Table J-11
Noncarcinogenic Toxicity Information for Chemicals of Potential Concern

Chemical	Oral Reference Dose (RfDo) (mg/kg-day)	Inhalation Reference Dose (RfDi) (mg/kg-day)	Primary Target Organs	Toxicity Information Reference Source[1]
1,4-Dichlorobenzene	3.0E-02	2.3E-01	GI, Kidney, CNS	IRIS
o-Xylene	2.0E-01	2.9E-02	CNS	IRIS
Isopropylbenzene	1.0E-01	1.0E-01	CNS	IRIS
MTBE	8.6E-01	8.6E-01	GI	IRIS
Tetrachloroethene	0.01	0.021	GI, Kidney	IRIS
TPHg	0.04	0.01		MADEP
Toluene	2.0E-01	1.1E-01	CNS	IRIS

Notes:

[1] National Center for Environmental Assessment (NCEA) as cited in U.S. EPA Region 9 Preliminary U.S. EPA Integrated Risk Information System (IRIS) database, October 2004.

mg/kg-day = Milligrams per kilogram per day

--- = Not available

NOEL = No observed effects level

GI = Gastrointestinal

CNS = Central nervous system

MADEP = Massachuetts Department of Environmental Protection

Table J-12
Carcinogenic Risk Estimate for Chemicals of Potential Concern

Chemical	Oral Cancer Slope Factor (Sfo) $(mg/kg\text{-}day)^{-1}$	Inhalation Cancer Slope Factor (Sfi) $(mg/kg\text{-}day)^{-1}$	Dermal Absorption Fraction (ABS) (dimensionless)	Concentration in Soil[1] (Cs) (mg/kg)	Concentration in Air (Ca) (mg/m^3)	RISK for Soil Pathway	RISK for Air Pathway
Metals							
Arsenic	9.5E+00	1.2E+01	0.03	140.0	7.0E-06	**3.E-03**	**1.E-05**
Chromium IV	--	5.1E+02	0.03	3.2	1.6E-07	**NA**	**1.E-05**
PCBs, SVOCs, and Furans							
Dibenzofuran	5.5E+00	5.5E+00	0.03	7.8	3.9E-07	**9.E-05**	**3.E-07**
Aroclor 1260	5	2.0E+00	0.15	69.7	3.5E-06	**2.E-03**	**1.E-06**
Polynuclear Aromatic Hydrocarbons (PAHs)							
Benzo(a)anthracene	1.2E+00	3.9E-01	0.15	32.9	1.6E-06	**2.E-04**	**1.E-07**
Benzo(a)pyrene	1.2E+01	3.9E+00	0.15	66.9	3.3E-06	**4.E-03**	**2.E-06**
Benzo(k)fluoranthene	1.2E+00	3.9E-01	0.15	63.5	3.2E-06	**3.E-04**	**2.E-07**
Chrysene	1.2E-01	3.9E-02	0.15	46.2	2.3E-06	**2.E-05**	**1.E-08**
Naphthalene	1.2E-01	1.2E-01	0.15	13.3	9.9E-04	**7.E-06**	**2.E-05**
Volatile Organic Compounds (VOCs)							
Benzene	1.00E-01	1.00E-01	0.1	36.0	8.6E-03	**1.E-05**	**1.E-04**
1,4-Dichlorobenzene	5.4E-03	5.0E-02	0.1	0.1	NA	**2.E-09**	**--**
MTBE	1.8E-03	9.1E-04	0.1	ND	1.3E-03	**--**	**2.E-07**
Tetrachloroethene	0.54	0.021	0.1	5.6	8.9E-04	**1.E-05**	**3.E-06**
TOTAL RISK (across all chemicals and exposure routes):			**9.E-03**				

Notes:

[1] Maximum detected concentration in soil
mg/kg = Milligrams per kilogram
mg/kg-day = Milligrams per kilogram per day
cm/hr = Centimeters per hour
mg/l = Milligrams per liter
mg/m^3 = Milligrams per cubic meter
VOCs = Volatile organic compounds

For Soil Pathway (equation shown on Figure 2.3; Cal-EPA 1999):
$RISK = ((Cs \times SFo) \times (1.57 \times 10^{-6})) + ((Cs \times SFo) \times (1.87 \times 10^{-5}) \times ABS)$

For Air Pathway (equation shown on Figure 2.4; Cal-EPA 1999):
$RISK = (Ca \times SFi) \times 0.149$
where for non-VOCs (equation shown on Figure 2.8, Cal-EPA 1999):
$Ca = Cs \times (5.0 \times 10^{-6}\ kg/m^3)$
VOC Air concentration calculated using Department of Toxic Substances Control Johnson & Ettinger's vapor model

Table J-13
Noncarcinogenic Hazard Index Estimate for Chemicals of Potential Concern

Chemical	Oral Reference Dose (RfDo) (mg/kg-day)	Inhalation Reference Dose (RfDI) (mg/kg-day)	Dermal Absorption Fraction (ABS) (dimensionless)	Concentration in Soil[1] (Cs) (mg/kg)	Concentration in Air (Ca) (mg/m^3)	HAZARD QUOTIENT for Soil Pathway	HAZARD QUOTIENT for Air Pathway
Metals							
Arsenic	3.0E-04	3.0E-04	0.03	140	7.0E-06	**8.E+00**	**1.E-02**
Barium	7.0E-02	1.4E-04	0.03	246	1.2E-05	**6.E-02**	**8.E-02**
Chromium	1.5E+00	1.5E+00	0.03	101	5.1E-06	**1.E-03**	**2.E-06**
Chromium IV	3.0E-03	2.2E-06	0.03	3.02	1.5E-07	**2.E-02**	**4.E-02**
Cobalt	2.0E-02	5.7E-06	0.03	92	4.6E-06	**8.E-02**	**5.E-01**
Copper	4.0E-02	4.0E-02	0.03	61	3.1E-06	**3.E-02**	**5.E-05**
Nickel	2.0E-02	2.0E-02	0.03	227	1.1E-05	**2.E-01**	**4.E-04**
Vanadium	1.0E-03	1.0E-03	0.03	86	4.3E-06	**1.E+00**	**3.E-03**
Zinc	3.0E-01	3.0E-01	0.03	221	1.1E-05	**1.E-02**	**2.E-05**
PCBs, SVOCs, and Furans							
Carbazole	0.02	2.0E-02	0.1	5.8	2.9E-07	**7.E-03**	**9.E-06**
Aroclor 1260	2.00E-05	2.0E-05	0.15	69.7	3.5E-06	**1.E+02**	**1.E-01**
TPHd aliphatic	1.00E-01	1.0E-01	0.15	480	2.4E-05	**2.E-01**	**2.E-04**
TPHd aromatic	3.00E-02	3.0E-02	0.15	720	3.6E-05	**8.E-01**	**8.E-04**
Polynuclear Aromatic Hydrocarbons (PAHs)							
Acenaphthene	6.00E-02	6.00E-02	0.15	7.788	3.9E-07	**4.E-03**	**4.E-06**
Anthracene	3.00E-01	3.00E-01	0.15	10.044	5.0E-07	**1.E-03**	**1.E-06**
Benzo(a)anthracene	3.00E-01	3.00E-01	0.15	32.864	1.6E-06	**4.E-03**	**4.E-06**
Benzo(a)pyrene	3.00E-02	3.00E-02	0.15	66.928	3.3E-06	**7.E-02**	**7.E-05**
Benzo(k)fluoranthene	4.00E-02	4.00E-02	0.15	63.542	3.2E-06	**5.E-02**	**5.E-05**
Chrysene	7.30E-03	7.30E-03	0.15	46.152	2.3E-06	**2.E-01**	**2.E-04**
Fluoranthene	4.00E-02	4.00E-02	0.15	46.416	2.3E-06	**4.E-02**	**4.E-05**
Fluorene	4.00E-02	4.00E-02	0.15	6.5	3.3E-07	**5.E-03**	**5.E-06**
Methylnaphthalene	2.00E-02	3.00E-03	0.15	11.1	5.6E-07	**2.E-02**	**1.E-04**
Naphthalene	2.00E-02	3.00E-03	0.15	13.1	9.9E-04	**2.E-02**	**2.E-01**
Phenanthrene	3.00E+00	3.00E+00	0.15	55.31	2.8E-06	**6.E-04**	**6.E-07**
Pyrene	3.00E-02	3.00E-02	0.15	59.68	3.0E-06	**6.E-02**	**6.E-05**
Volatile Organic Compounds (VOCs)							
Benzene	4.00E-03	8.60E-03	0.1	36.0	8.6E-03	**2.E-01**	**6.E-01**
Chlorobenzene	2.0E-02	1.7E-02	0.1	0.01	NA	**2.E-05**	--
Ethylbenzene	1.0E-01	2.9E-01	0.1	110.0	1.3E-03	**3.E-02**	**3.E-03**
1,4-Dichlorobenzene	3.0E-02	2.3E-01	0.1	0.1	NA	**1.E-04**	--
Isopropylbenzene	1.0E-01	1.0E-01	0.1	5.6	NA	**1.E-03**	--
mp-Xylenes	2.0E-01	2.9E-01	0.1	400.0	4.8E-03	**5.E-02**	**1.E-02**
o-Xylene	2.0E-01	2.9E-02	0.1	ND	9.2E-04	--	**2.E-02**
MTBE	8.6E-01	8.6E-01	0.1	32.0	1.3E-03	**1.E-03**	**1.E-03**
Tetrachloroethene	0.01	0.021	0.1	5.6	8.9E-04	**1.E-02**	**3.E-02**
TPHg	0.04	0.04	0.1	4900.0	2.5E-04	**3.E+00**	**4.E-03**
Toluene	2.0E-01	1.1E-01	0.1	170.0	1.6E-03	**2.E-02**	**9.E-03**
Hazard Index for Pathway						**1.E+02**	
TOTAL HAZARD INDEX (across all chemicals and expc				**127.66**			

Notes:

[1] Maximum detected concentration in soil or as the soil vapor source
mg/kg = Milligrams per kilogram
mg/kg-day = Milligrams per kilogram per day
mg/l = Milligrams per liter
cm/hr = Centimeters per hour
mg/m^3 = Milligrams per cubic meter
NA = Not applicable
VOCs = Volatile organic compounds

For Soil Pathway (equation shown on Figure 2.3; Cal-EPA 1999):
HAZARD = ((Cs/RfDo) x (1.28 x 10-5)) + ((Cs/RfDo) x (1.28 x 10-4) x ABS)

For Air Pathway (equation shown on Figure 2.4; Cal-EPA 1999):
HAZARD = (Ca/RfDi) x 0.639
where for non-VOCs (equation shown on Figure 2.8, Cal-EPA 1999):
Ca = Cs x (5.0×10^{-8} kg/m^3)
VOC Air concentration calculated using Department of Toxic Substances Control Johnson & Ettinger's vapor model

Table J-14
Lead Risk Assessment Spreadsheet

USER'S GUIDE to version 7

INPUT	
MEDIUM	LEVEL
Lead in Air (µg/m³)	0.0044
Lead in Soil/Dust (µg/g)	398
Lead in Water (µg/l)	15
% Home-grown Produce	
Respirable Dust (µg/m³)	1.5

OUTPUT							
	Percentile Estimate of Blood Pb (µg/dl)					PRG-99	PRG-95
	50th	90th	95th	98th	99th	(µg/g)	(µg/g)
BLOOD Pb, ADULT	1.4	2.6	3.1	3.8	4.3	2459	3851
BLOOD Pb, CHILD	4.3	7.9	9.4	11.4	12.9	259	440
BLOOD Pb, PICA CHILD	7.1	13.0	15.4	18.7	21.3	130	221
BLOOD Pb, OCCUPATIONAL	1.3	2.4	2.9	3.5	4.0	3518	5507

EXPOSURE PARAMETERS			
	units	adults	children
Days per week	days/wk	7	
Days per week, occupational		5	
Geometric Standard Deviation		1.6	
Blood lead level of concern (µg/dl)		10	
Skin area, residential	cm²	5700	2900
Skin area occupational	cm²	2900	
Soil adherence	µg/cm²	70	200
Dermal uptake constant	(µg/dl)/(µg/day)	0.0001	
Soil ingestion	mg/day	50	100
Soil ingestion, pica	mg/day		200
Ingestion constant	(µg/dl)/(µg/day)	0.04	0.16
Bioavailability	unitless	0.44	
Breathing rate	m³/day	20	6.8
Inhalation constant	(µg/dl)/(µg/day)	0.08	0.192
Water ingestion	l/day	1.4	0.4
Food ingestion	kg/day	1.9	1.1
Lead in market basket	µg/kg	3.1	
Lead in home-grown produce	µg/kg	179.1	

PATHWAYS

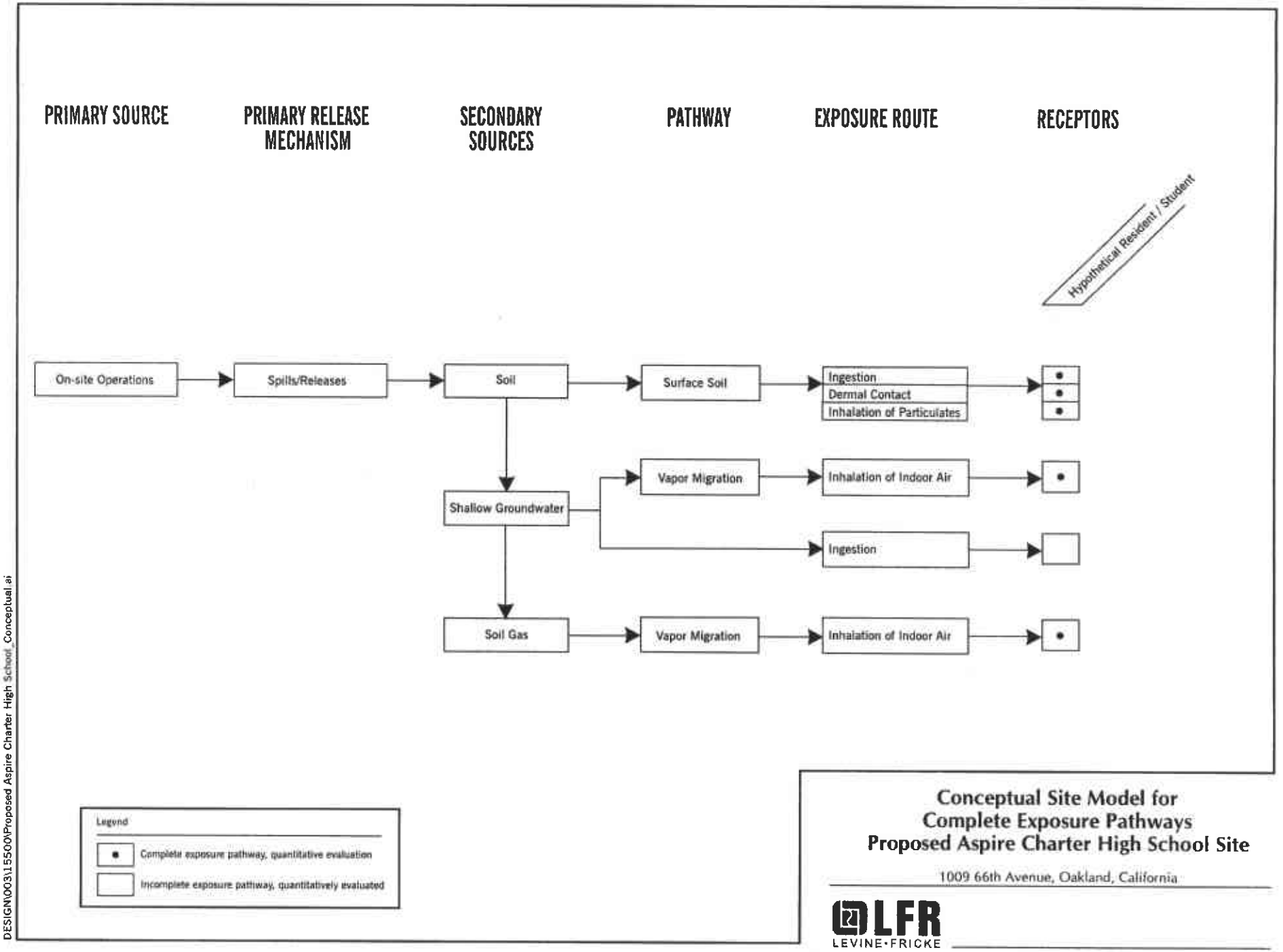
ADULTS	Residential			Occupational		
	Pathway contribution			Pathway contribution		
Pathway	PEF	µg/dl	percent	PEF	µg/dl	percent
Soil Contact	3.8E-5	0.02	1%	1.4E-5	0.01	0%
Soil Ingestion	8.8E-4	0.35	24%	6.3E-4	0.25	19%
Inhalation, bkgrnd		0.01	0%		0.01	0%
Inhalation	2.5E-6	0.00	0%	1.8E-6	0.00	0%
Water Ingestion		0.84	58%		0.84	63%
Food Ingestion, bkgrnd		0.23	16%		0.23	17%
Food Ingestion	0.0E+0	0.00	0%			0%

CHILDREN	typical			with pica		
	Pathway contribution			Pathway contribution		
Pathway	PEF	µg/dl	percent	PEF	µg/dl	percent
Soil Contact	5.6E-5	0.02	1%		0.02	0%
Soil Ingestion	7.0E-3	2.80	65%	1.4E-2	5.60	79%
Inhalation	2.0E-6	0.00	0%		0.00	0%
Inhalation, bkgrnd		0.01	0%		0.01	0%
Water Ingestion		0.96	22%		0.96	13%
Food Ingestion, bkgrnd		0.54	12%		0.54	8%
Food Ingestion	0.0E+0	0.00	0%		0.00	0%

Notes:

µg = microgram
m^3 = cubic meter
g = gram
l = liter
dl = deciliter
cm^2 = squared centimeter
mg = milligram
kg = kilogram

QA/QC_____



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Conceptual Site Model for Complete Exposure Pathways
Proposed Aspire Charter High School Site

1009 66th Avenue, Oakland, California

LFR LEVINE·FRICKE