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Alameda County
Environmental Health

Corrective Action Plan
Proposed Aspire High School Site
1009 66th Avenue, Oakland, California
(Fuel Leak Case No. RO0000411)

February 20, 2009
003-09155-01

Prepared by
LFR Inc.
1900 Powell Street, 12th Floor
Emeryville, California 94608

LFR an ARCADIS company

February 20, 2009 003-09155-01

Mr. Paresh Khatri
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Corrective Action Plan, Proposed Aspire School Site, 1009 66th Avenue, Oakland, California (Fuel Leak Case No. RO0000411)

Dear Mr. Khatri:

On behalf of Aspire Charter Schools ("Aspire"), LFR Inc. (LFR) is submitting this Corrective Action Plan (CAP) for the comprehensive remediation of soil, groundwater, and soil vapor at the Former Pacific Electric Motors Facility, Proposed Aspire School Site, located at 1009 66th Avenue, Oakland, California (Fuel Leak Case No. RO0000411; "the Site"). This CAP is presented in accordance with "Air Sparging and Soil-Vapor Extraction Pilot Test Completion Report at the Former Pacific Electric Motors Site," dated November 21, 2008. The scope of work was authorized by Alameda County Department of Environmental Health (ACDEH) with some minor modifications in ACDEH's letter dated December 10, 2008.

The objective of the CAP is to provide a plan to remediate soil, groundwater, and soil vapor from previous site activities and the release from a former underground storage tank and its associated piping that was formerly present at the Site.

Aspire and LFR thank you in advance for your prompt attention to this project and look forward to bringing it to closure. If you have any questions regarding this CAP, please contact either of the undersigned at (510) 652-4500, or Scott Seyfried at 916-786-0320.

Sincerely,

Lucas Goldstein, P.E., P.G.
Senior Associate Engineer

Ron Goloubow
Senior Associate Geologist

cc: Mr. Charles Robitaille – Aspire Public Schools

Attachment

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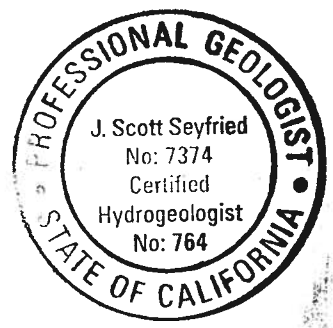
CERTIFICATION

LFR Inc. has prepared this Corrective Action Plan in a manner consistent with the level of care and skill ordinarily exercised by professional geologists and environmental scientists. This report was prepared under the technical direction of the undersigned California Professional Geologist.

02/19/09

J. Scott Seyfried, P.G., C.HG.
Principal Hydrogeologist
California Professional Geologist (7374)
Registered Hydrogeologist (764)

Date



1.0 INTRODUCTION

LFR Inc. (LFR) prepared this Corrective Action Plan (CAP) on behalf of Aspire Public Schools ("Aspire") for the Proposed Aspire Charter High School property at the former Pacific Electric Motors Facility located at 1009 66th Avenue, Oakland, Alameda County, California ("the Site"; Figure 1). This CAP has been prepared for submittal to the Alameda County Department of Environmental Health (ACDEH). Due to the release from the former underground storage tank (UST) at the Site, the ACDEH assigned this property with ACDEH Fuel Leak Case No. RO0000411.

1.1 Site Setting and Overview

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, and is currently developed with two buildings referred to as the "Manufacturing/Office Building" and the "Warehouse" (Figure 2). Aspire plans to develop a new charter high school on the Site.

Previous site use for manufacturing and warehouse storage has resulted in the presence of chemicals of potential concern (COPCs) in soil and groundwater beneath the Site. Several phases of investigation of soil, soil vapor, and groundwater quality have been completed at the Site to assess the nature and extent of COPCs in soil and groundwater. Results from previous investigations have been submitted to the California Department of Toxic Substance Control (DTSC) in several reports (see References Section 11.0) and are summarized in this report. In addition, LFR recently completed a field pilot test of soil-vapor extraction (SVE) and air sparging (AS).

Previous investigations and field pilot tests have provided the data necessary to meet the following objectives that are presented in this CAP:

- assess the nature and extent of COPCs beneath the Site
- support an evaluation of the potential human health risk associated with site COPCs and develop health-protective cleanup objectives
- support the selection of an appropriate remedy (remedial plan) to meet cleanup objectives

1.2 Report Objectives and Organization

The objectives of this CAP are as follows:

- provide a summary of results from previous investigations
- present a Site Conceptual Model (SCM)
- present Remedial Action Objectives (RAOs)

- evaluate potential remedies to meet those objectives, and provide the rationale for the selected remedy
- present a plan for implementing the selected remedy

This CAP is presented in the following sections:

Section 2.0 presents a description of the site setting, including topography and surrounding land use.

Section 3.0 provides a summary of results from previous investigations, and introduces several maps that depict the nature and extent of COPCs that have been detected at the Site.

Section 4.0 presents a description of the SCM. **Section 5.0** presents a summary of results of a baseline human health risk assessment for the Site.

Section 6.0 presents the methodology of developing cleanup goals for soil, soil gas, and groundwater at the Site.

Section 7.0 presents a narrative evaluation of potential remedies to meet RAOs and cleanup goals introduced in Section 6.0, and the rationale for the selected remedy.

Section 8.0 presents the plan for implementation of the selected remedy.

Sections 9.0 presents the anticipated schedule to implement the selected remedy.

2.0 SITE SETTING

The Proposed Aspire Charter High School project Site is located at 1009 66th Avenue, Oakland, California. The Assessor's Parcel Number designated by the Alameda County Assessor's Office for the Site is 041-4056-003. The Site is currently owned by Aspire Public Schools.

The site area is 2.51 acres and is located on the western side of 66th Avenue between East 14th Street (to the north) and San Leandro Street (to the south). The area around the Site is developed with a mixture of commercial, industrial, government, and multi-family residential buildings. The Site is bounded by a residential development to the north, Oakland Fire Department Station Number 2 to the east across 66th Avenue, Fruitvale Business Center to the south, and Northstar International Container Freight and Container Consolidation Services to the west.

Two structures are currently located on the Site. One two-story structure (denoted as the "Manufacturing/Office Building" on Figure 2) that was used for office space and manufacturing purposes and encompasses approximately 27,000 square feet of the property. The Manufacturing/Office Building is located on the eastern portion of the Site. The second structure (denoted as the "Warehouse" on Figure 2) is located on the western portion of the Site and encompasses approximately 5,000 square feet.

The Site is located at an elevation of approximately 15 feet 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.

2.1 Site History

2.1.1 History of Site Occupation

The first documented land use was residential, as evidenced by a 1947 aerial photograph that reportedly shows a house and several out buildings on the Site (Environ 1997 and ACC 2000). The first industrial development of the property was in about 1948 when the two buildings currently present on the Site were constructed by Pacific Electric Motors (PEM). PEM occupied the Site from 1948 to 2001.

The Manufacturing/Office Building currently present on the Site was shown on the 1950 aerial photograph, according to Environ's Phase I Environmental Assessment report (Environ 1997). Portions of the Site were paved and the area behind the building was vegetated in the 1950 aerial photograph.

The Warehouse initially appeared on the Site in the 1957 photograph (Environ 1997), and is still present on the western portion of the Site. A gasoline shed is visible on the Site in each of the aerial photographs from 1957 through the mid-1990s reviewed by Environ. Environ noted several square objects along the western border of the Site and on the property adjacent to the southwest in the 1957 aerial photograph, but drew no conclusions about these objects (Environ 1997).

Activities conducted at the Site by PEM included manufacturing specialty magnets, power supplies, and components; and repairing motors, generators, transformers, and magnets. A 2,000-gallon gasoline UST was reportedly installed at the Site by PEM in 1975. In addition, the gasoline shed in the fueling area may have stored vehicle lubricants and oil for vehicle maintenance.

Following acquisition of the Site by Mo Dad Properties in 2001, the on-site buildings were occupied by Bay Area Powder Coatings. Bay Area Powder Coatings declared bankruptcy and ceased operations at the Site; however, some equipment belonging to this company was still present on the Site in 2005. No details are available as to the specific processes of Bay Area Powder Coatings.

Landeros Iron Works ("Landeros"), which subleased the property from Bay Area Powder Coatings, conducted its operations in and around the Warehouse until December 2008. Landeros' operation was primarily welding and metal structure fabrication. The Site is now vacant.

2.1.2 Reported Releases and Recognized Environmental Concerns

Documented releases of hazardous materials at the Site by PEM include petroleum hydrocarbon compounds (from the former UST) and polychlorinated biphenyls (PCBs; presumably from repairing and servicing transformers and other electrical equipment).

Housekeeping and hazardous materials and waste use, generation, and storage issues were identified from a review of the Phase I Environmental Assessment reports prepared for the Site in 1997 (Environ) and 2000 (ACC) and during a site reconnaissance conducted by CSS Environmental Services Inc., Aspire, and DTSC personnel on January 20, 2005 (“the 2005 site reconnaissance”). The following environmental issues were identified at the Site:

- Bay Area Air Quality Management District (BAAQMD) permits indicated that PEM used 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 by PEM 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 the Site during the 2005 site reconnaissance. In 1995, PEM was informed by East Bay Municipal Utility District that samples collected from a steam-cleaning sump contained trace concentrations of PCBs (Environ 1997).
- Various 55-gallon and 5-gallon drums were present on the Site until recently. They were transported and disposed of by NRC Environmental Services in December 2008 at the Crosby and Overton Plant number 1 located in Long Beach, California. These drums were investigation-derived waste consisting of soil and groundwater generated from the drilling and sampling activities conducted during the 2005 site reconnaissance work.
- Old equipment, vehicles, vehicle parts, pallets, and miscellaneous junk were present around the Site (2005 site reconnaissance). These items have been removed (recycled) from the Site by representatives of Landeros.
- Stained surfaces were present inside the Manufacturing/Office Building and in the former drum storage area (2005 site reconnaissance).

These recognized environmental concerns have either been addressed through previous remedial measures under the oversight of the DTSC (described in Section 8.0) or will be addressed as part of this CAP.

2.2 Hydrogeology

2.2.1 Regional Geologic Setting

The Site is located within the Coast Ranges Geomorphic Province, and in the basin that includes San Francisco Bay. The bedrock geology in the Oakland area is characterized by two highly deformed Mesozoic basement assemblages, the Great Valley Complex (to the east) and the Franciscan complex (to the west), that are overlain by younger sedimentary and volcanic rocks. The complexes are separated by the Hayward Fault, which trends north-northwest to the east of the Site, at the base of the Oakland Hills (Graymer 2000).

The Site is located within the East Bay Alluvial Plain near the shore of San Francisco Bay, where Quaternary alluvial fans from the East Bay Hills abut basin deposits associated with the flatland areas adjacent to San Francisco Bay. The Oakland Hills to the east are part of the Coast Range hills, trending north-northwest. The sediments, including those eroded from the hills to the east, slope gently westward from the Oakland-Berkeley Hills to beneath the San Francisco Bay.

2.2.2 Sediments and Depositional Setting

Graymer (2000) maps the Site as being underlain by alluvial fan and fluvial deposits (Holocene) that are described as brown or tan, medium-dense to dense gravely sand or sandy gravel generally grading upward to sandy or silty clay. Graymer describes the fluvial deposits at the distal fan edge as brown, medium-dense sand with increasing silt and clay upward (higher and younger in this unit) to sandy or silty clay.

Sediments encountered beneath the Site are consistent with this regional description, and consist predominantly of silts with thin interbeds of sands and clay to a depth of approximately 30 feet (maximum depth sampled).

2.2.3 Occurrence and Movement of Groundwater

Based on descriptions of soil samples collected during the drilling of soil borings for groundwater monitoring wells installed at the Site, sediments consist of an interval of fine-grained sediment (silt and clay) with relatively thin (less than 1 foot thick). discontinuous intervals of more permeable fine- to coarse-grained sand and gravels from the ground surface to approximately 20 to 21 feet below ground surface (bgs). The relatively thin, discontinuous intervals comprised of more permeable fine- to coarse-grained sand and gravels have generally been encountered between approximately 12 and 17 feet bgs, contain the first groundwater at the Site, and represent the interval of “shallow zone” groundwater at the Site.

An interval of poorly graded, coarser grained sediments comprised of fine sand and gravel was consistently encountered from approximately 21 to 34 feet bgs. This interval of coarser grained sediments contains groundwater and represents the “deeper zone.”

Depth to groundwater measured in wells and soil borings drilled at the Site for the collection of grab groundwater samples ranges from approximately 3 to 6 feet bgs, indicating that the groundwater at the Site is confined. As shown in Table 1, depth to water varies seasonally, with the shallowest and deepest measurements generally occurring in the spring and fall, respectively.

Historical and recent groundwater monitoring data indicate that the direction of groundwater flow beneath the Site is predominantly toward the southwest, in the general direction of San Francisco Bay. This measured flow direction is expected based on the site hydrogeologic setting. Groundwater recharge from the surrounding Oakland Hills would be expected to flow toward San Francisco Bay (its discharge point) in a direction that is roughly perpendicular to San Francisco Bay shoreline. This local flow direction is consistent with groundwater flow directions recorded at two other properties in the immediate vicinity of the Site: the Oakland Fire Station, located at 1016 66th Avenue, and the Acts Full Gospel Church, formerly located at 1034 66th Avenue. Both of these properties are located east of the Site across 66th Avenue.

An example potentiometric surface map illustrating this flow direction is provided on Figure 3. This map was compiled using groundwater elevation data from MW-1 through MW-4 collected during July 2001. As shown on Figure 3, groundwater elevation data from these wells indicate a southwest flow direction. More recent groundwater elevation data collected from the nested well clusters (designated as NW) is consistent with this flow direction, with the shallowest interval indicating a more westerly direction, and the intermediate wells indicating a more southerly direction. Groundwater elevation data from the MW wells represent an average head throughout the shallow, intermediate, and deep intervals, resulting in a predominantly southwestern direction of flow.

The magnitude of the hydraulic gradient across the Site is very small. The calculated gradient using the July 2001 data is 0.003 foot/foot. A review of historical groundwater elevation data indicates that the total head drop across the Site is typically less than 1 foot.

3.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIATION WORK

Several phases of environmental investigation and remediation work have been performed at the Site over the past approximately 15 years. This CAP presents an overview of this work and a summary of findings that are relevant to the objectives of the CAP. A more comprehensive summary is presented in the report titled “Draft Final Soil Removal Action Work Plan, Proposed Aspire Charter School, 1009 66th Avenue, Oakland, Alameda County, California," prepared on behalf of Aspire Public Schools and submitted to the DTSC on October 10, 2006 (LFR 2006).

3.1 Scope of Work Completed to Date

3.1.1 Investigation – Collection and Analysis of Soil, Groundwater, and Soil-Gas Samples

Several phases of investigation have been completed at the Site that have included the following:

- Collection of approximately 280 soil samples throughout the Site. The majority of these samples were collected from 0.5 or 5 feet bgs and analyzed for petroleum hydrocarbons, semivolatile organic compounds (SVOCs), PCBs, and/or metals.
- Installation and monitoring of four shallow groundwater monitoring wells (MW-1 through MW-4) and three shallow/intermediate/deep monitoring well clusters (nested wells NW-1 through NW-3), and collection of grab groundwater samples from 20 soil borings. Monitoring of MW-1 through MW-4 has been performed intermittently since 1997.
- Completion of two investigations to assess soil-gas quality at the Site. The first soil-gas investigation included collection of soil-gas samples installed in a grid pattern in March 2005 (locations 1A through 5C). The second soil-gas investigation, conducted in August 2008, included 12 sampling locations (SV-1 through SV-12), with a focus on the former UST area.

3.1.2 Remediation – Excavation and Disposal of Affected Soil

3.1.2.1 Removal of PCE-Affected Soil

PEM conducted investigations and soil removal action for PCBs in 1992 and 1993 at the direction of the ACDEH. This work included removing and disposing of approximately 400 cubic yards (cy) of PCB-affected soil from the northwestern corner of the Site, and approximately 4 cy of PCB-affected soil from an off-site area located adjacent to the Site's northwestern corner. Soils near the northwestern corner were reportedly affected by the historical storage of transformers by PEM. The areas of PCB-affected soil that were excavated are illustrated on Figure 2.

The highest documented concentration of PCBs prior to excavation was 45,470 milligrams per kilogram (mg/kg; as Aroclor-1260). The cleanup objective 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 from the ACDEH.

3.1.2.2 Removal of the 2,000-Gallon UST

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 (W.A .Craig, Inc. 1997). The maximum detected concentrations of gasoline and benzene in soil samples were 10,000 mg/kg and 73 mg/kg, respectively, from the excavation stockpile. The maximum detected groundwater concentrations of gasoline and benzene in 1995 were 81,000 micrograms per liter (μg/L) and 3,100 μg/L, respectively.

3.1.2.3 Excavation of Petroleum-Affected Soil Associated with the UST - 1995

Approximately 1,500 cy of soil were removed in two excavation iterations completed during 1995 and stockpiled on the northern portion of the Site. Approximately 116,000 gallons of petroleum hydrocarbon-affected groundwater were pumped from the excavation. Site investigation work during this time also included the drilling of GeoProbe™ 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 (thought to be WAC-1) during backfilling operations. Backfill reportedly consisted of clean imported fill material. Reports indicate that the stockpiled excavated soils were disposed of in 1997 (W.A. Craig, Inc. 1995a, 1995b, 1995c, 1997).

3.1.2.4 Additional Excavation of Petroleum-Affected Soil - 2002

A 30-foot by 70-foot by 9-foot-deep excavation for the remediation of petroleum hydrocarbon-affected soils was completed in April 2002 to the south of the original UST remedial excavation (Decon Environmental Services, Inc. [Decon] 2002a, 2002b; Figure 2). Approximately 65,000 gallons of petroleum hydrocarbon-affected groundwater were removed from the excavation. Additional over-excavation was performed southeast of the 30-foot by 70-foot 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 were disposed of at an off-site facility (Decon 2002).

In addition, in June 2002, a total of 25 soil borings were advanced to a depth of 13 feet bgs 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 2002a, 2002b).

3.2 Summary of Previous Investigations Results

The following section presents a discussion of the nature and extent of COPCs in soil, groundwater, and soil gas at the Site. For descriptive purposes, this section includes a comparison of detected concentrations of COPCs with proposed cleanup goals. A detailed discussion of proposed cleanup goals for this project, including the methods used to develop those goals, is presented in Section 7.0 of this report.

3.2.1 Results of Soil Characterization

A summary of chemical analysis results for soil samples is presented in Table 2 (petroleum hydrocarbons, PCBs, and metals) and Table 3 (volatile organic compounds [VOCs], SVOCs, and PCBs). These data also are plotted on Figures 4a/b (SVOCs), 5a/b (metals), 6a/b (total petroleum hydrocarbons [TPH]), 7a/b (benzene), and 8a/b (PCBs). Detected concentrations above cleanup goals are indicated on the figures.

SVOCs. As shown on Figures 4a/b, occurrence of SVOCs above proposed cleanup goals is generally limited to an area south and southwest of the Warehouse. Soil samples collected to the west, north, east, and south of this area have contained SVOCs either at low concentrations or below laboratory reporting limits. The results for these soil samples indicated the lateral extent of soils with SVOC concentrations above the cleanup goal is rather limited or could be associated with the asphalt paving surface (Figures 4a/b).

Metals. As shown on Figures 5a/b, the distribution of soils with concentrations of metals exceeding the proposed cleanup goals is more extensive than that of SVOCs, and includes an area to the west of the Warehouse (i.e., borings 1BS and 1C; Figure 5a). The majority of the samples containing concentrations above the proposed cleanup goals are for arsenic, with lead being detected above cleanup goals in only two borings (5ASE and 5C; Figure 5b).

Petroleum Hydrocarbons. The distribution of TPH above cleanup goals in soil is similar to that of the SVOCs, with the majority of exceedances for diesel-range TPH (TPHd). Also similar to SVOCs, data from existing borings provide an approximate delineation of the area containing soils with TPH above the cleanup goal (Figures 6a/b).

Benzene. Benzene has not been detected above cleanup goals in samples collected within the 0- to 2-foot depth interval. This is consistent with the nature of the TPH encountered at this depth interval (i.e., TPHd). Benzene was detected above cleanup goals in three soil samples collected from 5 feet bgs. Given that depth to groundwater at the Site ranges from approximately 3 to 6 feet bgs, these detections of benzene likely reflect sorption effects from benzene-affected underlying groundwater associated with the former UST, as opposed to a surface release (Figures 7a/b).

PCBs. As shown on Figures 8a/b, concentrations of PCBs in soil appear to be limited to a few localized areas, with data from surrounding soil borings indicating concentrations that are generally below laboratory reporting limits.

3.2.2 Results of Groundwater Characterization

3.2.2.1 Description of Monitoring Well Network

The current groundwater monitoring well network at the Site includes 13 groundwater monitoring wells (MW-1 through MW-4, and NW-1 [S/I/D] through NW-3 [S/I/D]). MW-1 through MW-4 are screened from approximately 5 to 20 feet bgs, while the triple-nested groundwater monitoring wells are completed with screens at 3 to 5 feet bgs (shallow), 15 to 18 feet bgs (intermediate), and 25 to 30 feet bgs (deep). The locations of these wells are illustrated on Figure 3.

3.2.2.2 Nature and Extent of COPCs in Groundwater

Chemical analysis results for groundwater samples collected from these wells and from grab groundwater borings are summarized in Table 4. In addition, groundwater quality data collected during 2005 are plotted on Figure 9. Data from 2005 were selected because that year provided the most comprehensive "snapshot" of groundwater conditions and included data from all groundwater monitoring wells in addition to a set of grab groundwater data.

Isoconcentration contours developed from the 2005 dataset for gasoline-range TPH (TPHg), benzene, and methyl tertiary-butyl ether (MTBE) are presented on Figures 10, 11, and 12, respectively. As shown on these figures, affected groundwater is generally localized to an area immediately west of the Warehouse. Groundwater data collected from the areas that were excavated in 1995 and 2002 indicate that those excavation activities were successful in reducing potential groundwater impacts to very low to non-detect levels. Residual groundwater impacts are also present immediately west of the excavation footprints.

Figure 10 shows that the highest concentration of TPHg in groundwater is present in the immediate vicinity of monitoring well MW-4 and that concentrations of gasoline greater than 100 milligrams per liter (mg/L) are limited to the area immediately south of the Warehouse and southwest of the former UST location. Gasoline was not detected at concentrations at or above the laboratory reporting limits in the wells located downgradient from the former UST location (MW-2, MW-3, and NW-3).

Similarly, the highest concentration of benzene in groundwater is present in samples collected from well MW-4, as shown on Figure 11. Concentrations of benzene greater than 20,000 μg/L are limited to the area immediately south of the Warehouse and southwest of the former UST location. Benzene was not detected at concentrations at or above the laboratory reporting limits in the wells located downgradient from the former UST location (MW-2, MW-3, and NW-3).

Concentration of Dissolved Oxygen

Concentrations of dissolved oxygen (DO) in groundwater indicate that aerobic respiration is active in groundwater beneath the Site, resulting in the destruction of COPCs. This intrinsic bioremediation, when considered with the flat groundwater gradient, is consistent with the relatively limited extent of COPCs in groundwater, and the observed decrease in COPC concentrations at MW-1 following the soil excavation.

DO concentrations were measured in December 2002 and February and May 2003 in MW-1 through MW-4 and EW-1, with the following results (in mg/L):

	MW-1	MW-2	MW-3	MW-4
12/11/02	0.7	1.4	1.9	0.8
2/26/03	2.2*	0.8	1.9	0.1
5/16/03	0.2	2.7	1.9	0.4

*: DO measurement taken following purging of well

DO concentrations are relatively depressed in wells MW-4 and MW-1, located near the source area, when compared with downgradient wells MW-3 and MW-2. The depletion of DO in the source area is indicative of microbial utilization of DO during aerobic respiration of dissolved petroleum hydrocarbons. These DO results are favorable for the injection of air as proposed to remediate the petroleum-affected groundwater as described in Section 8.2.

Figure 12 shows that MTBE was detected at the highest concentrations around NW-2 (intermediate interval) with concentrations greater than 1,000 μg/L limited to the area immediately south of the Warehouse and southwest of the former UST location. MTBE was not detected at concentrations at or above the laboratory reporting limits in two of the wells located downgradient from the former UST location (MW-3 and NW-3).

3.2.3 Results of Soil-Gas Characterization

Chemical analysis results for soil-gas samples collected from the Site are summarized in Table 5, and plotted on Figure 13. As shown on Figure 13, the locations of elevated concentrations of COPCs in soil (i.e., concentrations above the proposed cleanup goals) generally correlate with the area of remaining petroleum hydrocarbons in soil and groundwater associated with releases from the former UST.

3.3 Field Pilot Testing of Soil-Vapor Extraction and Air Sparging

LFR conducted a field pilot test of SVE and AS during October 2008. The objective of this testing was to collect field data to assess whether air/ozone injection in conjunction with SVE is a potentially viable remediation technology to address petroleum-affected soil and groundwater beneath the Site.

The following sections present a summary of the methodology and results of the pilot test. A more complete presentation of this information is included in the report titled "Air Sparging and Soil-Vapor Extraction Pilot Test Completion Report at the Former Pacific Electric Motors Site, 1009 66th Avenue, Oakland, California (Fuel Leak Case No. RO0000411)," dated and submitted to the ACDEH on November 21, 2008 (LFR 2008).

3.3.1 Methodology and Scope

Completion of this test included the installation of one SVE well, one soil-vapor monitoring well, two AS wells (one intermediate and one deep), and two AS monitoring wells (one intermediate and one deep; total of six new wells).

Performance of the field test included injecting air into the AS wells at varying pressures, and monitoring nearby wells for pressure response, changes in concentration of DO, and presence of helium. In addition, soil vapor was extracted from the SVE well, and vapor pressures in nearby wells were monitored.

3.3.2 Summary of Results

Data collected during the pilot test supported the following conclusions:

- It is technically feasible to extract soil vapor from the subsurface containing elevated concentrations of TPHg and benzene, toluene, ethylbenzene, and total xylenes (BTEX) at low-to-moderate flow rates while applying low-to-moderate vacuum pressures. The most efficient applied vacuum and extraction rate combination was found to be approximately 5 inches of mercury and 10 standard cubic feet per minute (scfm), respectively.
- Air entry pressures into the aquifer were overcome at relatively low pressure (<10 pounds per square inch [psi]), and steady flow of air into the "intermediate" and "deep" groundwater was achieved.
- AS into the deep groundwater (through injection well AS-1D) measurably elevated the concentration of DO in both the deep- and intermediate-zone monitoring wells outfitted with DO meters.
- Direct radius of influence (ROI) indicators, inducing DO and helium tracer gas, show an AS ROI of a minimum of approximately 10 feet for AS-1I and a minimum of approximately 14 feet for AS-1D.
- Relatively elevated influent BTEX and TPHg concentrations were measured in the SVE system influent. The relatively elevated concentrations indicate that adequate contaminant mass is being removed by the AS/SVE system.

- Emission control equipment consisting of activated carbon was able to successfully capture and remove BTEX and TPHg from the vapor stream.

Based on these results, AS/SVE represents a technically feasible remedial alternative to address petroleum-affected soil and groundwater beneath the Site.

4.0 SITE CONCEPTUAL MODEL

An SCM is used to show the relationship between chemical sources, exposure pathways, and potential receptors for a property. This section presents an overview of the SCM that was developed for this Site to support the selection of appropriate cleanup goals and to help design an appropriate remedy to meet those goals.

As presented in Section 7.0, cleanup goals were developed for this Site based on Environmental Screening Levels (ESLs) published by the San Francisco Regional Water Quality Control Board (SFRWQCB 2008). The SCM presented below was used to select the appropriate media-specific and pathway-specific ESL.

The SCM for this property is depicted graphically on Figure 14, and is discussed in the following sections. For the purpose of the SCM, “soil” refers to earth materials between the ground surface to 2 feet bgs, based on guidance for dermal and ingestion potential exposure pathways. Soil below this depth is potentially affected by shallow groundwater, and is not subject to the dermal and ingestion potential pathways.

4.1 Sources

4.1.1 Primary Sources and Release Mechanisms

As described in the site history, primary sources and release mechanisms were related to past industrial use of the Site, including manufacturing specialty magnets, power supplies, and components; and repairing motors, generators, transformers, and magnets. A 2,000-gallon gasoline UST was reportedly installed at the Site in 1975. In addition, a former gasoline shed in the fueling area is thought to have stored vehicle lubricants and oil for vehicle maintenance. Documented releases of hazardous materials at the Site include petroleum hydrocarbon compounds (from the former UST) and PCBs (presumably from their manufacture and service of transformers and other electrical equipment).

These historical primary sources have been removed or are otherwise not present at the Site. Potential primary sources appear limited to potential handling of chemicals associated with Landeros, which subleased from Bay Area Powder Coatings and operated in the outdoor area southwest of the Warehouse. Its operations appeared to be primarily welding and metal structure fabrication.

Once chemicals are released into the surface or subsurface soils, the potential secondary release mechanisms include the following:

- volatilization of chemicals in soil and groundwater into ambient or indoor air
- wind erosion of surface soils and atmospheric dispersion of dusts
- migration of constituents from the subsurface soils into the groundwater
- off-site transport of chemicals in soil through surface-water runoff

The mechanisms listed above represent the theoretically complete mechanisms through which chemicals at the Site can be released and transported from one environmental medium to another.

4.1.2 Secondary Sources

Secondary sources for COPCs at the Site include COPCs in soil, groundwater, and soil gas. The nature and extent of COPCs in each of these environmental media were described in Section 3.2 of this report.

4.2 Potentially Complete Pathways and Potential Exposure Routes

As indicated in the SCM schematic, the complete pathways through which future on-site residents may be exposed to chemicals detected at the Site include the following:

- inhalation of vapors (from soil and groundwater) and particulates (from soil)
- soil ingestion
- dermal absorption from soil

A description of each pathway follows.

Inhalation of Vapors and Particulates. The inhalation of vapors from soil and groundwater and particulates from soil are potentially complete exposure pathways at the Site. Metals, petroleum hydrocarbons, SVOCs/polycyclic aromatic hydrocarbons (PAHs), and VOCs have been detected in the soil. The possible exposure routes for these compounds include inhalation of nonvolatile chemicals that are adsorbed onto soil particles, and the inhalation of petroleum hydrocarbons, some SVOCs/PAHs, and VOCs as vapors from soil.

Soil Ingestion. In accordance with the Preliminary Endangerment Assessment (PEA) Guidance Manual (DTSC 1999), future on-site residents, both children and adults, could be exposed to chemicals at the Site through the ingestion of soil. Accordingly, soil ingestion represents a complete exposure pathway at the Site and is included in the risk evaluation.

Dermal Absorption. In accordance with the PEA Guidance Manual (DTSC 1999), future on-site residents, both children and adults, could be exposed to chemicals at the Site through dermal contact with soil, and the subsequent absorption of chemicals present in the soil. Accordingly, dermal contact with soil represents a complete exposure pathway at the Site and is included in the risk evaluation.

4.3 Theoretically Complete but Insignificant Pathways

The following pathways are considered theoretically complete but insignificant at the Site:

- inhalation and ingestion of surface water
- ingestion of groundwater

The rationales for establishing that these pathways are theoretically complete, but insignificant, are provided below.

Surface Water. The erosion and transport of chemicals in soil to surface water is a theoretically complete but practically insignificant pathway at the Site. The nearest surface-water body downgradient from the Site is Lion Creek, located south of the Site. The runoff from the Site is collected by storm drains located on the western side of the Site. Given that runoff from the Site is expected to be minimal, because development of the Site will result in much of the Site being covered by asphalt or buildings, and considering that the runoff from the Site would be further diluted by the combined runoff of the storm-water system, the impact of surface-water runoff on either human health or the environment is believed to be insignificant and is therefore not considered further in the risk assessment.

Groundwater. Groundwater at the Site occurs between approximately 3 and 6 feet bgs (a value of 5 feet bgs was assumed for modeling purposes). Existing wells at the Site are used for monitoring purposes. The SFRWQCB (and ACDEH) has maintained the Site's status as an open LUFT case. A number of petroleum hydrocarbon compounds have been detected in samples collected from on-site wells at concentrations that exceed their respective ESLs developed by the SFRWQCB, and, where applicable, state and federal maximum concentration limits for drinking water. It is our understanding that this groundwater is not currently used for potable purposes; therefore, household uses (e.g., drinking, showering) do not constitute viable exposure pathways.

It is possible that chemicals in the groundwater can volatilize and migrate to areas above the ground surface. However, based on the DTSC's recent Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (DTSC 2005), this pathway can be evaluated using soil-vapor data. Therefore, inhalation of volatile chemicals emanating from the groundwater is indirectly evaluated in this assessment. It should be noted that two chemicals, naphthalene and 1-methylnapthalene, were detected in groundwater but not in soil vapor. Vapor intrusion into indoor air was evaluated using the groundwater data for these chemicals. Other pathways related to the groundwater at the Site are not believed to be significant, and are therefore not evaluated further.

4.4 Potential Receptors

The Site is the proposed location for the Aspire Charter High School. As such, the populations who will be present on the Site, and who could become exposed to chemicals present in either the soil or groundwater, include future students and adult school staff (including teachers, administrators, janitors, and landscapers).

5.0 QUANTITATIVE ASSESSMENT OF BASELINE RISK

LFR performed a baseline risk evaluation using the assumptions of residential exposure, as designated in the PEA Guidance Manual (DTSC 1999). A detailed description of the methods and procedures of this risk evaluation was presented in LFR 2006. A summary of results from this evaluation is presented below.

5.1 Calculated Baseline Risk

5.1.1 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 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.

The total excess cancer risk posed by the presence of chemicals in soil was calculated to be 9×10^{-3} (LFR 2006). The majority of this total risk is attributable to the presence of arsenic, chromium (VI), benzene, PAHs, and PCBs at the Site. The contribution of dioxin risk was found to be insignificant.

5.1.2 Non-Carcinogenic Effects

To assess the noncarcinogenic effects of chemicals, the estimated chronic daily intake of a chemical is divided by the reference dose (RfD) for oral exposure, or the reference concentration (RfC) for inhalation exposure. 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. An HQ less than or equal to 1 indicates that the predicted exposure to that chemical should not result in adverse noncarcinogenic health effects (U.S. Environmental Protection Agency [U.S. EPA]

1989). Consistent with California Environmental Protection Agency (Cal-EPA) risk assessment guidance, the chemical-specific HQs are added together to provide the hazard index (HI). A total, multi-chemical, multi-pathway HI of less than or equal to 1 indicates that potential noncancerous health effects are not likely to occur.

The total HI was calculated to be 128. The majority of the total noncancerous hazard is attributable to PCBs. Other chemicals that contribute to the noncancerous hazard include arsenic and vanadium.

5.1.3 Health Effects of Lead in Soil

The RfD 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 the DTSC, in which a multi-pathway algorithm is used for estimating blood-lead concentrations in children and adults.

Using the maximum concentration of lead detected in soil (398 mg/kg), the 99^{th} percentile blood-lead level associated with exposure to lead from both the Site and background sources in air, food, and drinking water is 12.9 micrograms per deciliter (μg/dl) for children (the most sensitive receptors), a level that is above the target concentration of 10 μg/dl, which was developed to be protective of children's health (DTSC 1992). Therefore, the 99^{th} 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 above the target concentration of 10 μg/dl (LFR 2006).

5.2 Selection of Chemicals of Potential Concern for Development of Cleanup Goals

Compounds were selected for cleanup goal development if they were identified in the baseline risk assessment as having a greater than one in one million risk or a hazard quotient greater than 1. Based on these criteria, the following chemicals were selected for development of cleanup goals:

• benzene (soil and groundwater)	• benzo(a)pyrene
• benzo(a)anthracene	• benzo(k)fluoranthene
• PCBs	• Arsenic
• lead	• chromium VI
• gasoline	• diesel
• motor oil	• chrysene
• naphthalene	

6.0 DEVELOPMENT OF SITE-SPECIFIC RISK-BASED CLEANUP GOALS

Risk-based cleanup goals were developed for the Site with an emphasis on health protection by incorporating conservative assumptions in the risk-based calculations. Cleanup goals were calculated by algebraically transforming the standard human health risk assessment equations to solve for a concentration given a target cancer risk of 1 x 10^{-6} or HI of 1. Calculation sheets used for this analysis are included in Appendix B.

Recommended cleanup goals resulting from this process are presented in Table 7. For comparison purposes, Table 7 also includes ESLs for residential and commercial settings, and includes cleanup goals that were previously approved for this Site by the DTSC.

The following sections discuss the methodology and rationale for recommended cleanup goals for soil, soil gas, and groundwater.

6.1 Soil

The SFRWQCB developed human health-based screening criteria for comparison purposes. The screening criteria were developed using standard U.S. EPA and DTSC human health risk assessment methodology. However, instead of calculating a risk, the risk equations are algebraically transformed to solve for a concentration. The health-based criteria were published in the document "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater" (SFRWQCB 2008). The residential and commercial scenario ESLs in soil are presented in the "Proposed Cleanup Goals for the Chemicals of Potential Concern" (Table 7). In addition, for comparison purposes, LFR modified the soil ESLs to be specific for the high school student receptor. The high school receptor specific input parameters were used in the ESL equation to estimate a cleanup goal that would be health protective to the high school student. The input parameters used to characterize the high school student receptor are presented below.

Skin surface area:	8,565 cubic centimeters per day
Soil ingestion:	100 milligrams per day
Inhalation rate:	10 cubic meters per school day
Body weight:	57 kilograms
Exposure Duration:	180 days per year for 6 years

Because metals are naturally occurring, background concentrations are selected as the cleanup goal. The cleanup goals were developed for the non-metal COPCs.

6.2 Soil Gas

The soil-gas cleanup goals were estimated using a fate and transport model (DTSC 2005). The DTSC model is based on the screening Johnson and Ettinger vapor transport model (DTSC 2005). Assumptions used in the soil-gas goal development include:

- 140 centimeters (cm) silty clay subsurface
- slab-on-grade construction
- building located directly on top of slab foundation
- default building characteristic assumptions (air exchange rate, size, pressure differential)

Similar to soil, soil-gas cleanup goals for residential, commercial, and student exposure scenarios are presented. The cleanup goals protective of the student receptor were modified from the published ESLs.

6.3 Groundwater

No specific groundwater goal will be used. The groundwater beneath the Site is not potable, and the redevelopment will use municipally supplied water. The potential exposure pathway to the VOCs in groundwater, transitioning to vapor, migrating up through the soil column and into the future building will be assessed with soil-gas data. DTSC prefers the use of soil-gas data to evaluate the vapor intrusion pathway (DTSC 2005).

6.4 Applicable or Relevant and Appropriate Requirements (ARARs)

The cleanup goals presented in the previous section typically represent the primary driver in the selection of a remedy. In addition, ARARs are regulations or guidelines that apply to the assessment, cleanup, and/or monitoring of contamination at a particular site that should be included in the evaluation of an appropriate remedy for the Site.

Federal, state, and local ARARs, which have been identified as either applicable or relevant to the Site, are presented in tables A-1, A-2, and A-3 of Appendix A. An assessment as to whether the selected remedy is consistent with the ARAR described is also included in those tables.

7.0 EVALUATION OF POTENTIAL REMEDIES

This section presents the RAOs for the Site, and an evaluation of potential remedies to meet those RAOs. Each selected potential remedy is evaluated based on its implementability, potential effectiveness, relative cost, and potential regulatory and community acceptance.

7.1 Objectives

The primary RAO for the Site is to reduce the concentrations of COPCs in soil, soil gas, and groundwater to levels that are protective of human health and the environment. Specific chemical and media-specific health based cleanup goals have been developed for the Site are presented in Table 7. A secondary objective for the selected remedy to meet this objective is to allow for redevelopment of the Site during implementation of the remedy.

7.2 Evaluation of Potential Remedies for Soil

Capping and excavation were evaluated to meet the RAOs for soil, as presented below.

7.2.1 Capping

Description: Under this option, a low-permeability surface cap (e.g., clay and/or asphalt) would be placed over soil containing COPCs at concentrations above cleanup goals. The cap would reduce the potential for human exposure to and leaching of contaminants from affected soil. To ensure that the potential for future exposure to contaminants is minimized, the cap would require periodic maintenance. Because affected soil would not be removed from the Site under this alternative, a deed restriction would be required to restrict future use of the Site. The land use covenant would be recorded with the Alameda County Assessor's Office before approval of the completion of the final removal action.

Prior to placement of the cap, the area would be graded or filled to provide proper drainage and topography. It is anticipated that a 2% grade would be used. Following grading, a 6-inch layer of base rock would be placed across the area. A 2-inch layer of asphalt would be placed over the base rock to form the cap. Institutional controls would be needed under this alternative to protect the cap. The institutional controls are likely to preclude reuse of the Site as a residence, day care center for children, long-term care hospital, or public or private school for persons less than 21 years of age.

Implementability: High. The capping technology is readily implementable and could be completed in a matter of weeks. However, this alternative would require an ongoing maintenance and monitoring program.

Effectiveness: Moderate/Low. Capping combined with institutional controls would be an effective method to reduce contaminant exposure, but would not meet the project RAO of reducing concentrations in soil to health-based cleanup goals.

Cost: Moderate. Costs associated with installation of the CAP are relatively low to moderate. However, implementation of the necessary maintenance activities and reporting requirements would represent an ongoing operations and maintenance cost for Aspire.

Community/Regulatory Acceptance: Potentially low. Although capping is a proven technology, regulatory and community acceptance of this option is likely low, especially considering the future site use as a school. This option may be seen by the public as not addressing or "cleaning up" the Site.

Overall Assessment: Capping was not selected as a remedial alternative for this Site based on the need for long-term maintenance and reporting, and the lack of community acceptance.

7.2.2 Excavation

Description: This option includes excavation of soil with COPCs above target levels to a depth of 2 feet bgs using conventional earth-moving equipment, and disposal of the excavated soil to a proper facility. Clean backfill would be imported, as necessary, to restore the desired final site grade. Post-excavation soil sampling would be performed to confirm that cleanup goals have been reached. Additional (repeat) excavation would be performed, as required, based on the results of the confirmation soil sampling.

Implementability: High. Given the relatively shallow target depth (2 feet bgs), common excavation equipment will easily be able to access COPC-affected soil, especially after the two existing buildings are demolished and removed from the Site.

Effectiveness: High. Excavation is proven to be very effective in the removal of COPCs from shallow soil and is considered a default remedy. This technology also will be effective for the entire range of different types of COPCs (i.e., metals [arsenic, chromium (VI), PCBs, petroleum hydrocarbons, and SVOCs).

Cost: Moderate. Based on the relatively limited volume of soil that will likely require removal from the Site, this technology is considered to be cost effective.

Community/Regulatory Acceptance: High. This technology is easy to relatively communicate to the public and is highly protective of human health and the environment. To maintain community acceptance, proper health and safety protocols (perimeter air monitoring, notifications, etc.) should be followed.

Overall Assessment: Excavation and off-site disposal of COPC-affected soil has been selected as the most appropriate technology to meet the objectives of this CAP.

7.3 Evaluation of Potential Remedies for Affected Soil Gas

7.3.1 Engineering Controls

Description: This option consists of the installation, operation, and long-term maintenance of vapor barriers to mitigate the potential for vapor intrusion that could be associated with the elevated concentrations of COPCs in soil gas beneath portions of the

Site. For those buildings located above soil gas with concentrations above COPCs, the vapor barrier system would include two components: passive and active. The passive vapor barrier system would consist of the application of very low-permeability materials on the building foundation slab (e.g., "Liquid Boot®" or similar material).

The active system would include the installation of horizontal piping within a layer of permeable base rock, and the application of a vacuum on that piping to achieve negative vapor pressure within the base rock. This active component would be designed to capture vapors that may migrate into the backfill beneath the building foundation slab. Indoor air and sub-slab sampling would be conducted to confirm effectiveness.

Implementability: High. This option is implementable and is commonly applied to address potential vapor intrusion issues associated with methane, radon, and COPCs. Implementation of this measure is particularly feasible for the construction of new buildings, as the vapor barrier components can be designed into the construction up front.

Effectiveness: High. This measure has been proven effective in reducing the potential for vapor intrusion into buildings. Although this measure would be protective of human health, it would not be effective in reducing the concentrations of COPCs in the site subsurface to levels that are protective of human health (i.e., cleanup goals).

Cost: Low. The costs of incorporating a vapor barrier system into new construction are relatively low, and the maintenance and monitoring of such a system also are typically relatively low when compared to active remedies.

Community/Regulatory Acceptance: Moderate/Low. Although this technology is proven to be effective at mitigating potential vapor intrusion issues, and is being implemented at many sites, it is not likely to be acceptable as a stand-alone remedy. Similar to the capping remedy, this option may be seen by the public as not addressing or "cleaning up" the site.

Overall Assessment: This option was not selected as a stand-alone remedy to address concentrations of COPCs in soil gas beneath the Site. However, this option was retained as a potential interim measure to allow for site redevelopment and reuse while another remedy is in progress.

7.3.2 Soil-Vapor Extraction

Description: This option consists of installing a series of SVE wells and associated aboveground equipment (blower and controls) to allow for the removal of soil gas from the ground surface. Extracted vapors are treated prior to discharge in accordance with local air permitting requirements. Based on the results of field testing of this technology, each SVE well can be expected to achieve an ROI of at least 15 feet. Soil-vapor quality data collected from soil-vapor monitoring wells and data from SVE wells are used to track the progress of meeting the cleanup goal.

Implementability: High. This technology is readily implementable, and has been demonstrated during a field pilot test.

Effectiveness: High. This technology has been proven to be effective for the COPCs in soil gas beneath the Site.

Cost: Moderate. Although initial capital and labor costs are relatively high for installation and startup, operations and maintenance costs are moderate, and the expected time frame for operation is relatively short (estimated to be less than 2 years).

Community/Regulatory Acceptance: High. This is a relatively aggressive remedy that has wide acceptance in the regulatory community.

Overall Assessment: This technology was selected to address COPCs above cleanup goals in soil gas beneath the Site based on its proven effectiveness, and the results of a field scale pilot test that indicated its potential effectiveness at the Site.

7.4 Evaluation of Potential Remedies for Groundwater

7.4.1 Groundwater Extraction and Treatment

Description: This option would consist of the installation and operation of groundwater extraction wells designed to extract affected groundwater. Extracted groundwater would be treated above ground, and discharged to either the local Publicly Owned Treatment Works, or to the storm drain (surface water) under a National Pollutant Discharge Elimination System permit. The groundwater extraction and treatment system would be operated until cleanup objectives for groundwater are met.

Implementability: Moderate. Based on experience with similar sites, it is expected that it would take several years (at least 5 and likely more) for this technology to reach RAOs for the Site. As a result, implementation of this technology would have to be compatible with the future land use. The subsurface extraction system could be installed subgrade to allow for site redevelopment. However, the housing for the aboveground treatment and discharge system requires a relatively large footprint and would be difficult to incorporate into the site plan.

Effectiveness: Low. This technology can be effective at reducing migration of chemicals in groundwater (i.e., hydraulic control). However, this technology has been shown to be relatively ineffective at removing contaminant mass and lowering contaminant concentrations to cleanup goals.

Cost: High. While capital costs are moderate to high, the expected long-term operation of this technology results in the overall cost rating of high.

Overall Assessment: This technology was not selected for this Site based on the limited effectiveness and high cost.

7.4.2 Monitored Natural Attenuation

Description: This technology consists of using the existing or amended groundwater monitoring well network to collect data to document and monitor the natural attenuation of COPCs in groundwater. This technology typically includes development of a contingency plan to implement in the event that conditions change or it is determined that concentrations of COPCs are not attenuating at a rate such that cleanup goals will not be attained in a reasonable time frame.

Implementability: High. Given that this technology does not involve the installation of aboveground systems or other equipment, this technology would be easy to implement.

Effectiveness: Low. Given that the COPCs in groundwater are ultimately biodegradable, it is expected that cleanup goals will be reached at some point. However, given the current relatively high magnitude of concentrations of petroleum hydrocarbons in groundwater and the age of the release, it is expected that the time frame associated with this remedy would be long (likely in excess of 10 years). Also, based on potential vapor intrusion concerns, this technology would need to be accompanied with a remedy to address the elevated concentrations of COPCs in soil gas (i.e., SVE or engineered controls) for the duration of this remedy.

Cost: Moderate/High. Based on the long time frame and the need for ongoing engineering controls for the soil-vapor issues.

Community/Regulatory Acceptance: Moderate/Low. This technology can be seen as a "do nothing approach." Also, the time frame to reach cleanup objectives (likely greater than 5 to 10 years) would be too long.

Overall Assessment: This technology was not selected for this Site based on the long time frame, lack of regulatory acceptance, and need for long-term engineering controls to address potential vapor intrusion issues. It is important to note that natural attenuation processes are contributing to the lack of apparent off-site migration of COPCs in groundwater at this Site. As such, continued monitoring of these downgradient wells during remedy implementation constitutes a form of monitored natural attenuation.

7.4.3 Enhanced In Situ Biodegradation

Description: This option consists of injecting nutrients into groundwater (e.g., oxygen) to stimulate the biodegradation of COPCs in groundwater.

Implementability: Moderate/High. Prior to site redevelopment, access is virtually unhindered, allowing for injection of nutrients at any desired location and density of points. After site development, re-injection at select locations (if required) would likely be problematic.

Effectiveness: Moderate. The limited extent and stability of the affected groundwater beneath the Site is indicative of a stable plume and indicates that biodegradation is a significant process. Also, DO data indicate a relative depletion of DO in the apparent core of the plume, indicating aerobic respiration is taking place (Section 3.2). As such, addition of nutrients (oxygen) would likely increase the biodegradation rate in the source area, and decrease the overall time frame to reach remedial goals. However, given the age of the release and the relative high magnitude of concentrations of petroleum hydrocarbons, it is expected that this technology would still require an extended time frame (greater than 5 years).

Cost: Moderate. Costs for the initial implementation of this technology would be relatively low. However, the extended time frame for monitoring and the likely need for additional nutrient injection would increase overall costs.

Regulatory/Community Acceptance: Moderate/High. This is a widely used and accepted remedial approach.

Overall Assessment: Not selected, based on likely extended time frame to reach cleanup objectives, and limited site access after development for follow-up injections.

7.4.4 Air/Ozone Sparging-Injection

Description: Air is injected directly into groundwater via a series of air sparging wells. VOCs are removed from groundwater through volatilization into the injected air, and by increased biodegradation (aerobic respiration) induced by the increase in available DO. Off-gas associated with the injected air is captured and treated in the vadose zone using the SVE system. This option includes a contingency measure of adding ozone into the injected air stream to accelerate contaminant removal by adding an oxidation component.

Implementability: Moderate/High. Installation of sparge wells and necessary infrastructure is readily implementable after buildings are demolished. The piping system to deliver the air/air-ozone mix can be installed sub-grade to allow for operation after redevelopment. The footprint associated with the above groundwater equipment is relatively small, and can typically fit into a dumpster enclosure or similar utility enclosure.

Effectiveness: High. Air sparging, especially when combined with SVE, is a proven technology to address gasoline-range petroleum hydrocarbons. Results of field pilot test indicate that a good delivery and distribution of sparge gas was achieved. Also, there is an option to increase effectiveness further by adding ozone to the injected air stream.

Cost: Moderate. Higher short-term cost of installing the infrastructure is offset by expected shorter remedial time frame.

Regulatory/Community Acceptance: High. This is a proven and widely applied technology, and represents an aggressive approach for a more rapid cleanup.

Overall Assessment: This technology, in coordination with the SVE technology, was selected for the Site based on the proven effectiveness and the relatively short expected time frame to reach remedial goals (less than 2 years).

7.5 Selected Remedies

The following technologies were selected for implementation at the Site:

- Shallow Soil – Excavation and disposal, with confirmation sampling
- Soil Gas – SVE, with potential for Engineered Controls during remedy implementation
- Groundwater – AS, with SVE, including a contingent upgrade to include ozone

8.0 IMPLEMENTATION PLAN

This section provides the work plan for the implementation of the selected remedial alternatives. Implementation of this CAP will begin upon receipt of written approval from ACDEH.

8.1 Excavation

Excavation will take place after the existing buildings are demolished (see Section 8.1.2). The following sections describe the proposed methods and procedures to implement the excavation remedy for the Site.

8.1.1 Site Management Plan

LFR will prepare a Soil Management Plan (SMP) to be submitted at a later date that outlines sampling and health and safety procedures to be implemented during site development including building demolition that could disturb site soil, such as the repair of a subsurface utility. The SMP will provide detailed procedures to be used during grading and construction activities in the event that unanticipated affected soil is encountered at the Site. In particular, this SMP addresses the following steps that should be taken in the event additional contamination is discovered during the course of implementing the SMP and/or during development of the property (i.e., grading and construction):

- procedures to be implemented during site development and/or any modifications to the land that could disturb site soil
- specific requirements and protocols needed to ensure that construction and any other subsurface disturbance activities are conducted in a manner that is protective of human health and the environment, and does not interfere with the day-to-day construction activities on the Site
- detailed procedures and protocols to be used during grading and construction activities in the event that previously unknown affected soil is suspected or encountered at the Site

The removal of building materials, including lead-based paint (LBP), asbestos-containing material (ACM; including transite [asbestos concrete] pipes), concrete, and debris, and soil surrounding existing buildings that has potentially been affected by LBP, will be handled according to the procedures presented in applicable Demolition and Abatement Plans to be presented under separate cover.

Issues not addressed in this document include construction and general California Occupational Safety and Health Administration (Cal-OSHA) worker safety requirements, including the Hazardous Waste Operations and Emergency Response Standard. Contractors who perform the site work are responsible for the health and safety of their own employees and must prepare a health and safety plan that is satisfactory to the owner, Aspire, before beginning work at the Site. All work at the Site must be completed in compliance with the federal, state, and local requirements not addressed in this document.

8.1.2 Permitting, Health and Safety Plan, and Storm-Water Pollution Prevention Plan

LFR will prepare a site-specific Health and Safety Plan (HSP) for this project in accordance with state and federal Occupational Safety and Health Administration (OSHA) regulations. The excavation contractor will obtain all necessary permits. These may include, but are not necessarily limited to, excavation permits and hazardous waste handling and transportation permits. In addition, a storm-water pollution prevention plan will be prepared by the construction contractor or other party as designated by Aspire for use during this project.

8.1.3 Site Preparation and Security Measures

LFR will notify the Underground Service Alert (USA) a minimum of 48 hours before the start of excavation activities. In addition, LFR will contract a private, underground-utility clearance contractor to locate potential underground utilities within the site boundaries prior to the commencement of excavation activities.

Prior to implementation of excavation activities, ACM, LBP, and materials with PCBs (e.g., concrete and metal) identified in the on-site buildings will be abated, the buildings will be demolished, and the pavement will be removed.

Before the commencement of excavation activities, LFR personnel will clearly delineate the extent of the initial excavation using either stakes or marking paint. Based on the results of confirmation sampling, the excavation boundaries may be expanded. Excavation expansion areas, if any, will be clearly marked by LFR personnel, using either stakes or marking paint, before the commencement of excavation in these areas.

A work exclusion zone will be established surrounding each of the excavations. Chain-link fencing is currently present around the site perimeter. The fencing will be maintained during excavation activities so that the Site will be accessible only through gates that will be closed and locked at the end of each work day and/or when Aspire's representatives/contractors are not present on the Site.

A visitor log will be maintained by LFR on-site personnel. Only authorized visitors with the appropriate level of health and safety training and subject to the requirements of the site-specific HSP will be allowed on site.

8.1.4 Excavation Plan

Soil within the delineated excavation areas will be removed to a depth of at least 2 feet bgs using a backhoe, or other appropriate earth-moving equipment. Excavated soil will either be stockpiled in an on-site staging area or directly loaded into trucks for transport to the off-site disposal facility. Prior to off-site disposal, stockpiled soil will be sampled for waste disposal characterization in accordance with the requirements of the selected waste disposal facility.

Excavated soil requiring temporary on-site storage will be stockpiled in a suitable location within the fenced-in work area. The stockpiled soil will be placed on plastic sheeting for temporary storage. Soil stockpiles will be spaced to allow continued site access as needed. The soil stockpiles will be sloped so as not to exceed a ratio of one to one and will be covered with plastic sheeting at the end of each work day or upon completion of excavation activities within a designated work area. The plastic sheeting will be secured with sandbags or other suitable method. If the soil is sufficiently moist that water may flow from the stockpile, a berm will be constructed around the stockpile and also covered with plastic sheeting.

Excavated soil potentially containing PCBs at concentrations greater than 50 mg/kg (e.g., from the area of boring 4B, located immediately adjacent to the former equipment pressure wash room) will be stockpiled separately. If waste characterization sampling reveals the presence of PCBs in the stockpiled soil at concentrations greater than 50 mg/kg, this soil will be disposed of at an appropriately licensed disposal facility (e.g., Kettleman Hills) as Toxic Substances Control Act (TSCA) hazardous waste.

Excavated soil that has concentrations of COPCs below the cleanup goals will be placed on plastic sheeting for temporary storage in a suitable location on the Site. This material will be reused on the Site to backfill the excavation or be removed from the Site for appropriate disposal.

A suitable location on the Site will be reserved for use as a decontamination area. Earth-moving vehicles will be equipped with dust covers and other required equipment, as appropriate, to prevent releases of material. Before vehicles exit the Site, their wheels will be brushed, if necessary, to remove excess dust and soil.

8.1.5 Air Monitoring (PID, RAM, PAMs) and Dust Control Measures

A miniature real-time aerosol monitor (mini-RAM) will be used to monitor total dusts generated during site work. If dust in excess of background levels (greater than 0.25 milligram per cubic meter [mg/m^3] above background levels) is observed for a sustained period of time (greater than 5 minutes), appropriate dust suppression measures (e.g., spraying soil with water) will be undertaken. A total dust reading of 1.36 mg/m^3 would result in an exceedance of the Acute Reference Exposure Level of 0.00019 mg/m^3 established for arsenic by the Cal-EPA Office of Environmental Health Hazard Assessment.

A total dust action level of 0.25 mg/m^3 above background levels would be conservative for the various COPCs detected on the Site that would be likely to adhere to windblown dust and protective of the on-site workers and members of the surrounding community.

Field staff will obtain and document total dust readings from the mini-RAM throughout each work day when affected soil excavation activities are occurring on the Site. These readings will be obtained from air monitoring stations established at approximately 100-foot intervals along the Site's perimeters (a total of 16 stations, including seven stations each on the northern and southern borders and one station each on the eastern and western borders) and various points (upwind, downwind, etc.) around each active excavation area.

In addition to monitoring for total dust using a mini-RAM, Personal Air Monitors (PAMs) will be used to record total dust. In addition, at least four fixed air monitors, with cassettes that can be submitted to a laboratory for analysis, will be used each work day when affected soil excavation activities are occurring on the Site. A PAM will be worn by at least one worker operating earth-moving equipment (backhoe, excavator, etc.). One air monitoring station will be located on the northern border of the Site to document conditions by the adjacent residences.

On-site worker exposure to airborne contaminants (VOCs) will be monitored during intrusive site activities. A calibrated photoionization detector (PID) with a lamp strength of 10.6 eV or flame ionization detector (FID) will be used to monitor changes in exposure to VOCs. Personnel will perform routine monitoring during site operations to evaluate concentrations of VOCs in employee breathing zones.

8.1.6 Confirmation Soil Sampling

Confirmation samples will be collected during excavation activities until analytical results for the target COPC(s) indicate that remaining concentrations of COPCs are less than the cleanup goals. Confirmation samples will be collected from a depth of approximately 1 foot bgs along the sidewalls of the excavations. Soil samples will be placed directly into glass jars using a hand trowel or similar device (for samples collected for the analysis of metals, SVOCs, and PCBs), or will be driven directly into brass sleeves using a slide hammer (samples collected for the analysis of TPHg or VOCs). One sample will be collected for every approximately 25 linear feet along each sidewall.

For quality assurance/quality control purposes, LFR will also collect one blind field duplicate soil sample for every 10 confirmation soil samples. The duplicate sampling program represents greater than 10% of the total number of samples proposed for analysis.

Sampling equipment that comes into contact with potentially affected soil will be decontaminated consistently to ensure the quality of samples collected. As appropriate, disposable equipment intended for one-time use may be used and will not be decontaminated, but will be packaged for appropriate disposal.

8.1.7 Off-Site Disposal

Excavated soil will be characterized for appropriate off-site disposal. A minimum sampling frequency of one 4-point composite sample per 200 cy of excavated soil will be used. These samples will be analyzed for the following compounds:

- gasoline, diesel, and motor oil using modified U.S. EPA Method 8015
- SVOCs/PAHs, using U.S. EPA Method 8270C
- Title 26 metals, specifically arsenic and lead, using U.S. EPA Method 6010B/7000 Series
- PCBs, using U.S. EPA Method 8082A
- VOCs, using U.S. EPA Method 8260B as appropriate, and combined with collection by U.S. EPA Method 5035

8.1.8 Backfilling

The excavations will be backfilled using on-site soils with COPCs less than the cleanup goals and/or clean imported fill material.

The excavations will be backfilled in accordance with the specifications required by the geotechnical engineer for the project. If drain rock or gravel is used as a backfill material, a geotextile fabric will be placed on top of the rock/gravel, if appropriate, prior to placing finer-grained fill material in the excavation. Backfill material will be compacted using appropriate vibratory or drum roller compaction equipment. Compaction testing of the engineering fill will be performed and documented by LFR personnel or Aspire's contractor.

8.2 Soil-Vapor Extraction and Air Sparging Systems

As presented in LFR's recent pilot test report (LFR 2008), additional field testing in the form of an extended pilot test was recommended to collect data to complete the design for the proposed SVE/AS system. This additional scope of work was approved by ACDEH (letter dated December 12, 2008). LFR has initiated the work that was recommended and approved, including the installation of several SVE, soil-vapor monitoring, and AS wells, and is in the process of obtaining permits from the BAAQMD to allow for discharge of treated extracted soil vapor.

The following sections present the objectives and scope of the extended pilot test, and describe the implementation of the SVE/AS remedy.

8.2.1 Objectives and Scope of Extended Pilot Test

Important design parameters that need to be determined include the size and type of equipment, and the number and layout of injection and extraction wells. The following sections present the scope of work developed to accomplish those objectives.

Specific recommendations in LFR 2008 included the installation of 10 clusters of SVE/AS wells. These wells were installed at the locations shown on Figure 13. Proposed further testing of these wells is recommended to complete design of the system, including:

- Install an SVE system and associated conveyance lines and emission control equipment.
- Install an air/ozone sparging system and associated conveyance lines.
- Implement AS concurrent with operation of the SVE for a minimum of three months.
- Perform continuous operation of the SVE wells in the vicinity of the AS wells to capture the air that was injected through the air sparging system.
- Amend air sparging air with ozone to oxidize (i.e., degrade in situ) residual fuel additives (such as MTBE) that are not readily stripped by AS alone. The addition of ozone will commence after one month of sparging with air only and will employ relatively low levels of ozone (less than 2 pounds per day) at which oxidation may not result in the generation of unacceptable concentrations of by-products such as

chloride, total dissolved solids (TDS), hexavalent chromium, arsenic, or other dissolved metals.

- Implement a monitoring program to assess changes in contaminant concentration over time, VOC removal and recovery rates, and the formation and attenuation of ozone reaction by-products.

Additional details regarding the design, construction, and operation of the extended pilot test system are presented below.

8.2.2 Air Sparging Operational Design Parameters and Mobilization Activities

The proposed air/ozone injection system was designed so that substantial flexibility in operation is possible. While single well sparging parameters have been selected for compressor and ozone generator selection and sizing of the conveyance piping, it is assumed that all wells may not be operated at the same time. Indeed, to achieve optimum efficiency, the system will allow for a pulsed operation schedule controllable on a well-by-well basis. This flexibility will facilitate any additional optimization of the system throughout the life of operation.

The sparging wells were designed based on LFR's pilot testing conducted in October 2008. Optimum injection pressures will be set at approximately 10 psi, and it is anticipated that the flow rate will be approximately 10 scfm. The air compressor and ozone generator will be sized to handle simultaneous injection into a minimum of four wells; as discussed above, valves will be installed to allow for pulsed operations for optimized delivery of ozone and air to the entire network of injection wells. Furthermore, to prevent formation fracturing, the injection pressure will not exceed approximately 25 pounds per square inch gauge (psig), based on a depth to top of screened interval of approximately 25 feet and a rule of thumb of 1 psig per foot.

Operation of the SVE system will require a permit from the BAAQMD. The BAAQMD requires a minimum of three weeks to review and approve permits.

Before any subsurface work is conducted, USA will be notified to alert utility companies with facilities in the site vicinity. A private utility locating subcontractor will also assist in locating underground utilities and clearing all trenching locations for subsurface utilities.

All system installation, start-up, and operation and maintenance activities will be conducted in accordance with LFR's site-specific HSP. This HSP will be distributed to on-site field personnel, who will be briefed on the contents and procedures of the HSP. Fieldwork will be monitored to ensure that appropriate health and safety procedures are followed.

8.2.3 SVE System Installation

The design of the proposed SVE pilot test system incorporates a system of eight SVE wells. The anticipated average extraction rate for each of the eight SVE wells is estimated to be approximately 10 scfm, based on the 10 scfm extraction rate recorded during the single-well pilot test adjusted slightly upwards to 100 scfm for a multiple extraction well scenario.

The blower will be sized to handle a maximum design flow of approximately 150 scfm at approximately 5 inches of mercury vacuum; however, components will be designed so that the system can be configured for operation at higher and lower operating flow/vacuum as required. For example, the AMETEK Rotron regenerative blower model DR6D5 (powered by a 5-horsepower, single-phase, 230-volt, and 21-amp electric motor) is capable of meeting the aforementioned performance requirements.

Extraction wells will be connected to the blower, moisture separator, and emission controls with 2-inch-diameter polyvinyl chloride (PVC) hose and piping. All conveyance hose and piping will be sized adequately to minimize flow restriction and pressure losses to the extraction system. The blower system will include a dilution inlet valve for increased optional flexibility. Given the current site usage, the conveyance piping will be aboveground and protected by standard traffic barricades and signage.

Emission control will consist of two Vent Scrub™ Series carbon adsorption vessels with 4-inch fittings and approximately 400 pounds of granular reactivated vapor-phase carbon connected in series.

8.2.4 AS/Ozone Sparging System Installation

The design of the proposed AS/ozone sparging pilot test system incorporates a system of 16 AS wells. Figure 13 presents the location of the proposed AS wells. The AS equipment will consist of an air compressor, ozone generator, cooling components, flow meters, pressure gauges, and associated controls. The system's conveyance piping will be aboveground (i.e., placed flat on the ground surface). The compressor that will be used to provide injection air will be placed near the shed housing the ozone generation equipment. A 15-scfm, oilless, rotary-screw compressor has been sized to supply the air/ozone sparge system.

The compressed air will be delivered from the air compressor described above, to a stainless steel manifold. One-half-inch-diameter Silicone Per Fluoro Alkoxy (PFA) supply hoses will run from the ports on the manifold to each of the 16 well heads. The manifold will be equipped with a minimum of 16 ports (one port for each injection well), each fitted with a solenoid valve and a valve. The ozone system Programmable Logic Controller will control the solenoid valves.

Ozone equipment, if used, will consist of an oxygen concentrator, an ozone generator and booster compressor, flow meters, an ambient ozone detector, cooling fans, and associated controls all packaged as an integral system.

Ozone concentrations generated from oxygen are in the range of 5% to 10% (by weight). Ozone generator capacities are typically expressed in terms of mass output (i.e., pounds ozone per day). The ozone generator capacity is expected to be approximately 2 pounds per day. The ozone will be delivered from the ozone generation equipment described above, via ½-inch-diameter PFA tubing. Ozone will be conveyed from the ozone generating equipment, through the distribution manifold, and onto the wells. Mixing of the ozone with compressed sparging air will occur prior to entry into the manifold. To balance flow across the 16 wells, the process discussed above for AS will be utilized; however, only compressed air (no ozone) will be injected during the balancing procedure, as the addition of ozone will not add appreciably to the delivery pressure.

Several interlocks (i.e., fail-safes) will be installed to prevent the system from operating if there are significant leaks in the system. Since ozone is a strong oxidant gas, safety procedures must be followed when performing in situ or process monitoring to avoid contact with concentrated ozone gas. OSHA requires that workers not be exposed to an average concentration of more than 0.10 parts per million (ppm) for eight hours. The National Institute of Occupational Safety and Health recommends an upper limit of 0.10 ppm, not to be exceeded at any time. U.S. EPA's National Ambient Air Quality Standard for ozone is a maximum eight-hour average outdoor concentration of 0.08 ppm (see the Clean Air Act-www.epa.gov/air/caa/title1.html#ib). When amended with air, ozone concentrations in the conveyance lines are expected to be above these recommended ozone concentration thresholds. Therefore, the following interlocks will be installed to prevent the ozone generator from operating:

- **Air compressor operation interlock.** This interlock would prevent the ozone generator from operating when the air compressor is off-line. This would prevent elevated concentrations of ozone that may result from the operation of the ozone generator without the blending of ambient air.
- **Ozone leak detector and interlock.** The ozone generator will be equipped with ambient ozone sensors for automatic shutdown in the event of a leak at the generator (before blending with the air stream) or the manifold.

It is anticipated that warning alarms will be displayed for incidents such as power failure to the compressor, ambient detector readings of above 0.10 ppm of ozone, and power failure to the ozone system. Power to the system will be terminated automatically in the event an alarm is activated.

8.2.5 System Start-up and Periodic Monitoring Program

Existing groundwater monitoring wells were incorporated into the system start-up and periodic monitoring program. The monitoring well network consists of (a) 16 air/ozone sparging wells, (b) 11 groundwater monitoring wells, (c) SVE system influent, and (d) four SVE vapor monitoring wells.

The parameters that will be measured during the system start-up and/or routine operation include:

- SVE performance:
  - vacuum
  - air flow rate
- AS performance:
  - pressure
  - air flow rate
- Groundwater parameters:
  - groundwater elevation
  - VOC concentration
  - geochemical parameters, DO, ph, oxidation-reduction potential, temperature, and conductivity
- Soil-vapor parameters:
  - VOC concentration

In advance of the addition of ozone to air sparging air, baseline metals present in groundwater will be evaluated prior to the start of the pilot test because ozone sparging treatment technology can oxidize some metals, including arsenic, iron, chromium, and selenium, to a more soluble form, thereby increasing their migration potential. This process also creates an additional demand for the oxidant. In addition, hexavalent chromium will be tested using EPA Method 7199, since chromium(III) can be temporarily converted to chromium (VI) under oxidizing conditions. If these conditions occur, they are expected to attenuate rapidly.

A general minerals analysis for groundwater, including TDS, bromide, bromate, and chloride, will also be performed for water samples collected from the four groundwater monitoring wells designated for AS monitoring; specifically, this monitoring will be performed in sparge area wells ASMW-2I and ASMW-2D and downgradient area wells ASMW-5I and ASMW-5D only.

System performance metrics. Two lines of evidence will be used to evaluate the overall effectiveness of the SVE/AS system.

- Concentration of COPCs in groundwater monitoring wells. Existing groundwater monitoring wells and proposed groundwater monitoring wells will be monitored for changes in concentration over time. Data for this line of evidence will be collected as part of a groundwater monitoring plan for the Site, which will be submitted to ACDEH under separate cover.
- Mass removal of COPCs by SVE. Mass removal rates will be estimated using SVE influent and flow rate data. These parameters will be routinely monitored to determine mass of COPCs removed by air/ozone sparging over time.

8.3 Contingency Plan for Site Redevelopment

In the event that cleanup goals are not met prior to site redevelopment, Aspire proposes to implement an active sub-slab depressurization (SSD) system combined with an indoor air monitoring program to allow for site redevelopment while soil gas and groundwater remediation is in progress. Vapor intrusion is not expected to be a complete pathway during implementation of the remedy, given that operation of the SVE system will be actively capturing COPCs and will be creating pressure gradients toward the SVE wells. This contingency measure has been included as an added level of protectiveness.

Buildings to be located over the area with COPCs in soil gas above cleanup goals will be constructed with a combination liquid boot system and a passive SSD system. The currently planned future layout of the Aspire High School development is included in Appendix C.

In the event that cleanup goals have not been achieved before site occupancy is scheduled, Aspire will convert the passive SSD system into an active system by applying a vacuum on the piping installed in the gravel base rock for the concrete foundation slab. In addition, Aspire will implement a monthly indoor air sampling program to confirm that operations of the SSD system are successful in mitigating the potential for vapor intrusion into the building(s).

In the event that this contingency is triggered, Aspire will provide the ACDEH with a work plan to conduct indoor air monitoring and for operation of the SSD system under separate cover.

9.0 SCHEDULE

The following chart presents an overview of the currently anticipated schedule to implement the CAP. This schedule should be considered preliminary, and is contingent on several factors that are not in control of Aspire or LFR, including project funding, site access, regulatory approvals, weather constraints, and other factors. LFR and Aspire will keep the ACDEH informed of changes to this schedule as the project is implemented.

Anticipated Schedule for CAP Implementation

Task	Time (months after CAP approval)											
	1	2	3	4	5	6	7	8	9	10	11	12
Ongoing (approved) Tasks												
Obtain air permit for SVE System	—	—										
Install SVE/AS Conveyance Piping		—										
Complete Long-Term Design Testing of SVE/AS System			—	—								
Finalize SVE/AS Design, Construct, Start-Up SVE/AS and Begin Operation of the System					—	—	—	—	—	? →		
New Tasks												
Demolish Buildings, prepare site for excavation		—	—									
Implement soil excavation plan				—	—							
Begin construction of school site											—	— →

10.0 LIMITATIONS

The opinions and recommendations presented in this report are based upon the scope of services, information obtained through the performance of the services, and the schedule as agreed upon by LFR and the party for whom this report was originally prepared. This report is an instrument of professional service and was prepared in accordance with the generally accepted standards and level of skill and care under similar conditions and circumstances established by the environmental consulting industry. No representation, warranty, or guarantee, express or implied, is intended or given. To the extent that LFR relied upon any information prepared by other parties not under contract to LFR, LFR makes no representation as to the accuracy or completeness of such information. This report is expressly for the sole and exclusive use of the party for whom this report was originally prepared for a particular purpose. Only the party for whom this report was originally prepared and/or other specifically named parties have the right to make use of and rely upon this report. Reuse of this report or any portion thereof for other than its intended purpose, or if modified, or if used by third parties, shall be at the user's sole risk.

Results of any investigations or testing and any findings presented in this report apply solely to conditions existing at the time when LFR's investigative work was performed. It must be recognized that any such investigative or testing activities are inherently limited and do not represent a conclusive or complete characterization. Conditions in other parts of the Site may vary from those at the locations where data were collected. LFR's ability to interpret investigation results is related to the availability of the data and the extent of the investigation activities. As such, 100% confidence in environmental investigation conclusions cannot reasonably be achieved.

LFR, therefore, does not provide any guarantees, certifications, or warranties regarding any conclusions regarding environmental contamination of any such property. Furthermore, nothing contained in this document shall relieve any other party of its responsibility to abide by contract documents and applicable laws, codes, regulations, or standards.

11.0 REFERENCES

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Table 1
Historical Groundwater Elevation Data
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

Monitoring Well ID	Date	TOC*	Depth to Water (ft)	Groundwater Elevations (ft, MSL)
MW-1	6/19/97	14.19	5.87	8.32
MW-1	7/1/97	14.19	5.88	8.31
MW-1	9/29/97	14.19	6.45	7.74
MW-1	12/16/97	14.19	3.42	10.77
MW-1	3/10/98	14.19	3.06	11.13
MW-1	10/1/98	14.19	6.36	7.83
MW-1	1/19/99	14.19	5.33	8.86
MW-1	4/15/99	14.19	3.23	10.96
MW-1	5/6/99	14.19	4.36	9.83
MW-1	7/30/99	14.19	5.49	8.70
MW-1	11/15/99	14.19	6.3	7.89
MW-1	3/24/00	14.19	3.47	10.72
MW-1	5/18/00	14.19	4.34	9.85
MW-1	7/26/00	14.19	5.28	8.91
MW-1	10/30/00	14.19	5.68	8.51
MW-1	11/14/00	14.19	5.53	8.66
MW-1	7/24/01	14.19	5.52	8.67
MW-1	11/28/01	14.19	5.31	8.88
MW-1	2/18/02	14.19	3.69	10.50
MW-1	12/11/02	14.19	5.71	8.48
MW-1	2/26/03	14.19	3.90	10.29
MW-1	5/16/03	14.19	3.61	10.58
MW-2	6/19/97	13.31	5.30	8.01
MW-2	7/1/97	13.31	5.37	7.94
MW-2	9/29/97	13.31	6.05	7.26
MW-2	12/16/97	13.31	3.81	9.50
MW-2	3/10/98	13.31	2.89	10.42
MW-2	10/1/98	13.31	5.83	7.48
MW-2	1/19/99	13.31	5.26	8.05
MW-2	4/15/99	13.31	3.19	10.12
MW-2	5/6/99	13.31	3.91	9.40
MW-2	7/30/99	13.31	4.79	8.52
MW-2	11/15/99	13.31	5.92	7.39
MW-2	3/24/00	13.31	3.55	9.76
MW-2	5/18/00	13.31	4.04	9.27
MW-2	7/26/00	13.31	4.85	8.46
MW-2	10/30/00	13.31	5.31	8.00
MW-2	11/14/00	13.31	5.14	8.17
MW-2	7/24/01	13.31	5.12	8.19
MW-2	11/28/01	13.31	5.15	8.16
MW-2	2/18/02	13.31	3.73	9.58
MW-2	12/11/02	13.31	5.30	8.01
MW-2	2/26/03	13.31	3.55	9.76
MW-2	5/16/03	13.31	3.37	9.94

Table 1
Historical Groundwater Elevation Data
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

Monitoring Well ID	Date	TOC*	Depth to Water (ft)	Groundwater Elevations (ft, MSL)
MW-3	6/19/97	13.43	5.50	7.93
MW-3	7/1/97	13.43	5.52	7.91
MW-3	9/29/97	13.43	6.16	7.27
MW-3	12/16/97	13.43	5.52	7.91
MW-3	3/10/98	13.43	3.11	10.32
MW-3	10/1/98	13.43	5.96	7.47
MW-3	1/19/99	13.43	5.45	7.98
MW-3	4/15/99	13.43	3.85	9.58
MW-3	5/6/99	13.43	4.12	9.31
MW-3	7/30/99	13.43	5.14	8.29
MW-3	11/15/99	13.43	6.35	7.08
MW-3	3/24/00	13.43	3.29	10.14
MW-3	5/18/00	13.43	4.16	9.27
MW-3	7/26/00	13.43	5.14	8.29
MW-3	10/30/00	13.43	5.43	8.00
MW-3	11/14/00	13.43	5.25	8.18
MW-3	7/24/01	13.43	5.29	8.14
MW-3	11/28/01	13.43	4.92	8.51
MW-3	2/18/02	13.43	3.88	9.55
MW-3	12/11/02	13.43	5.37	8.06
MW-3	2/26/03	13.43	3.71	9.72
MW-3	5/16/03	13.43	3.55	9.88
MW-4	9/15/98	13.78	NM	NM
MW-4	10/1/98	13.78	6.32	7.46
MW-4	1/19/99	13.78	5.59	8.19
MW-4	4/15/99	13.78	7.71	6.07
MW-4	5/6/99	13.78	4.50	9.28
MW-4	7/30/99	13.78	5.18	8.60
MW-4	11/15/99	13.78	6.27	7.51
MW-4	3/24/00	13.78	3.59	10.19
MW-4	5/18/00	13.78	4.40	9.38
MW-4	7/26/00	13.78	5.65	8.13
MW-4	10/30/00	13.78	5.89	7.89
MW-4	11/14/00	13.78	5.61	8.17
MW-4	7/24/01	13.78	5.34	8.44
MW-4	11/28/01	13.78	5.67	8.11
MW-4	2/18/02	13.78	4.21	9.57
MW-4	12/11/02	13.78	5.77	8.01
MW-4	2/26/03	13.78	4.00	9.78
MW-4	5/16/03	13.78	3.87	9.91

Notes:
ft = Feet
MSL = Mean sea level
* Top of Casing (TOC) based on survey data by Tronoff Associates January 5, 2006

Table 2
Analytical Results for Select Compounds in Soil from 0.0 to 5.0 Feet Below Ground Surface
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

		TPH			PCBs	Metals		
Sample ID & Location	Date Sampled	TPH (gasoline range) C4-C12 (mg/Kg)	TPH (diesel range) C22-C24 (mg/Kg)	TPH (oil range) C23-C40 (mg/Kg)	PCBs (mg/Kg)	Arsenic (mg/Kg)	Lead (mg/Kg)	Hexavalent Chromium (mg/Kg)
1A @ 0.5 PEA	3/8/05	<0.1	<5.0	**84**	<0.05	<2.0	<1.0	--
1A @ 5 PEA	3/8/05	<0.1	<5.0	<50	**0.203**	<2.0	<1.0	--
1A-N(10') 0.5'	8/12/05	--	--	--	<0.005	--	--	--
1A-N(10') 5'	8/12/05	--	--	--	<0.005	--		--
1A-SE(10') 0.5'	8/12/05	--	--	--	<0.005	--	--	--
1A-SE(10') 5'	8/12/05	--	--	--	<0.005	--	--	--
1A-SW(10') 0.5'	8/12/05	--	--	--	<0.005	--	--	--
1A-SW(10') 5'	8/12/05	--	--	--	<0.005	--	--	--
1B @ 0.5 PEA	3/8/05	<0.1	<5.0	<50	**0.716**	<2.0	**2**	--
1B @ 5 PEA	3/8/05	<0.1	<5.0	<50	<0.05	**5**	<1.0	--
1B-NE(10') 0.5'	8/12/05	--	--	--	<0.005	<5	--	--
1B-NE(10') 5'	8/12/05	--	--	--	<0.005	<5	--	--
1B-NW(10') 0.5'	8/12/05	--	--	--	<0.005	**7**	--	--
1B-NW(10') 5'	8/12/05	--	--	--	<0.005	<5	--	--
1B-S(10') 0.5'	8/12/05	--	--	--	<0.005	**11**	--	--
1B-S(10') 5'	8/12/05	--	--	--	<0.005	<5	--	--
1C @ 0.5 PEA	3/8/05	<0.1	<5.0	**133**	**21.34**	**8**	**2**	--
1C @ 5 PEA	3/8/05	<0.1	<5.0	<50	<0.05	<2.0	**3**	--
1C-N(10') 0.5'	8/12/05	--	--	--	<0.005	<5.0	--	--
1C-N(10') 5'	8/12/05	--	--	--	<0.005	<5.0	--	--
1C-SE(10') 0.5'	8/12/05	--	--	--	<0.005	<5.0	--	--
1C-SE(10') 5'	8/12/05	--	--	--	<0.005	<5.0	--	--
1C-SW(10') 0.5'	8/12/05	--	--	--	<0.005	<5.0	--	--
1C-SW(10') 5'	8/12/05	--	--	--	<0.005	<5.0	--	--
1C-S(20') 0.5' HOLD	8/11/05	--	--	--	--	<5.0	--	--
1C-S(20') 5' HOLD	8/11/05	--	--	--	--	<5.0	--	--
2A @ 0.5' PEA	3/9/05	<0.1	<5.0	<50	<0.05	**12**	**3**	**3.02**
2A @ 5' PEA	3/9/05	**0.4**	<5.0	<50	<0.05	**66**	**3**	--
2A-N(10') 0.5'	8/11/05	--	--	--	--	**11**	--	--
2A-N(10') 5'	8/11/05	--	--	--	--	<5.0	--	--
2A-S(10') 0.5'	8/11/05	--	--	--	--	**22**	--	--
2A-S(10') 3'	8/11/05	--	--	--	--	<5.0	--	--
2A-E(10') 0.5'	8/11/05	--	--	--	--	**27**	--	--
2A-E(10') 3'	8/11/05	--	--	--	--	<5.0	--	--
2A-W(10') 0.5'	8/11/05	--	--	--	--	**47**	--	--
2A-W(10') 5'	8/11/05	--	--	--	--	<5.0	--	--
2A-N(20') 0.5'	8/11/05	--	--	--	--	**37**	--	--
2A-N(20') 5' HOLD	8/11/05	--	--	--	--	<5.0	--	--
2A-S(20') 0.5'	8/11/05	--	--	--	--	**117**	--	--
2A-S(20') 5' HOLD	8/11/05	--	--	--	--	<5.0	--	--
2A-E(20') 0.5'	8/11/05	--	--	--	--	**10**	--	--
2A-E(20') 5' HOLD	8/11/05	--	--	--	--	<5.0	--	--
2A-W(20') 0.5'	8/11/05	--	--	--	--	**88**	--	--
2A-W(20') 5' HOLD	8/11/05	--	--	--	--	<5.0	--	--
2AW(40') 0.5'	3/1/05	--	--	--	--	**35**	--	--
2AW(40') 4.0'	3/1/05	--	--	--	--	**3.7**	--	--
2ANW(40') 0.5'	3/1/05	--	--	--	--	**31**	--	--
2ANW(40') 4.0'	3/1/05	--	--	--	--	**3.1**	--	--
2AN(50') HOLD	3/1/05	--	--	--	--	--	--	--
2AW(50') 0.5'	3/1/05	--	--	--	--	**13**	--	--
2ANW(50') 0.5'	3/1/05	--	--	--	--	**73**	--	--
2A-2 @ 0.5 PEA	3/9/05	<0.1	<5.0	**1,307**	<0.05	**5**	**30**	--
2A-2 @ 5 PEA	3/9/05	<0.1	<5.0	<50	<0.05	<2.0	<1.0	--
2A-2N(20') 0.5'	8/25/05	<0.1	<10	**1,110**	--	--	--	--
2A-2N(20') 5'	8/25/05	<0.1	<10	<50	--	--	--	--
2A-2S(20') 0.5'	8/25/05	<0.1	<10	**893**	--	--	--	--
2A-2S(20') 5'	8/25/05	<0.1	<10	<50	--	--	--	--
2A-2E(20') 0.5'	8/25/05	<0.1	<10	**386**	--	--	--	--
2A-2E(20') 5'	8/25/05	<0.1	<10	<50	--	--	--	--
2A-2W(20') 0.5'	8/25/05	<0.1	<10	**1,212**	--	--	--	--
2A-2W(20') 5'	8/25/05	<0.1	<10	<50	--	--	--	--
2B @ 0.5 PEA	3/9/05	<0.1	<5.0	**1,560**	<0.05	**19**	**18**	--
2B @ 5 PEA	3/9/05	**1.2**	<5.0	**847**	<0.05	**5**	**4**	--

Table 2
Analytical Results for Select Compounds in Soil from 0.0 to 5.0 Feet Below Ground Surface
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

		TPH			PCBs	Metals		
Sample ID & Location	Date Sampled	TPH (gasoline range) C4-C12 (mg/Kg)	TPH (diesel range) C22-C24 (mg/Kg)	TPH (oil range) C23-C40 (mg/Kg)	PCBs (mg/Kg)	Arsenic (mg/Kg)	Lead (mg/Kg)	Hexavalent Chromium (mg/Kg)
2B-N(20') 0.5'	8/11/05	<0.1	<10	**545**	--	<5.0	--	--
2B-N(20') 5'	8/11/05	**0.6**	<10	<50	--	--	--	--
2B-S(20') 0.5'	8/25/05	<0.1	<10	**798**	--	<5.0	--	--
2B-S(20') 5'	8/25/05	<0.1	<10	<50	--	--	--	--
2B-W(20') 0.5'	8/25/05	<0.1	<10	**7,415**	--	**6**	--	--
2B-W(20') 5'	8/25/05	<0.1	<10	<50	--	--	--	--
2B-N(37') 0.5'	8/24/05	<0.1	<5.0	<50	--	**13**	--	--
2B-N(37') 5'	8/24/05	**7.1**	<5.0	<50	--	--	--	--
2B2 @ 0.5 PEA	3/9/05	<0.1	<5.0	**1,319**	**0.1**	**5**	**14**	--
2B2 @ 3.5 PEA	3/9/05	<0.1	<5.0	**1,467**	<0.05	**5**	**10**	--
2B2-N(20') 0.5'	8/25/05	**0.3**	<20	**22,524**	--	<5.0	--	--
2B2-N(20') 5'	8/25/05	**979.5**	<10	**446**	--	--	--	--
2B2-S(20') 0.5'	8/25/05	<0.1	<10	**1,139**	--	--	--	--
2B2-S(20') 5'	8/25/05	<0.1	<10	<50	--	--	--	--
2B2-E(20') 0.5'	8/11/05	**0.1**	<10	**1,386**	--	--	--	--
2B2-E(20') 5'	8/11/05	<0.1	<10	<50	--	--	--	--
2B-3S(0.5') 0.5'	8/12/05	--	--	--	--	--	--	**1.14**
2B3 @ 0.5 PEA	3/9/05	<0.1	<5.0	<50	**0.051**	**4**	<1.0	--
2B3 @ 5 PEA	3/9/05	<0.1	<5.0	**614**	<0.05	**8**	**2**	--
2C @ 0.5 PEA	3/9/05	<0.1	<5.0	**1,346**	**0.428**	**17**	**24**	--
2C @ 5 PEA	3/9/05	<0.1	<5.0	**491**	**2.1**	**31**	**10**	--
2C-N(10') 0.5'	8/25/05	--	--	--	**0.00019**	**17**	--	--
2C-N(10') 5'	8/25/05	--	--	--	<0.005	<5.0	--	--
2C-E(10') 0.5'	8/11/05	<0.1	**45**	<50	<0.005	**57**	--	--
2C-E(10') 5'	8/11/05	<0.1	<10	<50	<0.005	<5.0	--	--
2C-N(20') 0.5'	8/25/05	<0.1	<10	<50	--	**21**	--	--
2C-N(20') 5'	8/25/05	<0.1	<10	<50	--	--	--	--
2CW(10') 0.5-1.0	12/13/05	--	--	--	**4.2**	--	--	--
2CW(10') 4.5-5.0	12/13/05	--	--	--	**3.2**	--	--	--
2C-W(20') 0.5-1.0	12/13/05	--	--	--	**8.1**	16	--	--
2CW(20') 4.5-5.0	12/13/05	--	--	--	**2.9**	<5.0	--	--
2C-W(20') 0.5'	8/24/05	<0.1	<10	<50	--	--	--	--
2C-W(20') 5'	8/24/05	<0.1	<10	<50	--	--	--	--
2C-E(20') 0.5'	8/24/05	<0.1	**93**	<50	--	63	--	--
2C-E(20') 5'	8/24/05	<0.1	<10	<50	--	<5.0	--	--
3A @ 0.5 PEA	3/9/05	<0.1	<5.0	<50	<0.05	<2.0	<1.0	--
3A @ 5 PEA	3/9/05	<0.1	<5.0	<50	**0.063**	<2.0	**2**	--
3B @ 0.5 PEA	3/8/05	<0.1	<5.0	<50	**0.987**	**3**	**5**	--
3B @ 5 PEA	3/8/05	<0.1	<5.0	<50	**0.720**	<2.0	**2**	--
3B-N(10') 0.5'	8/12/05	--	--	--	<0.005	--	--	--
3B-N(10') 5'	8/12/05	--	--	--	<0.005	--	--	--
3B-S(10') 0.5'	8/12/05	--	--	--	<0.005	--	--	--
3B-S(10') 5'	8/12/05	--	--	--	<0.005	--	--	--
3B-E(10') 0.5'	8/12/05	--	--	--	**0.340**	--	--	--
3B-E(10') 5'	8/12/05	--	--	--	<0.005	--	--	--
3B-W(10') 0.5'	8/12/05	--	--	--	<0.005	--	--	--
3B-W(10') 5'	8/12/05	--	--	--	<0.005	--	--	--
3B-N(20') 0.5'	8/23/05	--	--	--	--	<5.0	--	--
3B-N(20') 5'HOLD	8/23/05	--	--	--	--	--	--	--
3B-S(20') 0.5'HOLD	8/23/05	--	--	--	--	--	--	--
3B-S(20') 2'HOLD	8/23/05	--	--	--	--	--	--	--
3B-E(20') 0.5'	8/23/05	--	--	--	<0.005	--	--	--
3B-E(20') 5'HOLD	8/23/05	--	--	--	--	--	--	--
3B-W(20') 0.5'HOLD	8/23/05	--	--	--	--	--	--	--
3B-W(20') 5'HOLD	8/23/05	--	--	--	--	--	--	--
3C @ 0.5 PEA	3/8/05	<0.1	<5.0	<50	<0.05	<2.0	**9**	**1.77**
3C @ 5 PEA	3/8/05	<0.1	<5.0	<50	<0.05	<2.0	**51**	--
4A @ 0.5 PEA	3/8/05	<0.1	<5.0	<50	<0.05	**5**	**9**	--
4A @ 5 PEA	3/8/05	<0.1	<5.0	<50	<0.05	<2.0	<1.0	--
4B @ 0.5 PEA	3/8/05	<0.1	<5.0	<50	**69.68**	<2.0	**2**	--
4B @ 5 PEA	3/8/05	<0.1	<5.0	<50	**0.108**	**5**	<1.0	--

Table 2
Analytical Results for Select Compounds in Soil from 0.0 to 5.0 Feet Below Ground Surface
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

		TPH			PCBs	Metals		
Sample ID & Location	Date Sampled	TPH (gasoline range) C4-C12 (mg/Kg)	TPH (diesel range) C22-C24 (mg/Kg)	TPH (oil range) C23-C40 (mg/Kg)	PCBs (mg/Kg)	Arsenic (mg/Kg)	Lead (mg/Kg)	Hexavalent Chromium (mg/Kg)
4B-N(10') 0.5'	8/12/05	--	--	--	<0.005	--	--	--
4B-N(10') 5'	8/12/05	--	--	--	<0.005	--	--	--
4B-S(10') 0.5'	8/12/05	--	--	--	**0.230**	--	--	--
4B-S(10') 5'	8/12/05	--	--	--	<0.005	--	--	--
4B-E(10') 0.5'	8/12/05	--	--	--	**0.840**	--	--	--
4B-E(10') 4.5'-5.0'	12/13/05	--	--	--	<0.0097/<0.019	--	--	--
4B-W(10') 0.5'	8/12/05	--	--	--	0.040	--	--	--
4B-W(10') 5'	8/12/05	--	--	--	<0.005	--	--	--
4B-N(20') 0.5'HOLD	8/23/05	--	--	--	--	--	--	--
4B-N(20') 5'HOLD	8/23/05	--	--	--	--	--	--	--
4B-S(20') 0.5'	8/23/05	<0.1	<10	**64**	**0.0020**	--	--	--
4B-S(20') 3.5'	8/23/05	**23.5**	<10	**2,679**	**0.0022**	--	--	--
4B-S(20') 4'	8/23/05	**12.6**	<10	**890**	**0.0002**	--	--	--
4B-S(20') 5'	8/23/05	**99.6**	<10	**2,499**	**0.0002**	--	--	--
4B-E(20') 0.5'	8/23/05	--	--	--	<0.005	--	--	--
4B-E(20') 5'HOLD	8/23/05	--	--	--	--	--	--	--
4B-W(20') 0.5'	8/23/05	--	--	--	**0.0001**	--	--	--
4B-W(20') 5'HOLD	8/23/05	--	--	--	--	--	--	--
4C @ 0.5 PEA	3/8/05	<0.1	<5.0	<50	<0.05	<2.0	**11**	--
4C @ 5 PEA	3/8/05	<0.1	<5.0	<50	<0.05	<2.0	<1.0	--
5A @ 0.5 PEA	3/8/05	<0.1	<5.0	<50	<0.05	**7**	**320**	--
5A @ 5 PEA	3/8/05	<0.1	<5.0	<50	<0.05	<2.0	**3**	--
5A-N(10') 0.5'	8/24/05	--	--	--	--	--	**90**	--
5A-N(10') 5' HOLD	8/24/05	--	--	--	--	--	--	--
5A-S2 0.5'	8/24/05	--	--	--	--	--	--	<0.50
5A-SE(10') 0.5'	8/24/05	--	--	--	--	--	**301**	--
5A-SE(10') 5' HOLD	8/24/05	--	--	--	--	--	**6**	--
5A-SE(20') 0.5'	8/24/05	--	--	--	--	--	**154**	--
5A-SE(20') 5' HOLD	8/24/05	--	--	--	--	--	--	--
5A-SW(10') 0.5'	8/24/05	--	--	--	--	--	**159**	--
5A-SW(10') 5' HOLD	8/24/05	--	--	--	--	--	--	--
5A-N(20') 0.5'HOLD	8/24/05	--	--	--	--	--	--	--
5A-N(20') 5' HOLD	8/24/05	--	--	--	--	--	--	--
5A-SW(20') 0.5'HOLD	8/24/05	--	--	--	--	--	--	--
5A-SW(20') 5' HOLD	8/24/05	--	--	--	--	--	--	--
5C @ 0.5 PEA	3/8/05	<0.1	<5.0	<50	<0.05	**4**	**398**	--
5C @ 5 PEA	3/8/05	<0.1	**639**	**1,556**	<0.05	<2.0	**4**	--
5C-NE(4') 0.5'	8/24/05	<0.1	<10	<50	--	--	**81**	--
5C-NE(4') 5'	8/24/05	<0.1	<10	<50	--	--	--	--
5C-SE(10') 0.5'	8/24/05	<0.1	<10	<50	--	--	**28**	--
5C-SE(10') 5'	8/24/05	<0.1	<10	<50	--	--	--	--
5C-ESE(20') 0.5'HOLD	8/24/05	--	--	--	--	--	**271**	--
5C-ESE(20') 5'	8/24/05	--	--	--	--	--	**6**	--
5C-W(10') 0.5'	8/24/05	<0.1	<10	<50	--	--	**191**	--
5C-W(10') 5'	8/24/05	<0.1	<10	<50	--	--	--	--
5C-WNW(20') 0.5'HOLD	8/24/05	--	--	--	--	--	--	--
5C-WNW(20') 5'HOLD	8/24/05	--	--	--	--	--	--	--
5C-NE(23') 0.5'HOLD	8/24/05	--	--	--	--	--	--	--
5C-NE(23') 5'HOLD	8/24/05	--	--	--	--	--	--	--
*6A @ 0.5 PEA**	3/8/05	<0.1	<5.0	<50	<0.05	**16**	**19**	--
*6B @ 0.5 PEA**	3/8/05	<0.1	<5.0	<50	**0.825**	<2.0	**12**	--
*6C @ 0.5 PEA**	3/8/05	<0.1	<5.0	<50	**1.51**	<2.0	<1.0	--
*7B @ 5 PEA**	3/9/05	**1.8**	<5.0	**135**	<0.05	**3**	**2**	--
*7B-2 @ 3.5 PEA**	3/9/05	<0.1	<5.0	**924**	**0.087**	**3**	**84**	--
*7B-3 @ 5 PEA**	3/9/05	<0.1	<5.0	<50	<0.05	<2.0	<1.0	--
Blank 12/12/05 (TEG)	12/12/05	<1.0	--	<50	--	<0.25	--	--
Blank 12/13/05 (TEG)	12/13/05	<1.0	--	<50	--	<0.25	--	--
Blank 12/13/05 (C&T)	12/13/05	<0.20	--	--	<0.0095/<0.019	--	--	--
Blank 12/14/05 (TEG)	12/14/05	<1.0	<10	<50	--	<0.25	--	--
Blank 12/15/05 (TEG)	12/15/05	<1.0	--	<50	--	--	--	--

Table 2
Analytical Results for Select Compounds in Soil from 0.0 to 5.0 Feet Below Ground Surface
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

		TPH			PCBs	Metals		
Sample ID & Location	Date Sampled	TPH (gasoline range) C4-C12 (mg/Kg)	TPH (diesel range) C22-C24 (mg/Kg)	TPH (oil range) C23-C40 (mg/Kg)	PCBs (mg/Kg)	Arsenic (mg/Kg)	Lead (mg/Kg)	Hexavalent Chromium (mg/Kg)
SB-3-0.5-1.0	12/12/05	--	--	**3,400**	--	--	--	--
SB-3-4.5-5.0	12/12/05	--	**3.2 H Y b**	**15 b**	--	--	--	--
SB-4-0.5-1.0	12/12/05	--	--	<50	--	**4.8**	--	--
SB-4-1.0-1.5 dup	12/12/05	--	--	<50	--	**3.5**	--	--
SB-4-4.5-5.0	12/12/05	--	--	<50	--	**3.6**	--	--
SB-5-0.5-1.0	12/13/15	--	--	--	--	**69**	--	--
SB-5-4.5-5.0	12/13/05	--	--	--	--	**4.6**	--	--
SB-6-0.0-0.5	12/13/05	--	--	--	--	**60**	--	--
SB-6-4.5-5.0	12/12/05	**12**	--	--	--	--	--	--
SB-8-0.0-0.5	12/13/05	--	--	--	--	**3.9**	--	--
SB-8-4.5-5.0	12/12/05	<1.0	--	--	--	--	--	--
SB-9-0.5-1.0	12/12/05	--	--	--	--	**130**	--	--
SB-9-4.5-5.0	12/12/05	**84**	--	--	--	--	--	--
SB-10-0.0-0.5	12/13/05	--	--	--	--	**7.3**	--	--
SB-10-0.5-1.0	12/12/05	--	--	**180**	--	--	--	--
SB-10-4.5-5.0	12/12/05	**55**			--	--	--	--
SB-13-0.5-1.0	12/12/05	--	--	**1,700**	--	--	--	--
SB-13 4.5-5.0	12/12/05	--	**2.4 H Y b**	**16 b**	--	--	--	--
SB-14 0.5-1.0	12/12/05	--	--	**1,800**	--	--	--	--
SB-14 4.5-5.0	12/12/05	--	<1.0 b	<5.0 b	--	--	--	--
SB-17-0.5-1.0	12/13/05	--	--	**590**	--	**71**	--	--
SB-17-4.5-5.0	12/13/05	<0.19	<1.0 b	<5.0 b	--	**3.9**	--	--
SB-18-0.5-1.0	12/13/05	--	--	--	--	**140**	--	--
SB-18-4.5-5.0	12/13/05	--	--	--	--	**5.5**	--	--
SB-19-0.5-1.0	12/13/05	--	--	**81**	--	**140**	--	--
SB-19-4.5-5.0	12/13/05	<1.0		--	--	**6.9**	--	--
SB-20-0.5-1.0	12/14/05	--	--	**160**	--	**110**	--	--
SB-20dup-1.0-1.5	12/14/05	--	--	<50	--	**11**	--	--
SB-20-4.5-5.0	12/14/05	<1.0		--	--	**5.0**	--	--
SB-21-0.5-1.0	12/14/05	--	--	**61**	--	--	--	--
SB-21-4.5-5.0	12/14/05	<1.0		--	--	--	--	--
SB-22-0.5-1.0	12/14/05	--	--	<50	--	**98**	--	--
SB-22-4.5-5.0	12/14/05	<1.0		--	--	**6.0**	--	--
SB-24-0.5-1.0	12/12/05	--	--	**80**	--	**4.9**	--	--
SB-24dup-1.0-1.5	12/12/05	--	--	--	--	**3.4**	--	--
SB-24-4.5-5.0	12/12/05	<0.17	--	--	--	**5.8**	--	--
SB-25-0.5-1.0	12/12/05	--	--	**1,800**	--	--	--	--
SB-26-0.5-1.0	12/12/05	--	--	**820**	--	**110**	--	--
SB-26-4.5-5.0	12/12/05	--	**9.9 H Y b**	**7.0 L b**	--	**5.7**	--	--
SB-27-0.5-1.0	12/12/05	--	--	**3,100**	--	--	--	--
SB-27-4.5-5.0	12/12/05	--	**12 H Y b**	**60 b**	--	--	--	--
SB-28-0.5-1.0	12/12/05	--	--	**5,500**	--	--	--	--
SB-29-0.5-1.0	12/12/05	--	--	**2,300**	--	--	--	--
SB-29-4.5-5.0	12/12/05	--	**82 H Y b**	**140 L b**	--	--	--	--
SB-30-0.5-1.0	12/12/05	--	--	**3,700**	--	**3.5**	--	--
SB-30-4.5-5.0	12/12/05	--	**33 H Y b**	**96 L b**	--	**19**	--	--
SB-32-4.5-5.0	12/14/05	**140 H Y**	--	--	--	--	--	--
SB-33-4.5-5.0	12/15/05	<1.0	--	--	--	--	--	--
SB-34-4.5-5.0	12/14/05	**250**	--	--	--	--	--	--
SB-35-4.5-5.0	12/14/05	<1.1	--	--	--	--	--	--
SB-36-0.5-1.0	12/15/05		--	--	**0.022**	--	--	--
SB-36-4.5-5.0	12/15/05		--	--	<0.012/<0.024	--	--	--
SB-37-4.5-5.0	12/15/05	<1.0	--	--	--	--	--	--
SB-39-4.5-5.0	12/12/05	**21**	--	--	--	--	--	--
SB-40-0.5-1.0	12/13/05	--	--	--	--	**1.9**	--	--
SB-40-4.5-5.0	12/13/05	--	--	--	--	**5.7**	--	--
SB-42-0.5-1.0	12/15/05	--	--	**910**	--	--	--	--
SB-42-4.5-5.0	12/15/05	--	--	**78**	--	--	--	--
SB-43-0.5-1.0	12/15/05	--	--	**1,600**	--	--	--	--
SB-43-4.5-5.0	12/15/05	--	--	<50	--	--	--	--
SB-44-0.5-1.0 (01/01/06)	12/15/05	--	**170 H Y b**	**1200 b**	--	--	--	--
SB-44-0.5-1.0 (12/22/05)	12/15/05	--	**560 HY**	**3300 V**	--	--	--	--
SB-44-4.5-5.0 (01/01/06)	12/15/05	--	**27 H Y**	**58 L**	--	--	--	--

Table 2
Analytical Results for Select Compounds in Soil from 0.0 to 5.0 Feet Below Ground Surface
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

		TPH			PCBs	Metals		
Sample ID & Location	Date Sampled	TPH (gasoline range) C4-C12 (mg/Kg)	TPH (diesel range) C22-C24 (mg/Kg)	TPH (oil range) C23-C40 (mg/Kg)	PCBs (mg/Kg)	Arsenic (mg/Kg)	Lead (mg/Kg)	Hexavalent Chromium (mg/Kg)
SB-45-0.5-1.0	12/15/05	--	**5.8 H Y**	**31 H**	--	--	--	--
SB-45-4.5-5.0	12/15/05	--	**1.3 HY**	<5.0	--	--	--	--
SB-46-0.5-1.0	12/15/05	--	**1.9 H Y**	**40**	--	--	--	--
SB-46-4.5-5.0	12/15/05	--	**2.9 H Y**	**5.6**	--	--	--	--
SB-47-0.5-1.0	1/5/06	--	--	--	<0.0097/<0.019	--	--	--
SB-47-4.5-5.0	1/5/06	--	--	--	**0.021**	--	--	--
SB-48-0.5-1.0	1/5/06	--	--	--	<9.5/<19	--	--	--
SB-48-4.5-5.0	1/5/06	--	--	--	**1.1**	--	--	--
SB-49-0.5-1.0	1/5/06	--	--	--	**15**	--	--	--
SB-49-4.5-5.0	1/5/06	--	--	--	**1.3**	--	--	--
SB-50-0.5-1.0	1/5/06	--	--	--	**9**	--	--	--
SB-50-4.5-5.0	1/5/06	--	--	--	**1.4**	--	--	--

Notes:

TPH = Total Petroleum Hydrocarbons
PCB = Polychlorinated Biphenyls
PEA = Preliminary Environmental Assessment
mg/Kg - milligrams per kilogram
-- = Not analyzed for constituent
* = Unable to determine location of sample

< = Not detected at the indicated reporting limit
Y = Sample exhibits chromatographic pattern which does not resemble standard
L = Lighter hydrocarbons contributed to the quantitation
J = Estimated concentration
H = Heavier hydrocarbons contributed to the quantitation
Bold font denotes a detection above the laboratory reporting limit

Table 3
Analytical Results for Select Compounds in Soil from 0.0 to 5.0 Feet Below Ground Surface
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

		VOCs							SVOCs													
Sample ID & Location	Date Sampled	Benzene mg/Kg	Toluene mg/Kg	Ethylbenzene mg/Kg	Xylene mg/Kg	MTBE mg/Kg	Isopropylbenzene mg/Kg	Chlorobenzene mg/Kg	1,4-Dichlorobenzene mg/Kg	Naphthalene mg/Kg	1-Methylnaphthalene mg/Kg	Acenaphthylene mg/Kg	Acenaphthene mg/Kg	Fluorene mg/Kg	Phenanthrene mg/Kg	Anthracene mg/Kg	Fluoranthene mg/Kg	Pyrene mg/Kg	Benzo(a)Anthracene mg/Kg	Chrysene mg/Kg	Benzo(k)Fluoranthene mg/Kg	Benzo(a)Pyrene mg/Kg
1A @ 0.5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	**0.924**	<0.25	**0.492**	**0.442**	<0.25	<0.25	<0.25	<0.25
1A @ 5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
1B @ 0.5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
1B @ 5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
1C @ 0.5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
1C @ 5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2A @ 0.5 PEA	3/9/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2A @ 5 PEA	3/9/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2A-2 @ 0.5 PEA	3/9/05	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2A-2 @ 5 PEA	3/9/05	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2A-2N(20') 0.5'	8/25/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**2.901**	**3.666**	**2.054**	**2.812**	**3.978**	**3.623**
2A-2N(20') 5'	8/25/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2A-2S(20') 0.5'	8/25/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1.944**	**2.360**	**0.885**	**1.058**	**2.729**	**3.556**
2A-2S(20') 5'	8/25/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2A-2E(20') 0.5'	8/25/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.629**	<0.5	**0.507**	**0.711**	**0.865**
2A-2E(20') 5'	8/25/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2A-2W(20') 0.5'	8/25/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**2.228**	**3.105**	**1.799**	**2.330**	**4.710**	**4.184**
2A-2W(20') 5'	8/25/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2B @ 0.5 PEA	3/9/05	--	--	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**6.647**	**4.534**
2B @ 5 PEA	3/9/05	**0.139**	**0.013**	**0.031**	**0.101**	**0.019**	<0.002	<0.002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**428 J**	**0.744**	<0.5	**0.404 J**	**3.982**	**3.160**
2B-N(20') 0.5'	8/11/05	<0.002	<0.002	**0.006**	**0.070**	<0.002	<0.002	<0.002	<0.25	**2.925**	**2.049**	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2B-N(20') 5'	8/11/05	**0.080**	**0.002**	<0.002	**0.043**	<0.002	<0.002	<0.002	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2B-S(20') 0.5'	8/25/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**3.106**	**5.758**	**1.074**	**1.185**	**4.300**	**6.163**
2B-S(20') 5'	8/25/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2B-W(20') 0.5'	8/25/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	**4.784**	<2.5	**21.940**	**30.450**	**16.162**	**20.080**	**35.126**	**48.390**
2B-W(20') 5'	8/25/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2B-N(37') 0.5'	8/24/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2B-N(37') 5'	8/24/05	**0.338**	**0.248**	**0.103**	**0.258**	**0.369**	**0.004**	<0.002	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--
2B2 @ 0.5 PEA	3/9/05	--	--	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.377 J**	<0.5	**4.485**	**9.455**	**2.500**	**3.902**	**15.919**	**9.525**
2B2 @ 3.5 PEA	3/9/05	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.666**	<0.5	**0.584**	**1.844**	<0.5	**0.602**	<0.5	<0.5
2B2-N(20') 0.5'	8/25/05	**0.002**	**0.007**	<0.002	**0.006**	**0.015**	<0.002	<0.002	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	**46.416**	**59.680**	**32.864**	**46.152**	**63.542**	**66.928**
2B2-N(20') 5'	8/25/05	**7.682**	**49.063**	**19.817**	**73.228**	**3.357**	**1.851**	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.550**	**0.798**	<0.5	**0.631**	**0.504**	**0.729**
2B2-S(20') 0.5'	8/25/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.597**	<0.5	**2.734**	**6.890**	**2.122**	**3.458**	**7.050**	**8.341**
2B2-S(20') 5'	8/25/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2B2-E(20') 0.5'	8/11/05	**0.029**	**0.094**	**0.013**	**0.047**	<0.002	<0.002	<0.002	<2.5	**5.017**	**3.230**	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
2B2-E(20') 5'	8/11/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2B-3 @ 5 PEA	3/9/05	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.318 J**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2C @ 0.5 PEA	3/9/05	--	--	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2C @ 5 PEA	3/9/05	--	--	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3A @ 0.5 PEA	3/9/05	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
3A @ 5 PEA	3/9/05	<0.002	--	--	--	--	--	<0.002	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25

Table 3
Analytical Results for Select Compounds in Soil from 0.0 to 5.0 Feet Below Ground Surface
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

		VOCs							SVOCs													
Sample ID & Location	Date Sampled	Benzene mg/Kg	Toluene mg/Kg	Ethylbenzene mg/Kg	Xylene mg/Kg	MTBE mg/Kg	Isopropylbenzene mg/Kg	Chlorobenzene mg/Kg	1,4-Dichlorobenzene mg/Kg	Naphthalene mg/Kg	1-Methylnaphthalene mg/Kg	Acenaphthylene mg/Kg	Acenaphthene mg/Kg	Fluorene mg/Kg	Phenanthrene mg/Kg	Anthracene mg/Kg	Fluoranthene mg/Kg	Pyrene mg/Kg	Benzo(a)Anthracene mg/Kg	Chrysene mg/Kg	Benzo(k)Fluoranthene mg/Kg	Benzo(a)Pyrene mg/Kg
3B @ 0.5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
3B @ 5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
3C @ 0.5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
3C @ 5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
4A @ 0.5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
4A @ 5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
4B @ 0.5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
4B @ 5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
4B-S(20') 5'	8/23/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.012**	**0.128**	--	--	--	--	--	--	--	--	--	--	--	--	--
4C @ 0.5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
4C @ 5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
5A @ 0.5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
5A @ 5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
5C @ 0.5 PEA	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
5C @ 5 PEA	3/8/05	--	--	--	--	--	--	--	<0.5	**1.146**	<0.5	**4.702**	<0.5	**6.474**	**55.310**	**10.046**	**28.320**	**26.074**	**10.210**	**9.572**	**4.868**	**3.316**
5C-NE(4') 5'	8/24/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
5C-SE(10') 5'	8/24/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
5C-W(10') 5'	8/24/05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
*6A @ 0.5 PEA**	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
*6B @ 0.5 PEA**	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
*6C @ 0.5 PEA**	3/8/05	--	--	--	--	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
*7B @ 5 PEA**	3/9/05	**0.143**	**0.019**	**0.041**	**0.122**	**0.019**	<0.002	<0.002	0.000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.282 J**	**0.480 J**	<0.5	**0.292 J**	**3.561**	**2.531**
*7B-2 @ 3.5 PEA**	3/9/05	--	--	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.382 J**	<0.5	**4.690**	**6.462**	**2.345**	**0.256 J**	**2.415**	**2.080**
*7B-3 @ 5 PEA**	3/1/05	--	--	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Blank 12/12/05 (TEG)	12/12/05	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Blank 12/13/05 (TEG)	12/13/05	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Blank 12/13/05 (C&T)	12/13/05	<0.001	<0.001	<0.001	<0.001	<0.004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Blank 12/14/05 (TEG)	12/14/05	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	<0.34	<0.067	--	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067
Blank 12/15/05 (TEG)	12/15/05	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	<0.34	<0.067	--	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067
SB-3-0.5-1.0	12/12/05	--	--	--	--	--	--	--	<17	<3.4	--	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
SB-3-4.5-5.0	12/12/05	--	--	--	--	--	--	--	<0.33	<0.067	--	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067
SB-4-0.5-1.0	12/12/05	--	--	--	--	--	--	--	<0.66	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13
SB-4dup-0.5-1.0	12/12/05	--	--	--	--	--	--	--	<0.34	<0.068	--	<0.068	<0.068	<0.068	<0.068	<0.068	<0.068	<0.068	<0.000068	<0.068	<0.068	<0.068
SB-4-4.5-5.0	12/12/05	--	--	--	--	--	--	--	<0.33	<0.067	--	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067
SB-6-4.5-5.0	12/12/05	<0.005	<0.005	<0.005	**0.440**	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-8-4.5-5.0	12/12/05	<0.005	**0.089**	**0.081**	**0.320**	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-9-4.5-5.0	12/12/05	**2.300**	<0.005	**2.900**	**5.000**	**14.000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-10-4.5-5.0	12/12/05	**3.400**	**1.700**	**1.500**	**5.000**	**7.500**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-13-0.5-1.0	12/12/05	--	--	--	--	--	--	--	<0.67	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13
SB-13-4.5-5.0	12/12/05	--	--	--	--	--	--	--	<0.33	<0.066	--	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066
SB-14-0.5-1.0	12/12/05	--	--	--	--	--	--	--	<67	<13	--	<13	<13	<13	<13	<13	<13	<13	<13	<13	<13	<13
SB-14-4.5-5.0	12/12/05	--	--	--	--	--	--	--	<0.33	<0.066	--	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066
SB-17-4.5-5.0	12/13/05	**0.002**	<0.00094	<0.00094	**0.023**	<0.0038	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 3
Analytical Results for Select Compounds in Soil from 0.0 to 5.0 Feet Below Ground Surface
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

		VOCs							SVOCs													
Sample ID & Location	Date Sampled	Benzene mg/Kg	Toluene mg/Kg	Ethylbenzene mg/Kg	Xylene mg/Kg	MTBE mg/Kg	Isopropylbenzene mg/Kg	Chlorobenzene mg/Kg	1,4-Dichlorobenzene mg/Kg	Naphthalene mg/Kg	1-Methylnaphthalene mg/Kg	Acenaphthylene mg/Kg	Acenaphthene mg/Kg	Fluorene mg/Kg	Phenanthrene mg/Kg	Anthracene mg/Kg	Fluoranthene mg/Kg	Pyrene mg/Kg	Benzo(a)Anthracene mg/Kg	Chrysene mg/Kg	Benzo(k)Fluoranthene mg/Kg	Benzo(a)Pyrene mg/Kg
SB-19-4.5-5.0	12/13/05	<0.005	**0.053**	**0.041**	**0.140**	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-20-0.5-1.0	12/14/05	--	--	--	--	--	--	--	<0.34	<0.067	--	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067
SB-20dup-1.0-1.5	12/14/05	--	--	--	--	--	--	--	<0.34	<0.068	--	<0.068	<0.068	<0.068	<0.068	<0.068	<0.068	<0.068	<0.068	<0.068	<0.068	<0.068
SB-20-4.5-5.0	12/14/05	<0.005	**0.027**	**0.027**	**0.059**	<0.005	--	--	<0.33	<0.067	--	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067
SB-21-0.5-1.0	12/14/05	--	--	--	--	--	--	--	<0.33	<0.066	--	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066
SB-21-4.5-5.0	12/14/05	<0.005	**0.025**	**0.069**	**0.300**	<0.005	--	--	<0.34	<0.067	--	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067
SB-22-4.5-5.0	12/14/05	<0.005	<0.005	<0.005	**0.041**	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-24-0.5-1.0	12/12/05	--	--	--	--	--	--	--	<0.33	<0.066	--	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066
SB-24-4.5-5.0	12/12/05	<0.00085	<0.00085	<0.00085	<0.00085	<0.0034	--	--	<0.33	<0.067	--	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067	<0.067
SB-27-0.5-1.0	12/12/05	--	--	--	--	--	--	--	<8.3	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
SB-27dup-1.0-1.5	12/12/05	--	--	--	--	--	--	--	<6.7	<1.3	--	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
SB-27-4.5-5.0	12/12/05	--	--	--	--	--	--	--	<0.34	<0.067	--	<0.067	<0.067	<0.067	<0.067	<0.067	**0.160**	**0.170**	<0.067	**0.100**	**0.086**	**0.069**
SB-29-0.5-1.0	12/12/05	--	--	--	--	--	--	--	<8.3	<1.7	--	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
SB-29-4.5-5.0	12/12/05	--	--	--	--	--	--	--	<0.33	<0.066	--	<0.066	<0.066	<0.066	<0.066	<0.066	**0.190**	**0.190**	**0.095**	**0.150**	**0.140**	**0.110**
SB-32-4.5-5.0	12/14/05	<100	<100	<100	<100	<400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-33-4.5-5.0	12/15/05	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-34-4.5-5.0	12/14/05	<5.0	<5.0	<5.0	**0.130**	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-35-4.5-5.0	12/14/05	<5.3	<5.3	<5.3	<5.3	<21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-37-4.5-5.0	12/15/05	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-39-4.5-5.0	12/12/05	**0.120**	**0.610**	**0.330**	**1.700**	**0.097**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

VOCs = Volatile organic compounds

SVOCs = Semi-volatile organic compounds

mg/Kg - milligrams per kilogram

PEA = Preliminary Environmental Assessment

'-- = Not analyzed for constituent

< = Not detected at the indicated reporting limit

Bold font denotes a detection above the laboratory reporting limit

* = Unable to determine location of sample

Table 4
Analytical Data for Select Compounds in Groundwater
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

		VOCs					SVOCS	TPH			PCBs
Sample ID	Date Sampled	Benzene (μg/L)	Toluene (μg/L)	Ethylbenzene (μg/L)	Xylene (μg/L)	MTBE (μg/L)	SVOCs (μg/L)	TPH (gasoline range) C4-C12 (mg/L)	TPH (diesel range) C22-C24 (mg/L)	TPH (oil range) C23-C40 (mg/L)	PCBs (μg/L)
Groundwater Monitoring Wells											
MW-1	6/19/97	3,300	200	1,100	4,900	<250	--	18	--	--	--
MW-1	7/1/97	--	--	--	--	--	--	--	--	--	--
MW-1	9/29/97	4,800	<25	2,000	3,500	<250	--	29	--	--	--
MW-1	12/16/97	1.3	<0.5	0.6	0.7	<5.0	--	<0.050	--	--	--
MW-1	3/10/98	2.0	<0.5	5.7	1.7	<5.0	--	0.190	--	--	--
MW-1	10/1/98	--	--	--	--	--	--	--	--	--	--
MW-1	1/19/99	40	<0.5	18	68	8.3	--	1.0	--	--	--
MW-1	4/15/99	0.92	0.9	0.7	0.87	<5.0	--	<0.050	--	--	--
MW-1	5/6/99	--	--	--	--	--	--	--	--	--	--
MW-1	7/30/99	60	<0.5	63	120	13	--	1.4	--	--	--
MW-1	11/15/99	120	<0.5	150	620	<5.0	--	3.6	--	--	--
MW-1	3/24/00	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-1	5/18/00	10	1.2	38	130	8.6	--	1.3	--	--	--
MW-1	7/26/00	100	7	260	680	<5.0	--	6.4	--	--	--
MW-1	10/30/00	130	14	330	950	<100	--	6.0	--	--	--
MW-1	11/14/00	--	--	--	--	--	--	--	--	--	--
MW-1	7/24/01	13	<0.5	70	39	13	--	1.2	--	--	--
MW-1	11/28/01	27	1	72	160	<5.0	--	1.8	--	--	--
MW-1	2/18/02	18	<2.5	89	200	<25	--	2.4	--	--	--
MW-1	12/11/02	83	9	320	640	<0.5	--	8.4	--	--	--
MW-1	2/26/03	12	<10	240	720	<10	--	8.3	--	--	--
MW-1	5/16/03	22	<5.0	240	490	<5.0	--	5.6	--	--	--
MW-1	3/8/05	<0.5	<0.5	<0.5	<0.5	<5.0	--	0.230	<0.5	<1.0	<0.5
MW-2	6/19/97	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-2	7/1/97	--	--	--	--	--	--	--	--	--	--
MW-2	9/29/97	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--
MW-2	12/16/97	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--
MW-2	3/10/98	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-2	10/1/98	--	--	--	--	--	--	--	--	--	--
MW-2	1/19/99	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-2	4/15/99	0.75	0.64	<0.5	0.74	<5.0	--	<0.050	--	--	--
MW-2	5/6/99	--	--	--	--	--	--	--	--	--	--
MW-2	7/30/99	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-2	11/15/99	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--

Table 4
Analytical Data for Select Compounds in Groundwater
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

		VOCs					SVOCS	TPH			PCBs
Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylene (µg/L)	MTBE (µg/L)	SVOCs (µg/L)	TPH (gasoline range) C4-C12 (mg/L)	TPH (diesel range) C22-C24 (mg/L)	TPH (oil range) C23-C40 (mg/L)	PCBs (µg/L)
MW-2	3/24/00	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-2	5/18/00	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-2	7/26/00	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-2	10/30/00	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-2	11/14/00	--	--	--	--	--	--	--	--	--	--
MW-2	7/24/01	<0.5	<0.5	<0.5	<0.5	**7.6**	--	<0.050	--	--	--
MW-2	11/28/01	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-2	2/18/02	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-2	12/11/02	<0.5	<0.5	<0.5	<1.0	**5.8**	--	<0.050	--	--	--
MW-2	2/26/03	<0.5	<0.5	<0.5	<1.0	**10**	--	<0.050	--	--	--
MW-2	5/16/03	<0.5	<0.5	<0.5	<1.0	**16**	--	<0.050	--	--	--
MW-2	3/9/05	<0.5	<0.5	<0.5	<0.5	**15**	--	<0.050	<0.5	<1.0	<0.5
MW-2	2/15/06	<0.5	<0.5	<0.5	<0.5	**19**		<0.050	--	--	--
MW-2	2/15/06	<0.5	<0.5	<0.5	<0.5	**7**		<0.050	--	--	--
MW-2	2/16/06	<0.5	<0.5	<0.5	<0.5	**5.6**		<0.050	--	--	--
MW-3	6/19/97	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-3	7/1/97	--	--	--	--	--	--	--	--	--	--
MW-3	9/29/97	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-3	12/16/97	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-3	3/10/98	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-3	10/1/98	--	--	--	--	--	--	--	--	--	--
MW-3	1/19/99	0.78	<0.5	<0.5	<0.5	**8.7**	--	<0.050	--	--	--
MW-3	4/15/99	**5.4**	**3.9**	**1.7**	**5.6**	**23**	--	<0.050	--	--	--
MW-3	5/6/99	--	--	--	--	--	--	--	--	--	--
MW-3	7/30/99	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-3	11/15/99	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-3	3/24/00	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-3	5/18/00	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-3	7/26/00	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-3	10/30/00	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-3	11/14/00	--	--	--	--	--	--	--	--	--	--
MW-3	7/24/01	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-3	11/28/01	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--

Table 4
Analytical Data for Select Compounds in Groundwater
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

		VOCs					SVOCS	TPH			PCBs
Sample ID	Date Sampled	Benzene (μg/L)	Toluene (μg/L)	Ethylbenzene (μg/L)	Xylene (μg/L)	MTBE (μg/L)	SVOCs (μg/L)	TPH (gasoline range) C4-C12 (mg/L)	TPH (diesel range) C22-C24 (mg/L)	TPH (oil range) C23-C40 (mg/L)	PCBs (μg/L)
MW-3	2/18/02	<0.5	<0.5	<0.5	<0.5	<5.0	--	<0.050	--	--	--
MW-3	12/11/02	<0.5	<0.5	<0.5	<1.0	**0.78**	--	<0.050	--	--	--
MW-3	2/26/03	<0.5	<0.5	<0.5	<1.0	<0.5	--	<0.050	--	--	--
MW-3	5/16/03	<0.5	<0.5	<0.5	<1.0	**2.6**	--	<0.050	--	--	--
MW-3	3/8/05	<0.5	<0.5	<0.5	<0.5	<2	--	<0.050	<0.5	<1.0	<0.5
MW-4	9/15/98	**26,000**	**32,000**	**2,900**	**18,000**	**26,000**	--	**170**	--	--	--
MW-4	10/1/98	--	--	--	--	--	--	--	--	--	--
MW-4	1/19/99	**1,700**	**3.8**	**25**	**29**	**13,000**	--	**2.6**	--	--	--
MW-4	4/15/99	**28,000**	**15,000**	**3,700**	**19,000**	**52,000**	--	**210**	--	--	--
MW-4	5/6/99	--	--	--	--	--	--	--	--	--	--
MW-4	7/30/99	**16,000**	**7,500**	**2,300**	**8,500**	**68,000**	--	**91**	--	--	--
MW-4	11/15/99	**8,500**	**2,400**	**1,400**	**4,000**	**57,000**	--	**63**	--	--	--
MW-4	3/24/00	**16,000**	**13,000**	**2,500**	**12,000**	**44,000**	--	**95**	--	--	--
MW-4	5/18/00	**15,000**	**10,000**	**2,200**	**9,600**	**64,000**	--	**91**	--	--	--
MW-4	7/26/00	**11,000**	**6,400**	**1,700**	**6,500**	**80,000**	--	**130**	--	--	--
MW-4	10/30/00	**6,700**	**2,200**	**750**	**3,100**	**68,000**	--	**59**	--	--	--
MW-4	11/14/00	--	--	--	--	--	--	--	--	--	--
MW-4	7/24/01	**25,000**	**23,000**	**3,500**	**20,000**	**44,000**	--	**180**	--	--	--
MW-4	11/28/01	**8,100**	**3,300**	**1,400**	**5,600**	**57,000**	--	**67**	--	--	--
MW-4	2/18/02	**20,000**	**12,000**	**2,300**	**15,000**	**47,000**	--	**98**	--	--	--
MW-4	12/11/02	**340**	**<5.00**	**590**	**1,000**	**17,000**	--	**200**	--	--	--
MW-4	2/26/03	**8,100**	**4,400**	**1,900**	**8,200**	**30,000**	--	**63**	--	--	--
MW-4	5/16/03	**24,000**	**20,000**	**12,000**	**63,000**	**42,000**	--	**530**	--	--	--
MW-4	3/9/05	**22,053**	**17,310**	**3,981**	**13,969**	**5,841**	**382[1]/443[2]**	**152.2**	<0.5	<1.0	<0.5
MW-5 (MW-4 dup)	3/9/05	**21,536**	**16,547**	**3,900**	**13,786**	**6,026**	**364[1]/43[2]**	**162.9**	<0.5	<1.0	<0.5
EW-1	12/11/02	**530**	<5.00	**87**	<100	**2,600**	--	**6.6**	--	--	--
EW-1	2/26/03	**170**	**20**	**41**	**53**	**5,000**	--	**4.0**	--	--	--
EW-1	5/16/03	**12**	**7.6**	**4.2**	**14**	**300**	--	**0.330**	--	--	--
EW-1	3/8-9/2005	<0.5	<0.5	<0.5	<0.5	**8**	ND	**0.105**	<0.5	<1.0	<0.5
Grab Groundwater Samples											
1A	3/9/05	<0.5	<0.5	<0.5	<0.5	<2.0	ND	<0.050	<0.5	<1.0	**1.7**
1C	3/9/05	<0.5	<0.5	<0.5	<0.5	<2.0	ND	<0.050	<0.5	<1.0	**2.0**
2C	3/9/05	<0.5	<0.5	<0.5	<0.5	<2.0	--	<0.050	<0.5	**2.184**	--
3A	3/9/05	<0.5	<0.5	<0.5	<0.5	<2.0	ND	<0.050	<0.5	<1.0	<0.5
4A	3/8/05	<0.5	<0.5	<0.5	<0.5	--	--	<0.050	<0.5	<1.0	<0.5
5A	3/8/05	<0.5	<0.5	<0.5	<0.5	--	--	<0.050	<0.5	<1.0	<0.5
5C	3/8/05	<0.5	<0.5	<0.5	<0.5	--	--	<0.050	<0.5	<1.0	<0.5

Table 4
Analytical Data for Select Compounds in Groundwater
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

		VOCs					SVOCS	TPH			PCBs
Sample ID	**Date Sampled**	**Benzene (µg/L)**	**Toluene (µg/L)**	**Ethylbenzene (µg/L)**	**Xylene (µg/L)**	**MTBE (µg/L)**	**SVOCs (µg/L)**	**TPH (gasoline range) C4-C12 (mg/L)**	**TPH (diesel range) C22-C24 (mg/L)**	**TPH (oil range) C23-C40 (mg/L)**	**PCBs (µg/L)**
1A-N(42') GW1	8/11/05	--	--	--	--	--	--	--	--	--	**4.5**
2A-2W(4') GW1	8/12/05	<0.5	<0.5	<0.5	<0.5	<0.5	ND	<0.10	--	--	--
1B-W(37') GW1	8/11/05	--	--	--	--	--	--	--	--	--	**7.1**
2B-N(20') GW1	8/12/05	**28,496**	**29,456**	**4,719**	**15,529**	<0.5	**2,365[1]/487[2]**	**221.1**	<0.5	<1.0	--
2B-N(37') GW1	8/25/05	**10754.6**	**13534.7**	**3428.7**	**9903.1**	**7007.0**	**293[1]/57[2]**	**146.6**	<0.5	<1.0	--
2B-2E(20') GW1	8/12/05	<0.5				<0.5	ND	<0.10	--	--	--
1C-W(68') GW1	8/11/05	--	--	--	--	--	--	--	--	--	--
1C-SW(20') GW2	8/24/05	--	--	--	--	--	--	--	--	--	--
2C-E(10') GW1	8/12/05	<0.5	<0.5	<0.5	<0.5	<0.5	ND	**0.16**			--
2C-W(20') GW2	8/24/05	--	--	--	--	--	ND	<0.10	<0.50	<1.0	--
SB-19-GW	12/14/05	**25**	**120**	**69**	**410**	**1,100**	0.013	**2.2**	**0.680 L Y**	<0.3	--
SB-19-GWDUP	12/14/05	**34**	**150**	**88**	**480**	**1,100**	--	**2.7**	**0.860 H L Y**	**0.43**	--
SB-22-GW	12/15/05	<0.5	<0.5	<0.5	<0.5	<2.0	ND	<0.050	**0.420 H Y**	**1.80**	--
SB-22-GWDUP	12/15/05	<0.5	<0.5	<0.5	<0.5	<2.0	ND	<0.050	**0.260 H Y**	**0.3**	--
SB-33-GW	12/15/05	<0.5	<0.5	<0.5	<0.5	<2.0	ND	<0.050	**0.560 H Y**	**0.570 H Y**	--
SB-35-GW	12/15/05	<0.5	0.59	<0.5	1.1	<2.0	ND	<0.050	**0.570 H Y**	<0.3	--
SB-35-GWDUP	12/15/05	<0.5	<0.5	<0.5	<0.5	<2.0	--	<0.050	**0.600 H Y**	<0.3	--
Nested Wells											**--**
NW-1 S	12/27/05	<0.5	<0.5	<0.5	<0.5	<2.0	--	<0.050	**0.320 H Y**	**0.420 L Y**	--
NW-1 I	12/27/05	<0.5	<0.5	<0.5	<0.5	**8**	--	<0.050	**0.089 Y**	<0.3	--
NW-1 D	12/27/05	<0.5	<0.5	<0.5	<0.5	**37**	--	<0.050	<0.05	<0.3	--
NW-2 S	12/27/05	**570**	**570**	**62**	**1,530**	**1,600**	--	**7.1**	**7.3 H L Y**	**2.6 L Y**	--
NW-2 I	12/27/05	**22,000**	**24,000**	**2,100**	**12,800**	**120,000**	--	**120**	**7.2 H L Y**	**1.6 L Y**	--
NW-2 D	12/27/05	300	13	<2.5	178	**1,600**	--	**1.4**	**0.820 H L Y**	**0.53 L Y**	--
NW-3 S	12/27/05	<0.5	<0.5	<0.5	<0.5	<2.0	--	<0.050	**0.970 H Y**	**0.870 L Y**	--
NW-3 S	2/15/06	<0.5	<0.5	<0.5	<0.5	**5.7**	--	<0.050	--	--	--
NW-3 S	2/15/06	<0.5	<0.5	<0.5	<0.5	**5**	--	**0.058**	--	--	--
NW-3 S	2/16/06	<0.5	<0.5	<0.5	0.52	**6.5**	--	**0.081**	--	--	--

Table 4
Analytical Data for Select Compounds in Groundwater
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66^{th} Avenue, Oakland, California

		VOCs					SVOCS	TPH			PCBs
Sample ID	**Date Sampled**	**Benzene (μg/L)**	**Toluene (μg/L)**	**Ethylbenzene (μg/L)**	**Xylene (μg/L)**	**MTBE (μg/L)**	**SVOCs (μg/L)**	**TPH (gasoline range) C4-C12 (mg/L)**	**TPH (diesel range) C22-C24 (mg/L)**	**TPH (oil range) C23-C40 (mg/L)**	**PCBs (μg/L)**
NW-3 I	12/27/05	<0.5	<0.5	<0.5	<0.5	<2.0	--	<0.050	**0.095 Y**	<0.3	--
NW-3 I	2/15/06	<0.5	<0.5	<0.5	<0.5	<2.0	--	<0.050	--	--	--
NW-3 I	2/15/06	<0.5	<0.5	<0.5	<0.5	<2.0	--	<0.050	--	--	--
NW-3 I	2/16/06	<0.5	<0.5	<0.5	<0.5	<2.0	--	<0.050	--	--	--
NW-3 D	12/27/05	<0.5	<0.5	<0.5	<0.5	<2.0	--	<0.050	**0.910 H Y**	**0.780 L Y**	--
NW-3 D	2/15/06	<0.5	<0.5	<0.5	<0.5	<2.0	--	<0.050	--	--	--
NW-3 D	2/15/06	<0.5	<0.5	<0.5	<0.5	**2.1 C**	--	<0.050	--	--	--
NW-3 D	2/16/06	<0.5	<0.5	<0.5	<0.5	<2.0	--	<0.050	--	--	--
DUP-1 (NW-2D)	12/27/05	**320**	--	--	--	**1,500**	--	**1.6**			--

Notes:

VOCs = Volatile Organic Compounds
SVOCs = Semi-volatile Organic Compounds
TPH = Total Petroluem Hydrocarbons
PCBs = Polychlorinated Biphenyls
μg/L = micrograms per liter
mg/L = milligrams per liter
-- = Not analyzed for constituent
< = Not detected at the indicated reporting limit
ND = Not detected

S = Shallow
I = Intermediate
D= Deep
H = Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y = Sample exhibits chromatographic pattern which does not resemble standard
[1] Naphthalene
[2] 1-Methylnaphthalene
Bold font denotes a detection above the laboratory reporting limit
Only SVOCs with detections are reported in this table; all other SVOCs were not detected above the laboratory reporting limit

Table 5
Analytical Results for Soil-Gas Samples
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

Sample Location	Sample Depth (feet bgs)	Date Collected	TPH-P (GRO) ($\mu g/m^3$)	Benzene ($\mu g/m^3$)	Toluene ($\mu g/m^3$)	Ethylbenzene ($\mu g/m^3$)	Total Xylenes ($\mu g/m^3$)	MTBE ($\mu g/m^3$)	PCE ($\mu g/m^3$)
SV-1	4	8/25/08	**12,000**	**100**	<200	<100	<300	--	--
SV-2	4	8/25/08	**13,000**	**160**	360	<100	270	--	--
SV-3	4	8/25/08	**190,000**	**6,200**	10,000	1,100	4,660	--	--
SV-3-DUP	*4*	*8/25/08*	***160,000***	***6,200***	*13,000*	*1,600*	*7,400*	--	--
SV-4	4	8/25/08	**11,000**	**160**	230	<100	<300	--	--
SV-4-DUP	*4*	*8/25/08*	*<18000*	*60*	*94*	*26*	*125*	--	--
SV-5	4	8/25/08	<10000	<100	210	<100	<300	--	--
SV-6	4	8/25/08	**24,000**	**150**	220	160	440	--	--
SV-7	3	8/25/08	**13,000**	<100	260	<100	<300	--	--
SV-7-DUP	*3*	*8/25/08*	*<21000*	***110***	*330*	*84*	*410*	--	--
SV-8	4	8/25/08	<10000	<100	<200	<100	430	--	--
SV-9	4	8/25/08	<10000	<100	<200	<100	<300	--	--
SV-10	4	8/25/08	**820,000**	<100	910	41,000	**155,000**	--	--
SV-10-DUP	*4*	*8/25/08*	***50,000***	*28*	*200*	*3,700*	***162,200***	--	--
SV-11	4	8/25/08	<10000	<100	<200	<100	<300	--	--
SV-12	4	8/25/08	**110,000**	<100	<200	3,200	14,000	--	--
1A	4	3/8/05	--	<100	<1,000	<1,000	<2,000	<1,000	<1,000
1B	4	3/8/05	--	<100	<1,000	<1,000	<2,000	<1,000	<1,000
1C	4	3/8/05	--	<100	<1,000	<1,000	<2,000	<1,000	<1,000
2A	4	3/8/05	--	<100	<1,000	<1,000	<2,000	<1,000	<1,000
2A-2	5	3/8/05	--	140	<1,000	<1,000	<2,000	<1,000	<1,000
2B	4	3/8/05	--	**9,300**	1,700	1,600	6,700	<1,000	<1,000
2B-DUP	*4*	*3/8/05*	--	***6,100***	*1,100*	*<1000*	*2,800*	*<1,000*	*<1,000*
2B-2	5	3/8/05	--	230	<1,000	<1,000	<2,000	1,300	<1000
2B-3	4	3/8/05	--	<100	<1,000	<1,000	<2,000	<1,000	<1,000
3A	5	3/8/05	--	<100	<1,000	<1,000	<2,000	<1,000	<1,000
3A-DUP	*5*	*3/8/05*	--	*<100*	*<1,000*	*<1,000*	*<2,000*	*<1,000*	*<1,000*
3B	3	3/8/05	--	<100	<1,000	<1,000	<2,000	<1,000	<1,000
3C	3	3/8/05	--	<100	<1,000	<1,000	<2,000	<1,000	<1,000
4A	3	3/8/05	--	<100	<1,000	<1,000	<2,000	<1,000	<1,000
4B	3	3/8/05	--	<100	<1,000	<1,000	<2,000	<1,000	1,100
4C	3	3/8/05	--	<100	<1,000	<1,000	<2,000	<1,000	<1,000
5A	4	3/8/05	--	<100	<1,000	<1,000	<2,000	<1,000	<1,000
5C	4	3/8/05	--	<100	<1,000	<1,000	<2,000	<1,000	<1,000
Screening Criteria									
ESL-Soil-Vapor Intrusion Soil Gas to Indoor Air Table E - residential land use			10,000	84	63,000	210,000	21,000	630,000	83,000
ESL-Soil-Vapor Intrusion Soil Gas to Indoor Air Table E - industrial- commercial land			29,000	180	180,000	580,000	58,000	1,800,000	230,000

Notes:

bgs = below ground surface

$\mu g/m^3$ = micrograms per cubic meter

Samples SV-1 through SV-12 were analyzed by TEG's mobile lab using EPA Method 8260.

Duplicate samples 2B, 3A, and SV-3 was analyzed by TEG 's mobile lab using EPA Method 8260B.

Samples collected at locations SV-4, SV-7, and SV-10 were submitted to Cal Science Environmental Labs for analysis using EPA Method TO15.

ESLs denote environmental screening criteria established by the Regional Water Quality Control Board (RWQCB) to address environmental protection. Under most circumstances, the presence of a chemical in soil or groundwater at concentrations below the corresponding ESL can be assumed to not pose a significant threat to human health. Levels applied to this table are shallow soil-gas ESLs used for the evaluation of potential vapor intrusion concerns. The ESLs can be obtained from http://www.swrcb.ca.gov/rwqcb2/ESL.htm.

Bold font denotes a detection above the laboratory reporting limit.

Table 6
Analytical Results for Title 22 Metals in Groundwater
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

Sample ID	Date Sampled	Antimony (μg/L)	Arsenic (μg/L)	Barium (μg/L)	Beryllium (μg/L)	Cadmium (μg/L)	Chromium (μg/L)	Cobalt (μg/L)	Copper (μg/L)	Lead (μg/L)	Mercury (μg/L)	Molybdenum (μg/L)	Nickel (μg/L)	Selenium (μg/L)	Sliver (μg/L)	Thallium (μg/L)	Vanadium (μg/L)	Zinc (μg/L)
MW-1	3/8/05	<10	<10	<10	<5	<5	<5	<5	<5	<5	<0.2	<5	<5	<10	<5	<10	<10	**23**
MW-2	3/9/05	<10	<10	**14**	<5	<5	<5	<5	<5	<5	<0.2	<5	<5	<10	<5	<10	<10	<5
MW-3	3/8/05	<10	<10	<10	<5	<5	<5	<5	<5	<5	<0.2	<5	<5	<10	<5	<10	<10	<5
MW-4	3/9/05	<10	<10	**270**	<5	<5	<5	<5	<5	<5	<0.2	<5	<5	<10	<5	<10	<10	<5
MW-5 (MW-4 dup)	3/9/05	<10	<10	**298**	<5	<5	<5	<5	<5	<5	<0.2	<5	<5	<10	<5	<10	<10	<5
EW-1	3/8-9/2005	<10	**13**	<10	<5	<5	**133**	<5	<5	<5	<0.2	**33**	<5	<10	<5	<10	**6**	<5
1A	3/9/05	<10	<10	**34**	<5	<5	<5	<5	<5	<5	<0.2	<5	<5	<10	<5	<10	<10	<5
1C	3/9/05	<10	<10	<10	<5	<5	<5	<5	<5	<5	<0.2	<5	<5	<10	<5	<10	<10	<5
3A	3/9/05	<10	<10	<10	<5	<5	<5	<5	<5	<5	<0.2	<5	<5	<10	<5	<10	<10	<5
4A	3/8/05	<10	<10	**17**	<5	<5	<5	**69**	<5	<5	<0.2	<5	**367**	<10	<5	<10	<10	**25**
5A	3/8/05	<10	<10	**79**	<5	<5	<5	<5	<5	<5	<0.2	<5	**12**	<10	<5	<10	<10	**29**
5C	3/8/05	<10	<10	**35**	<5	<5	<5	<5	<5	<5	<0.2	<5	<5	<10	<5	<10	<10	**17**

Notes

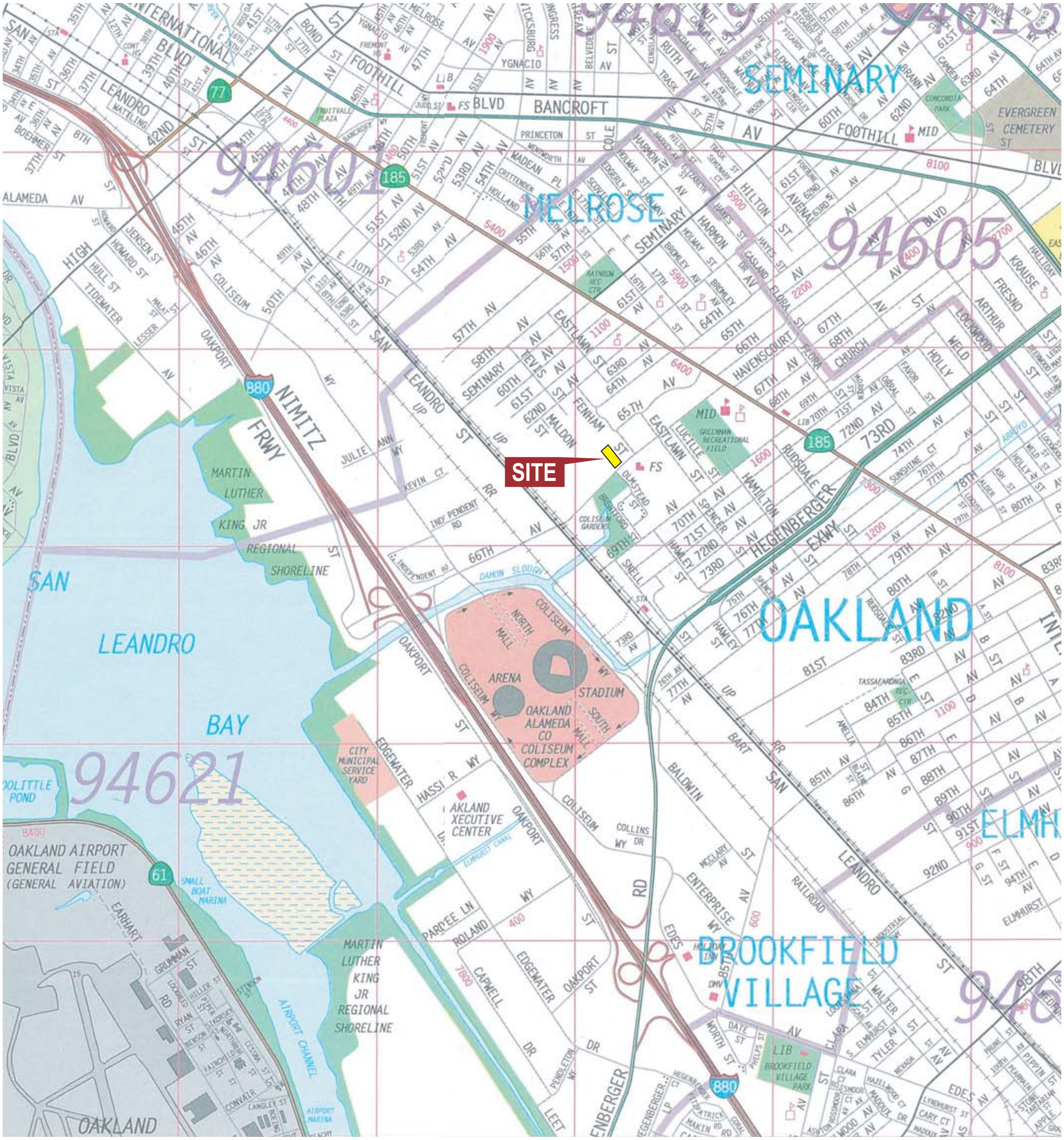
μg/L = micrograms per liter

Bold font denotes a detection above the laboratory reporting limit

Table 7
Proposed Cleanup Goals for Chemicals of Potential Concern
Former Pacific Electric Motors
Potential Aspire Charter School Site
1009 66th Avenue, Oakland, California

Chemical of Potential Concern in each media	ESL[1] residential (direct exposure)	ESL commercial (direct exposure)	DTSC-approved goal	Student Receptor Cleanup Goal[5]	Recommended Cleanup Goal[6]
Soil (mg/Kg)					
TPH as gasoline	110	450	100	720	**450**
TPH as diesel	110	450	500	800	**450**
TPH as motor oil	370	3700	500	800	**800**
benzo(a)pyrene	0.038	0.13	0.05	0.21	**0.13**
benzo(a)anthracene	0.38	1.3	0.51	2.1	**1.3**
benzo(k)fluoranthene	0.38	1.3	0.51	2.1	**1.3**
chrysene	23	210	4.06	21	**21**
napthalene	1.3	2.8	4.06	21.0	**2.8**
benzene	0.12	0.27	4.96	4.5	**0.27**
arsenic	0.39	1.6	7 [2]	7 [2]	**7 [2]**
lead	260	750	255 [3]	255 [3]	**255 [3]**
chromium IV	9.4	360	17 [4]	17 [4]	**17 [4]**
PCBs	0.22	0.74	0.13	0.39	**0.39**
Groundwater (μg/L)	ESL residential (vapor intrusion)				
benzene	540	---	20	---	---
toluene	170,000	---	---	---	---
ethylbenzene	380,000	---	---	---	---
xylenes	160,000	---	---	---	---
Soil Gas (μg/m³)					
benzene	84	280	---	1,200	**280**
toluene	63,000	170,000	---	680,000	**170,000**
ethylbenzene	980	3,300	---	15,500	**3,300**
xylenes	21,000	58,000	---	232,000	**58,000**
TPH as gasoline	10,000	29,000	---	116,000	**29,000**

Notes:
1. Environmental Screening Level - SFRWQCB, 2008
2. Based on estimate of background concentration - Appendix B
3. Based on DTSC school program
4. Based on residential CHSSL
5. Calculated from residential ESL and considering a school exposure scenario (calculation spreadsheets in Appendix B)
6. The lower of student or teacher receptor



MAP SOURCE:
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ALAMEDA COUNTY
2002 Edition

N

0 2,000 4,000 FEET

Site Vicinity

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

LFR

Figure 1

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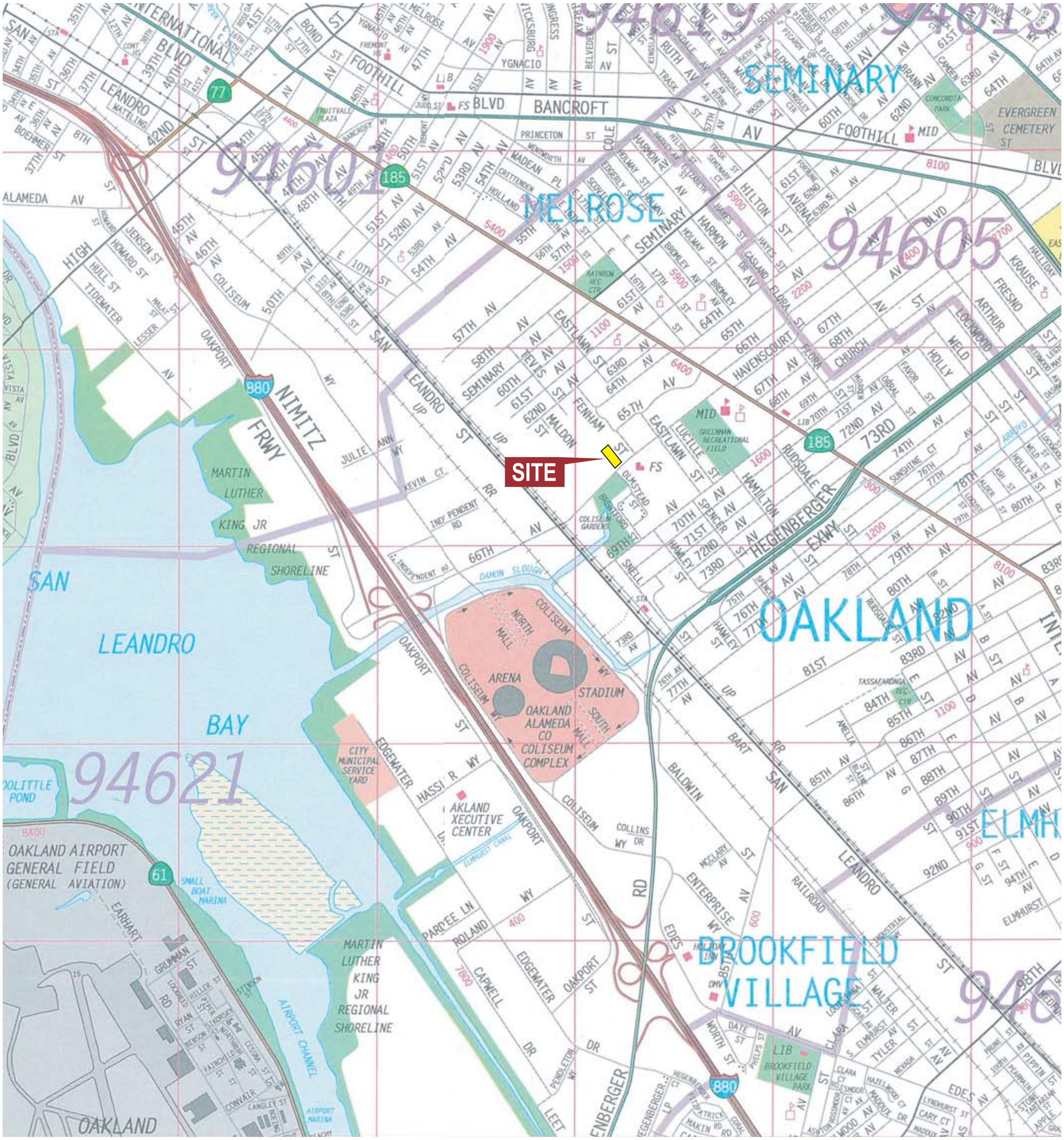

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2002 Edition

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0 2,000 4,000 FEET

Site Vicinity

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

LFR

Figure 1

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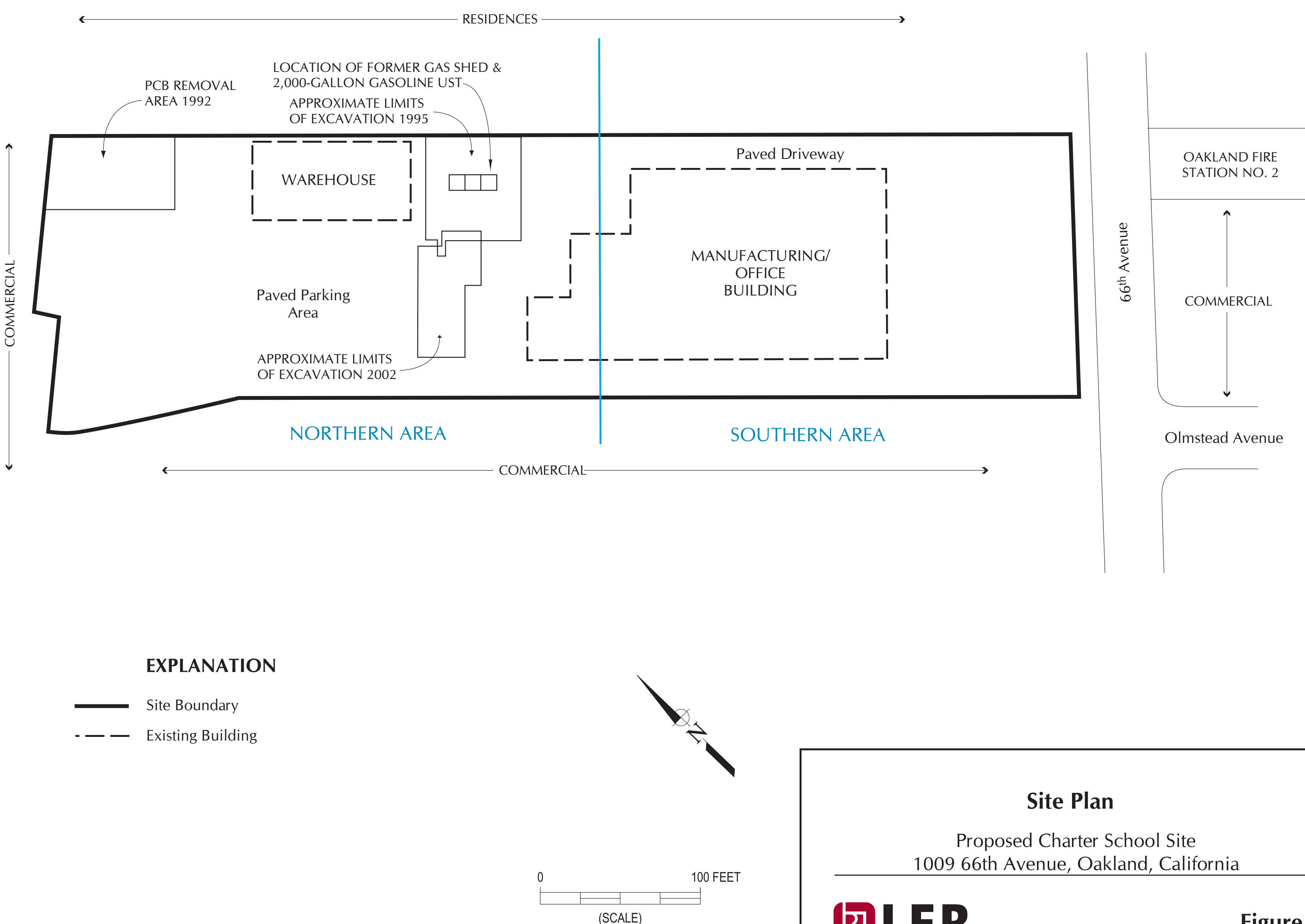

Site Plan

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

LFR

Figure 2

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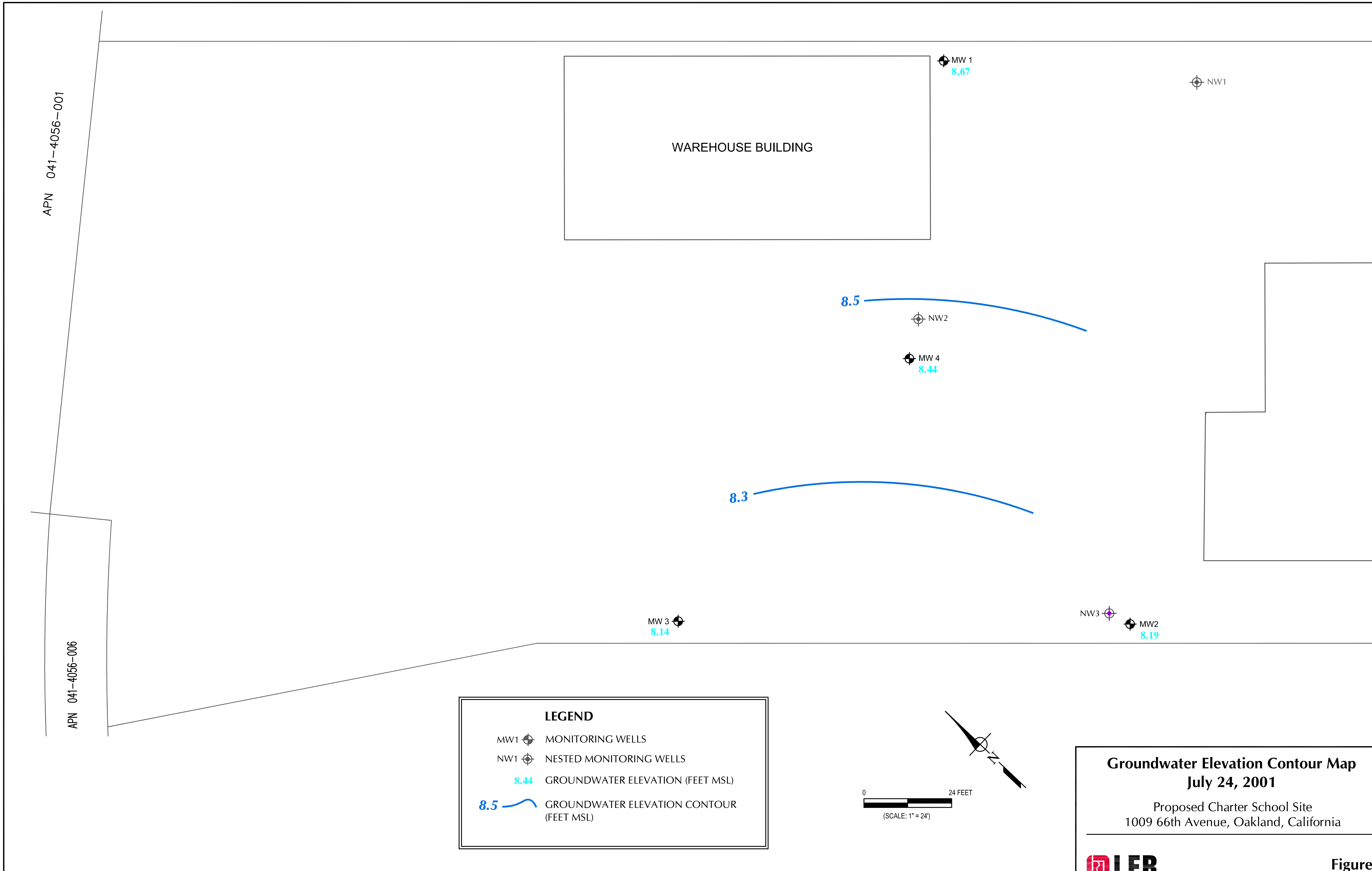

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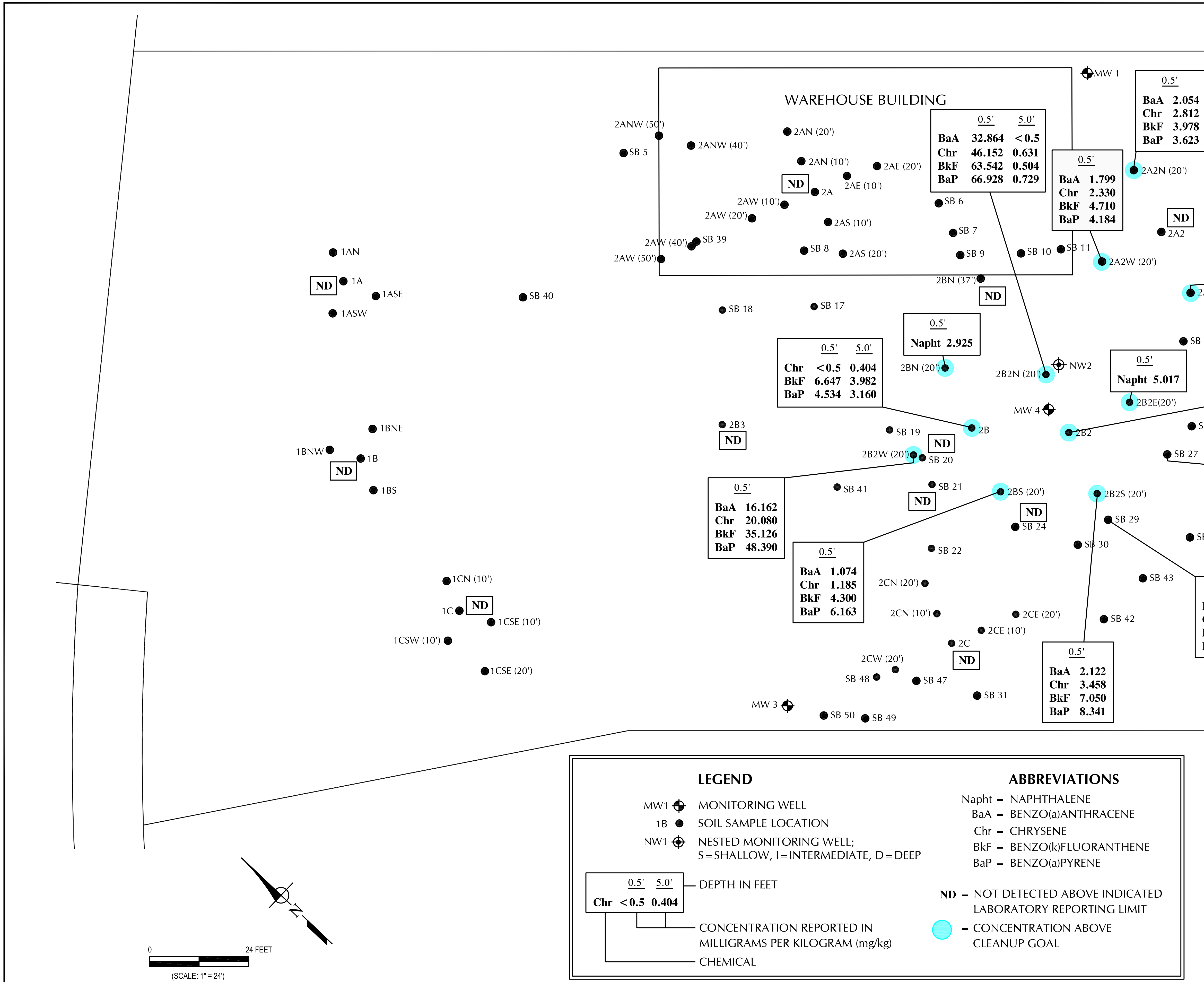

Semi-Volatile Organic Compounds Detected in Soil Samples - 0 to 5 Feet Northern Area

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

LFR

Figure 4a

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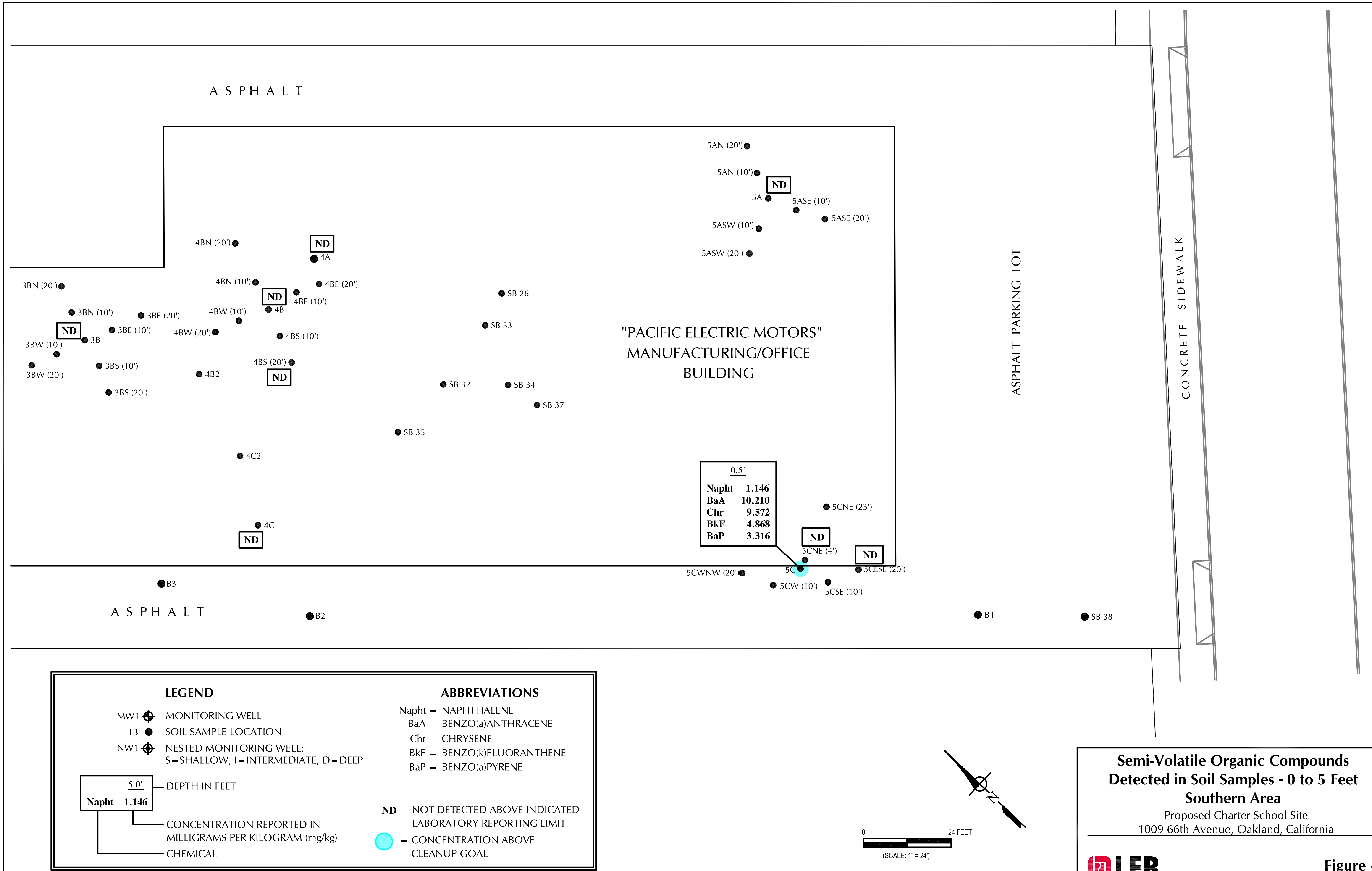

Semi-Volatile Organic Compounds Detected in Soil Samples - 0 to 5 Feet Southern Area

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

LFR

Figure 4b

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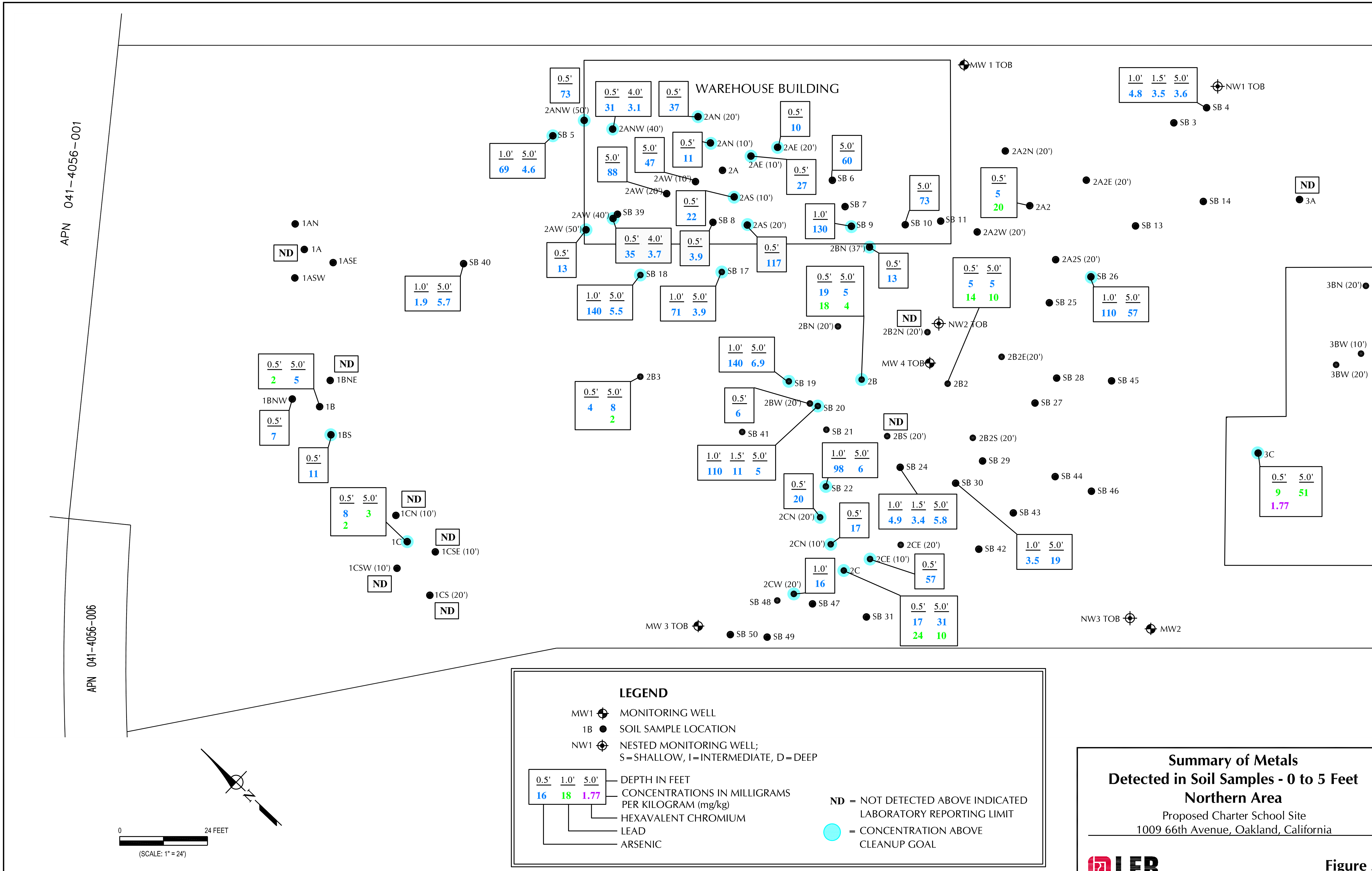

Summary of Metals Detected in Soil Samples - 0 to 5 Feet Northern Area

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

LFR

Figure 5a

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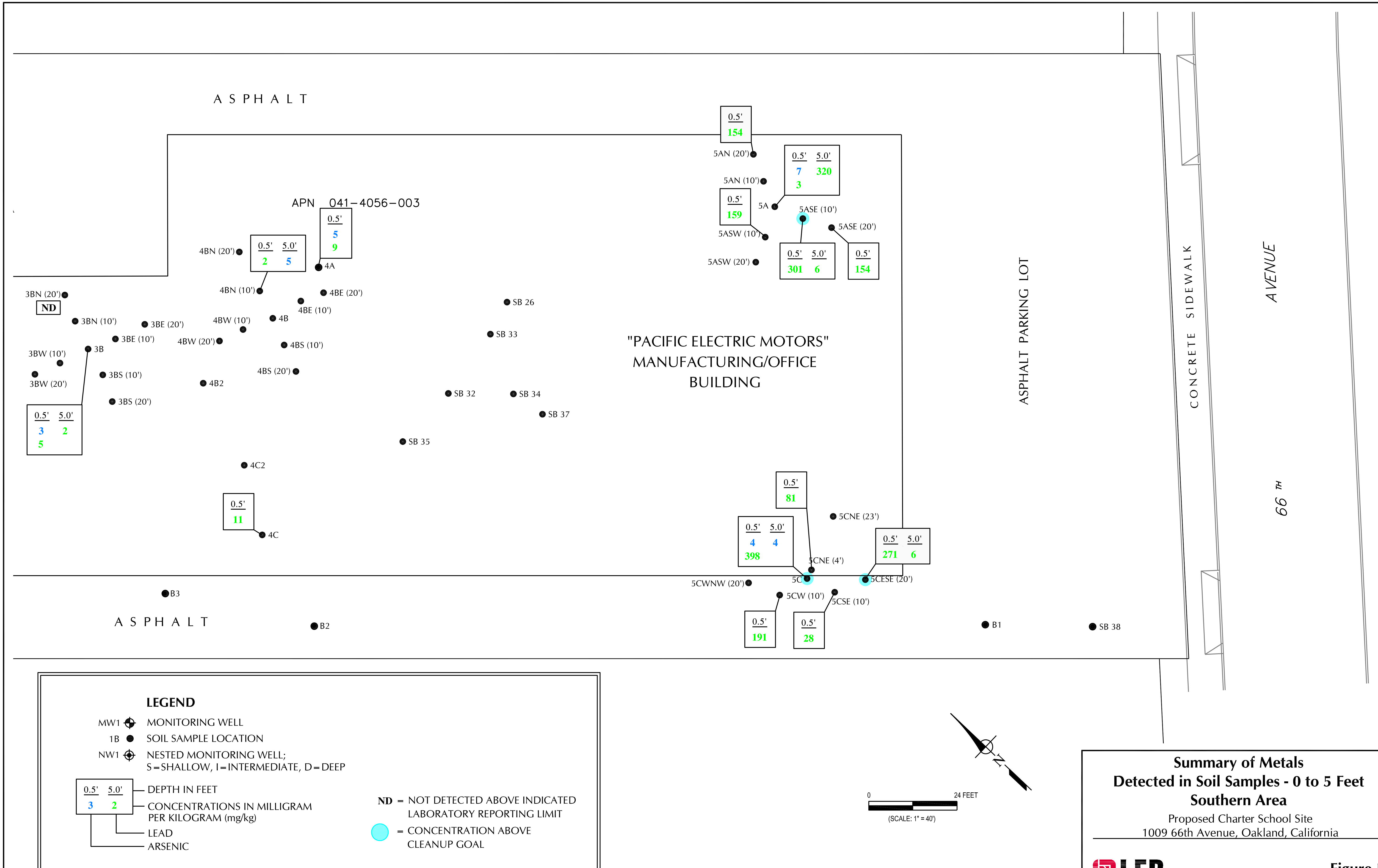

Summary of Metals
Detected in Soil Samples - 0 to 5 Feet
Southern Area

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

LFR

Figure 5b

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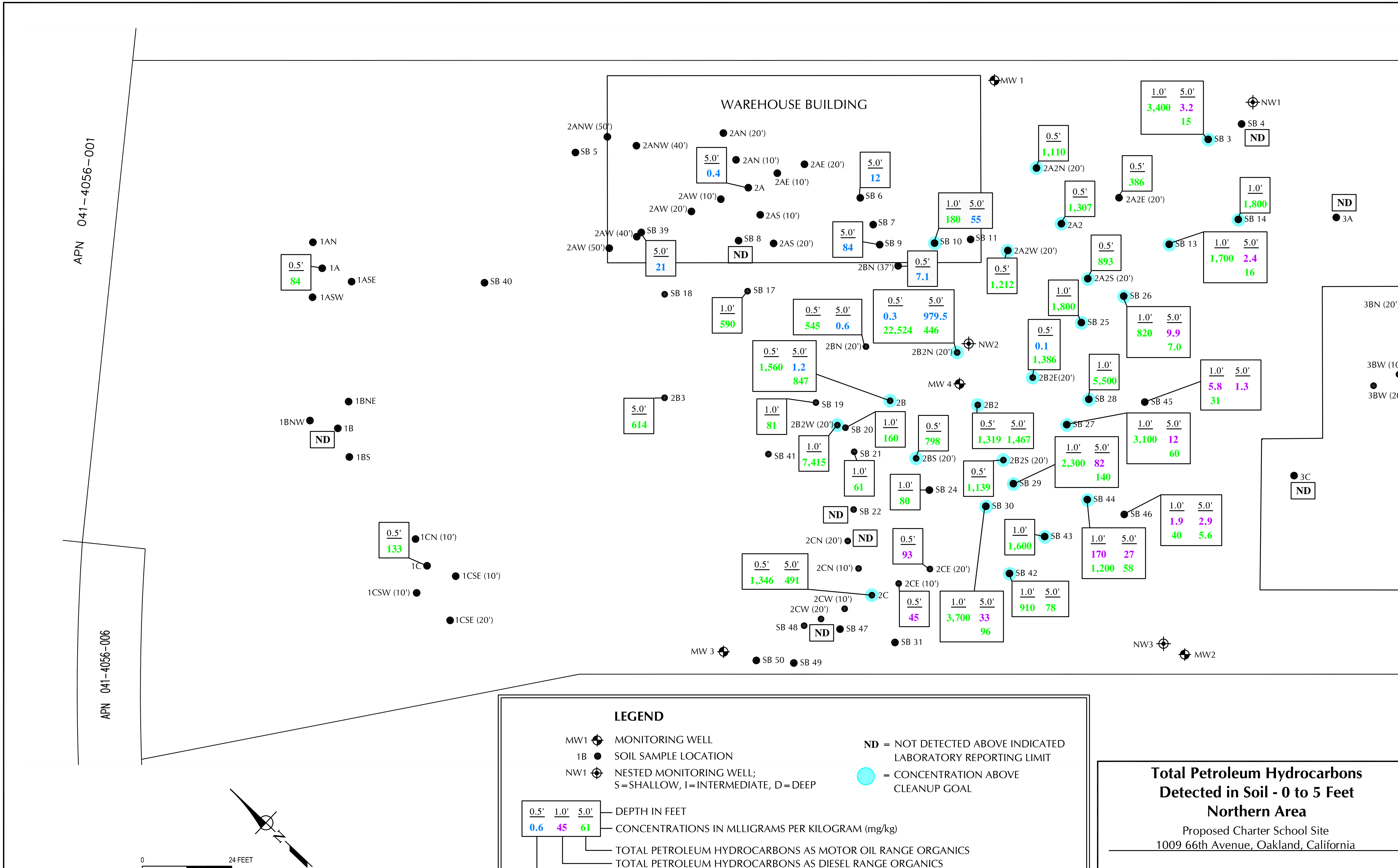

LEGEND

MW1 — MONITORING WELL

1B — SOIL SAMPLE LOCATION

NW1 — NESTED MONITORING WELL; S=SHALLOW, I=INTERMEDIATE, D=DEEP

ND = NOT DETECTED ABOVE INDICATED LABORATORY REPORTING LIMIT

= CONCENTRATION ABOVE CLEANUP GOAL

0.5'	1.0'	5.0'
0.6	45	61

— DEPTH IN FEET

— CONCENTRATIONS IN MLLIGRAMS PER KILOGRAM (mg/kg)

— TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL RANGE ORGANICS

— TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS

— TOTAL PETROLEUM HYDROCARBONS AS GASOLINE RANGE ORGANICS

Total Petroleum Hydrocarbons Detected in Soil - 0 to 5 Feet Northern Area

Proposed Charter School Site

1009 66th Avenue, Oakland, California

LFR

Figure 6a

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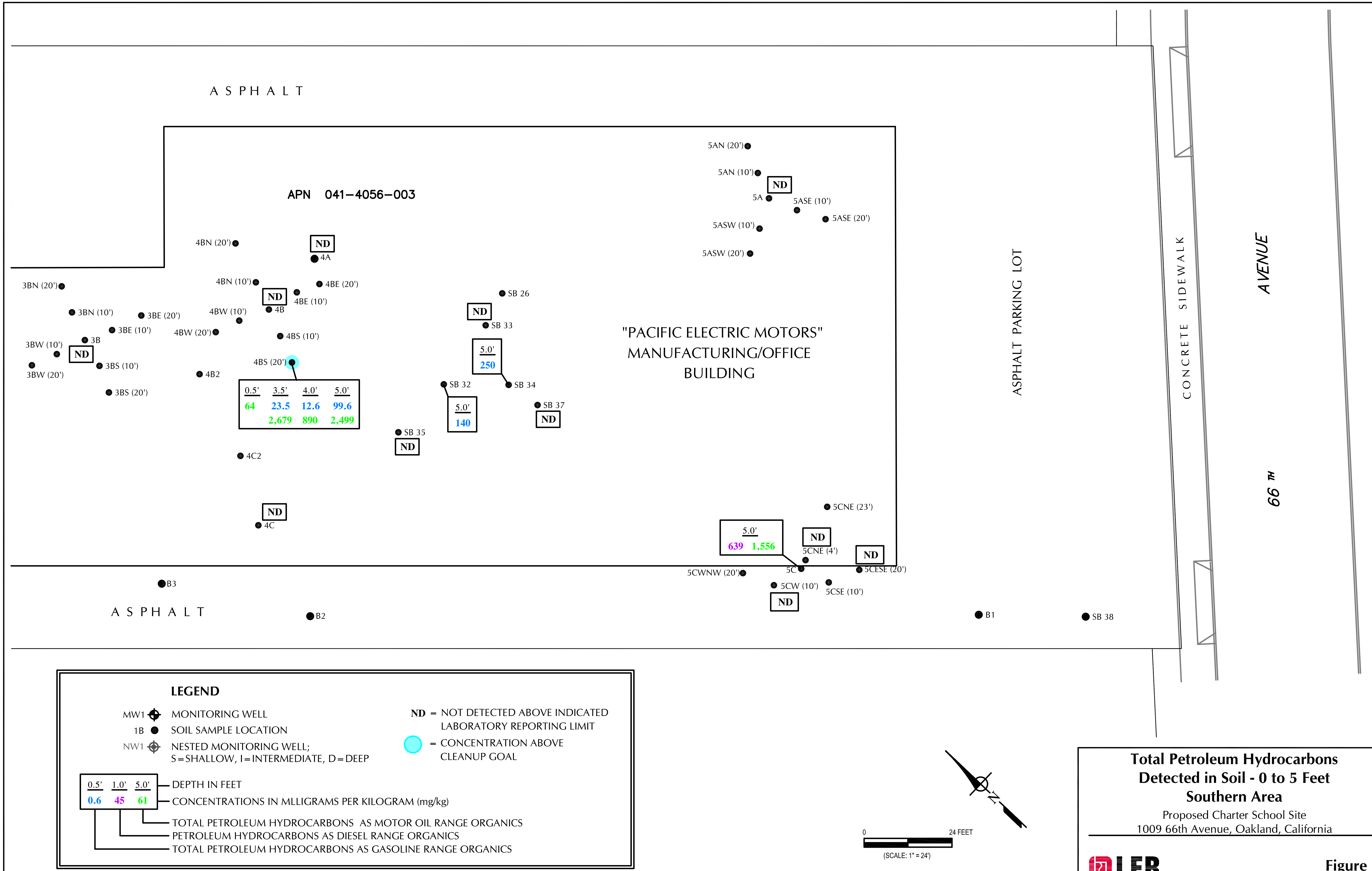

Total Petroleum Hydrocarbons Detected in Soil - 0 to 5 Feet Southern Area

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

LFR

Figure 6b

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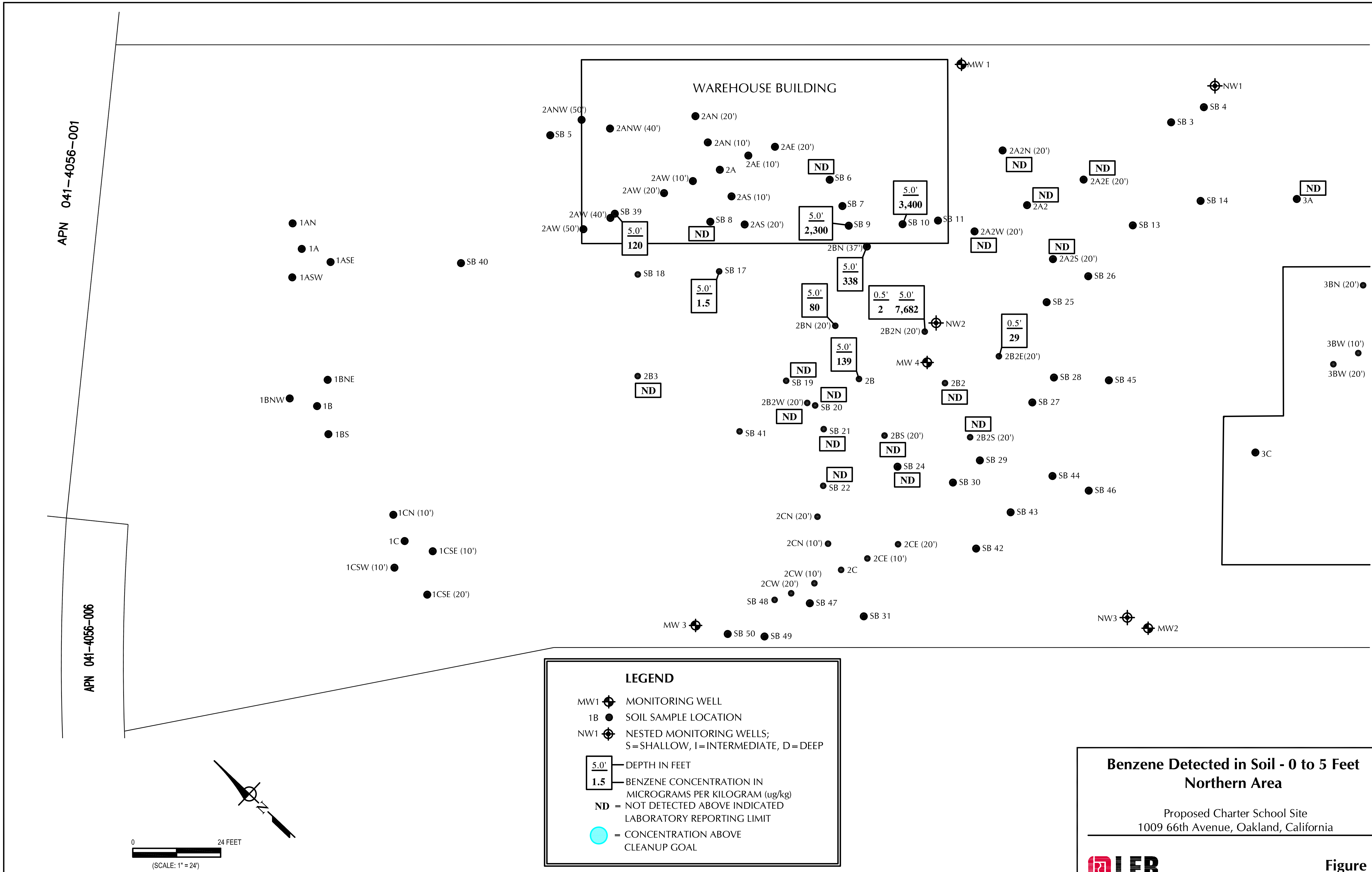

Benzene Detected in Soil - 0 to 5 Feet
Northern Area

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

Figure 7a

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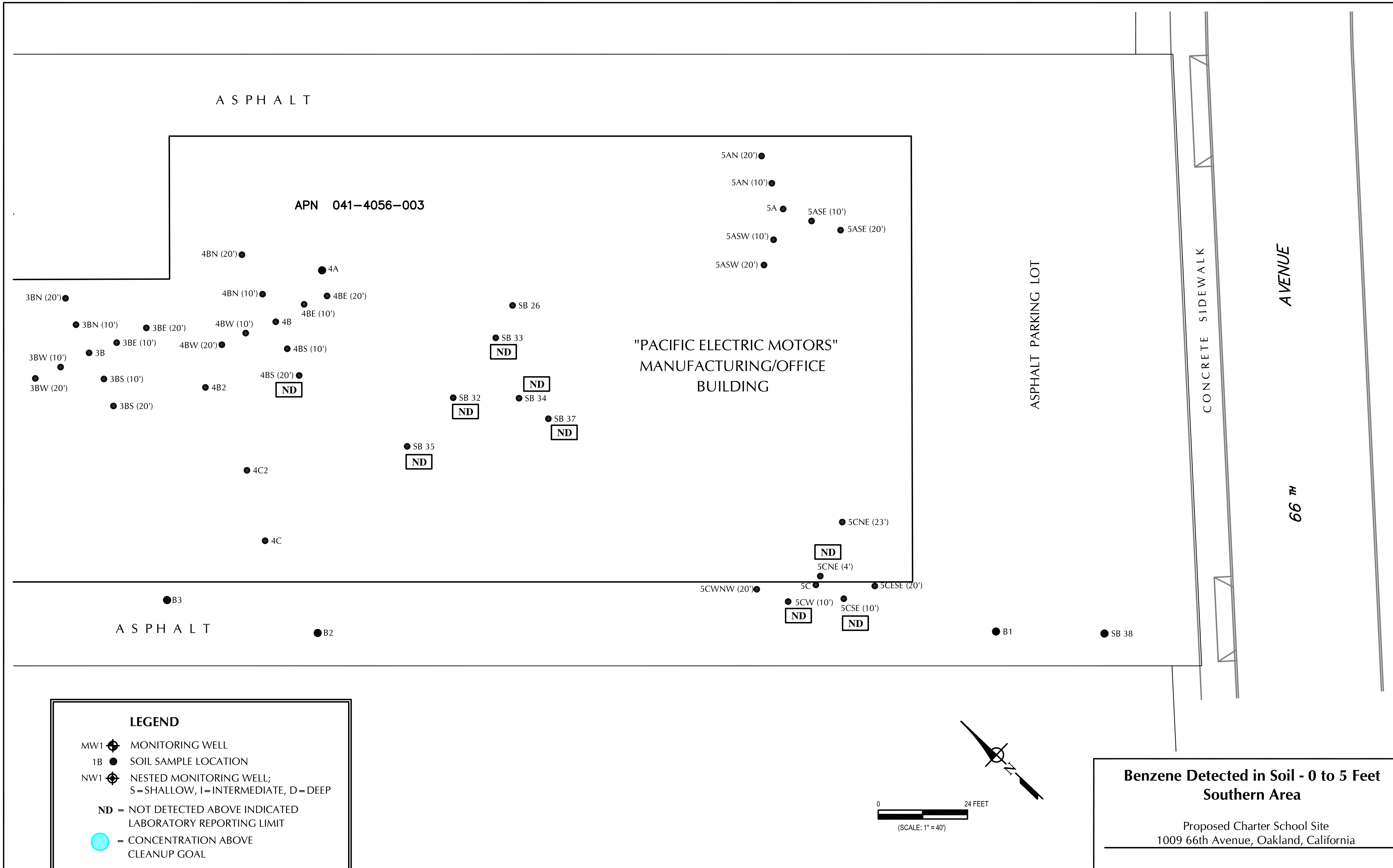


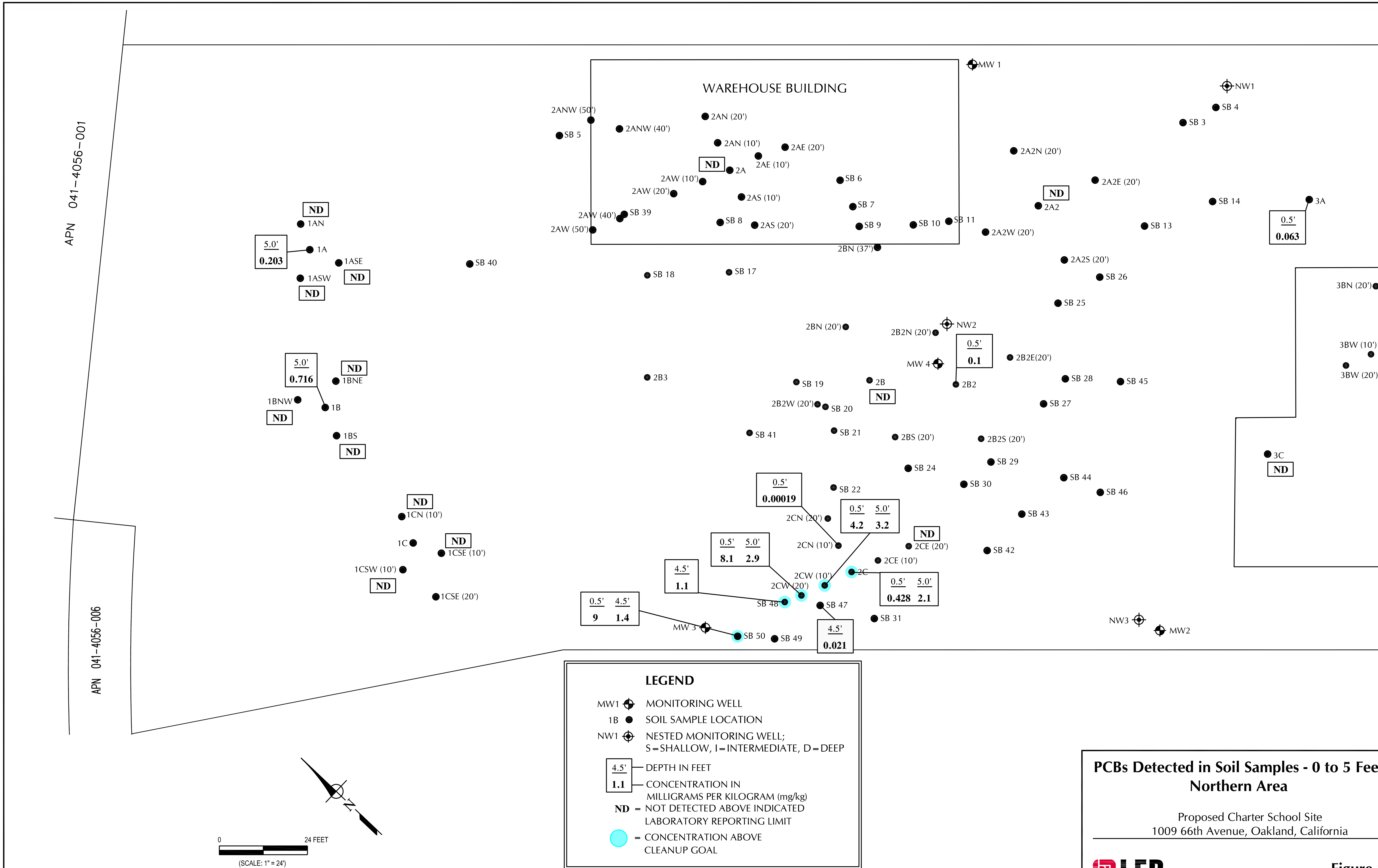
Benzene Detected in Soil - 0 to 5 Feet
Southern Area

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

LFR

Figure 7b

H:\LFPUBLIC\GRAPHICS FILES\FIGURES\09155_CharterSchools\Jan_2009\JAK\09155 03_PBC Figs.dwg Feb 19,2009-2:27pm



PCBs Detected in Soil Samples - 0 to 5 Feet
Northern Area

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

LFR

Figure 8a

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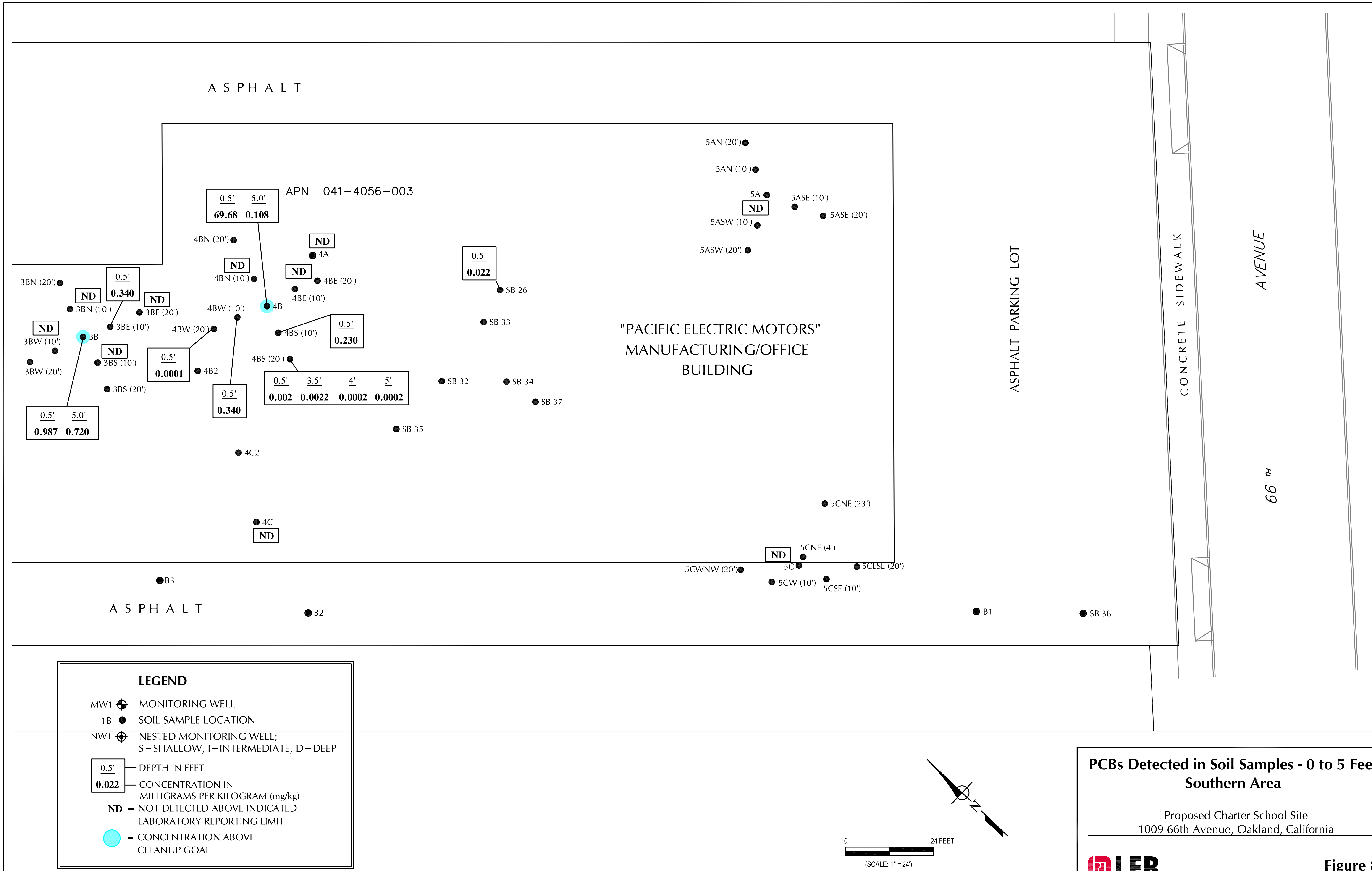

PCBs Detected in Soil Samples - 0 to 5 Feet
Southern Area

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

LFR

Figure 8b

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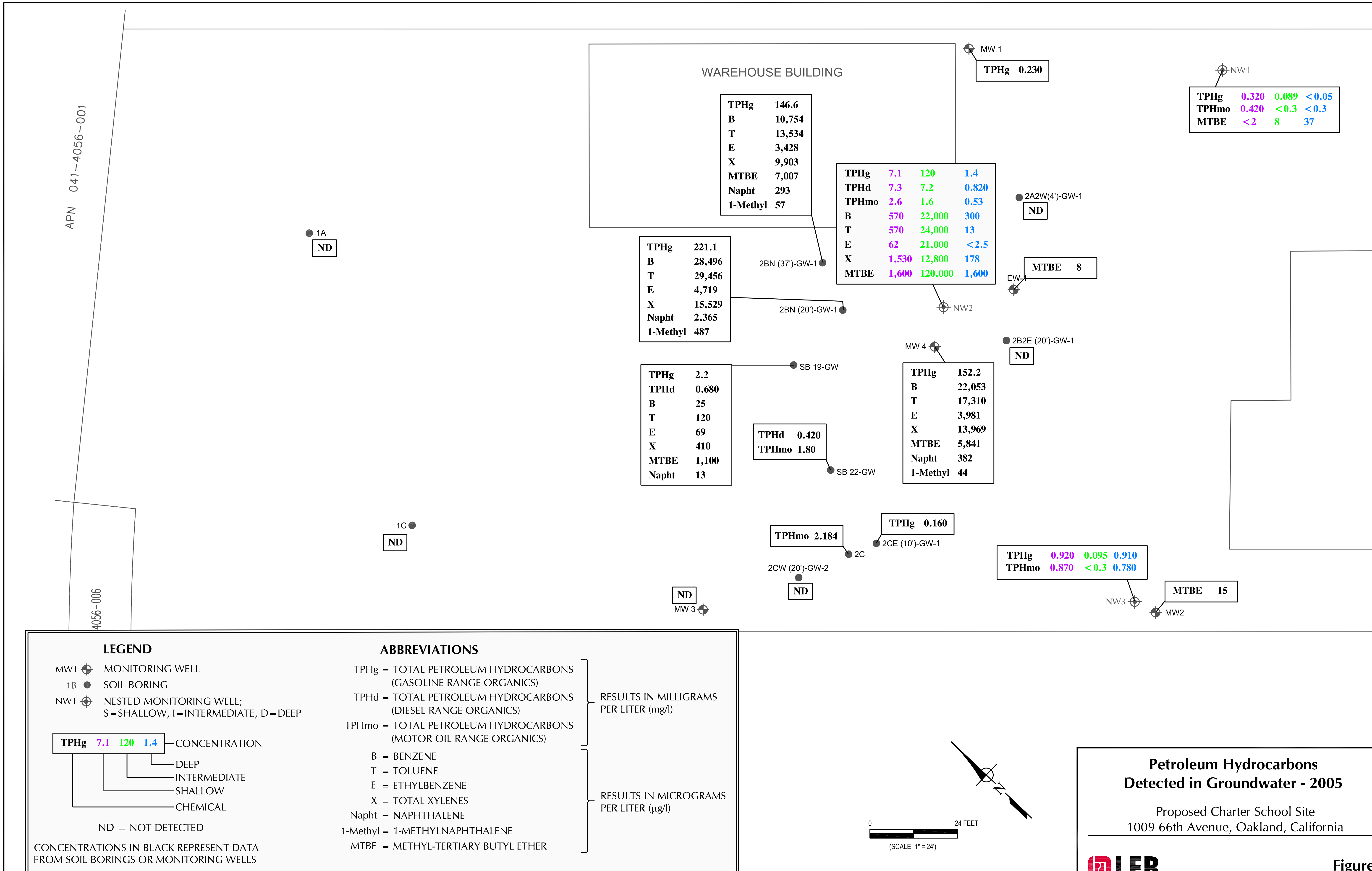

Petroleum Hydrocarbons Detected in Groundwater - 2005

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

Figure 9

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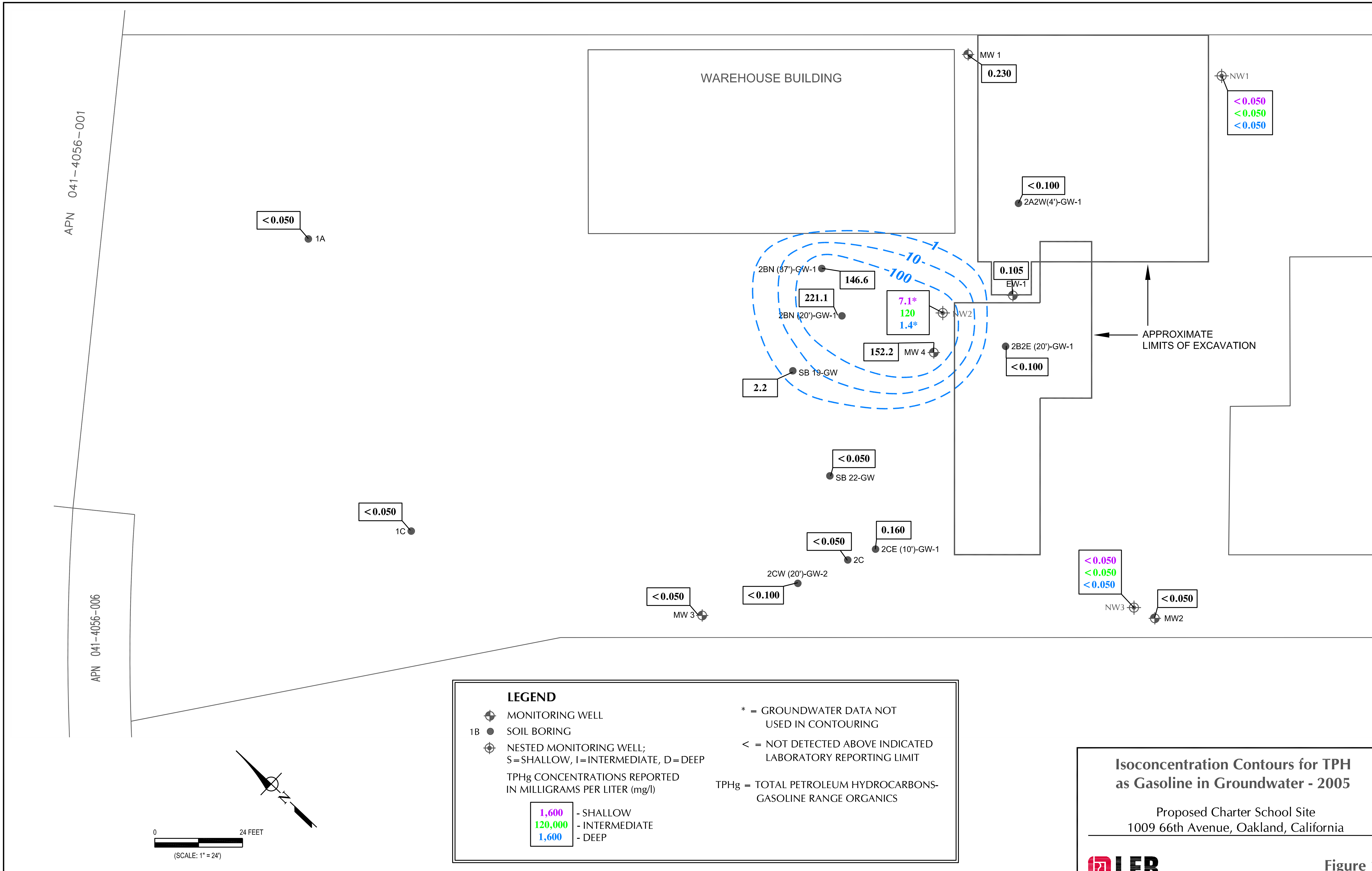


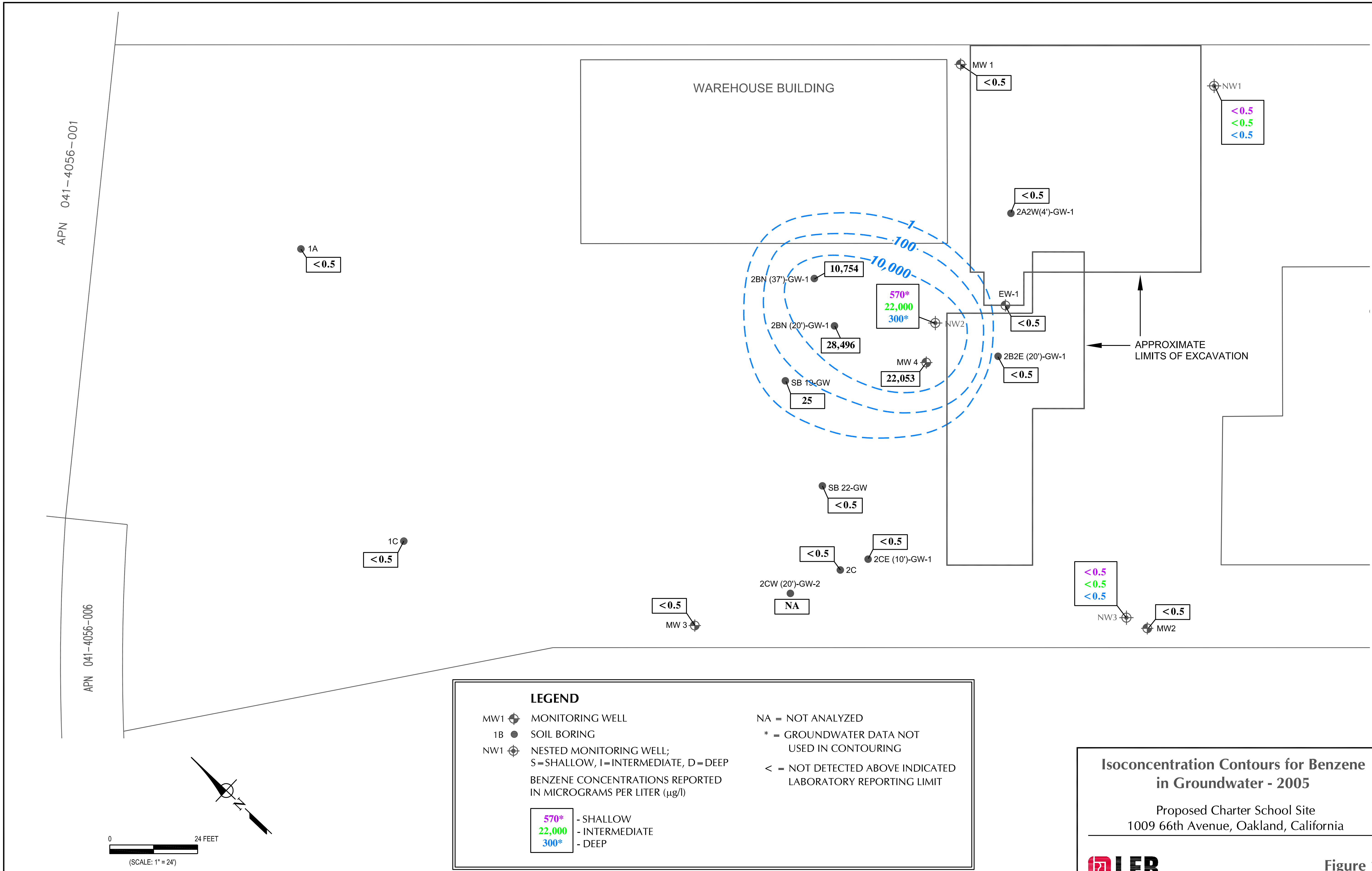
Isoconcentration Contours for TPH as Gasoline in Groundwater - 2005

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

LFR

Figure 10

K:\Data\Graphics\003-Santa Maria\003-09155-03\09155.03_GWQ- Figs.dwg   Feb 20,2009-5:02pm



LEGEND

MW1 ⊕ MONITORING WELL

1B ● SOIL BORING

NW1 ⊕ NESTED MONITORING WELL;
S=SHALLOW, I=INTERMEDIATE, D=DEEP

BENZENE CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (µg/l)

570* - SHALLOW
22,000 - INTERMEDIATE
300* - DEEP

NA = NOT ANALYZED

* = GROUNDWATER DATA NOT USED IN CONTOURING

< = NOT DETECTED ABOVE INDICATED LABORATORY REPORTING LIMIT

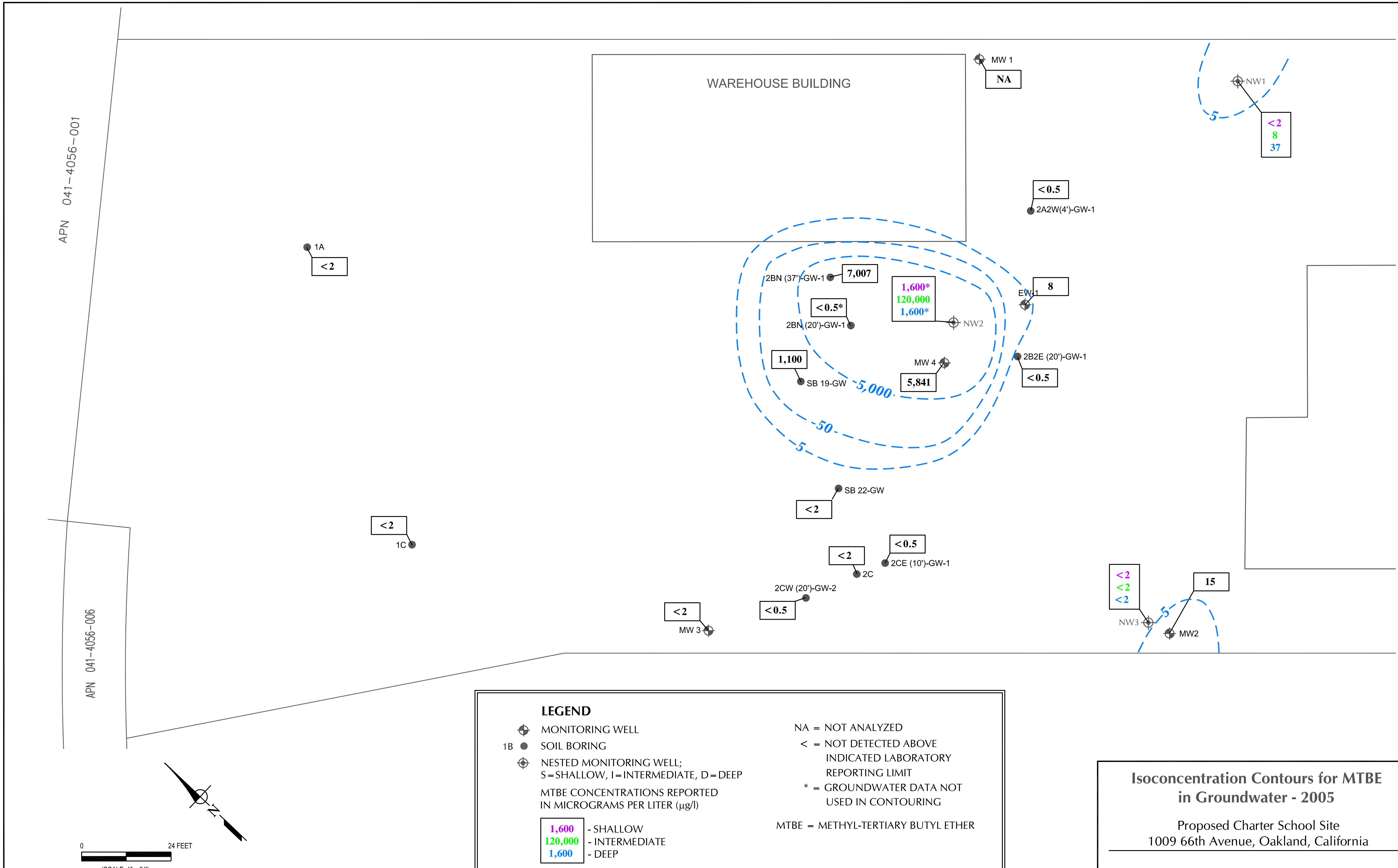
Isoconcentration Contours for Benzene in Groundwater - 2005

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

LFR

Figure 11

K:\Data\Graphics\003-Santa Maria\003-09155-03\09155.03_GWQ- Figs.dwg Feb 20,2009-5:01pm



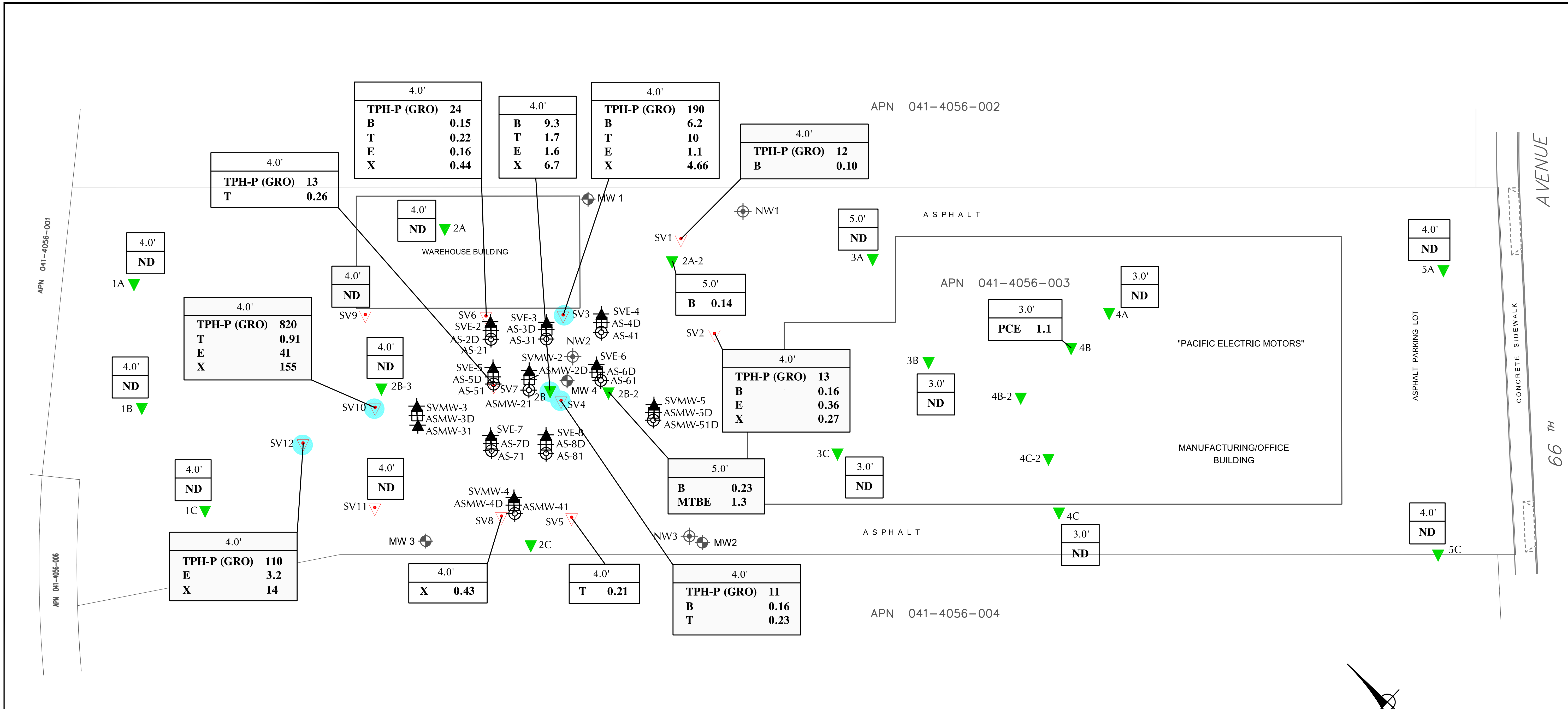
Isoconcentration Contours for MTBE in Groundwater - 2005

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

LFR

Figure 12

K:\Data\Graphics\003-Santa Maria\003-09155-03\09155.03_GWQ- Figs.dwg   Feb 20,2009-5:00pm



LEGEND

MW1	MONITORING WELL
NW1	NESTED MONITORING WELL
1A	SOIL GAS SAMPLE LOCATION - MARCH 2005
SV1	SOIL GAS SAMPLE LOCATION - AUG 2008
SVE-3	SVE MONITORING WELL
AS-3D	INTERMEDIATE GROUNDWATER AIR INJECTION OR AIR INJECTION MONITORING WELL
AS-31	DEEP GROUNDWATER AIR INJECTION OR AIR INJECTION MONITORING WELL

5.0' — DEPTH IN FEET

B 0.14 — ANALYSIS RESULTS IN MICROGRAMS PER LITER(µg/l) — CHEMICAL

ND = NOT DETECTED ABOVE INDICATED LABORATORY REPORTING LIMIT

= CONCENTRATION ABOVE CLEANUP GOAL

ABBREVIATIONS

- TPH-P (GRO) = TOTAL PETROLEUM HYDROCARBONS (GASOLINE RANGE ORGANICS)
- B = BENZENE
- T = TOLUENE
- E = ETHYLBENZENE
- X = TOTAL XYLENES
- MTBE = METHYL-TERTIARY BUTYL ETHER
- PCE = TETRACHLOROETHENE

SOURCE: TRONOFF ASSOCIATES

Volatile Organic Compounds Detected in Soil Gas

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

LFR

Figure 13

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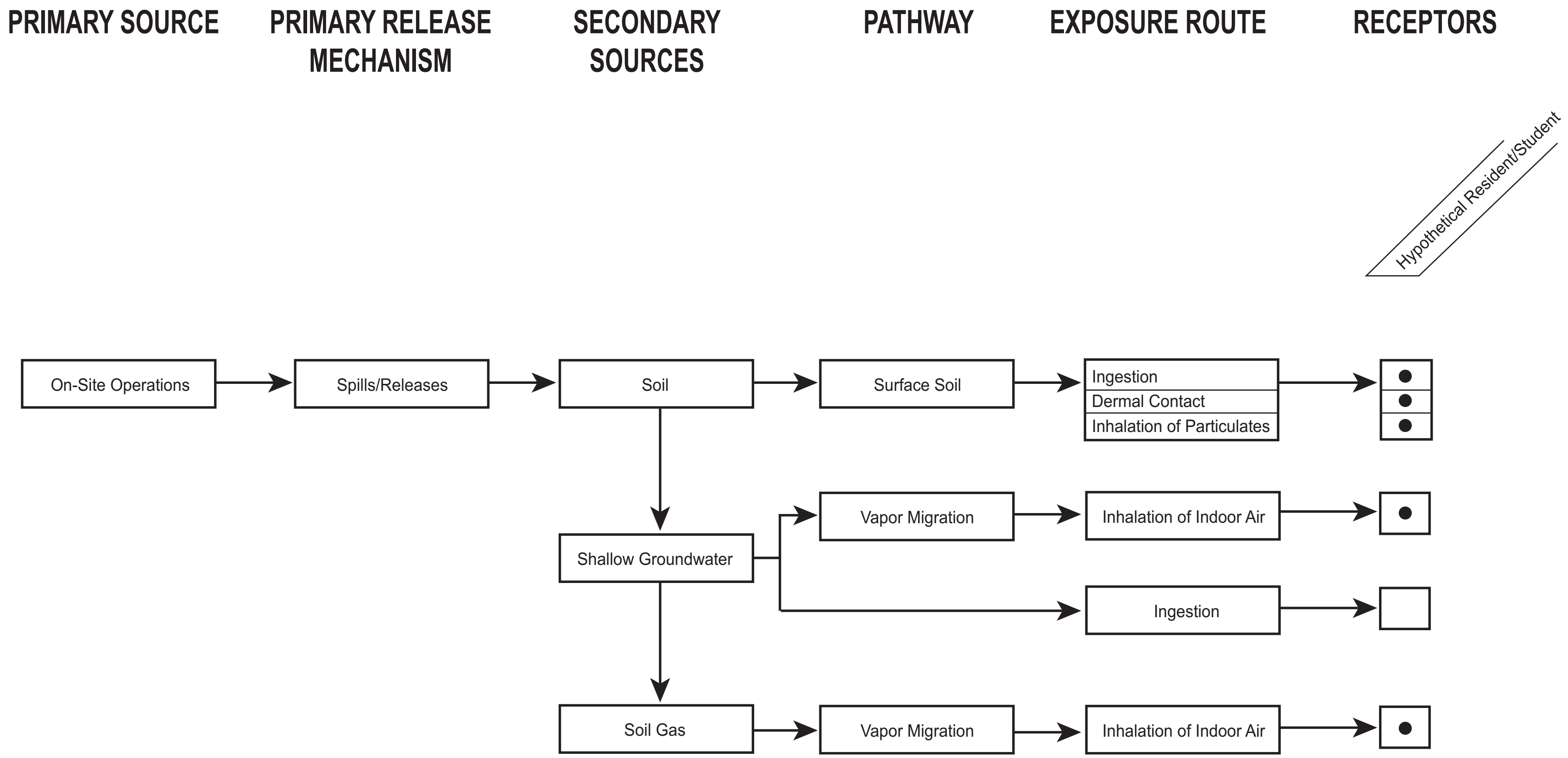

LEGEND

- ● Complete exposure pathway, quantitative evaluation
- ☐ Incomplete exposure pathway, quantitatively evaluated

Conceptual Site Model for Complete Exposure Pathways

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

LFR

Figure 14

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APPENDIX A

Applicable or Relevant and Appropriate Requirements

Table A-1
Potential Federal ARARs

Requirement	Citation	Description	Applicable/ Relevant and Appropriate	Comments	ARAR Will Be Met For Project
Potential Federal Chemical-Specific ARARs					
TSCA	15 U.S.C. Section 2601 to 2692	Establishes management standards for toxic substances including PCBs.			
PCB Remediation Waste	40 C.F.R. Section 761.61	Established self-implementing cleanup standards for PCB remediation waste under specified conditions	No/Yes	Cleanup levels for unrestricted use may be relevant and appropriate if PCBs greater than 50 mg/kg are removed from the Site for off site disposal during remedial actions.	Yes
Potential Federal Action-Specific ARARs					
RCRA as amended by the HSWA	42 U.S.C. Sections 6901-6992k	Establishes standards for management of hazardous waste.			
Identification and Listing of Hazardous Waste	40 C.F.R. Part 261	Criteria defining hazardous waste.	Yes/No	Investigation-derived residuals meeting these criteria must be managed as a hazardous waste.	Yes
Hazardous Waste Generator Standards	40 C.F.R. Part 262	Requirements for waste identification; obtaining an EPA identification number; use of the hazardous waste manifest; packaging, marking, and labeling; accumulation time; recordkeeping and reporting.	Yes/No	Applicable to site activities involving generation of hazardous waste, such as generation of some investigation-derived residuals.	Yes

Table A-1
Potential Federal ARARs

Requirement	Citation	Description	Applicable/ Relevant and Appropriate	Comments	ARAR Will Be Met For Project
Hazardous Waste Generator Standards	40 C.F.R. Part 265 Subpart C	Preparedness and prevention requirements.	Yes/No	Applicable to site activities involving generation of hazardous waste, such as generation of some investigation-derived residuals.	Yes
Hazardous Waste Generator Standards	40 C.F.R. Part 265.16	Training requirements.	Yes/No	Applicable to site activities involving generation of hazardous waste, such as generation of some investigation-derived residuals.	Yes
Hazardous Waste Generator Standards	40 C.F.R. Part 265 Subpart I	Container management requirements.	Yes/No	Applicable to on-site accumulation of hazardous waste, such as some investigation-derived residuals, in containers for less than 90 days.	Yes
Land Disposal Restrictions	40 C.F.R. Part 268	Prohibits land disposal of restricted hazardous waste without meeting treatment standards; recordkeeping requirements.	Yes/No	Hazardous waste sent off site for disposal, including investigation-derived residuals, just meet appropriate treatment standards before being disposed to land.	Yes
Hazardous Waste Transportation Requirements	40 C.F.R. Part 263	Requirements for hazardous waste transporters.	Yes/No	Applicable for transportation of hazardous waste off site.	Yes

Table A-1
Potential Federal ARARs

Requirement	Citation	Description	Applicable/ Relevant and Appropriate	Comments	ARAR Will Be Met For Project
OSHA	29 U.S.C. Sections 651-678	Establishes workplace health and safety standards.			
OSHA Hazardous Waste Operations and Emergency Response Regulations	29 C.F.R. Section 1910.120	Standards for employee safety during specified hazardous waste operations.	Yes/No	Worker protection standards applicable to cleanup operations.	Yes
OSHA Safety and Health Standards for Construction	29 C.F.R. Part 1926	Standards for construction and excavation.	Yes/No	Applicable to specified construction and excavation activities.	Yes
DOT Requirements for Hazardous Materials Transportation	40 C.F.R. Parts 171-177	Standards for transportation of hazardous materials.	Yes/No	Applicable to off-site transportation of specified hazardous materials, including hazardous waste.	Yes
Potential Federal Location-Specific ARARs					
No potential Federal location-specific ARARs have been identified for this Site.					

Table A-2
Potential State ARARs

Requirement	Agency	Citation	Description	Applicable/ Relevant and Appropriate	Comments	ARAR Will Be Met For Project
Potential State Chemical-Specific ARARs						
Visible Emissions	BAAQMD	Air Quality Management District Regulations, Regulation 6	Prohibits the emission of visible air contaminants into the atmosphere.	Yes/No	Applies to sources which emit or may emit air contaminants that are as dark or darker in shade than No. 1 on the Ringelman Chart for more than three (3) minutes in any one hour. Potentially applicable if investigation or remediation activities have the potential to produce visible emissions.	Yes
Nuisance	BAAQMD	Air Quality Management District Regulations, Rule 1-301	Prohibits the creation of a nuisance by emission of air contaminants.	Yes/No	Applies to source operations which emits or may emit air contaminants or other materials. Potentially applicable if investigation or remediation activities have the potential to generate air emissions.	Yes
Handling of Stockpiled Soil	BAAQMD	Air Quality Management District Regulation 8, Rule 40	Provides the requirements for maintaining, covering, and stockpiling excavated soil.	Yes/No	Applies to excavated soil which stockpiled on site for any length of time.	Yes
Risk Based Screening Levels	RWQCB	Application of Risk-Based Screening Levels and Decision Making to Sites With Impacted Soil and Groundwater	Requires minimum acceptable levels of chemicals in soil and groundwater be met to achieve closure	Yes/No	Applies specifically to remediation and cleanup of school sites. Directly applicable to remediation activities at the Site.	Yes

Table A2
Potential State ARARs

Requirement	Agency	Citation	Description	Applicable/ Relevant and Appropriate	Comments	ARAR Will Be Met For Project
Potential State Action-Specific ARARs						
Safe Drinking Water and Toxics Enforcement Act of 1986 (Proposition 65)	OEHHA	Cal. Health & Safety Code, Division 20, Chapter 6.6, Section 25249.5	Requires warnings of exposure to listed chemicals above specified concentrations or risk levels.	Yes/No	Investigation and remediation activities will consider warning requirements if they result in exposures above specified levels of "No significant risk".	Yes
VOC emissions from decontamination of contaminated soil	BAAQMD	Air Quality Management District Regulations, Rule 8-40	Limits VOC emissions from handling of contaminated soil by requiring specified management practices including covering stockpiles and trucks.	Yes/No	Potentially applicable to excavation of VOC-affected soil	Yes
California Hazardous Waste Control Law	DTSC	Cal. Health & Safety Code, Division 20, Chapter 6.5	Establishes standards for management of hazardous waste.			
Remediation Waste Staging	DTSC	Cal. Health & Safety Code, Section 25123.3	Establishes standards for management of remediation waste in staging piles	Yes/No	Applicable if excavated soil is temporarily managed in on-site staging piles	Yes
Criteria for identification of hazardous and extremely hazardous waste	DTSC	22 Cal. Code Regs. Division 4.5, Chapter 11	Establishes numerical criteria for identification of hazardous and extremely hazardous waste.	Yes/No	Investigation-derived residuals meeting these criteria must be managed as a hazardous waste.	Yes

Table A2
Potential State ARARs

Requirement	Agency	Citation	Description	Applicable/ Relevant and Appropriate	Comments	ARAR Will Be Met For Project
Hazardous waste generator standards	DTSC	22 Cal. Code Regs. Division 4.5, Chapter 12	Requirements for waste identification; obtaining an EPA identification number; use of the hazardous waste manifest; packaging, marking and labeling; accumulation time; recordkeeping and reporting.	Yes/No	Applicable to site activities involving generation of hazardous waste, such as generation of IDR.	Yes
Hazardous waste generator standards	DTSC	22 Cal. Code Regs. Division 4.5, Chapter 15, Article 3	Preparedness and prevention requirements.	Yes/No	Applicable to site activities involving generation of hazardous waste, such as generation of IDR.	Yes
Hazardous waste generator standards	DTSC	22 Cal. Code Regs. Division 4.5, Chapter 15, Article 4	Contingency Plan requirements.	Yes/No	Applicable to site activities involving generation of hazardous waste, such as generation of IDR.	Yes
Hazardous waste generator standards	DTSC	22 Cal. Code Regs. Section 66265.16	Training requirements.	Yes/No	Applicable to site activities involving generation of hazardous waste, such as generation of IDR.	Yes
Hazardous waste generator standards	DTSC	22 Cal. Code Regs. Division 4.5, Chapter 15, Article 9	Container management requirements.	Yes/No	Applicable to on-site accumulation of hazardous waste, such as some IDR, in containers for less than 90 days.	Yes

Table A2
Potential State ARARs

Requirement	Agency	Citation	Description	Applicable/ Relevant and Appropriate	Comments	ARAR Will Be Met For Project
Land disposal restrictions	DTSC	22 Cal. Code Regs. Division 4.5, Chapter 18	Prohibits land disposal of restricted hazardous waste without meeting treatment standards; recordkeeping requirements.	Yes/No	Applicable to restricted hazardous waste disposed off site.	Yes
Hazardous waste transportation requirements	DTSC	22 Cal. Code Regs. Division 4.5, Chapter 13	Requirements for hazardous waste transporters.	Yes/No	Applies to transportation of hazardous waste off site.	Yes
Removal Action Work Plan Oversight Requirements	DTSC	Cal Health and Safety Code, Division 20, Chapter 6.8, Section 25356.1	Requirements for review and approval of Removal Action Work Plan as part of School Property Evaluation and Cleanup	Yes/No	Requires DTSC to review and approve any Removal Action Work Plan for a school site.	Yes
California Occupational Safety and Health Act	Cal/OSHA	Cal. Labor Code, Division 5	Establishes workplace health and safety standards.			
Construction Safety Orders	Cal/OSHA	8 Cal. Code Regs. Chapter 4, Subchapter 4	Detailed construction safety requirements.	Yes/No	Applicable to on-site construction activities.	Yes
Electrical safety orders	Cal/OSHA	8 Cal. Code Regs. Chapter 4, Subchapter 5	Detailed electrical safety requirements.	Yes/No	Applicable to on-site investigation and remediation activities involving electrical wiring and equipment.	Yes
General Industry Safety Orders	Cal/OSHA	8 Cal. Code Regs. Chapter 4, Subchapter 7	Detailed safety requirements of general applicability.	Yes/No	Applicable to specific on site investigation and remediation activities.	Yes

Table A2
Potential State ARARs

Requirement	Agency	Citation	Description	Applicable/ Relevant and Appropriate	Comments	ARAR Will Be Met For Project
Hazardous Waste Operations and Emergency Response regulations	Cal/OSHA	8 Cal. Code Regs. Section 5192	Standards for employee safety during specified hazardous waste operations.	Yes/No	Worker protection standards applicable to cleanup operations.	Yes
Storm-Water Pollution Prevention Plan	SWRCB	Order No. 99-08-DWQ	Discharges of storm-water runoff associated with construction activities	Yes/No	Applicable to on-site construction activities.	Yes
Potential State Location-Specific ARARs						
No potential State location-specific ARARs have been identified for this Site.						

Table A-3
Potential Local ARARs

Requirement	Agency	Citation	Description	Applicable/ Relevant and Appropriate	Comments	ARAR Will Be Met For Project
Potential Local Action-Specific ARARs						
Excavation	City of Oakland Engineering Department	Chapter 12, Section 12 of the City of Oakland Municipal Code	Requires permit for excavation	No/No	Permits are required for excavation activities in public areas such as streets and sidewalks. Not applicable for the Site as excavation activities will be entirely within private property boundaries and do not involve sidewalks or other public rights of way.	No
Burn permit	City of Oakland Fire Department	Unknown	Requires permit for any open flame including cutting torches.	No/No	Unable to confirm requirement but is a standard requirement in most areas but no open flames will be present during remediation.	No
Potential Local Chemical-Specific ARARs						
Risk Based Corrective Action Program for sites with impacted soil	City of Oakland Department of Public Works, Urban Land Redevelopment Program	Oakland Urban Land Redevelopment Program Guidance Document	Requires minimum chemical levels in soil to be met before closure is granted	Yes/No	Applicable for remediation activities at the Site as final chemical levels should conform to the levels designated in the Oakland Urban Land Redevelopment Program Guidance Document	Yes
Conditional Use Permit for Remedial Action	City of Oakland Planning Department	Oakland Planning Code (Ordinance 12054, Section 2) 1998, Chapter 17.70.081	Requires a conditional use permit for a Hazardous Waste Management Activity on properties zoned M-30	Yes/Yes	Applicable for planned site remediation activities as the Site is zoned M-30 and soil with hazardous chemical levels will be excavated for off site disposal.	Yes

APPENDIX B

Calculation Sheets for Cleanup Goals and Log Plot of Arsenic Concentrations for Assessment of Background

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
71432	1.20E+03			Benzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	152.4	24	sic		

MORE ↓

ENTER Vandose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
sic	1.38	0.481	0.216	5

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	6	6	180

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (^oC)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (^oK)	Critical temperature, T_C (^oK)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
8.80E-02	9.80E-06	5.54E-03	25	7,342	353.24	562.16	2.9E-05	3.0E-02	78.11

END

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137.4	0.265	0.284	1.52E-09	0.844	1.28E-09	4,000	1.20E+03	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,977	5.29E-03	2.17E-01	1.80E-04	4.57E-03	137.4

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	1.20E+03	1.25	8.33E+01	4.57E-03	5.00E+03	7.01E+15	7.01E-04	8.42E-01

Unit risk factor, URF ($\mu g/m^3$)$^{-1}$	Reference conc., RfC (mg/m^3)
2.9E-05	3.0E-02

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
1.0E-06	1.4E-02

MESSAGE SUMMARY BELOW:

END

Site Specific Clean-Up Goals
Aspire Public High School
PATHWAY -- SOIL -- PRG -- CARCINOGEN

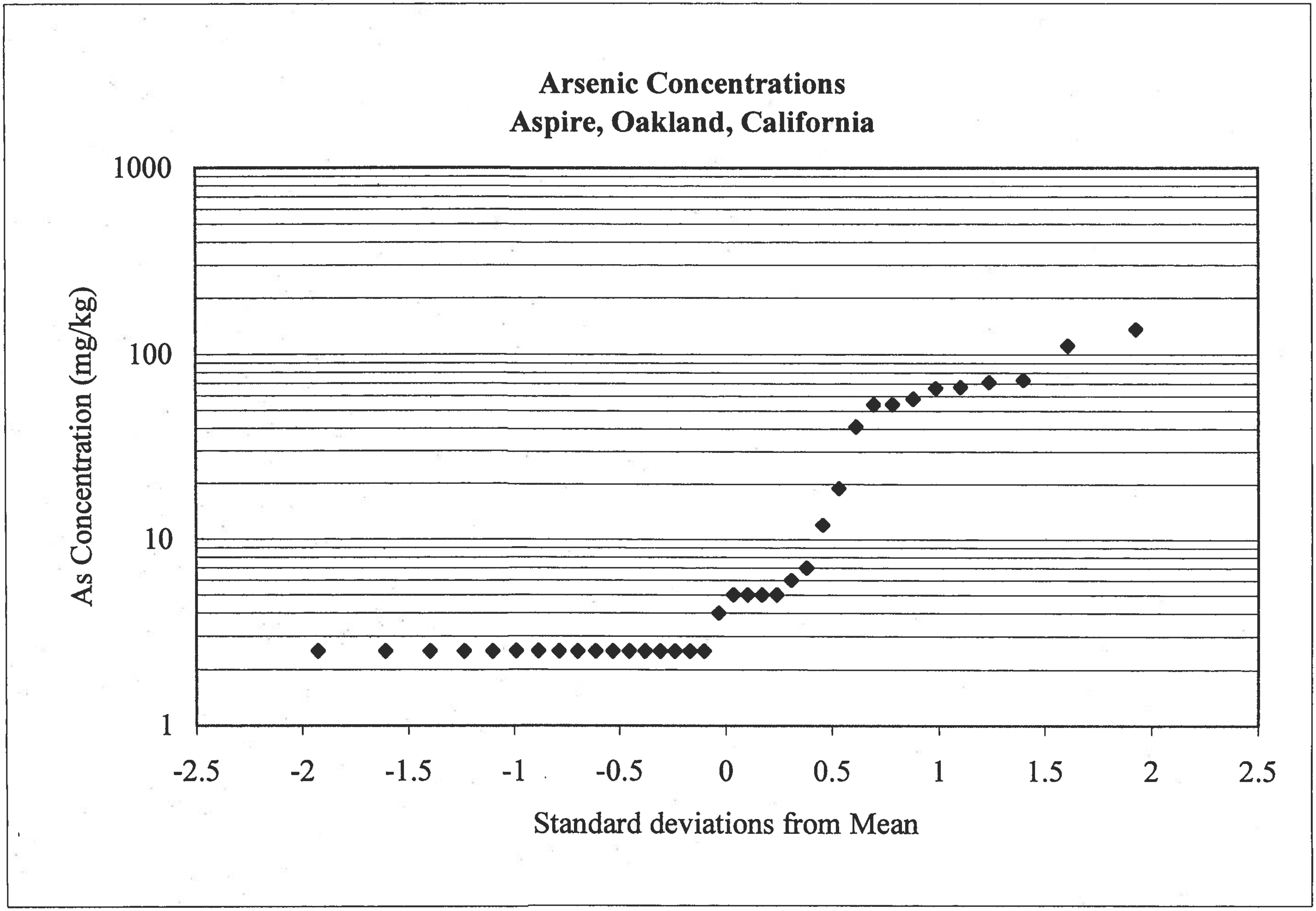
Exposure Input Variables	Acronym	Units	Child Value	PCBs	Benzo(a) Pyrene	Benzo(a) anthracene	Benzo(b) fluoranthene	chrysene	napthalene	benzene
Target Risk	TR		1.00E-06							
Skin surface area (1)	SA	cm2/day	8565							
Mass conversion factor	MCF	mg/Kg	1.0E+06							
Soil to skin adherence factor (1)	AD	mg/cm2	0.5							
Bioavailability factor	BF	unitless		0.14	0.10	0.10	0.10	0.10	0.10	0.10
Soil Ingestion (1)	SI	mg/day	100							
Inhalation Rate (1)	IR	m3/school day	10							
	VF	m3/kg								4.00E+03
Particulate Emission Factor (2)	PEF	m3/kg	N/A	5.0E+08	5.0E+08	5.0E+08	5.0E+08	5.0E+08	5.0E+08	
Exposure frequency (1)	EF	days/yr	180							
Exposure duration	ED	yr	6							
Body weight (1)	BW	kg	57.1							
Exposure extrapolation factor (1)	EEF	yr	70							
	CF	days/yr	365							
Adult		mg/kg/day		3.86E-01	2.13E-01	2.13E+00	2.13E+00	2.13E+01	2.13E+01	4.5E+00
Cancer Slope Factor-Oral	CSF	1/mg/kg/day		5.00E+00	1.20E+01	1.20E+00	1.20E+00	1.20E-01	1.20E-01	1.00E-01
Cancer Slope Factor-Inhalation	CSF			2.00E+00	3.90E+00	3.90E-01	3.90E-01	3.90E-02	1.20E-01	1.00E-01
EPA Carcinogenic Classification				B2	B2	B2	B2	B2	B2	B2
PRG		mg/kg		**3.9E-01**	**2.1E-01**	**2.1E+00**	**2.1E+00**	**2.1E+01**	**2.1E+01**	**4.5E+00**

Data Entered by_____Date_______
Data Checked by_____Date_______

(1) Skin surface area for an average male and female high school-aged receptor dreassed for warm weather, 180 school days per year (OEHHA, 2004).
(2) Preliminary Endangerment Assessment (Cal-EPA, 1999).

$$CDI = \frac{(C)\ (SA)\ (MCF)\ (AD)\ (BF)\ (EF)\ (ED)}{(BW)\ (EEF)\ (CF)}$$

RISK = (CDI) (CSF)

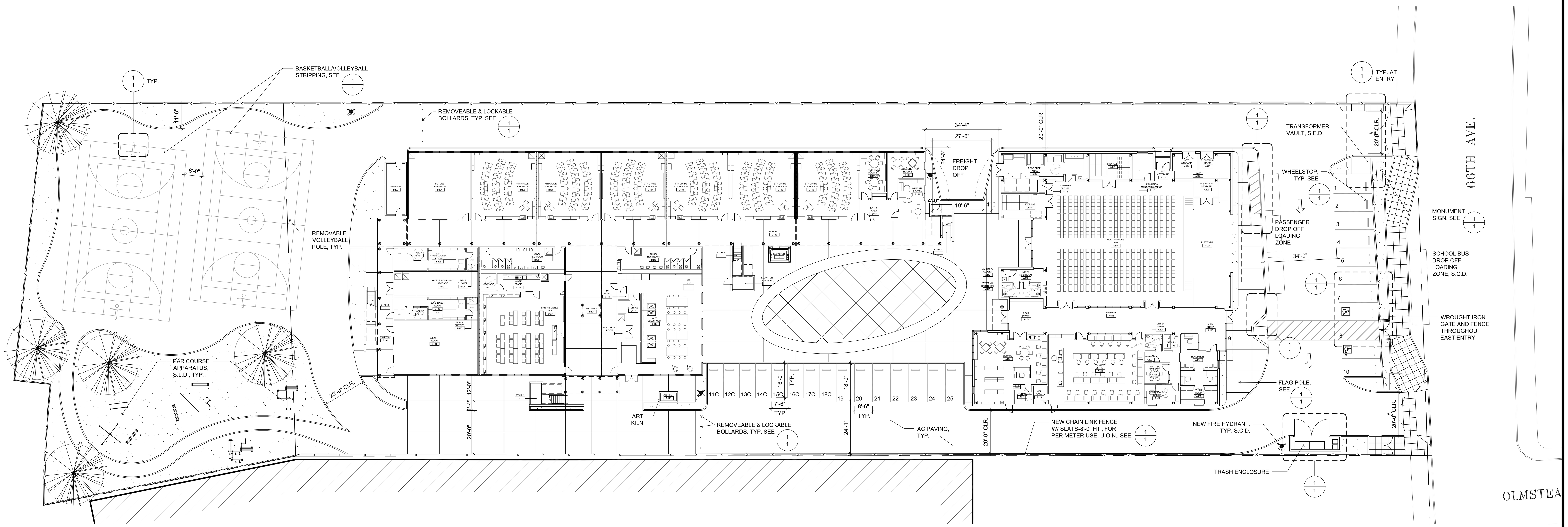

Arsenic Concentrations
Aspire, Oakland, California
As Concentration (mg/kg)
1000
100
10
1
-2.5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
2.5
Standard deviations from Mean

n 36

Rank			mg/kg
1.00	0.027027	-1.926403	2.5
2.00	0.054054	-1.606755	2.5
3.00	0.081081	-1.397837	2.5
4.00	0.108108	-1.236652	2.5
5.00	0.135135	-1.10244	2.5
6.00	0.162162	-0.98561	2.5
7.00	0.189189	-0.880888	2.5
8.00	0.216216	-0.785036	2.5
9.00	0.243243	-0.695908	2.5
10.00	0.27027	-0.611996	2.5
11.00	0.297297	-0.53219	2.5
12.00	0.324324	-0.45564	2.5
13.00	0.351351	-0.381675	2.5
14.00	0.378378	-0.309743	2.5
15.00	0.405405	-0.23938	2.5
16.00	0.432432	-0.170185	2.5
17.00	0.459459	-0.101796	2.5
18.00	0.486486	-0.03388	4
19.00	0.513514	0.03388	5
20.00	0.540541	0.101796	5
21.00	0.567568	0.170185	5
22.00	0.594595	0.23938	5
23.00	0.621622	0.309743	6
24.00	0.648649	0.381675	7
25.00	0.675676	0.45564	12
26.00	0.702703	0.53219	19
27.00	0.72973	0.611996	41
28.00	0.756757	0.695908	54
29.00	0.783784	0.785036	54
30.00	0.810811	0.880888	58
31.00	0.837838	0.98561	66
32.00	0.864865	1.10244	67
33.00	0.891892	1.236652	71
34.00	0.918919	1.397837	73
35.00	0.945946	1.606755	111
36.00	0.972973	1.926403	136

APPENDIX C

Proposed Layout of Future Aspire High School Site



1 Site Plan – Fire Truck Accessibility & Egress Plan

1" = 20' - 0"

SHEET NOTES

1. SEE CIVIL AND LANDSCAPE DRAWINGS FOR ADDITIONAL REQUIREMENTS.
2. SEE CIVIL DRAWINGS FOR BUS LANE REQUIREMENTS AND PARKING LAYOUT.
3. FOR TYP. WHEEL STOP, SEE
4. ALL GATES SEPARATING VEHICULAR TRAFFIC TO BE 20'-0" MIN. CLEAR.
5. "C" DENOTATION AFTER PARKING STALL NUMBER INDICATES COMPACT SPACE - 7'-6" X 16'

Legend

NEW TREES, S.L.D.

(E) TREES

NEW LAWN AREA, S.L.D.

K2A
ARCHITECTURE + INTERIORS

444 DeHaro Street, Suite 220
San Francisco, CA 94107
tel 415.487.6900
fax 415.487.6909

■ Approval Stamp

LICENSED ARCHITECT
STEVEN BENJAMIN KOLM
NO.C15946
EXP. 03/07
STATE OF CALIFORNIA

■ Client

Aspire Public Schools

426 - 17th St.
Suite 200
Oakland, CA 94612

■ Project Name

Aspire Oakland 66th Ave.

1009 66th Ave.
Oakland, CA

■ Consultants

Stamp

■ Sheet Name

SITE PLAN

■ Revisions:

■ Approvals

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APPL 01– 000
AC ______ FLS ______ SS ______
DATE: ______

■ Sheet Information:

Drawing Scale: As Noted
Drawn By:

■ Project Information:

Date: 11/7/05
Status: Design Development Set
Project Number: 0442

■ Sheet

A1.1

OF

plot date:
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