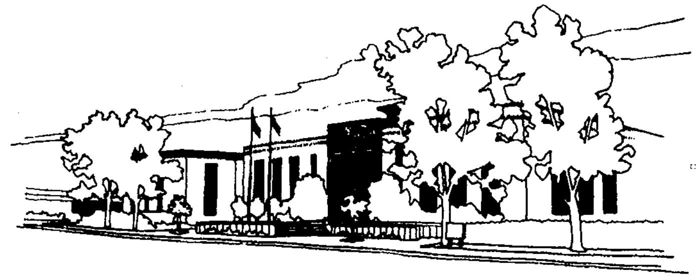
City of San Leandro
Civic Center, 835 E. 14th Street
San Leandro, California 94577



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9:03 am, Jun 22, 2010
Alameda County
Environmental Health

June 16, 2010

Mark Detterman, Hazardous Material Specialist, PG, CEG
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Dear Mr. Detterman,

Attached please find the Remedial Action Plan. The San Leandro Redevelopment Agency performed the work reported in the attached report On Behalf Of Diana Pagano, former owner of the property at 14901 East 14th Street and the primary responsible party for the site cleanup. It is in this capacity that the Agency makes the following statement:

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

Sincerely,

Stephen L. Hollister, Executive Director
Redevelopment Agency of the City of San Leandro

REMEDIAL ACTION PLAN
14901 EAST 14TH STREET
SAN LEANDRO, CALIFORNIA

PREPARED FOR:
The City of San Leandro
Engineering and Transportation Department
835 East 14th Street
San Leandro, California 94577

PREPARED BY:
Ninyo & Moore
Geotechnical and Environmental Sciences Consultants
1956 Webster Street, Suite 400
Oakland, California 94612

January 10, 2008
Project No. 401007004

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Project No. 401007004

Mr. Austine Osakwe, P.E. Senior Engineer
City of San Leandro
Engineering and Transportation Department
835 East 14th Street
San Leandro, California 94577

Subject: Remedial Action Plan
14901 East 14th Street
San Leandro, California

Dear Mr. Long:

Ninyo & Moore is pleased to present this Remedial Action Plan (RAP) for Quality Tune Up located at 14901 East 14th Street (site) in the San Leandro, Alameda County, California. The purpose of this RAP is provide a historical synthesis of site data, outline the preferred remedial alternative, and provide a rough estimate of costs associated with the implementation of this method.

Please don't hesitate to contact Ninyo & Moore if you have any questions or concerns.

Sincerely,
NINYO & MOORE

Brian J. Harvey
Staff Environmental Scientist

PROFESSIONAL GEOLOGIST
MARKUS B. NIEBANCK
No. 5607
STATE OF CALIFORNIA

Markus B. Niebanck, P.G.
Manager, Environmental Sciences

BJH/MBN/dhi

Distribution: (5) Addressee

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1. INTRODUCTION

On behalf of the City of San Leandro, Ninyo & Moore has completed this summary of environmental assessment and Remedial Action Plan for the property located at 14901 East 14th Street, in San Leandro, California. This work has been completed in accordance with the Ninyo & Moore proposal dated August 30, 2007.

1.1. Purpose

The history and environmental quality of the subject property have been examined by different consulting firms on several occasions over the past 14 years. The purpose of this phase of project activity is the synthesis of investigative findings and the evaluation of the occurrence, magnitude, and significance of environmental contamination resulting from historic site development and occupation. The Remedial Action Plan aims to identify and outline the most effective and efficient method of site clean up.

1.2. Report Configuration

This report first describes the property in terms of geographic setting and history of economic development/use. This is followed by the Site Conceptual Model, which describes the physical site characteristics and the nature and extent of use-related environmental impact. The model is in turn followed by an assessment of the significance of contamination in relation to human and ecologic site populations. The report concludes with a description of remedial alternatives and a recommendation for remedial action.

2. GEOGRAPHIC SETTING AND DEVELOPMENT HISTORY

2.1. Site Setting

The site is located at 14901 East 14th Street, between 150th Avenue and Hesperian Boulevard in the City of San Leandro, California (Figure 1) and consists of an approximately 10,600 square foot, triangular shaped parcel. The site contains one single-story structure encompassing approximately 900 square feet occupied by Quality Tune Up, an automobile service and smog inspection facility. The properties in the immediate vicinity of the site are primarily commercial facilities, beyond which are mostly residential single family homes (Figure 2).

Situated immediately north of the site is the intersection of East 14^{th} Street and Hesperian Boulevard. Commercial properties primarily occupy the area beyond the intersection to the north of the site. Immediately east and northeast of the site is East 14^{th} Street, beyond which are several commercial retail facilities and restaurants are located. Located beyond these facilities are residential single family homes. Situated immediately south and southeast of the site is 150^{th} Avenue, beyond which a restaurant, a shopping center, and residential homes are located. Hesperian Boulevard is situated immediately west of the site, beyond which a restaurant, a bank, and a shopping center are located.

As depicted in Figure 2, several former and current gasoline service stations that occupy properties in the site vicinity include:

- (Former) Flyers gasoline station, a closed Leaking Underground Storage Tank (LUST) facility located north of the site at 14880 East 14^{th} Street.
- (Former) Mobil gasoline station, an open LUST facility located northeast of the site at 14994 East 14^{th} Street.
- 76 gasoline station, an open LUST facility located east of the site at 15008 East 14^{th} Street.
- (Former) Chevron gasoline station, a closed LUST facility located south of the site at 15002 Hesperian Boulevard.

2.2. History of Site Development, Tenancy, and Use

The section that follows describes characteristics of site occupancy and use. Property ownership has been investigated neither by earlier site investigators nor by Ninyo & Moore.

The earliest available historical sources examined in previous environmental reports of the site indicated that the site was developed and occupied as early as 1948. From 1948 to approximately 1950, the site was occupied by Riley's Gasoline Station. In approximately 1950, the site was constructed to a similar configuration as the current layout, including the buildings on-site. From approximately 1950 to 1974, the site was occupied by Red's Flying A Service Gas Station. In approximately 1974, the site changed occupancy to a Phillip's 66 gasoline station. In 1976, the site again changed occupancy to Electrotune and remained occupied by Electrotune until some time prior to 1981. The current tenants of the site, Quality Tune Up, have been occupying the site from 1981 until present (Ninyo and Moore, 2004).

2.3. Anticipated Future Use

The site is anticipated to be utilized in the future as part of the roadway at the three-way intersection of East 14th Street, 150th Avenue, and Hesperian Boulevard.

3. SITE CONCEPTUAL MODEL

3.1. History of Physical Environmental Property Testing

Prior investigators have employed physical testing methods to assess property conditions and the impact of prior tenants and uses on site environmental quality. Prior site investigations historically conducted are described below. A comprehensive tabulation of soil and groundwater data from previous investigations is presented in Tables 1 through 5.

Report of Limited Soil Investigation, October 1993

Hageman Aguiar, Inc. (HA) prepared a Limited Soil Investigation Report in 1993 (dated October 26). HA indicated three gasoline underground storage tanks (USTs) were present onsite, however, had not been used in ten years. A fourth UST (reported to be of 200 and 500-gallon capacities), had also been reported at the subject site. Refer to Figure 3 for the location of the four former USTs.

Investigation activities performed included advancement of four soil borings (B-1 through B-4) to a depth of approximately 15 feet below ground surface (bgs), in the vicinity of the USTs (Figure 3). Soil samples collected were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Analytical results reported the following maximum concentrations: TPHg, 180 milligrams per kilogram (mg/kg); benzene, 230 micrograms per kilogram (μg/kg); toluene, 320 μg/kg; ethylbenzene, 560 μg/kg; and total xylenes, 1,400 μg/kg (Table 3). These results, however, were reported from a saturated soil sample collected below the water table. The near surface soil samples collected (<5 feet bgs) did not contain detectable concentrations of petroleum hydrocarbons above the laboratory reporting limits. The report indicated the bottoms of two of the USTs were approximately at the same depth of groundwater, which was reported at 13 feet bgs.

HA concluded the concentration of petroleum hydrocarbons was due to an on-site release or migration of contamination from an off-site source. Recommendations for an additional subsurface investigation were not provided in the report.

Report of Additional Subsurface Investigation, January 1997

Based on the results of soil sampling provided in the 1993 Limited Soil Investigation Report, a work plan was prepared to further evaluate soil conditions in the vicinity of underground piping and existing pump islands. Six borings (GP-1 through GP-6) (Figure 3) were advanced to depths of approximately 15 feet bgs and soil samples analyzed contained the following maximum concentrations of TPHg at 29 mg/kg, benzene at 41 μg/kg, toluene at 8.0 μg/kg, ethylbenzene at 12 μg/kg, and total xylenes at 31 μg/kg (Table 3). Methyl tertiary-butyl ether (MTBE) was not detected above the laboratory reporting limit in soil samples collected. Similar to the findings in the 1993 Limited Soil Investigation Report, the near surface soil samples collected (<5 feet bgs) did not contain detectable concentrations of petroleum hydrocarbons above the laboratory reporting limits. Grab groundwater samples were collected from three (GP-1, GP-2, and GP-3) of the six borings and analytical results reported concentrations of up to 210,000 micrograms per liter (μg/L) of TPHg (Figure 4), 200 μg/L of benzene, 180 μg/L of toluene, 180 μg/L of ethylbenzene, and 420 μg/L of total xylenes in GP-3 (Table 1). MTBE was not reported above the laboratory reporting limits (0.5 μg/L). Based on the regional topography of the subject site and groundwater information collected for nearby gasoline stations, the groundwater flow was reported to be towards the south-southeast.

HA concluded that the data provides "strong evidence that the presence of gasoline concentrations beneath the site is due to tank leakage and/or overfill at one or more of the existing underground storage tank locations" (HA, 1997a).

Tank Closure Summary, October 1997

HA reported the removal and sampling activities associated with four USTs in a Tank Closure Summary Report, dated October 13, 1997. Two of the tanks were of single-wall steel construction with 10,000-gallon capacities and stored gasoline. A third gasoline tank a single-wall fiberglass UST with a 5,000-gallon capacity. The fourth tank was of steel single-wall construction with a 500-gallon capacity used to store waste oil. The tanks were noted to be in good condition upon their removal with no signs of holes or rust. The UST area was excavated to depths ranging from 11 feet on the north side to 13 feet on the south side (Figure 2). Soil samples collected from the excavated area and soil pile generated from excavation activities contained low levels of petroleum hydrocarbons (Figure 2, Table 3) and officials with the City of San Leandro Fire Department Hazardous Materials Division "agreed that any additional over-excavation would not be required" (HA, 1997b).

Initial Site Assessment, September, 2004

Ninyo and Moore prepared an Initial Site Assessment (ISA) for the site on behalf of the City of San Leandro in September 2004. The ISA was performed to evaluate site impacts on a road widening and sidewalk improvement project in the site vicinity. The ISA did not consist of further environmental testing, but instead provided a site description and historical overview, as well as a summary of recognized environmental concerns (RECs) at the site.

Ninyo & Moore concluded the ISA with recommendations to perform additional testing on-site for the purpose of determining if the contamination on-site is due to an off-site or on-site release (Ninyo & Moore, 2004).

Limited Phase II Environmental Site Assessment, June, 2005

Ninyo & Moore prepared a Limited Phase II Environmental Site Assessment (ESA) for the site on behalf of the City of San Leandro in June 2005. The Limited Phase II ESA was conducted according to the recommendations made in the 2004 ISA performed by Ninyo & Moore. Nine direct push borings (NM-1 through NM-9) were advanced on-site in the following areas of concern: three borings were advanced in the area of the former USTs; three borings were advanced in the areas of the former pump islands; and three borings were advanced upgradient of the site structures along the northeast edge of the site along East 14th Street (Figure 3). Soil samples were collected from four of the boring locations at depths of 2 feet bgs, 5 feet bgs, and at the soil-groundwater interface (15 or 16 feet bgs). Grab groundwater samples were collected from all nine borings at the first occurrence of groundwater, approximately 16 feet bgs. Soil and groundwater samples collected were analyzed for the following constituents of concern (COCs): MTBE, BTEX, TPH-G, total petroleum hydrocarbons as diesel (TPH-D), and total petroleum hydrocarbons as motor oil (TPH-MO).

The following maximum concentrations of COCs were reported in soil samples: TPH-G at 180 mg/kg, MTBE at 150 µg/kg, and TPH-MO at 53.0 mg/kg (Table 3, 5). These concentrations were reported along the west and north edges of the former 5,000 gallon gasoline UST location. BTEX compounds and TPH-D were not reported above their respective laboratory reporting limits (RLs) in soil samples collected.

The following maximum concentrations of COCs were reported in groundwater samples: TPH-G at 20,000 µg/L, MTBE at 5.50 µg/L, total xylenes at 1.70 µg/L, TPH-D at 60,000 µg/L, and TPH-MO at 27,000 µg/L (Table 1). TPH concentrations are also illustrated in Figure 4. COCs were primarily reported in the vicinity of the former 5,000 gallon gasoline UST location, as well as in the area surrounding the former pump island station immediately south of the former UST locations. Benzene, toluene, and ethylbenzene were not reported above their respective RLs in groundwater samples collected.

Based on the results of the analytical data, Ninyo & Moore concluded that "the source of contamination (on-site) may be attributable to the presence of residual fuels remaining beneath the area of the former UST(s); sub-surface piping; and/or former dispensing equipment" (Ninyo & Moore, 2005). Ninyo & Moore recommended additional characterization and remediation of the remaining contaminated areas of the site, as well as the implementation of a groundwater monitoring plan to track the natural degradation and migration of petroleum hydrocarbon constituents.

Preferential Pathway Study and Workplan for Additional Soil and Groundwater Evaluation, January, 2007

Ninyo and Moore prepared a Preferential Pathway Study and Workplan for Additional Soil and Groundwater Evaluation for the site on behalf of the City of San Leandro in January 2007. This work was conducted to satisfy a request by Alameda County Environmental Health Services (ACEHS). Included in the Preferential Pathway Study was an off-site well survey which evaluated active, abandoned, and destroyed wells within a one-quarter mile radius of the site; and a utility trench survey which evaluated underground utility trenches in the site and site vicinity. Both components of the Preferential Pathway Study were intended to evaluate the potential for COCs to migrate off-site and into potential sensitive receptors.

The Preferential Pathway Study concluded that because depth to shallow groundwater in the site vicinity was several feet below the deepest utility trench, "it is unlikely these (utility) trenches would be exposed to COC impacted groundwater on-site or within the site vicinity" (Ninyo & Moore, 2007a). The report also indicated that the nearest off-site well down-gradient of the site used for domestic or agricultural use was located approximately 800 feet west of the site. The Workplan for Additional Soil and Groundwater Evaluation portion of the report outlines the proposed implementation of the investigation discussed below.

Additional Soil and Groundwater Investigation, May 2007

Ninyo and Moore prepared an Additional Soil and Groundwater Investigation for the site on behalf of the City of San Leandro in May 2007. This investigation was conducted at the request of ACEHS for the purpose of evaluating the vertical and lateral extent of the petroleum hydrocarbon contamination migration in groundwater at the site and in the immediate site vicinity. The field activities for this investigation included the advance of three cone penetrometer testing (CPT) borings (CPT-1 through CPT-3) to evaluate the subsurface stratigraphy and identify water bearing zones to be sampled subsequently. Analysis of the CPT boring results indicated two water bearing zones at the site and in the site vicinity – a shallow water bearing zone located between 13 and 18 feet bgs; and a mid-range water bearing zone located between 28 and 32 feet bgs. Discreet soil samples were collected from seven borings (NM-10 through NM-14, NM-17, and NM-18) advanced subsequent to the analysis of the CPT boring data (Figure 3). Soil samples were collected from the capillary zone at the soil-groundwater interface, as well as at the first encountered water bearing zone. Groundwater samples were collected from the first encountered water bearing zone in all seven borings and from the second (mid-range) encountered water bearing zone in four of the seven borings.

The borings were located in the following areas of the site and site vicinity (Figure 3):

- two borings (NM-10 and NM-11) were located upgradient of the site on the west side of East 14th Street.
- three borings were located on-site – one adjacent to the former USTs on site (NM-12); one adjacent to the southern-most former pump island (NM-13); and one on the southern section of the site (NM-14).
- two borings were located down gradient and off-site on 150th Street (NM-17 and NM-18).

Soil and groundwater samples collected were analyzed for the following COCs: TPH-G, TPH-D, TPH-MO, and volatile organic compounds (VOCs). The following maximum concentrations were reported in soil samples collected: TPH-G at 11 mg/kg; TPH-D at 15 mg/kg; TPH-MO at 12 mg/kg; isopropylbenzene at 18 µg/kg; methylene chloride at 6.2 µg/kg; n-butylbenzene at 220 µg/kg; n-propylbenzene at 130 µg/kg; naphthalene at 18 µg/kg; and sec-butylbenzene at 81 µg/kg. These concentrations were primarily located in the sample taken from boring NM-12, adjacent to the west edge of the location of the former USTs (Table 3, 5).

The following maximum concentrations were reported in groundwater samples collected: TPH-G at 7,000 µg/L; TPH-D at 32,000 µg/L; TPH-MO at 8,300 µg/L; 1,2 dichloroethane at 0.53 µg/L; 1,3,5 – trimethylbenzene at 15 µg/L; chloroethane at 0.53 µg/L; isopropylbenzene at 15 µg/L; n-butylbenzene at 82 µg/L; n-propylbenzene at 80 µg/L; naphthalene at 15 μg/L; sec-butylbenzene at 39 μg/L; tert-butylbenzene at 0.78 μg/L; and toluene at 1.1 μg/L (Tables 1 and 2). TPH concentrations are illustrated in Figure 4. These concentrations were primarily reported in samples collected from the shallow water bearing zone adjacent to the former USTs and the southern-most former pump island.

The report concluded that the highest concentrations of COCs were detected in the shallow water bearing zone adjacent to and immediately down-gradient from the former USTs on site, as well as the area immediately adjacent to and down-gradient from the southern-most pump island. Because groundwater samples collected on-site from the deeper water bearing zone did not contain concentrations of COCs above their RLs, the TPH impact on-site was reported to be confined to the shallow water bearing zone. Samples collected off-site and both upgradient and down-gradient from the site from the deeper water bearing zone contained low concentrations of petroleum hydrocarbons which may be attributable to off-site releases.

3.2. Results of Site Characterization

The property and its features of concern have been evaluated in great detail over the course of the past 14 years. Information gathered by site investigators with respect to subsurface site characteristics is presented here.

3.2.1. Sedimentology and Local Geology

The site is located within the Coast Ranges Geomorphic Province. The Coast Ranges extend approximately 600 miles from the Oregon border to the central coast of California. The Coast Ranges are northwest trending and are underlain by marine and non-marine sedimentary rocks.

Based on information collected during previous subsurface investigations at the site, the site is underlain by alluvium, which primarily consists of clay, silt, and sand. Boring logs indicate an approximately 2 foot thick layer of asphalt and gravels beneath which are clays and clayey sands to a maximum explored depth of approximately 50 feet.

Three water bearing zones encountered below the site have been encountered and are further described below.

3.2.2. Hydrogeology

During the most recent sampling activities conducted at the site, water bearing zones were encountered in sand lenses between 13 and 18 feet bgs, between 28 to 32 feet bgs, and between 47 to 50 feet bgs. Groundwater flow direction at the site has been reported to flow toward the southwest; however fluctuations in groundwater flow direction due to pumping and de-watering may cause adjustments in groundwater flow in the area.

3.2.3. Soil and Groundwater Sample Analysis

Soil and groundwater samples have been collected from surface and subsurface sampling points; the collected media have been the subject of analytical tests corresponding to COCs regarding the historical operation of USTs and pump dispenser islands in various areas of the property. A comprehensive tabulation of historical soil and groundwater analysis is presented in Tables 1 through 5. Results of testing are depicted graphically on Figure 3.

3.2.3.1. Contaminants of Concern

Environmental samples have been tested for a variety of analytes, including metals, petroleum hydrocarbons: TPH-G, TPH-D, and TPH-MO, respectively, and VOCs (including analytes associated with both motor fuel and solvent contamination). Included for reference on Tables 1-5 are California regulating agency screening criteria, or more specifically San Francisco Bay RWQCB Environmental Screening Levels (ESLs)

Results of analysis have shown concentrations of petroleum hydrocarbons present in isolated areas of the property at levels above regulatory guidance. Volatile organic compounds are generally not present, but were reported in areas where high petroleum hydrocarbons were detected. Due to this fact, the primary COCs determining areas where remediation is necessary are petroleum hydrocarbons. Concentrations of metals exceeding ESLs have not been historically encountered at the site.

As described in greater detail later in this report, based on intended non-residential/commercial/industrial redevelopment, Ninyo & Moore recommends the commercial/industrial RWQCB ESLs be relied upon for preliminary guidance. It is further anticipated that the ESL values corresponding to the evaluation of a current or potential drinking water resource are most applicable, given the location of site areas and contaminants of concern and the commercial and residential nature of this portion of San Leandro.

3.2.3.2. Contaminant Distribution

Due to the historical use of the site as a gasoline service station, the areas of concern where potential source soil remains on site are inferred to exist below the former gasoline pump islands and to the west and north of the former USTs. Soil and groundwater sample results have indicated most of the impacted groundwater within or immediately down-gradient of the footprints of the former USTs and pump islands.

Former Underground Storage Tanks

Results of testing in the area surrounding the former USTs have indicated that residual petroleum hydrocarbon impacted soil and groundwater likely exists along the north and west edges of the former UST location. As discussed above, the area surrounding the former USTs has been the focus of several subsurface investigations conducted at the site. Initial soil samples collected from the UST area in 1993 indicated that saturated soil at depths of 15 feet bgs were impacted with low level petroleum hydrocarbons as gasoline, as well as low level VOCs associated with gasoline products. Upon removal of the USTs in 1997, confirmation samples collected from the sidewalls of the excavation also contained low levels of petroleum hydrocarbons, with only one sample exhibiting concentrations exceeding ESLs. Subsequent soil samples collected in the former UST area have contained low levels of petroleum hydrocarbons. Although the soil analytical data does not particularly suggest residual potential source soil, several groundwater samples collected and analyzed in the area of the former USTs indicate a continuing release of petroleum hydrocarbon contamination. Groundwater samples collected by Ninyo & Moore in 2004 and 2007 indicated high residual contamination along the north and western edges of the former UST location and excavation (Figure 4). The following maximum concentrations of petroleum hydrocarbons have been reported in groundwater along the northwest edge of the former USTs: TPH-G at 7,000 µg/L; TPH-D at 60,000 µg/L; and TPH-MO at 27,000 µg/L. The ESL for any of these three constituents is 100 µg/L. Because the area of the former USTs was excavated to depths ranging from 11 to 13 feet bgs upon removal of the USTs, the potential source soil is unlikely in this area. These results instead indicate the potential for residual petroleum contaminated soil to exist within and along the west and northern edge of the footprint of the former USTs, at a depth of 10 to 15 feet bgs – directly above the soil groundwater interface. This area of potential source soil is likely impacted from the associated product piping from the former USTs.

<u>Former Gasoline Pump Islands</u>

Results of testing in the areas of the former gasoline pump islands indicate residual petroleum hydrocarbon contamination likely exists in sediments beneath each of the three former pump islands. Former pump islands are located in the west portion of the site, between the former gasoline service station building and Hesperian Boulevard; in the northeast portion of the site, between the northeast corner of the former gasoline service station building and East 14th Street; and in the southeast portion of the site, between the southeast corner of the former gasoline service station building and 150th Avenue.

In the area of the former pump island located in the western portion of the site, near Hesperian Boulevard, the following maximum concentrations of petroleum hydrocarbons were reported in groundwater: TPH-G at 22,000 µg/L and TPH-D at 250 µg/L (Figure 4). In the area of the former pump island located in the northeastern portion of the site, near East 14th Street, the following maximum concentrations of petroleum hydrocarbons were reported in groundwater: TPH-G at 210,000 µg/L and TPH-D at 270 µg/L (Figure 4). The area of the former pump island located in the southeast portion of the site, near 150th Avenue, contained the following maximum concentrations of petroleum hydrocarbons in groundwater: TPH-G at 20,000 µg/L; TPH-D at 57,000 µg/L; and TPH-MO at 900 µg/L (Figure 4). For regulatory comparison, the RWQCB ESLs for TPH-G, TPH-D, and TPH-MO are all 100 µg/L. Soil borings in the vicinity of the dispenser islands showed no significant shallow contamination. Based on this data, and the results of groundwater samples collected in the vicinity of the islands, it is anticipated that the column of impacted soil is relatively narrow, and exists in the area immediately beneath the former pump islands and potentially along trenches where the former product piping was located.

3.2.4. Contaminant Migratory Pathways

3.2.4.1. Naturally Occurring Pathways

Based on observations recorded during previous subsurface testing, two water bearing zones are understood to exist underneath the site. A capillary zone and a shallow water bearing zone were encountered under the site at depths ranging from 13 to 18 feet bgs; and a mid-range water bearing zone was encountered under the site at depths ranging from 28 to 32 feet bgs.

Based on observations recorded during subsurface testing, it is anticipated that groundwater migration is not facilitated by the presence of preferential migratory pathways, and is instead restricted exclusively to movement under natural conditions in fine-grained alluvial sediments. In settings such as the site, such preferential migratory pathways may be observed in the form of relatively permeable lenses in otherwise fine-grained sediments. Naturally occurring preferential pathways has been detected in a shallow water bearing zone (13 to 18 feet bgs) and a mid-range water bearing zone (28 to 32 feet bgs) (Ninyo & Moore, 2007b).

3.2.4.2. Anthropogenic Pathways

A Preferential Pathway Study prepared for the site suggests no intersection of subsurface utility trenches and local groundwater (Ninyo & Moore, 2007a). There is no evidence of any other human-induced structure or disturbance at depth; it is not likely that any anthropogenic preferential migratory pathway exists at the subject site.

3.3. Receptor and Exposure Pathway Analysis

3.3.1. Potentially Exposed Populations

Receptors at the subject site may be both human and ecologic. Human receptors would include maintenance/construction workers. Given the future intended use of the site as an addition to the adjacent roadway, commercial, industrial, and residential populations would not be included as a potentially exposed population. Similarly, ecologic receptors would be unlikely to encounter the site subsurface, once backfilling and paving have been completed.

3.3.2. Exposure Pathways

The two closest surface bodies of water to the site are the San Lorenzo Creek, located approximately 1.4 miles south of the site; and the San Francisco Bay, located approximately 3 miles southwest of the site. Due to their distances from the site, these bodies of water are considered to be of a low likelihood for ecologic exposure. Secondary ecologic exposure potentially results from the deposition of windblown dust derived from the subject site.

The primary mechanism for human exposure to identified site contamination is by way of dermal contact. Inhalation of windblown dust and volatilized contaminants are secondary pathways. Other common exposure pathways that are not of concern include:

Ingestion. Contaminant uptake by its consumption in water is not a viable pathway at this site due to the groundwater not being produced for drinking. Given the nature of the property, consumption by the direct ingestion (by eating) of the site sediments is also unlikely.

3.4. Summary

Results of episodes of site characterization have shown the subject site to contain elevated (with respect to regulatory guidance) concentrations of petroleum hydrocarbons. Petroleum-related contamination appears to emanate from and be most concentrated in the vicinity of the former gasoline pump islands and the footprint of the former USTs on-site.

Petroleum hydrocarbons are present in groundwater beneath the former gasoline pump islands; west, north, and within the footprint of the former USTs. Petroleum hydrocarbons were detected in low quantities in sample points up-gradient from the former USTs and pump islands, as well as further down-gradient from the site.

Given the nature and extent of identified contamination, it is apparent that human site occupants, primarily construction/maintenance workers, are a potentially exposed population, with this exposure expressed as a risk of dermal contact and a risk of inhalation of windblown dust and volatilized contaminants. Risk to ecologic resources is not significant.

4. HAZARD AND RISK EVALUATION

4.1. Evaluative Method Selection

The hazard and risk associated with use-related environmental impact is measured primarily in terms of estimated threat to human and ecologic receptors. Due to the fact that the concentrations of petroleum hydrocarbons at this property are not so high that they represent an immediate or acute hazard, the represented threat must be calculated using models accounting for prolonged exposure over time. Such models take two different forms –site-specific parametric risk assessments or the more general evaluation of risk using agency-created guidance tables.

Site specific risk assessments are often utilized for properties containing non point-source, unpredictably distributed contamination. Such properties are characterized by "hot-spots"–areas or points where testing has shown unacceptable concentrations of a contaminating material surrounded by areas with no or low levels of contamination. Agency-created tables are often utilized in circumstances where the contaminant is better understood, for example: a known source of contamination distributed in a discernable pattern with predictable migratory characteristics.

In the case of the site located at 14901 East 14th Street, the distribution of use-related impact is neither chaotic nor unpredictable. Contaminants of potential concern occur near their point of origin within the footprint of the former USTs and at the former gasoline pump islands. The lateral and vertical bounds of the impacted areas are understood, and the contact between impacted- and un-impacted materials along most margins of the areas of concern is relatively sharp. The concentrations of contaminants are sufficiently high to anticipate that some form of agency remedial attention would be required. For these reasons it is unlikely that the results of a site-specific risk assessment would yield health- or ecology-protective contaminant guidance concentrations (cleanup levels) that are substantially different than the concentrations calculated by existing agency guidelines.

Three different resources exist for the estimation of agency site remedial requirements–EPA Preliminary Remediation Goals (PRGs), CalEpa Office of Environmental Health Hazard Assessment (OEHHA) California Human Health Screening Levels (CHHSLs) and RWQCB Environmental Screening Levels (ESLs). Each resource presents basic guidance in the form of "look-up" tables, charts showing estimates of contaminant acceptability under a variety of site use and impacted-media (soil, groundwater, soil-vapor) scenarios.

The selection of a method from the three alternative approaches is in part a function of the regulatory agency involved, or anticipated to be involved, in the oversight process. In the case of the subject site, with its commercial nature and plans for non-residential/commercial/industrial redevelopment, it is clear that the regulating agency will be the San Francisco Bay Region RWQCB. This, in combination with the lack of cost-benefit anticipated to come from a site-specific risk assessment, makes the utilization of the RWQCB ESL guidance the obvious practical choice for cleanup endpoint guidance.

4.2. Contaminant Concentration/ESL Comparison

Results of thorough site testing have identified contaminants of concern to be present in the soil within the footprint of the former USTs and underneath the former gasoline pump islands. The areas where impact exceeds guidance-level are clearly defined, and are shown on Figure 4.

5. REMEDIAL OBJECTIVES

The objective of site remediation is the mitigation of a threat posed by site contaminants to human or ecological receptors. In the case of the subject facility, the potential threat to human health or environmental quality exists in the form of petroleum hydrocarbon contamination in soil and groundwater in the vicinity of the former gasoline pump islands and along the western and northern edge of the former USTs.

6. EVALUATION OF REMEDIAL ALTERNATIVES

Paving/No-Action with MNA (Monitored Natural Attenuation) – Prevents contact with material; impedes percolation of rainwater and water-influenced leaching and migration of contaminants. Paving or capping is most practical and protective for contaminated soil which is not in close proximity to groundwater, unlike this property. Monitored natural attenuation is a remedial approach that involves the attainment of water-quality objectives within a specified period. While no MNA study has been completed at this site, given current contaminant concentrations and the amount of time that has passed since last facility operations, it is anticipated that MNA will not observe a substantial reduction in concentrations in a reasonable amount of time.

Targeted Removal – Prevents contact with material, as material is removed. Targeted removal is practical in situations where areas of impact are not so large that removal is cost-prohibitive.

In-place treatment – Typically utilized in cases where removal is impractical due to volumes of media to be removed or site constraints preventing removal (structures, utilities, etc.).

Mechanical contaminant removal – Practical in circumstances involving operating businesses where targeted removal is not appropriate, or in areas where impact is at such a depth or of such a widespread nature that targeted removal is impractical. Mechanical extraction requires equipment for contaminated media removal (pumps for water, blowers for soil-vapor) and equipment for treatment of the extracted media. This equipment is relatively expensive, compared to sites appropriate for targeted removal, where no equipment expense is incurred.

7. RECOMMENDED REMEDIAL ALTERNATIVE

The recommended remedial alternative for this site is targeted removal.

Former Underground Storage Tanks

To target the removal of the potential source soil in the area to the west of the former USTs, Ninyo and Moore proposes to excavate approximately 1,250 cubic yards of soil in proposed Excavation C (Figure 5). This excavation will extend in a 45 foot by 50 foot rectangle to a depth of approximately 15 feet bgs. Since soil samples collected in this area suggest that the top 10 feet of fill is not impacted by petroleum hydrocarbons, only the bottom 5 feet of soil (415 cubic yards) is anticipated to be off-hauled as Class II waste after characterization and stockpile sampling. The remaining 835 cubic yards will be stockpiled separately and is anticipated to be used for clean backfill, subsequent to stockpile sampling according to RWQCB guidelines. ACDEH confirmation sampling guidelines will be followed prior to backfilling Excavation C. The proposed installation of a groundwater monitoring well directly down-gradient from this excavation will be used to monitor the attenuation of petroleum hydrocarbon constituents (MW-2).

Former Gasoline Pump Islands

To target the removal of this potential source soil below each former pump island, Ninyo and Moore proposes to excavate a combined total of approximately 500 cubic yards of soil in proposed Excavations A, B, and D (Figure 5). Since soil samples collected in each of these areas suggest that the top 10 feet of soil is not impacted by petroleum hydrocarbons, only the bottom 5 feet of soil from each excavation (a total of 165 cubic yards) is anticipated to be off-hauled as Class II waste after characterization and stockpile sampling. The remaining 335 cubic yards will be stockpiled separately and is anticipated to be used for clean backfill, subsequent to stockpile sampling according to RWQCB guidelines. ACDEH confirmation sampling guidelines will be followed prior to backfilling Excavations A, B, and D. The proposed installation of a groundwater monitoring wells directly down-gradient from these excavations will be used to monitor the attenuation of petroleum hydrocarbon constituents (MW-1, MW-3, and MW-4).

The total amount of excavated soil from all four proposed excavations on site is anticipated to be approximately 1,750 cubic yards. Approximately 580 cubic yards of this soil is anticipated to be off-hauled to a Class II landfill, while the remaining 1,170 cubic yards of soil will be utilized as clean backfill subsequent to stockpile sampling. Installation of four groundwater monitoring wells is proposed to monitor the attenuation of petroleum hydrocarbons on-site. Given the anticipated effectiveness of the targeted removal remedial alternative, the attenuation of constituents on-site is expected to occur following the removal of the source soil.

The targeted removal remedial alternative is anticipated to cost approximately $235,000.00.

8. SELECTED REFERENCES

Hageman – Aguiar, Inc., 1993, Report of Limited Soil Investigation, Quality Tune-Up, 14901 East 14th Street, San Leandro, CA, dated October 26.

Hageman – Aguiar, Inc., 1997a, Report of Additional Subsurface Investigation, Quality Tune-Up, 14901 East 14th Street, San Leandro, CA, dated January 6.

Hageman – Aguiar, Inc., 1997b, Tank Closure Summary, Quality Tune-Up Shop, 14901 East 14th Street, San Leandro, CA, dated October 13.

Ninyo & Moore, 2004, Initial Site Assessment, Quality Tune-Up, 14901 East 14th Street, San Leandro, California, dated September 27.

Ninyo & Moore, 2005, Limited Phase II Environmental Site Assessment, Quality Tune-Up, 14901 East 14th Street, San Leandro, California, dated June 6.

Ninyo & Moore, 2007a, Preferential Pathway Study and Workplan for Additional Soil and Groundwater Evaluation, Quality Tune-Up, 14901 East 14th Street, San Leandro, California, dated January 22.

Ninyo & Moore, 2007b, Additional Soil and Groundwater Investigation, Quality Tune-Up, 14901 East 14th Street, San Leandro, California, dated May 24.

TABLE 1
GRAB GROUNDWATER SAMPLE LABORATORY ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS AS
GASOLINE, DIESEL, and MOTOR OIL, BTEX and MTBE

Sample ID	Boring Location	Date Sampled	ANALYTE							
			TPH-G (µg/L)	TPH-D (µg/L)	TPH-MO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
GP-1	GP-1	Dec-96	**4,400**	NA	NA	**0.7**	<0.5	**1.4**	**2**	<0.5
GP-2	GP-2	Dec-96	**22,000**	NA	NA	**4**	**5.7**	**10**	**23**	<0.5
GP-3	GP-3	Dec-96	**210,000**	NA	NA	**200**	**180**	**180**	**420**	<0.5
NMGW-1	NM-1	Oct-04	<50	**250**	<50	<1.00	<1.00	<1.00	<1.00	**2.20**
NMGW-2	NM-2	Oct-04	<50	**270**	<50	<1.00	<1.00	<1.00	<1.00	<0.50
NMGW-3	NM-3	Oct-04	**4,100**	**60,000**	**27,000**	<10.0	<10.0	<10.0	<10.0	**5.00**
NMGW-4	NM-4	Oct-04	**2,100**	**620**	**2,600**	<1.00	<1.00	<1.00	<1.00	<0.50
NMGW-5	NM-5	Oct-04	<50	**840**	**450**	<1.00	<1.00	<1.00	**1.70**	**1.52**
NMGW-6	NM-6	Oct-04	<50	**280**	**280**	<1.00	<1.00	<1.00	<1.00	<0.50
NMGW-7	NM-7	Oct-04	**5,100**	**41,000**	<50	<1.00	<1.00	<1.00	<1.00	<0.50
NMGW-8	NM-8	Oct-04	**20,000**	**57,000**	<50	<10.0	<10.0	<10.0	<10.0	**5.50**
NMGW-9	NM-9	Oct-04	<50	**250**	<50	<1.00	<1.00	<1.00	<1.00	<0.50
GW-10-13	NM-10	Apr-07	**110**	<50	**76**	<0.50	<0.50	<0.50	<1.0*	<0.50
GW-11-18	NM-11	Apr-07	**110**	<50	<50	<0.50	<0.50	<0.50	<1.0*	<0.50
GW-12-17	NM-12	Apr-07	**7,000**	**32,000**	**8,300**	<0.50	<0.50	<0.50	<1.0*	<0.50
GW-12-28	NM-12	Apr-07	<50	<50	<50	<0.50	<0.50	<0.50	<1.0*	<0.50
GW-13-18	NM-13	Apr-07	**2,200**	**10,000**	**900**	<0.50	<0.50	<0.50	<1.0*	<0.50
GW-13-31	NM-13	Apr-07	<50	<50	<50	<0.50	<0.50	<0.50	<1.0*	<0.50

TABLE 1
GRAB GROUNDWATER SAMPLE LABORATORY ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS AS
GASOLINE, DIESEL, and MOTOR OIL, BTEX and MTBE

Sample ID	Boring Location	Date Sampled	ANALYTE							
			TPH-G (µg/L)	TPH-D (µg/L)	TPH-MO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
GW-14-18	NM-14	Apr-07	<50	<50	<50	<0.50	<0.50	<0.50	<1.0*	<0.50
GW-14-30	NM-14	Apr-07	<50	<50	<50	<0.50	<0.50	<0.50	<1.0*	<0.50
GW-17-17	NM-17	Apr-07	**1,000**	**88**	<50	<0.50	<0.50	<0.50	<1.0*	<0.50
GW-17-32	NM-17	Apr-07	<50	**100**	**150**	<0.50	**1.1**	<0.50	<1.0*	<0.50
GW-18-18	NM-18	Apr-07	<50	**93**	**120**	<0.50	<0.50	<0.50	<1.0*	<0.50
ESLs (µg/L)	ESLs (µg/L)	Apr-07	100	100	100	1	40	30	20	5

Notes: **Notes:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline or Gasoline Range Organic compounds analyzed by EPA Method 8015B
TPH-D = Total Petroleum Hydrocarbons as Diesel or Diesel Range Organic compounds analyzed by EPA Method 8015B
TPH-MO = Total Petroleum Hydrocarbons as Motor Oil or Motor Oil Range Organic compounds analyzed by EPA Method 8015B
µg/L = micrograms per liter
< = below laboratory reporting limits
ESLs = San Francisco Bay RWQCB Environmental Screening Levels for Commercial / Industrial Use - Shallow Soils (≤ 3 mbgs) - Where Groundwater is a current or potential source of drinking water (February 2005)
Bold = Concentrations higher than laboratory reporting limits
MTBE = Methyl-tert-butyl-ether
Samples analyzed for Benzene, Toluene, Ethylbenzene, Total Xylenes, and MTBE using EPA Method 8260B
Shaded = Concentrations equal to or higher than ESLs
* Total Xylenes not analyzed, however m,p-Xylene and o-Xylene values were <1.0 µg/kg

TABLE 2
GRAB GROUNDWATER SAMPLE LABORATORY ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

ANALYTE	SAMPLE ID											ESLs (µg/L)
	GW-10-13	GW-11-18	GW-12-17	GW-12-28	GW-13-18	GW-13-31	GW-14-18	GW-14-30	GW-17-17	GW-17-32	GW-18-18	
1,1,1,2-Tetrachloroethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1
1,1,1-Trichloroethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	62
1,1,2,2-Tetrachloroethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1
1,1,2-Trichloroethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5
1,1-Dichloroethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5
1,1-Dichloroethene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6
1,1-Dichloropropene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
1,2,3-Trichlorobenzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
1,2,3-Trichloropropane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
1,2,4-Trichlorobenzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	25
1,2,4-Trimethylbenzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
1,2-Dibromo-3-chloropropane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0
1,2-Dibromoethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0
1,2-Dichlorobenzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	10
1,2-Dichloroethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.53**	<0.50	1
1,2-Dichloropropane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5
1,3,5-Trimethylbenzene	<0.50	<0.50	**15**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
1,3-Dichlorobenzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	65
1,3-Dichloropropane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
1,4-Dichlorobenzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5
2,2-Dichloropropane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
2-Chlorotoluene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
4-Chlorotoluene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
4-Isopropyltoluene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
Benzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1
Bromobenzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
Bromodichloromethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	100
Bromoform	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	100
Bromomethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	10
Carbon tetrachloride	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1
Chlorobenzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	25
Chloroethane	<0.50	<0.50	<0.50	<0.50	**0.53**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	12
Chloroform	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	70
Chloromethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1
cis-1,2-Dichloroethene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
cis-1,3-Dichloropropene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
Dibromochloromethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	100
Dibromomethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
Dichlorodifluoromethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
Ethylbenzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	30

TABLE 2
GRAB GROUNDWATER SAMPLE LABORATORY ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

ANALYTE	SAMPLE ID											ESLs (µg/L)
	GW-10-13	GW-11-18	GW-12-17	GW-12-28	GW-13-18	GW-13-31	GW-14-18	GW-14-30	GW-17-17	GW-17-32	GW-18-18	
Hexachlorobutadiene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0
Isopropylbenzene	<0.50	<0.50	**15**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
m,p-Xylene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	20
Methylene chloride	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5
MTBE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5
n-Butylbenzene	<0.50	<0.50	**82**	<0.50	**2.4**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
n-Propylbenzene	<0.50	<0.50	**80**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
Naphthalene	<0.50	<0.50	**15**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	17
o-Xylene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	20
sec-Butylbenzene	<0.50	<0.50	**39**	<0.50	**3.3**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
Styrene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	10
tert-Butylbenzene	<0.50	<0.50	**0.78**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
Tetrachloroethene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5
Toluene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**1.1**	<0.50	40
trans-1,2-Dichloroethene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
Trichloroethene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5
Trichlorofluoromethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--
Vinyl chloride	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1

Notes:
-- = Not available
VOCs analyzed using EPA Method 8260B
All results are displayed in µg/L = micrograms per liter
< = below laboratory reporting limit
Bold = Concentrations higher than laboratory reporting limits
ESLs = San Francisco Bay RWQCB Environmental Screening Levels for Commerical / Industrial Use - Shallow Soils (≤ 3 mbgs) Where Groundwater is a Current or Potential Source of Drinking Water (February 2005)
Grab Groundwater Samples analyzed for VOCs collected in April 2007

TABLE 3
SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS AS
GASOLINE, DIESEL, and MOTOR OIL, BTEX and MTBE

Sample ID	Boring Location	Date Sampled	Depth (feet)	ANALYTE							
				TPH-G (mg/kg)	TPH-D (mg/kg)	TPH-MO (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (µg/kg)
B-1	B-1	Oct-93	5	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
B-1	B-1	Oct-93	10	**4.5**	NA	NA	**5.8**	**8.1**	**14**	**35**	NA
B-1	B-1	Oct-93	15	**180**	NA	NA	**230**	**320**	**560**	**1,400**	NA
B-2	B-2	Oct-93	5	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
B-2	B-2	Oct-93	10	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
B-2	B-2	Oct-93	15	**31**	NA	NA	**35**	**49**	**84**	**210**	NA
B-3	B-3	Oct-93	5	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
B-3	B-3	Oct-93	10	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
B-3	B-3	Oct-93	15	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
B-4	B-4	Oct-93	5	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
B-4	B-4	Oct-93	10	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
B-4	B-4	Oct-93	15	**58**	NA	NA	**75**	**97**	**170**	**420**	NA
GP-1	GP-1	Dec-96	5	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
GP-1	GP-1	Dec-96	10	**4.3**	NA	NA	**6.6**	<5.0	**6.5**	**10**	NA
GP-1	GP-1	Dec-96	15	**4.4**	NA	NA	**41**	**5.2**	<5.0	**28**	NA
GP-2	GP-2	Dec-96	5	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
GP-2	GP-2	Dec-96	10	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
GP-2	GP-2	Dec-96	15	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
GP-3	GP-3	Dec-96	5	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
GP-3	GP-3	Dec-96	10	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
GP-3	GP-3	Dec-96	15	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
GP-4	GP-4	Dec-96	5	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
GP-4	GP-4	Dec-96	10	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
GP-4	GP-4	Dec-96	15	**5.9**	NA	NA	**7.9**	**5**	**12**	**20**	NA
GP-5	GP-5	Dec-96	5	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
GP-5	GP-5	Dec-96	10	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
GP-5	GP-5	Dec-96	15	**7.1**	NA	NA	**9.7**	**5.1**	**6.9**	**10**	NA
GP-6	GP-6	Dec-96	5	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
GP-6	GP-6	Dec-96	10	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	NA
GP-6	GP-6	Dec-96	15	**29**	NA	NA	**24**	**8**	**12**	**31**	NA

TABLE 3
SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS AS
GASOLINE, DIESEL, and MOTOR OIL, BTEX and MTBE

Sample ID	Boring Location	Date Sampled	Depth (feet)	ANALYTE							
				TPH-G (mg/kg)	TPH-D (mg/kg)	TPH-MO (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (µg/kg)
EXC-B	EXC-B	Sep-97	11	**34**	NA	NA	<5.0	<5.0	**5.7**	**35**	<5.0
EXC-C	EXC-C	Sep-97	12	**130**	NA	NA	**59**	**39**	**71**	**240**	<5.0
EXC-D	EXC-D	Sep-97	11.5	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0
EXC-E	EXC-E	Sep-97	12	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0
EXC-F	EXC-F	Sep-97	11.5	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0
EXC-G	EXC-G	Sep-97	13	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0
EXC-H	EXC-H	Sep-97	12.5	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0
EXC-J	EXC-J	Sep-97	11.5	<1.0	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0
W.O. Bottom	W.O. Bottom	Sep-97	8.5	NA	NA	<10	NA	NA			
NMSB3-02	NM-3	Oct-04	2	<1.0	<1.00	**19**	<1.00	<1.00	<1.00	<1.00	<0.50
NMSB3-05	NM-3	Oct-04	5	<1.0	<1.00	<10	<1.00	<1.00	<1.00	<1.00	<0.50
NMSB3-16	NM-3	Oct-04	16	**180**	<1.00	**51**	<1.00	<1.00	<1.00	<1.00	**150**
NMSB4-02	NM-4	Oct-04	2	<1.0	<1.00	**53**	<1.00	<1.00	<1.00	<1.00	<0.50
NMSB4-05	NM-4	Oct-04	5	<1.0	<1.00	**41**	<1.00	<1.00	<1.00	<1.00	<0.50
NMSB4-15	NM-4	Oct-04	15	<1.0	<1.00	<10	<1.00	<1.00	<1.00	<1.00	<0.50
NMSB7-02	NM-7	Oct-04	2	<1.0	<1.00	<10	<1.00	<1.00	<1.00	<1.00	<0.50
NMSB7-05	NM-7	Oct-04	5	<1.0	<1.00	<10	<1.00	<1.00	<1.00	<1.00	<0.50
NMSB7-15	NM-7	Oct-04	15	<1.0	<1.00	<10	<1.00	<1.00	<1.00	<1.00	<0.50
NMSB9-02	NM-9	Oct-04	2	<1.0	<1.00	<10	<1.00	<1.00	<1.00	<1.00	<0.50
NMSB9-05	NM-9	Oct-04	5	<1.0	<1.00	<10	<1.00	<1.00	<1.00	<1.00	<0.50
NMSB9-15	NM-9	Oct-04	15	<1.0	<1.00	<10	<1.00	<1.00	<1.00	<1.00	<0.50
NM-10-13	NM-10	Apr-07	13	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0*	<5.0
NM-10-8	NM-10	Apr-07	8	<1.0	<1.0	2.9	<5.0	<5.0	<5.0	<5.0*	<5.0
NM-11-13	NM-11	Apr-07	13	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0*	<5.0
NM-11-18	NM-11	Apr-07	18	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0*	<5.0
NM-12-12	NM-12	Apr-07	12	**6.2**	**15**	**12**	<5.0	<5.0	<5.0	<5.0*	<5.0
NM-12-17	NM-12	Apr-07	17	**11**	**3.2**	**1.5**	<5.0	<5.0	<5.0	<5.0*	<5.0
NM-13-13	NM-13	Apr-07	13	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0*	<5.0
NM-13-18	NM-13	Apr-07	18	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0*	<5.0
NM-14-13	NM-14	Apr-07	13	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0*	<5.0

TABLE 3
SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS AS
GASOLINE, DIESEL, and MOTOR OIL, BTEX and MTBE

Sample ID	Boring Location	Date Sampled	Depth (feet)	ANALYTE							
				TPH-G (mg/kg)	TPH-D (mg/kg)	TPH-MO (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (µg/kg)
NM-14-18	NM-14	Apr-07	18	<1.0	**1.4**	**2.9**	<5.0	<5.0	<5.0	<5.0*	<5.0
NM-17-12	NM-17	Apr-07	12	<1.0	<1.0	**2.4**	<5.0	<5.0	<5.0	<5.0*	<5.0
NM-17-17	NM-17	Apr-07	17	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0*	<5.0
NM-18-13	NM-18	Apr-07	13	<1.0	<1.0	**2**	<5.0	<5.0	<5.0	<5.0*	<5.0
NM-18-18	NM-18	Apr-07	18	<1.0	**1.3**	**2.7**	<5.0	<5.0	<5.0	<5.0*	<5.0
ESLs (mg/kg)	ESLs (mg/kg)			100	100	1,000	44	2,900	3,300	2,300	23

Notes: **Notes:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline or Gasoline Range Organic compounds analyzed by EPA Method 8015B
TPH-D = Total Petroleum Hydrocarbons as Diesel or Diesel Range Organic compounds analyzed by EPA Method 8015B
TPH-MO = Total Petroleum Hydrocarbons as Motor Oil or Motor Oil Range Organic compounds analyzed by EPA Method 8015B
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
< = below laboratory reporting limits
ESLs = San Francisco Bay RWQCB Environmental Screening Levels for Commercial / Industrial Use - Shallow Soils (≤ 3 mbgs) - Where Groundwater is a current or potential source of drinking water (February 2005)
Bold = Concentrations higher than laboratory reporting limits
MTBE = Methyl-tert-butyl-ether
Samples analyzed for Benzene, Toluene, Ethylbenzene, Total Xylenes, and MTBE using EPA Method 8260B
Shaded = Concentrations equal to or higher than ESLs
* Total Xylenes not analyzed, however m,p-Xylene and o-Xylene values were <5.0 µg/kg
NA = Not Analyzed

TABLE 4
SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
LUFT 5 METALS

Sample ID	Boring Location	Date Sampled	Depth (feet)	ANALYTE				
				Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
W.O. Bottom	W.O. Bottom	Sep-97	8.5	**1.3**	<1.0	**3.1**	**61**	**10**
ESLs (mg/kg)	ESLs (mg/kg)			7.4	58	750	150	600

Notes: **Notes:**
(Leaking Underground Fuel Tank (LUFT) 5 Metals analysis performed by EPA method 6010B
mg/kg = milligrams per kilogram
< = below laboratory reporting limits
ESLs = San Francisco Bay RWQCB Environmental Screening Levels for Commercial / Industrial Use - Shallow Soils (≤ 3 mbgs) - Where Groundwater is a current or potential source of drinking water (February 2005)
Bold = Concentrations higher than laboratory reporting limits

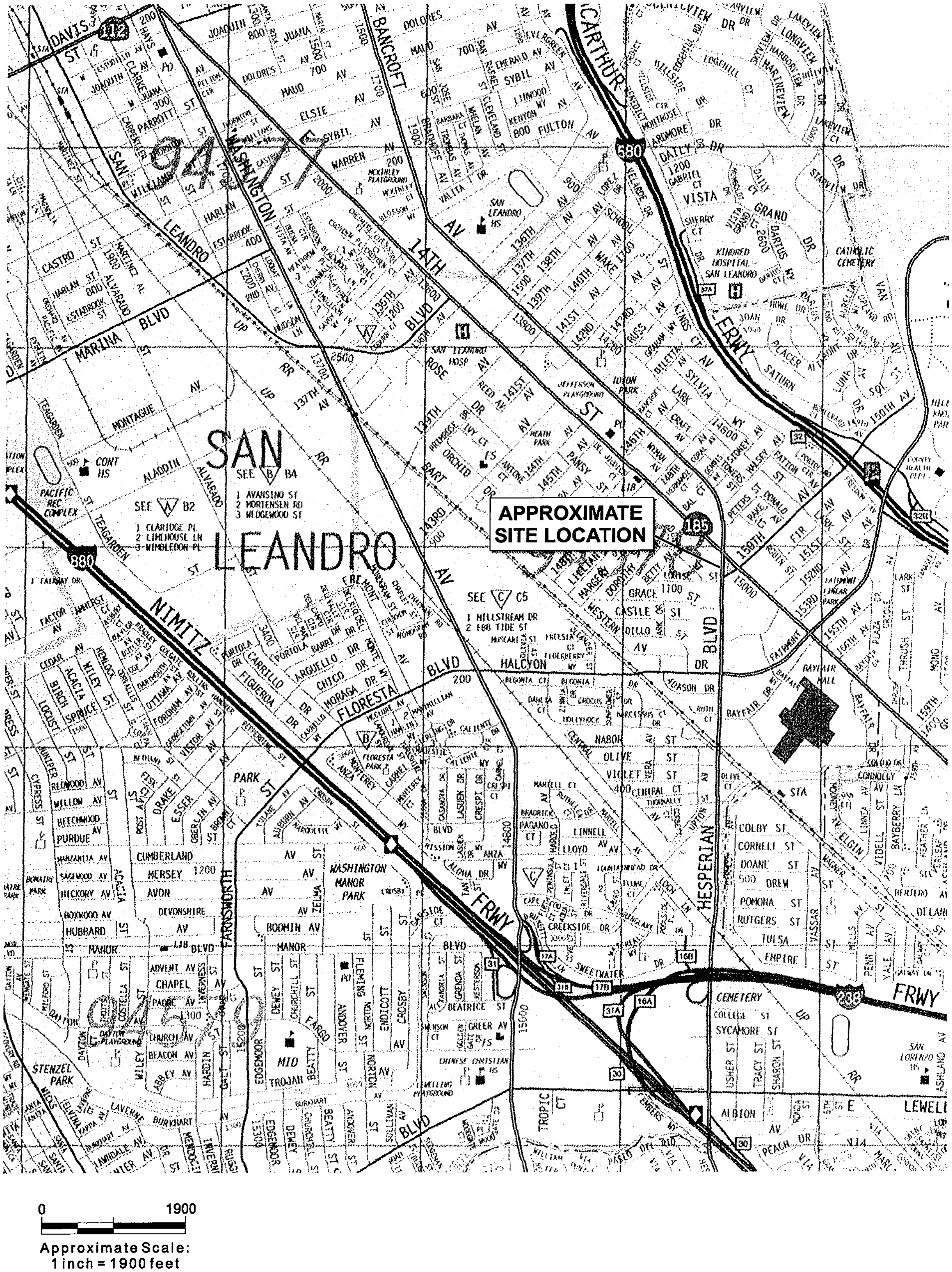
TABLE 5
SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Sample ID	W.O. Bottom	NM-10-8	NM-10-13	NM-11-13	NM-11-18	NM-12-12	NM-12-17	NM-13-13	NM-13-18	NM-14-13	NM-14-18	NM-17-12	NM-17-17	NM-18-13	NM-18-18	
Date Sampled	Sep-97	Apr-07	Apr-07	Apr-07	Apr-07	Apr-07	Apr-07	Apr-07	Apr-07	Apr-07	Apr-07	Apr-07	Apr-07	Apr-07	Apr-07	
Analyte																ESLs(µg/kg)
1,1,1,2-Tetrachloroethane	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	24
1,1,1-Trichloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	7,750
1,1,2,2-Tetrachloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	18
1,1,2-Trichloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	70
1,1-Dichloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	200
1,1-Dichloroethene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1,000
1,1-Dichloropropene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
1,2,3-Trichlorobenzene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
1,2,3-Trichloropropane	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
1,2,4-Trichlorobenzene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1,000
1,2,4-Trimethylbenzene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
1,2-Dibromo-3-chloropropane	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	4
1,2-Dibromoethane	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
1,2-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1,150
1,2-Dichloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	4
1,2-Dichloropropane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	125
1,3,5-Trimethylbenzene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
1,3-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	7,300
1,3-Dichloropropane	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
1,4-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	125
2,2-Dichloropropane	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
2-Chlorotoluene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
4-Chlorotoluene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
4-Isopropyltoluene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
Benzene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	45
Bromobenzene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
Bromodichloromethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	40
Bromoform	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2,150
Bromomethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	400
Carbon tetrachloride	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	35

TABLE 5
SOIL SAMPLE LABORATORY ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS

Sample ID	W.O. Botton	NM-10-8	NM-10-13	NM-11-13	NM-11-18	NM-12-12	NM-12-17	NM-13-13	NM-13-18	NM-14-13	NM-14-18	NM-17-12	NM-17-17	NM-18-13	NM-18-18	
Chlorobenzene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1,500
Chloroethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	850
Chloroform	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1,900
Chloromethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	200
cis-1,2-Dichloroethene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
Dibromochloromethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
Dibromomethane	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	54
Dichlorodifluoromethane	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
Ethyl Tert-butyl ether	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
Ethylbenzene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	3,275
Hexachlorobutadiene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1,000
Isopropylbenzene	NA	<5.0	<5.0	<5.0	<5.0	**6.7**	**18**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
m,p-Xylene	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	2,260
Methylene chloride	<5.0	<5.0	<5.0	<5.0	<5.0	**5.8**	<5.0	<5.0	**5.5**	**6.2**	<5.0	<5.0	<5.0	<5.0	<5.0	77
MTBE	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	23
n-Butylbenzene	NA	<5.0	<5.0	<5.0	<5.0	**130**	**220**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
n-Propylbenzene	NA	<5.0	<5.0	<5.0	<5.0	**37**	**130**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
Naphthalene	NA	<5.0	<5.0	<5.0	<5.0	**18**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1,500
o-Xylene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2,260
sec-Butylbenzene	NA	<5.0	<5.0	<5.0	<5.0	**44**	**81**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
Styrene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1,500
tert-Butylbenzene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
Tetrachloroethene	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	250
Toluene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2,850
trans-1,2-Dichloroethene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
Trichloroethene	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	450
Trichlorofluoromethane	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--
Vinyl chloride	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	20

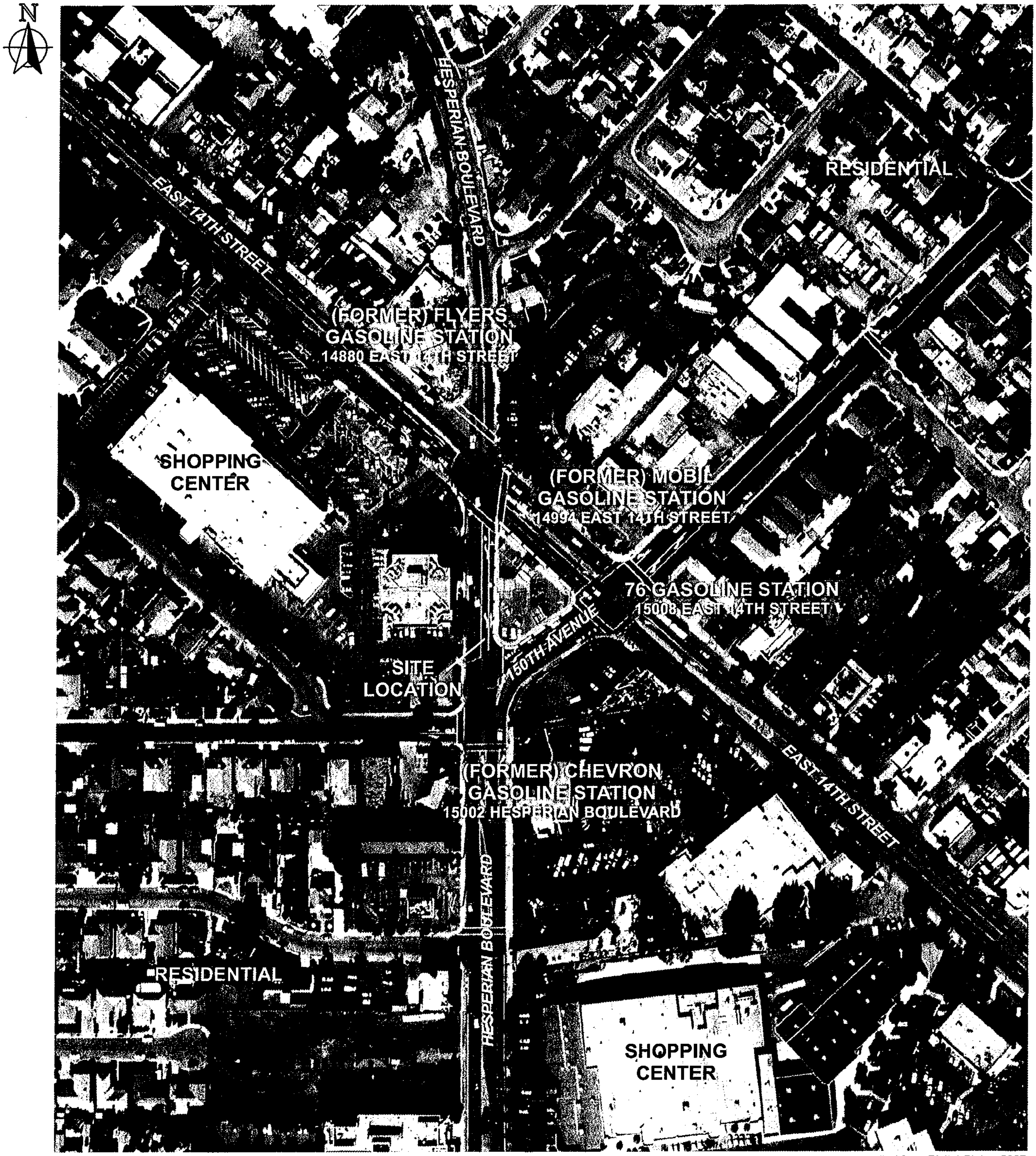
-- = Not available
VOCs analyzed using EPA Method 8260B
µg/kg = micrograms per kilogram
< = below laboratory reporting limit
Bold = Concentrations higher than laboratory reporting limits
ESLs = San Francisco Bay RWQCB Environmental Screening Levels for Commerical / Industrial Use - Shallow Soils (≤ 3 mbgs)
Where Groundwater is a Current or Potential Source of Drinking Water (February 2005)



Source: The Thomas Guide, Bay Area Metro Edition, 2006.

Ninyo & Moore	SITE LOCATION MAP	FIGURE
PROJECT NO: 401007004 / DATE: 01/08	QUALITY TUNE UP 14901 EAST 14TH STREET SAN LEANDRO, CALIFORNIA	1

file no: 1007vmap1007

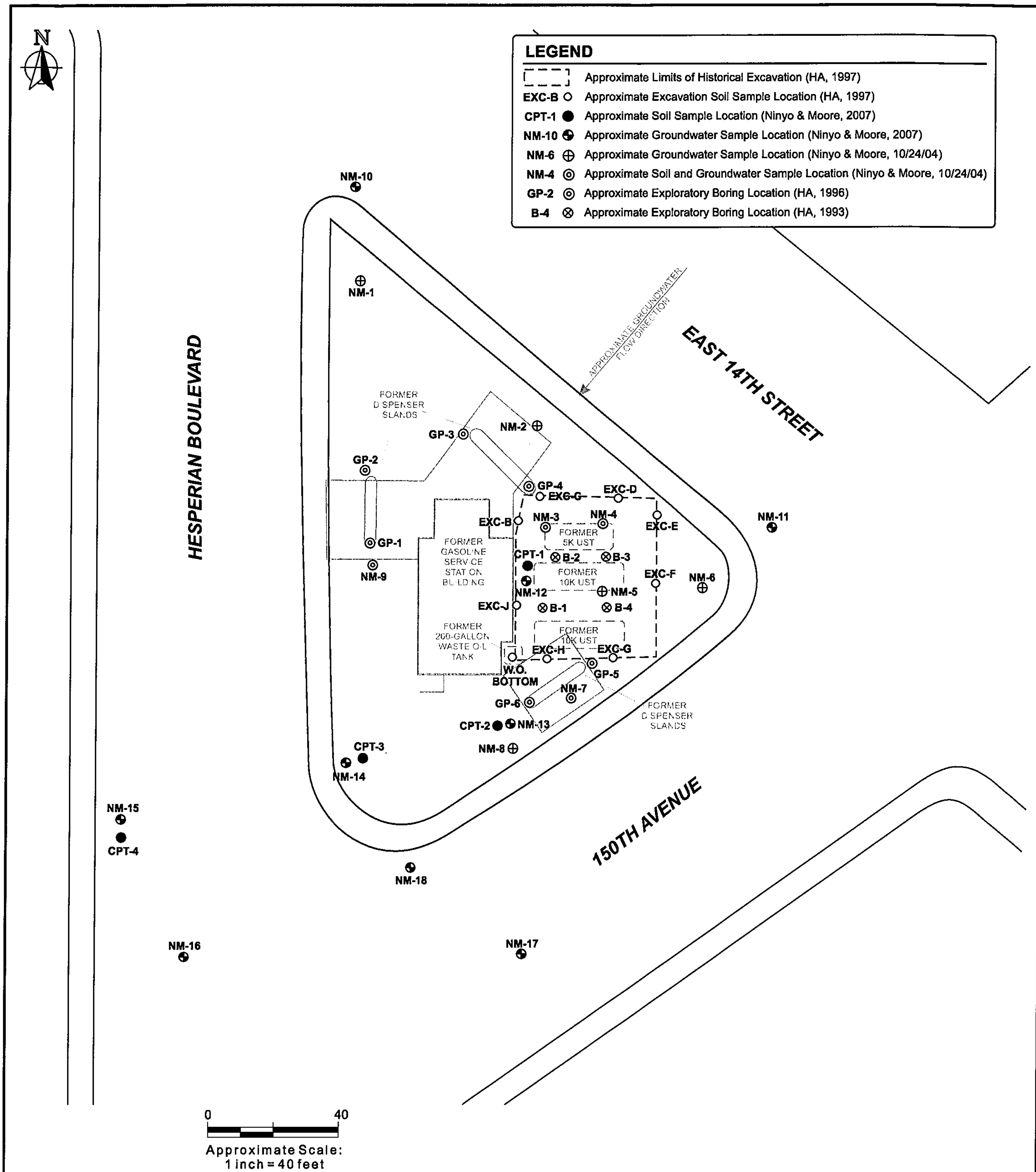


Source: Aerial photo supplied from Digital Globe, 2007.

NOT TO SCALE

Ninyo & Moore		SITE VICINITY MAP	FIGURE
PROJECT NO: 401007004	DATE: 01/08	QUALITY TUNE UP 14901 EAST 14TH STREET SAN LEANDRO, CALIFORNIA	2

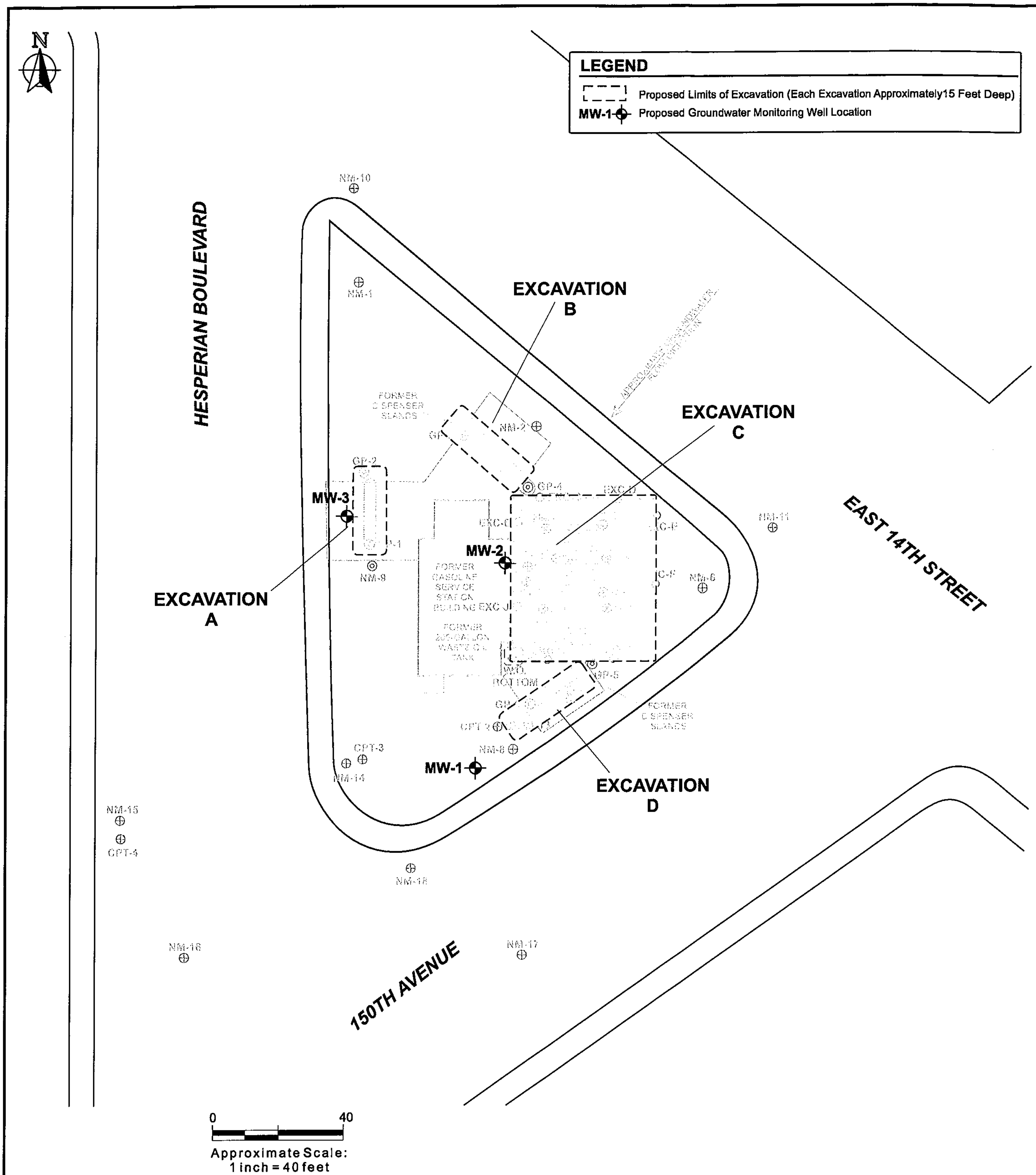
file no: 1007arl1007



SOURCE: Hageman Aguiar, Inc., Report of Additional Subsurface Investigation, January, 1997.

Ninyo & Moore		HISTORIC BORING LOCATION MAP	FIGURE
PROJECT NO: 401007004	DATE: 01/08	QUALITY TUNE UP 14901 EAST 14TH STREET SAN LEANDRO, CALIFORNIA	3

file no: 1007his1007



SOURCE: Hageman Aguiar, Inc., Report of Additional Subsurface Investigation, January, 1997.

Ninyo & Moore

PROPOSED EXCAVATION AND GROUNDWATER MONITORING WELL LOCATION MAP

FIGURE 5

PROJECT NO:	DATE:	
401007004	01/08	QUALITY TUNE UP 14901 EAST 14TH STREET SAN LEANDRO, CALIFORNIA

file no: 1007exc1007