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Alameda County
Environmental Health

CORRECTIVE ACTION PLAN

HARD-RDA HOLLAND PARK PROPERTY

16301 East 14th Street
San Leandro (Ashland District), California

PREPARED FOR:

Hayward Area Recreation and Park District
1099 E Street
Hayward, CA 94541

PREPARED BY:

Amicus – Strategic Environmental Consulting
580 Second Street
Suite 260
Oakland, CA 94607

SUBMITTED TO:

Alameda County Department of Environmental Health
1311 Harbor Bay Parkway
Alameda, CA 94502-6577
Attn: Mr. Jerry Wickham

March 6, 2009

TABLE OF CONTENTS

TABLE OF CONTENTS, CONTINUED

FIGURES

ATTACHMENTS

1. INTRODUCTION

This report presents a plan for the mitigation of historic use-related environmental conditions at the former Holland Oil Company bulk fuel storage and distribution facility located at 16301 East 14th Street, San Leandro (Ashland District), California (Figure 1). This property was acquired in 2008 by the Hayward Area Recreation and Park District (HARD) and the Alameda County Redevelopment Agency (RDA) for redevelopment as a recreational and community services neighborhood amenity. This Corrective Action Plan (CAP) follows a series of environmental assessments, with the most recent final environmental evaluation conducted by Ninyo & Moore in December 2008. The form and schedule for CAP submittal is described in a January 22, 2009 letter from the Alameda County Environmental Health Department (ACEHD). This letter is provided for reference in Attachment A.

1.1. Purpose

The purpose of this report is the examination of site history and current condition in terms of its suitability for redevelopment as a park and community service center. In areas of the site where historic use-related contaminants are present in concentrations conflicting with the contemplated re-use, this report examines the nature and extent of these contaminants, and evaluates alternatives available for their removal or neutralization. The report concludes with a selection of the appropriate alternative and description of methods, endpoints and schedule.

1.2. Background

The last comprehensive property use was as a bulk fuel storage and distribution business. Historic reports indicate this use commenced around 1960 and continued through the middle 1980s. Historic research indicates the property and surrounding land was in cultivation as an orchard prior to being redeveloped in the 1960s for the fuel business.

The bulk fuel storage and distribution business was located in the property interior; parcels fronting on East 14th Street were utilized until recent years as auto sales lots. Fuel operations were apparently never conducted on these frontage lots. Aboveground and underground product storage tanks, lines, dispensers and loading racks were removed from the property in 1998.

Various investigations of site environmental quality have been commissioned over the years. The earliest assessments confirmed the presence of bulk plant-related hydrocarbons in soil and groundwater. A two-stage assessment that built on the earlier investigations was recently completed by Ninyo & Moore, an environmental consulting company retained by HARD. The results of this recent comprehensive assessment are discussed later in this report.

The property was purchased by HARD and the RDA in 2008. The parcels acquired by HARD are to be redeveloped as a neighborhood park with a skate park, play structure, picnic area, an area for passive recreation and parking lot. The parcels acquired by the RDA are presently contemplated to be redeveloped with structures for a Teen Center with associated non-structural hardscape and landscaping. Figure 2 shows the respective parcels, numbers and boundaries. Figure 3 shows a conceptual redevelopment plan.

2. SITE CHARACTERISTICS

2.1. Setting

The project property is located on the southern side of 14th Street in unincorporated Alameda County, in the Ashland District between the cities of Hayward and San Leandro. The neighborhood along 14th is predominantly commercial, with primarily single-family residential units located along the intersecting streets. The Edendale Middle School adjoins the HARD site to the north; Edendale athletic fields are to the west.

The land occupied by the site and its surroundings is relatively flat. The East Bay/Hayward Hills rise to the east approximately a mile from the property; San Francisco Bay is about four miles to the west.

2.2. Historic Use-Related Features

The project property is presently free of structures. When in operation as a bulk fuel storage facility the property contained a storage/small quantity distribution warehouse of single story steel and corrugated metal construction and a smaller similarly constructed building used for vehicle maintenance. A third structure, presumably for the bulk plant office, was located along the northern edge of the operation adjoining the auto-sales operations along East 14th. This structure was demolished prior to the most recent work.

These buildings (excepting the presumed office structure) and the small auto sales-related buildings on the parcels adjoining the former bulk plant are visible in Figure 4. The more noteworthy aboveground bulk plant features - the aboveground storage tanks, rack and dispensers are not visible, having been removed prior to this photograph being taken. Project reports indicate that approximately 20 aboveground tanks of varying capacity were historically utilized over the course of site operations. Figure 5 shows the aboveground tanks and site buildings.

Historic reports also document the prior presence of eight underground storage tanks. Three of these tanks are reported to have once held gasoline, two diesel fuel, two kerosene, and one Stoddard (non-halogenated) solvent. All tanks were removed from the property in 1998. With the reported concurrence of the oversight agency, overburden removed to free the underground tanks was returned to the tank excavations. The remainders of the tank cavities were backfilled with imported fill material (EBS, 1998).

2.3. Sedimentology

As described in investigative reports, the surface is underlain by sediments of alluvial origin, with terrestrially-derived sand, silt and clay to a depth of approximately 35 feet below grade. These terrestrial deposits are underlain by the geologically recent fine-grained bay mud, which was deposited in and around the margins of the San Francisco Bay during historic times when the bay extended further inland than it does currently.

2.4. Hydrogeology

Unconfined groundwater is encountered in local sediments at an approximate depth of 9 feet below ground surface (bgs). Groundwater occurs in both fine- and coarse-grained sediments; no apparent lower bound to the unconfined water-bearing zone was encountered during assessment activities to the maximum depth explored (40 feet bgs). Investigative data shows that groundwater moves towards the west/southwest, with a gradient of 0.005 feet/foot (Ninyo & Moore, 2008).

2.5. Nature and Distribution of Use-Related Contaminants

Results of facility characterization have shown the project site to contain concentrations of historic use-related substances in soil and groundwater. The nature and distribution of the detected substances are consistent with site history.

2.6. Contaminant Type

As is common in similar former bulk fuel storage and dispensing facilities, contaminants measured during investigative activities consist predominantly of motor fuel hydrocarbons and heavier hydrocarbons likely associated with lubricants or heavier oils. These contaminant signatures are comprised primarily of gasoline-range and diesel-range hydrocarbons.

2.6.1. Soil

Weathered fuel hydrocarbons have been detected in soil beneath the former Holland operation in two areas of the site. The first area corresponds with the location of the former underground tanks and dispensers, the second corresponds with no obvious operational feature in a portion of the site that may have been used for vehicle parking and drum storage.

The results of analysis of samples collected during the most recent Ninyo & Moore assessment are presented on Figure 6. As shown, samples collected from the borings for monitoring wells B-1, MW-6 and MW-8 exhibited elevated concentrations of fuel-related compounds. These borings appear to have been located in areas near the former tanks, but not within the footprint of the tank excavations themselves. Elevated concentrations in near-surface sediments are consistent with the assumption that these areas were not excavated when the tanks were removed.

The areas formerly housing the underground tanks are expected to contain a lesser vertical column of hydrocarbon-containing sediments, as the tank-holds extended to near the surface of the water table and upon tank removal were backfilled with relatively hydrocarbon-free sediments (overburden and imported fill).

Results of analysis also showed elevated concentrations of fuel-related compounds in sediments encountered in borings B-2, B-7, SB-11 and SB-12. As shown, these borings are not located near the former fuel storage or handling area. Impact detected in these borings is generally restricted to the near-surface portion of the soil column, suggesting that contaminant introduction may have been by way of spillage from drums or vehicles stored in this area of the site.

2.6.2. Groundwater

Results of site characterization show hydrocarbons in groundwater in monitoring wells and discrete groundwater samples taken in the central portion of the site. Samples from monitoring wells MW-1, MW-4, MW-6 and MW-8 have shown persistent moderate concentrations of gasoline and diesel-range hydrocarbon compounds. Wells MW-6 and MW-8 are located in the immediate vicinity of the former underground tanks and dispensers; MW-1 and MW-4 are just downgradient of these former facility features. Samples from MW-10 and MW-11, located on the neighboring school property downgradient of wells MW-1 and MW-4 have been free of hydrocarbon compounds and indicate that the extent of historic impact is predominantly on-property near the former tanks. The distribution of diesel-range hydrocarbons is shown on Figure 7.

2.7. Sensitive Receptors

Use-related hydrocarbons have been shown to be restricted to the former Holland parcel. Were they to move from the parcel they would do so in migrating groundwater, and the receptor of concern would be a water supply well.

For the purposes of conservative evaluation, the ACEHD requested that a well survey be completed. Agency records were reviewed for the purposes of locating water supply wells within a one-quarter mile radius of the study site. Records were reviewed at both the California Department of Water Resources and the Alameda

County Public Works Department. Identified wells are depicted on Figure 8. As shown, two wells were located in an approximate downgradient direction within relative proximity to the site. One of these wells (the domestic) is listed in DWR and County records as being on Ashland Avenue. The address could not be mapped. Records review indicates that much of this neighborhood was at one time served by individual wells, but that these wells have since been abandoned, presumably replaced by municipal water service.

3. CORRECTIVE ACTION PLAN OBJECTIVES

The use-related environmental conditions at the subject property are not presently consistent with the contemplated redevelopment plan. The hydrocarbon content of the shallow soil on and near the parcel planned for RDA redevelopment exceeds levels considered acceptable for unrestricted land use. As no restrictions are desired on this parcel, the objective of corrective action in this area is the removal of hydrocarbon-bearing sediments to below use-restricting thresholds.

The HARD park parcel also contains use-related hydrocarbon compounds. As this parcel is intended for redevelopment as a skate-park, parking lot and passive recreational area, the removal threshold is higher than that of the unrestricted RDA parcel. Corrective action objectives in this portion of the project parcel include:

1. The removal of sediments containing the highest concentrations of hydrocarbon compounds to facilitate the continued natural restoration of subsurface materials;
2. The grading and removal of near-surface sediments from the park project area corresponding to the former facility footprint in order to prevent contact with hydrocarbon-bearing material by future park workers or visitors.

While this is not a removal action governed by EPA National Contingency Plan (NCP) criteria or requirements, the NCP criteria do serve as effective categories for evaluating the objectives and benefits of the plan for corrective action. Specifically, the nine NCP criteria are as follows:

1. Overall protection of human health and the environment
2. Applicable or Relevant and Appropriate Requirements (ARARs)
3. Long-term effectiveness and permanence
4. Reduction of toxicity, mobility or volume
5. Short term effectiveness
6. Implementability
7. Cost
8. State acceptance
9. Community acceptance

4. REVIEW OF CORRECTION ACTION ALTERNATIVES

Site characterization efforts have shown impact on the RDA parcel to be confined to shallow subsurface sediments. Subsurface material on the HARD parcel in the vicinity of former bulk plant features contains hydrocarbon compounds to a relatively greater depth; groundwater in this area has also been shown as affected. Hydrocarbon concentrations in groundwater, decline rapidly with distance, and it appears as if groundwater plume stability has been attained (hydrocarbons in soil continue to leach to groundwater but not to a degree that facilitates the expansion of the affected area).

Given these physical site attributes and the objectives of contemplated corrective action, remedial alternatives that address hydrocarbon compounds in soil are the most appropriate alternatives for evaluation. Given the redevelopment schedule, an alternative that can satisfy corrective plan objectives by the autumn of 2009 is required.

<u>Alternative 1 – No removal or treatment - capping.</u>
This alternative is considered as a formality. Clearly, capping would not satisfy the RDA objective of unrestricted use, and capping would not remove the residual mass of hydrocarbon compounds that continue to affect groundwater quality beneath the HARD parcel. This alternative will be considered no further.

<u>Alternative 2 – Soil excavation, amendment, replacement.</u>
This alternative would conceivably satisfy the objectives of both parcels, with the likely exception of project schedule. Were this alternative implemented, soil from both sites would be excavated, temporarily piled on site, and then mixed with an amendment designed to accelerate the biologic degradation of hydrocarbons. Once mixed, the soil would be replaced in the excavation, compacted, and periodically tested to confirm the attainment of concentration-reduction objectives.

While this is an on-site carbon-sensitive alternative, the amendment option lacks absolute certainty and would clearly, even if acceptable contaminant concentration goals were eventually attained, require a greater span of time than the redevelopment project would allow. This alternative is therefore not acceptable and will be considered no further.

<u>Alternative 3 – Excavation, removal, backfilling with clean imported material.</u>
This alternative satisfies all evaluative criteria. As follows:

1. Overall protection of human health and the environment – the excavation and removal from affected areas will prevent human contact or exposure (protective of human health), and facilitate the natural restoration of groundwater quality (protective of the environment).
2. Applicable or Relevant and Appropriate Requirements (ARARs) – excavation and removal will return the parcels to conditions acceptable to the applicable agencies for the contemplated future uses.

3. Long-term effectiveness and permanence – the removal action on the RDA parcel will be complete and consequently permanent; the HARD parcel removal action will completely cure the condition in the area excavated, and lead to complete restoration over time.
4. Reduction of toxicity, mobility or volume – excavation and removal of affected sediments accomplishes each of these criteria.
5. Short term effectiveness – excavation and removal is effective in the immediate term.
6. Implementability – excavation and removal has been implemented at many similar project sites and no barriers to implementation exist at this project location.
7. Cost – as there are no other reasonable alternatives, cost is not a primary evaluative criterion. This considered, however, cost per unit excavated and removed is not anticipated to be excessive.
8. State acceptance – excavation and removal is anticipated to be acceptable to state and local oversight agencies.
9. Community acceptance – the excavation and removal plan will be implemented with community priorities in mind. Trucking schedules and routes will be designed such that the community is not negatively affected. Excavation-generated dust will be monitored and suppressed. It is anticipated that with the appropriate investment of foresight and planning the community will accept this corrective action alternative as appropriate.

Alternative 3 – excavation, removal and backfilling is recommended as the preferred method of corrective action.

5. PROPOSED METHODOLOGY

Methods to be utilized during the removal of hydrocarbon-containing sediments are described below.

5.1. Planning and Permitting

The remedial contractor will secure all necessary operational and environmental permits prior to commencing work.

5.2. Excavation Plan

The excavations shall be conducted in series. Areas A and B (see Figure 9) shall be excavated first, with excavated materials stockpiled in Area C. Areas A and B will be backfilled with materials delivered by trucks that will carry the excavated material to the selected project landfill. Area C will be excavated following backfilling and compaction of A and B. The staging area for material excavated from Area C will be scraped following loading, and scraped material added to the final trucks to depart.

The excavations in Areas A and B will be extended to 10 feet below ground surface, approximately one foot into water-saturated sediments. The lateral dimensions of these excavations have been determined by the results of site investigations and are designed to facilitate the removal of hydrocarbon-bearing sediments from areas of the site not previously excavated. Areas A and B will be excavated as shown on Figure 10. The excavations in Area C will be initially be excavated to six feet below grade, with final excavation dimensions to be determined by confirmation samples (Figure 11).

Monitoring wells MW-6 and MW-8 are present within proposed excavation boundaries in Areas A and B. These wells will be completely removed by excavation equipment.

5.3. Profiling of Excavated Materials

Excavated materials shall be profiled by the remedial contractor in accordance with local landfill acceptance criteria. Composite profiling samples shall be analyzed by the project lab on an expedited schedule (preferably overnight) so as to facilitate as short a stockpile residence period as possible.

5.4. Stockpile Weatherization and Security

Excavation activities will take place in late summer, in the California dry season. Given this, and the fact that the site is secured by a locked fence, no special measures will be taken to weatherize or secure the piles. They will remain on site uncovered for as short a period as possible following their generation until removal (less than one week per pile).

5.5. Excavation Confirmation Sampling

The portion of the RDA parcel containing elevated concentrations of fuel hydrocarbons is that which overlaps a portion of the yard for the former bulk plant. This yard was used for storage of vehicles and drums; no record has been identified showing any larger storage tank was ever present in this area.

Confirmation samples shall be taken from the sidewalls and bottom of the excavation on the RDA parcel (Area C) to confirm the removal of all soil containing hydrocarbons in excess of applicable criteria.

Based on site characterization efforts, shallow materials in the RDA parcel subsurface in places contain elevated concentrations of diesel-range petroleum hydrocarbons. The applicable regulatory guidelines are the San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESL). From the ESL look-up tables, a value of 100 mg/kg for both gasoline and diesel (middle distillate) petroleum hydrocarbons is appropriate as a remedial endpoint for unrestricted future property use. This ESL value corresponds to a residential, beneficial drinking water resource scenario. Given the nature and distribution of hydrocarbons beneath this parcel, this ESL scenario is most appropriate.

The excavations in Area C shall first be extended to its predetermined initial extent, laterally as shown on Figure 11 and to an initial depth of six feet below ground surface. This initial footprint is based on the results of site characterization efforts. Sidewall samples will be collected at a depth of three feet from ground surface. In areas where obvious impact is observed the affected materials will be removed prior to sampling. One sample shall be taken from each of the excavation side-walls. Given the dimensions of the excavations, one bottom sample will be adequate for the establishment of conditions at depth.

The Area C excavations will be enlarged and resampled in the event confirmation sample exhibits concentrations of gasoline or diesel-range hydrocarbons in excess of the 100 mg/kg target concentration and the ACEHD requires excavation enlargement. It is anticipated the agency will be asked to judge the excavation complete if concentrations in confirmation samples are reasonably near remedial targets.

Areas A and B will be excavated as shown on Figure 10, to a depth of 10 feet below ground surface. Due to the lateral dimensions of each excavated area, a single sample from each respective sidewall will be sufficient for the purposes of characterization. Sidewall samples will be collected at a depth of five feet below ground surface. A floor sample shall be collected from center of each excavation. As the objective is to remove hydrocarbon-bearing sediments from areas defined by prior sampling, the excavations will not be enlarged based on the results of confirmation sampling. If, however, obvious significant contamination is observed in an area bordering the planned excavations, it will be removed.

5.6. Air Monitoring

Ambient air in the vicinity of the excavated areas will be monitored for concentrations of hydrocarbon vapors during site work. Monitors will utilize a hand-held instrument (photo-ionization detector or equivalent). While the nature of the hydrocarbon contamination is such that the exceedance of action levels is not anticipated, the remedial contractor shall describe the criteria for action in their Site Specific Health and Safety Plan and be prepared to modify excavation plans in the event of a significant vapor event.

5.7. Dust Suppression

In the event that unusually dry conditions prevail at the time of excavation and dust suppression measures are deemed prudent, the site surface will be watered so as to minimize dust generation.

5.8. Storm Water Management

As the excavation will take place during the California dry season, storm water mitigation measures are not expected to be necessary. Should schedules change, the remediation contractor shall take appropriate storm water management measures.

5.9. Truck Routes

The remediation contractor shall select a route for trucks that minimizes travel through residential neighborhoods. Hauling during rush hours (7-9AM and 4-6PM) shall be minimized to the extent practicable.

5.10. Backfill

The excavation on the RDA parcel shall be backfilled with clean imported fill and compacted in two-foot lifts using excavation equipment. The excavation on the HARD parcel will also be backfilled with clean import, with the upper four feet of the excavation compacted in two 2-foot lifts using excavation equipment. The surfaces will be finished during redevelopment in the months following remediation; following backfilling the excavations will remain un-surfaced.

6. POST-EXCAVATION MONITORING

The study area peripheral wells (MW-10, 11 and 12) were installed and initially sampled during the fourth quarter of 2008. Conventional practice involves the quarterly sampling of monitoring wells for four consecutive events, over the course of a complete hydrologic season, in order to gather data representative of the subsurface during times of differing seasonal water table elevations. The third quarter 2009 monitoring event shall be the fourth consecutive monitoring episode for these relatively new peripheral wells. Interior wells have been sampled for a longer duration (though somewhat sporadically).

The results of monitoring events to date indicate the extent of hydrocarbon-bearing groundwater to be contained predominantly on the HARD property. Had significant contaminant migration occurred it would already be evidenced in samples in peripheral downgradient wells. It is implausible to suspect that such migration remains a possibility. As such, it is recommended that the monitoring wells associated with this environmental project be sampled one time following the described removal action. This sampling will be for the purposes of completing the evaluative hydrologic cycle, not for the purposes of confirming the effectiveness of the sediment removal. The effectiveness of the removal can be predicted using existing information, no additional monitoring is necessary.

7. CLOSURE

This concludes the Corrective Action Plan for the redevelopment project at the subject HARD – RDA Holland Park Property.

8. REFERENCES

Ninyo & Moore, Site Assessment Report, December 2008

Environmental Bio-Systems, Workplan: Demolition and Removal of USTs and AGTs, August 1998

Many historic assessment and facility-related documents can be located in the Alameda County database, at:

http://ehgis.acgov.org/dehpublic/dehpublic.jsp

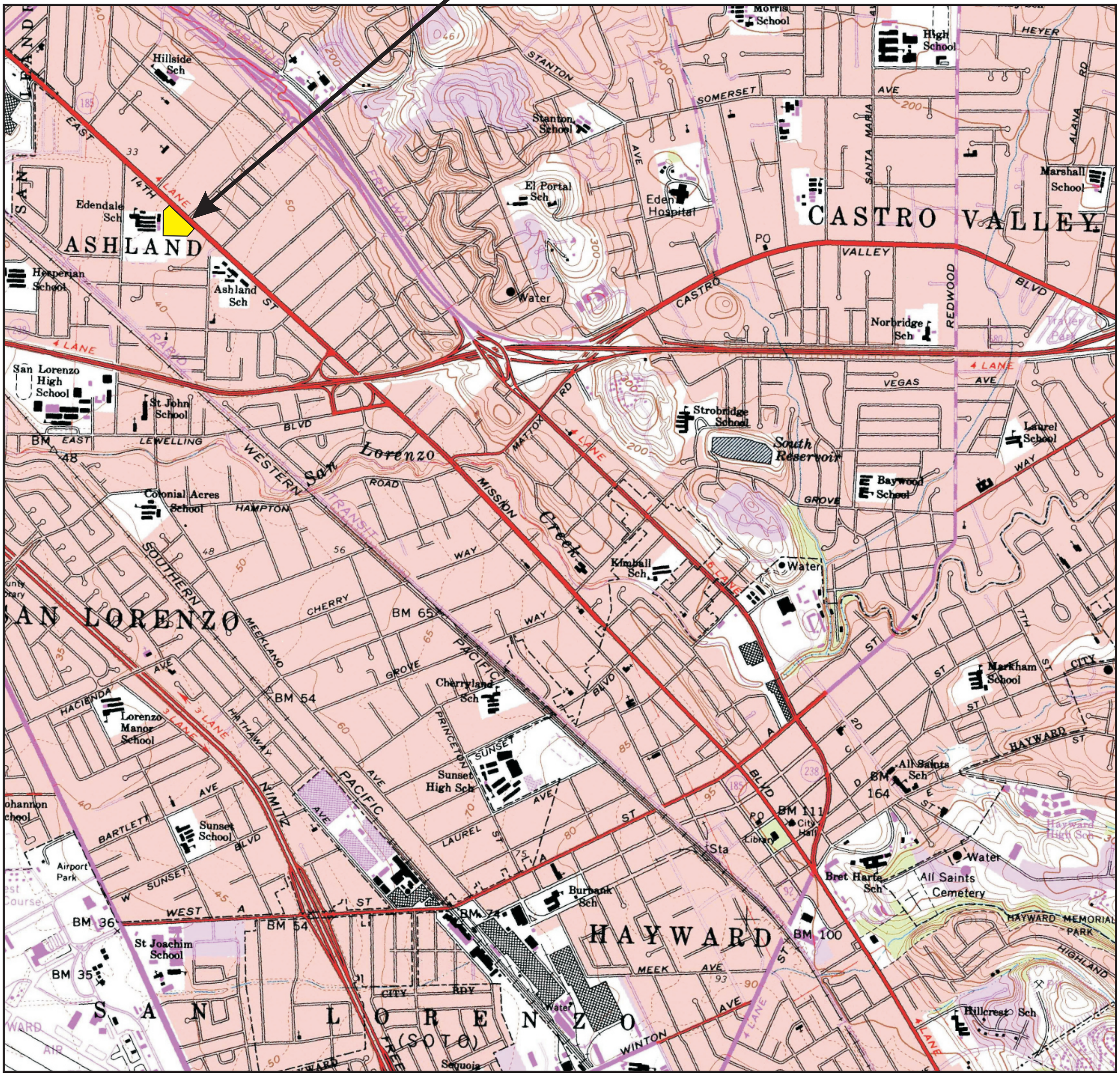
9. PREPARED BY

This Corrective Action Plan has been prepared by:

Markus B. Niebanck, PG No. 5607
Principal

Figures

Project Property



Base map from USGS Hayward Topographic Quadrangle Map

Figure 1: Property Location Map

HARD-RDA Holland Park Property
16301 East 14th Street, San Leandro, CA

March 6, 2009

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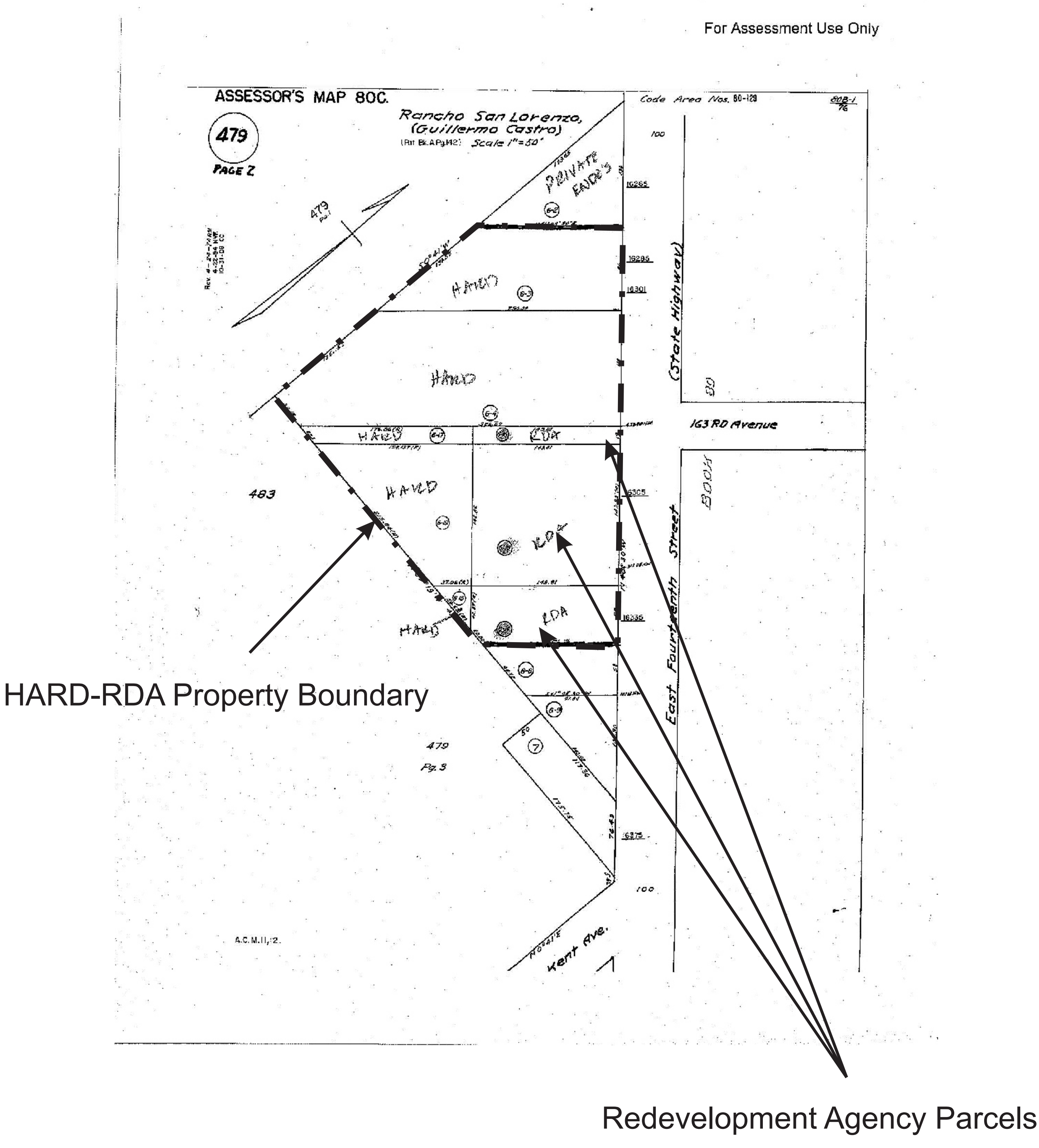

Figure 2: Parcel Map

HARD-RDA Holland Park Property
16301 East 14th Street, San Leandro
March 6, 2009

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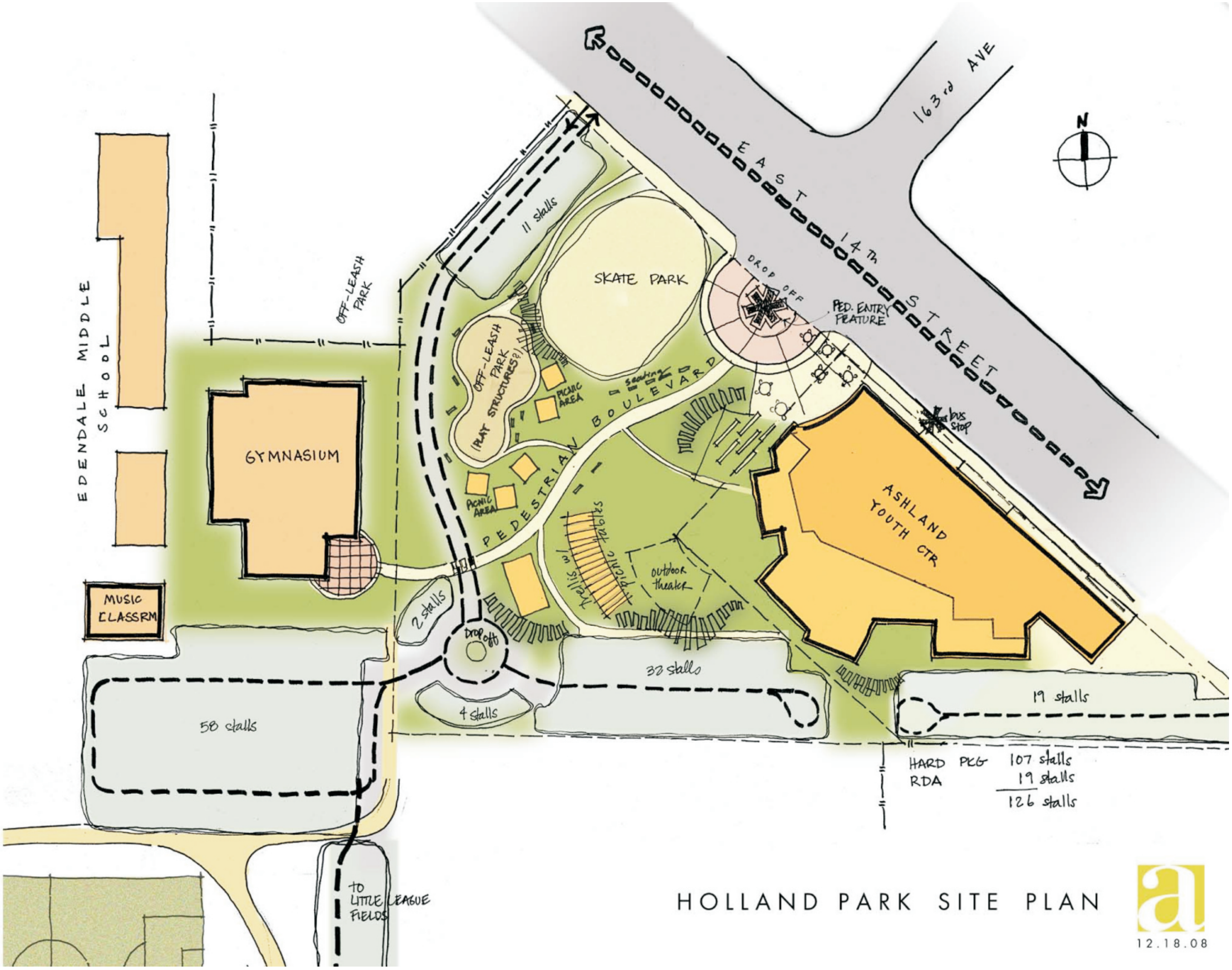

Draft Park Plan by: AEDIS Architecture and Planning

Figure 3: Draft Park Redevelopment Plan

HARD-RDA Holland Park Property
16301 East 14th Street, San Leandro

March 6, 2009

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Project Property

Figure 4: Aerial View of Project Property and Vicinity

HARD Park Property
Corrective Action Plan

March 6, 2009

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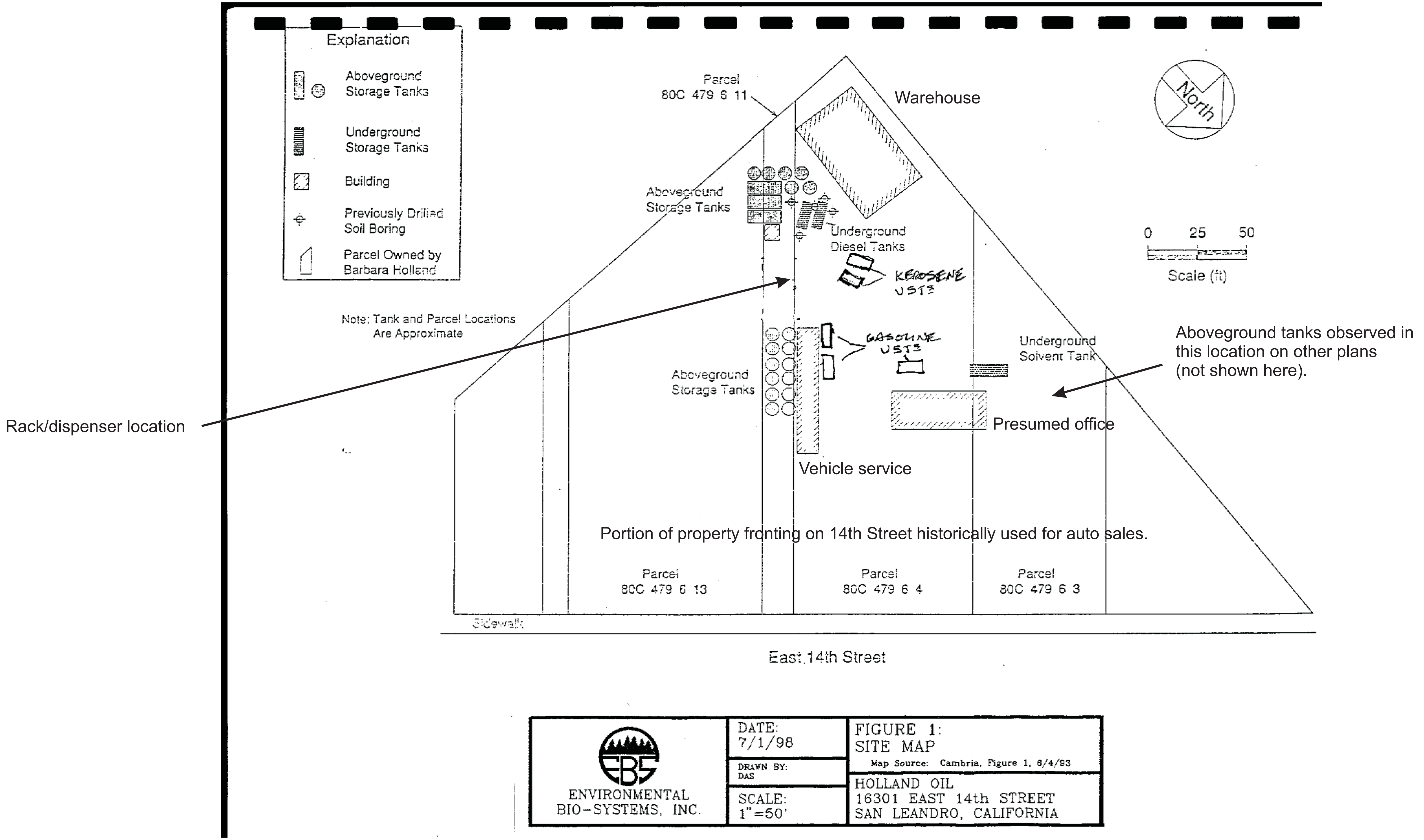

From: Environmental Bio-Systems August 10, 1998 Workplan for Tank Removal

Figure 5: Historic Features Site Plan

HARD-RDA Holland Park Property
16301 East 14th Street, San Leandro

March 6, 2009

From: Ninyo & Moore Site Assessment Report, December 2008

Approximate Scale (Feet)

0 50 100

Figure 6: Hydrocarbons in Soil

HARD-RDA Holland Park Property
16301 East 14th Street, San Leandro

March 6, 2009

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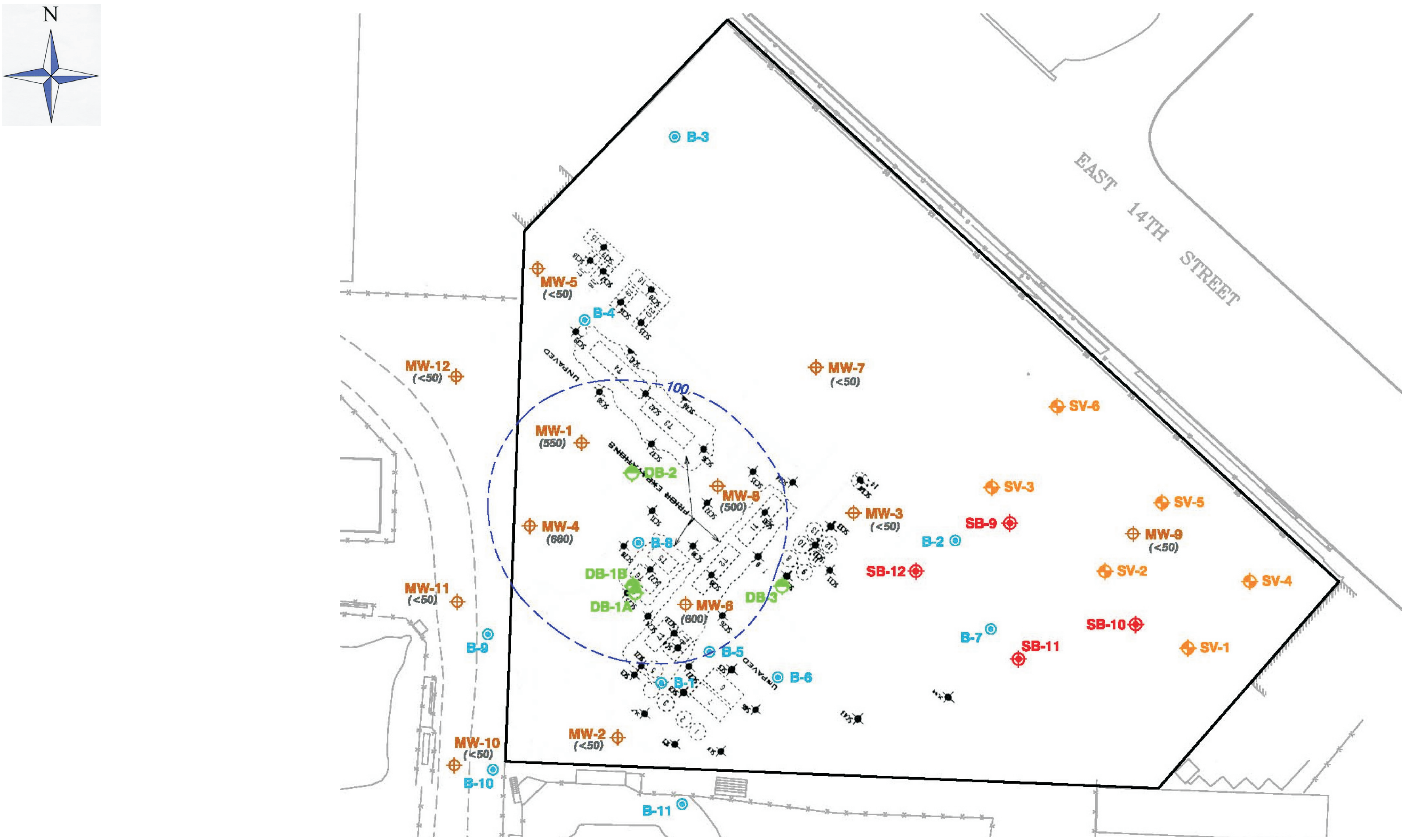

From: Ninyo & Moore Site Assessment Report, December 2008

Approximate Scale (Feet)

0 50 100

Figure 7: Diesel-Range Organics in Groundwater

HARD-RDA Holland Park Property
16301 East 14th Street, San Leandro

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Base map from USGS Hayward Topographic Quadrangle Map

Well Type

Irrigation   Domestic   Domestic (precise location uncertain)

Figure 8: Water Well Location Map

HARD-RDA Holland Park Property
16301 East 14th Street, San Leandro

March 6, 2009

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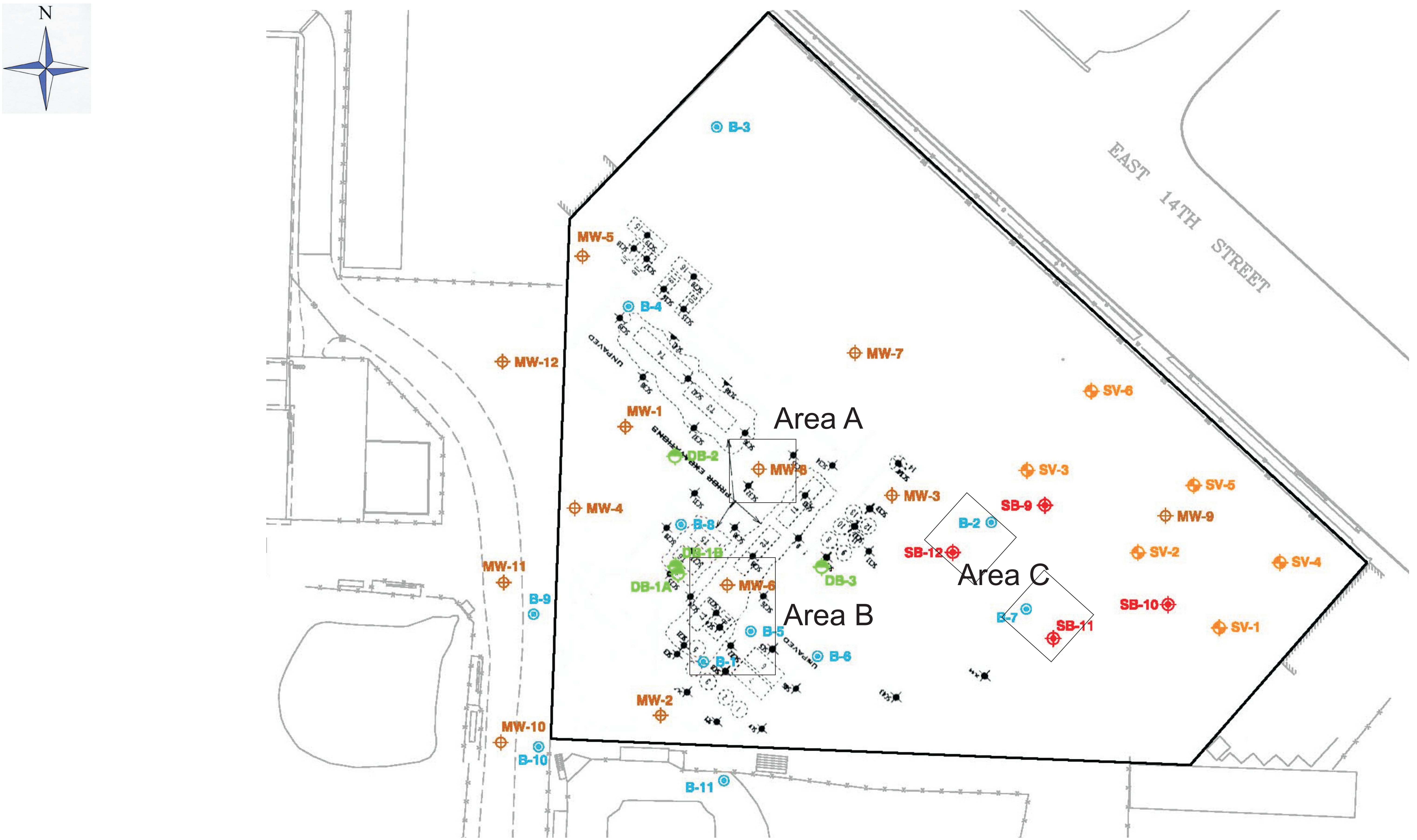

Figure 9: Remedial Excavation Locations

HARD-RDA Holland Park Property
16301 East 14th Street, San Leandro

March 6, 2009

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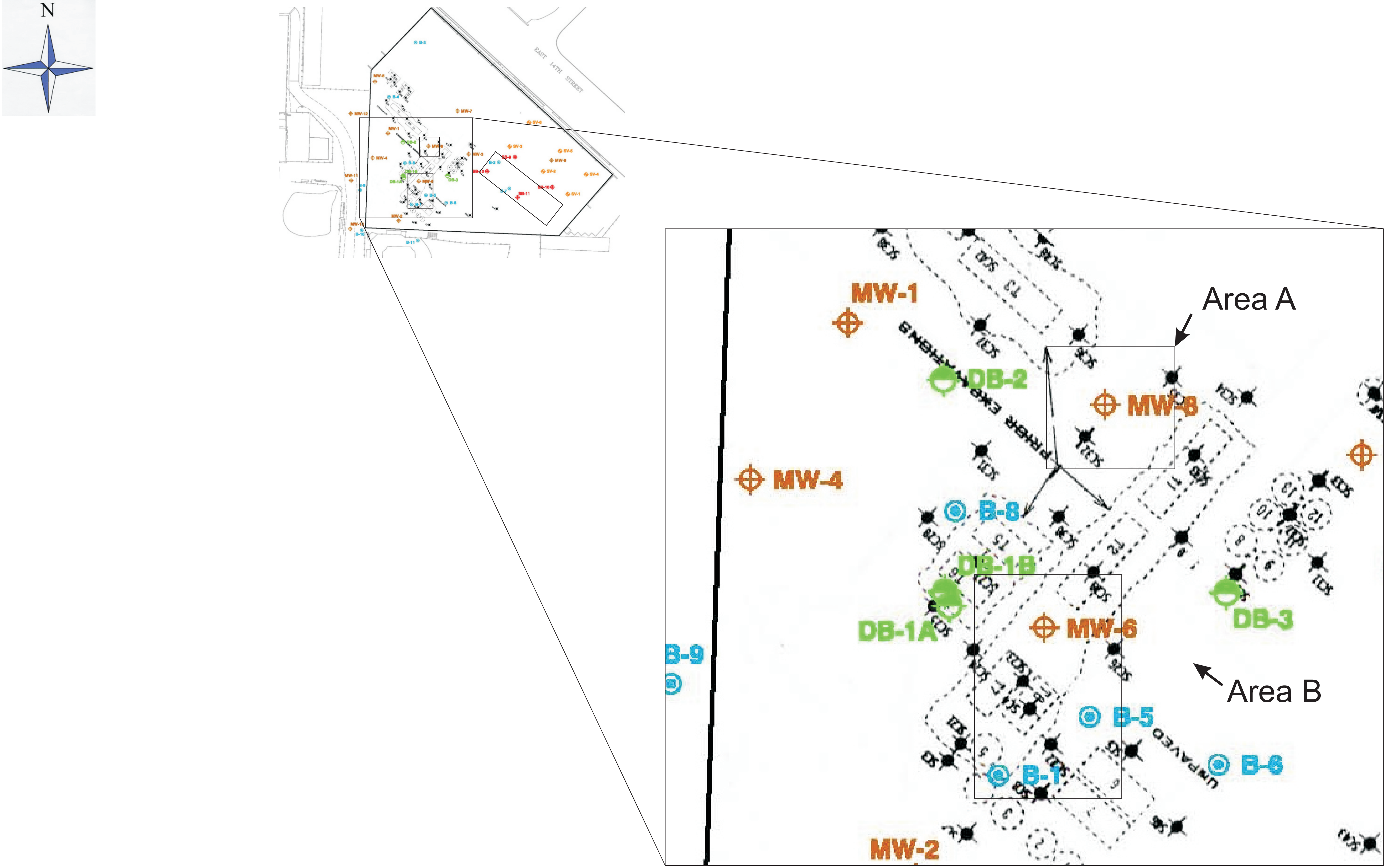

Approximate Scale (Feet)

0 50 100

Figure 10: Area A and B Excavation Detail

HARD-RDA Holland Park Property
16301 East 14th Street, San Leandro

March 6, 2009

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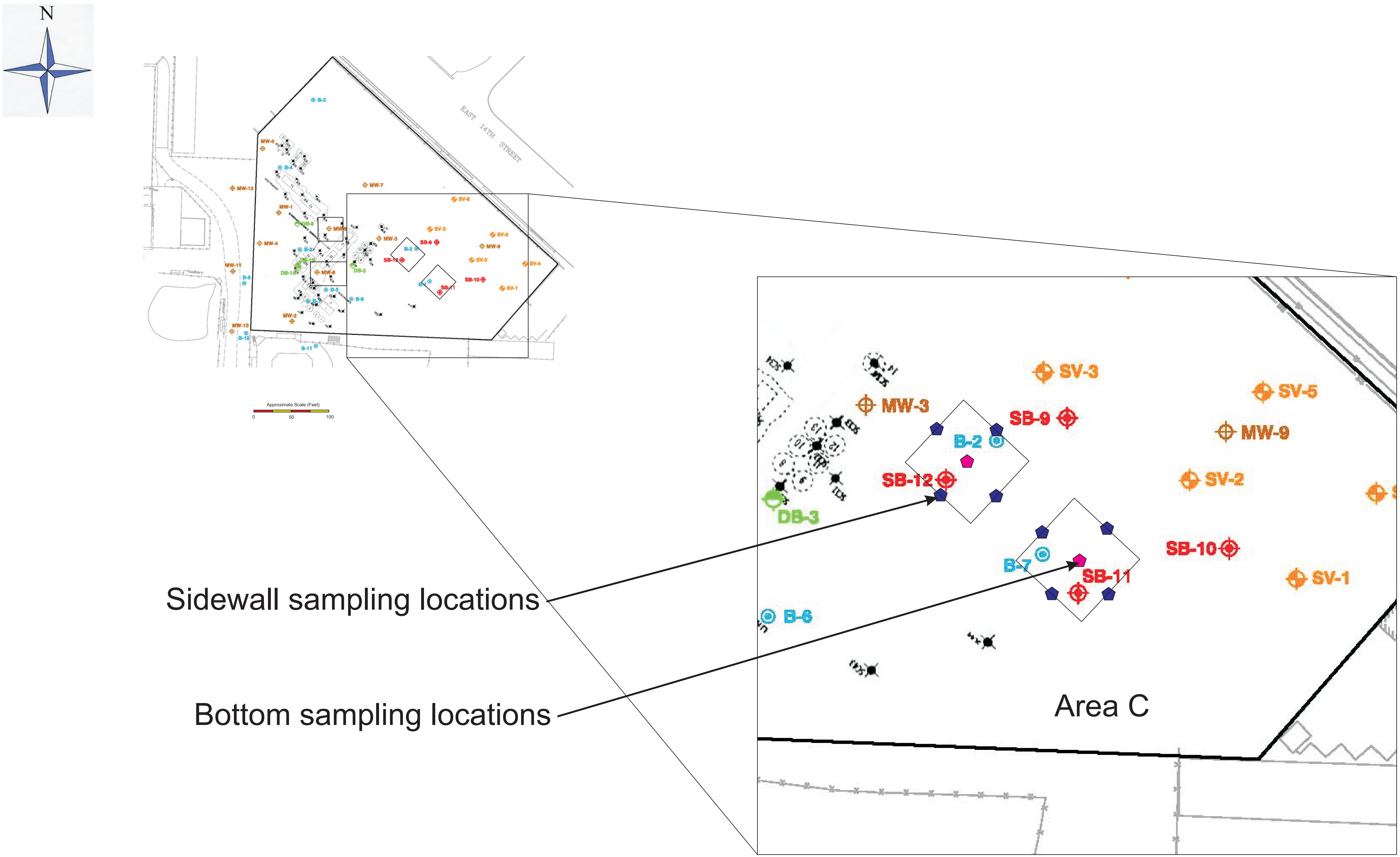

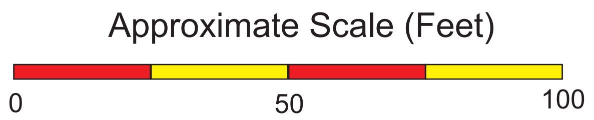

Figure 11: Area C Excavation Detail

HARD-RDA Holland Park Property
16301 East 14th Street, San Leandro

March 6, 2009

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Attachment A

Alameda County Environmental Health January 22, 2009 Letter

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-93

January 22, 2009

Ms. Ann Marie Holland Tiers
Estate of Jack Holland
1498 Hamrick Lane
Hayward, CA 94544

Ms. Barbara Holland
P.O. Box 5
Kentfield, CA 94914

Mr. Lawrence Lepore
Hayward Area Recreation and Park District
1099 E Street
Hayward, CA 94541

Subject: Fuel Leak Case No. RO0000212 and Geotracker Global ID T0600100709, Holland Oil, 16301 East 14th Street, San Leandro, CA 94580

Dear Ms. Tiers, Ms. Holland, and Mr. Lepore:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the subject site including the recently submitted document entitled, "*Site Assessment Report, Holland Oil Property, 16301 East 14th Street, San Leandro, California 94580*," dated December 11, 2008 (Report). The Report presents the results of soil, groundwater, and soil vapor sampling conducted in September and October of 2008. Soil sampling results from the eastern portion of the site confirm the presence of elevated concentrations of petroleum hydrocarbons (TPH) as diesel and kerosene in shallow soil in the area of previous soil borings B-2 and B-7. Groundwater sampling conducted in September and October 2008 provides additional data to define the extent of dissolved phase hydrocarbons. We concur with the recommendation in the Report to conduct two additional quarterly groundwater sampling events to confirm the extent of dissolved phase hydrocarbons.

The Report indicates that recommendations for appropriate remedial action will be presented with the Second Quarter 2009 Groundwater Monitoring Report. We request that you prepare a Draft Corrective Action Plan that proposes cleanup goals and evaluates potential remedial methods (see technical comment 1). We request that you address the following technical comments, perform the proposed work, and send us the reports described below.

TECHNICAL COMMENTS

1. **Draft Corrective Action Plan.** We request that you prepare a Draft Corrective Action Plan (Draft CAP) that meets the provisions of section 2725 of the UST regulations (CCR, Title 23, Chapter 16, section 2600, et seq.) and includes the following minimum information:

   - Proposed cleanup goals and the basis for cleanup goals.
   - Summary of site characterization data.
   - Receptor information including likely future land use scenarios, adjacent land use and sensitive receptors, and potential groundwater receptors (see technical comment 2 regarding well survey).

- Evaluation of remedial alternatives including discussion of feasibility and limitations for each remedial alternative.
- Detailed description of proposed remediation including confirmation sampling and monitoring during implementation.
- Post-remediation monitoring.
- Schedule for implementation of cleanup.

Please provide the future development plans for the site to help in evaluation of the receptor information and proposed cleanup goals. Public participation is a requirement for the Corrective Action Plan process. Therefore, we request that you submit a Draft CAP for ACEH review. Upon ACEH approval of a Draft CAP, ACEH will notify potentially affected members of the public who live or own property in the surrounding area of the proposed remediation described in the Draft CAP. Public comments on the proposed remediation will be accepted for a 30-day period.

2. **Detailed Well Survey.** In order to identify potential receptors for the fuel hydrocarbon plume from your site, we request that you locate all water supply wells within a radius of 2,000 feet of the subject site. We recommend that you obtain well information from both Alameda County Public Works Agency and the State of California Department of Water Resources, at a minimum. Submittal of maps showing the location of all wells identified in your study, and the use of tables to report the data collected as part of your survey are required. Please provide a table that includes the well designation, location, total depth, diameter, screen interval, date of well installation, current status, historic use, and owner of the wells. In addition, please provide well logs and completion records for wells downgradient from the site that are potential receptors. Please present your results in the Draft CAP requested below.

3. **Groundwater Monitoring.** Quarterly groundwater monitoring is to be implemented for the existing monitoring wells at the site. The groundwater samples are to be analyzed for TPH as gasoline and TPH as diesel using EPA Method 8015 and VOCs using EPA Method 8260. Please include results from the quarterly groundwater sampling in the reports requested below

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **March 30, 2009** – Draft Corrective Action Plan
- **April 17, 2009** – First Quarter 2009 Groundwater Monitoring Report
- **July 17, 2009** – Second Quarter 2009 Groundwater Monitoring Report

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "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." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org.

Sincerely,

Jerry Wickham

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297
Senior Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Leroy Griffin, Oakland Fire Hazardous Materials Unit, 250 Frank Ogawa Plaza, Suite 3341, Oakland, CA 94612

Markus Niebanck, Amicus, 580 Second Street, Suite 260, Oakland, CA 94607

Cem Atabek, Ninyo & Moore, 1956 Webster Street, Suite 400, Oakland, CA 94612

Donna Drogos, ACEH
Jerry Wickham, ACEH
File

Attachment B

Ninyo & Moore December 2008 Site Assessment Tables

Ninyo & Moore

Project # 401314002

TABLE 1. SOIL ANALYTICAL DATA - TPH, BTEX & MTBE - Former Holland Oil Facility, 16301 East 14th Street, San Leandro, California

Sample I.D.	Date	Depth (ft bgs)	TPH-d	Kerosene	TPH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
			←			Analytical Results (mg/kg)				→
B-1-S-2.0	7/2/2007	2.0	67	15	4	--	--	--		--
B-1-S-5.0	7/2/2007	5.0	3.2	3.3	1.1	--	--	--		--
B-1-S-6.5	7/2/2007	6.5	11,000	5,900	67	--	--	--		--
B-2-S-2.0	7/2/2007	2.0	15,000	4,600	37	--	--	--		--
B-2-S-5.0	7/2/2007	5.0	7,000	2,000	ND<1.0	--	--	--		--
B-2-S-6.5	7/2/2007	6.5	1.2	ND<1.0	ND<1.0	--	--	--		--
B-3-S-2.0	7/2/2007	2.0	18	ND<2.0	ND<1.0	--	--	--		--
B-4-S-2.0	7/2/2007	2.0	8.4	1.9	ND<1.0	--	--	--		--
B-4-S-5.0	7/2/2007	5.0	2	1.2	ND<1.0	--	--	--		--
B-4-S-8.0	7/2/2007	8.0	5,100	5,600	410	--	--	--		--
B-5-S-2.0	7/2/2007	2.0	1.5	ND<1.0	ND<1.0	--	--	--		--
B-7-S-2.0	7/2/2007	2.0	1,900	380	13	--	--	--		--
B-8-S-2.0	7/2/2007	2.0	2.1	1.2	ND<1.0	--	--	--		--
B-8-S-8.0	7/2/2007	8.0	23	14	14	--	--	--		--
MW-6-S-2.0	7/2/2007	2.0	1,200	760	1.7	--	--	--		--
MW-6-S-5.0	7/2/2007	5.0	1,500	850	34	--	--	--		--
MW-6-S-6.5	7/2/2007	6.5	2,000	1,300	54	--	--	--		--
MW-7-S-2.0	7/2/2007	2.0	770	74	ND<1.0	--	--	--		--
MW-7-S-5.0	7/2/2007	5.0	34	ND<5.0	ND<1.0	--	--	--		--
MW-7-S-7.5	7/2/2007	7.5	16	ND<2.0	ND<1.0	--	--	--		--
MW-8-S-2.0	7/2/2007	2.0	110	140	5,700	--	--	--		--
MW-8-S-5.0	7/2/2007	5.0	14,000	16,000	5,200	--	--	--		--
MW-8-S-6.5	7/2/2007	6.5	1,700	1,600	3,800	--	--	--		--

TABLE 1. SOIL ANALYTICAL DATA - TPH, BTEX & MTBE - Former Holland Oil Facility, 16301 East 14th Street, San Leandro, California

Sample I.D.	Date	Depth (ft bgs)	TPH-d	Kerosene	TPH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
			Analytical Results (mg/kg)							
MW-9-2	10/1/2008	2.0	ND<1.0	--	ND<0.5	ND<0.002	ND<0.002	ND<0.002	ND<0.004	ND<0.0005
MW-9-5	10/1/2008	5.0	ND<1.0	--	ND<0.5	ND<0.002	ND<0.002	ND<0.002	ND<0.004	ND<0.0005
MW-9-10	10/1/2008	10.0	ND<1.0	--	ND<0.5	ND<0.002	ND<0.002	ND<0.002	ND<0.004	ND<0.0005
SB-9-2	10/2/2008	2.0	ND<1.0	--	ND<0.5	ND<0.002	ND<0.002	ND<0.002	ND<0.004	ND<0.0005
SB-9-5	10/2/2008	5.0	ND<1.0	--	ND<0.5	ND<0.002	ND<0.002	ND<0.002	ND<0.004	ND<0.0005
SB-9-10	10/2/2008	10.0	ND<1.0	--	ND<0.5	ND<0.002	ND<0.002	ND<0.002	ND<0.004	ND<0.0005
SB-10-2	10/2/2008	2.0	ND<1.0	--	ND<0.5	ND<0.002	ND<0.002	ND<0.002	ND<0.004	ND<0.0005
SB-10-5	10/2/2008	5.0	ND<1.0	--	ND<0.5	ND<0.002	ND<0.002	ND<0.002	ND<0.004	ND<0.0005
SB-10-10	10/2/2008	10.0	ND<1.0	--	ND<0.5	ND<0.002	ND<0.002	ND<0.002	ND<0.004	ND<0.0005
SB-11-3	10/2/2008	3.0	1,200	--	30	ND<0.002	ND<0.002	ND<0.002	ND<0.004	0.320
SB-11-8	10/2/2008	8.0	2,300	--	80	ND<0.002	ND<0.002	ND<0.002	ND<0.004	0.310
SB-11-11	10/2/2008	11.0	ND<1.0	--	ND<0.5	ND<0.002	ND<0.002	ND<0.002	ND<0.004	ND<0.0005
SB-12-2	10/2/2008	2.0	1,000	--	40	0.390	6.800	3.200	26.800	0.340
SB-12-5	10/2/2008	5.0	ND<1.0	--	ND<0.5	ND<0.002	ND<0.002	ND<0.002	ND<0.004	ND<0.0005
SB-12-10	10/2/2008	10.0	ND<1.0	--	ND<0.5	ND<0.002	ND<0.002	ND<0.002	ND<0.004	ND<0.0005

Notes and Abbreviations:
ft bgs = feet below ground surface
TPH-d = total petroleum hydrocarbons as diesel analyzed by EPA Method 8015B
kerosene analyzed by EPA Method 8015B
TPH-g = total petroleum hydrocarbons as gasoline analyzed by EPA Method 8015B
BTEX = benzene, toluene, ethylbenzene, xylenes analyzed by EPA Method 8260B
MTBE = methyl tert butyl ether analyzed by EPA Method 8260B
mg/kg = miligrams per kilogram
-- = not analyzed, not available, not applicaple
ND< X = not detected, below laboratory reporting limit of X

TABLE 2. SOIL ANALYTICAL DATA - VOCs - Former Holland Oil Facility, 16301 East 14th Street, San Leandro, California

Sample ID	Date	Depth (ft bgs)	Acetone	2-Butanone	Carbon disulfide	Isopropyl-benzene	n-Propyl-benzene	tert-Butyl-benzene	n-Butyl-benzene	Naphthalene	Other VOCs
			Analytical Results (mg/kg)								
MW-9-2	10/1/2008	2.0	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND
MW-9-5	10/1/2008	5.0	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND
MW-9-10	10/1/2008	10.0	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND
SB-9-2	10/2/2008	2.0	0.340	0.070	0.0045	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND
SB-9-5	10/2/2008	5.0	0.050	0.0071	0.0029	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND
SB-9-10	10/2/2008	10.0	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND
SB-10-2	10/2/2008	2.0	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND
SB-10-5	10/2/2008	5.0	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND
SB-10-10	10/2/2008	10.0	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND
SB-11-3	10/2/2008	3.0	1.200	2.600	ND<.200	0.400	1.100	0.200	2.100	2.700	sec-Butylbenzene (1.700)
SB-11-8	10/2/2008	8.0	0.460	2.100	ND<.200	1.100	4.400	0.780	26.000	15.000	sec-Butylbenzene (10.000)
SB-11-11	10/2/2008	11.0	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND
SB-12-2	10/2/2008	2.0	1.300	2.600	ND<.200	0.990	2.300	ND<.200	1.900	4.000	1,3,5-Trimethylbenzene (7.000) 4-Isopropyltoluene (1.300) 1,2,4-Trimethylbenzene (1.600)
SB-12-5	10/2/2008	5.0	0.050	0.010	0.0069	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND
SB-12-10	10/2/2008	10.0	0.0053	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND<.002	ND

Notes and Abbreviations:
ft bgs = feet below ground surface
VOCs analyzed using EPA Method 8260 B
mg/kg = miligrams per kilogram
ND< X = not detected, below laboratory reporting limit of X
ND = not detected

TABLE 3. GROUNDWATER ANALYTICAL DATA - TPH & VOCs - Former Holland Oil Facility, 16301 East 14th Street, San Leandro, California

Boring/Well ID (toc elev)	Sample Date	Sample Collection Depth (ft bgs)	Depth to Groundwater (ft btoc/ ft bgs)	Groundwater Elevation (ft msl)	TPH-d	Kerosene	TPH-g	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	1,4-Dichloro-benzene	Chloro-benzene	Isopropyl-benzene	n-Butyl-benzene	n-Propyl-benzene	sec-Butyl-benzene	tert-Butyl-benzene	Other VOCs
					Analytical Results (µg/L)															
Monitoring Well Groundwater Samples																				
MW-1	7/10/2007	Shallow WBZ	8.22	28.37	1,100	800	1,700	3	ND<0.5	1.3	ND<1.5	ND<0.5	0.51	0.84	51	27.0	130	25	1.9	ND
36.59	10/13/2008	Shallow WBZ	8.73	27.86	550	--	440	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<0.5	ND<1.0	ND<1.0	20	5.5	30	ND<1.0	ND<1.0	ND
MW-2	7/9/2007	Shallow WBZ	8.41	28.92	210	94	93	ND<0.5	ND<0.5	ND<0.5	ND<1.5	ND<0.5	ND<0.5	ND<0.5	0.68	ND<0.5	0.6	0.52	ND<0.5	ND
37.33	10/13/2008	Shallow WBZ	9.04	28.29	ND<50	--	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
MW-3	7/10/2007	Shallow WBZ	8.11	29.27	62	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND
37.38	10/13/2008	Shallow WBZ	8.77	28.61	ND<50	--	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
MW-4	7/10/2007	Shallow WBZ	8.38	28.39	710	400	670	3.7	ND<0.5	ND<0.5	ND<1.5	13	0.51	1.7	20	7.9	42	12	1.2	1,2-Dichlorobenzene (0.51)
36.77	10/13/2008	Shallow WBZ	8.89	27.88	660	--	470	2.9	ND<1.0	ND<1.0	ND<1.0	1.9	ND<1.0	1.7	10	5.3	30	ND<1.0	ND<1.0	Carbon disulfide (2) Naphthalene (1.4)
MW-5	7/10/2007	Shallow WBZ	8.21	28.03	380	170	170	ND<0.5	ND<0.5	ND<0.5	ND<1.5	6.9	ND<0.5	ND<0.5	1.8	ND<0.5	2.3	0.94	0.51	ND
36.24	10/13/2008	Shallow WBZ	8.66	27.58	ND<50	--	70	ND<1.0	ND<1.0	ND<1.0	ND<1.0	20	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	Acetone (4.9)
MW-6	7/9/2007	Shallow WBZ	8.25	28.9	1,500	910	780	11	0.64	0.71	2.4	ND<0.5	9.1	2.1	20	5.4	32	7	0.57	1,2-Dichlorobenzene (0.58); 1,3-Dichlorobenzene (3.1); 2-Chlorotoluene (1.6)
37.15	10/13/2008	Shallow WBZ	8.85	28.30	600	--	470	7	ND<1.0	ND<1.0	1.1	ND<0.5	6.3	1.6	10	2.8	20	ND<1.0	ND<1.0	1,3-Dichlorobenzene (2)
MW-7	7/10/2007	Shallow WBZ	8.24	28.58	510	91	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.5	ND<0.5	ND<0.5	0.94	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND
36.82	10/13/2008	Shallow WBZ	8.75	28.07	ND<50	--	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
MW-8	7/9/2007	Shallow WBZ	8.16	28.65	790	500	2,100	110	6.8	76	215	ND<0.5	ND<0.5	3.8	12	7.2	30	2.5	0.59	1,2,4-Trimethylbenzene (82); 1,3,5-Trimethylbenzen (30); 4-Isopropyltoluene (3.5)
36.81	10/14/2008	Shallow WBZ	8.69	28.12	500	--	390	50	1.4	10	23.2	ND<0.5	ND<1.0	2.6	3.3	ND<1.0	8.6	ND<1.0	ND<1.0	Naphthalene (4.9)
MW-9 37.22	10/14/2008	Shallow WBZ	8.11	29.11	ND<50	--	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
MW-10 36.79	10/14/2008	Shallow WBZ	8.77	28.02	ND<50	--	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
MW-11 36.2	10/14/2008	Shallow WBZ	8.35	27.85	ND<50	--	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	Acetone (10) Carbon disulfide (2.4)
MW-12 36.06	10/14/2008	Shallow WBZ	8.51	27.55	ND<50	--	110	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
2008 Discrete Groundwater Samples																				
DB-1B	10/1/2008	34-37	9.05	--	ND<50	--	120	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	cis-1,2-Dichloroethene (1.9)
DB-2	10/1/2008	34-37	9.12	--	ND<50	--	60	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND
DB-3	10/1/2008	34-37	9.80	--	ND<50	--	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	Acetone (6.0) Carbon disulfide (1.1)
2007 Grab Groundwater Samples																				
B-9-GW	8/10/2007	Shallow WBZ	7.85	--	ND<50	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	Chloromethane (0.67)
B-10-GW	8/10/2007	Shallow WBZ	7.85	--	ND<50	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND
B-11-GW	8/10/2007	Shallow WBZ	7.40	--	740	270	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND

TABLE 3. GROUNDWATER ANALYTICAL DATA - TPH & VOCs - Former Holland Oil Facility, 16301 East 14th Street, San Leandro, California

Boring/Well ID (toc elev)	Sample Date	Sample Collection Depth (ft bgs)	Depth to Groundwater (ft btoc/ ft bgs)	Groundwater Elevation (ft msl)	TPH-d	Kerosene	TPH-g	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	1,4-Dichloro-benzene	Chloro-benzene	Isopropyl-benzene	n-Butyl-benzene	n-Propyl-benzene	sec-Butyl-benzene	tert-Butyl-benzene	Other VOCs
					Analytical Results (µg/L)															

Notes and Abbreviations:
TPH = total petroleum hydrocarbons analyzed by EPA Method 8015B
VOCs = volatile organic compounds analyzed by EPA Method 8260B
toc elev = top of casing elevation in feet above mean sea level
ft btoc= feet below top of casing
ft bgs= feet below ground surface
ft msl = feet above mean sea level
TPH-d = total petroleum hydrocarbons as diesel analyzed by EPA Method 8015B
Kerosene analyzed by EPA Method 8015B
TPH-g = total petroleum hydrocarbons as gasoline analyzed by EPA Method 8015B
BTEX = benzene, toluene, ethylbenzene, xylenes analyzed by EPA Method 8260B
MTBE = methyl tert butyl ether analyzed by EPA Method 8260B
µg/L = micrograms per liter
WBZ = water bearing zone
-- = not analyzed, not available, not applicaple
ND< X = not detected, below laboratory reporting limit of X

TABLE 4. GROUNDWATER ANALYTICAL DATA - PAHs - Former Holland Oil Facility, 16301 East 14th Street, San Leandro, California

Monitoring Well ID (toc elev)	Sample I.D.	Sample Date	Depth to Groundwater (ft btoc)	Groundwater Elevation (ft msl)	Acenaphthene	Flourene	Naphthalene	Phenanthrene	Other PAHs
					Analytical Results (µg/L)				
Monitoring Well Groundwater Samples									
MW-1 *36.59*	MW-1-GW	7/10/2007	8.22	28.37	0.52	0.63	ND<0.2	ND<0.2	ND
MW-2 *37.33*	MW-2-GW	7/9/2007	8.41	28.92	ND<0.2	ND<0.2	ND<0.2	ND<0.2	ND
MW-3 *37.38*	MW-3-GW	7/10/2007	8.11	29.27	ND<0.2	ND<0.2	ND<0.2	ND<0.2	ND
MW-4 *36.77*	MW-4-GW	7/10/2007	8.38	28.39	ND<0.2	ND<0.2	ND<0.2	ND<0.2	ND
MW-5 *36.24*	MW-5-GW	7/10/2007	8.21	28.03	ND<0.2	ND<0.2	ND<0.2	ND<0.2	ND
MW-6 *37.15*	MW-6-GW	7/9/2007	8.25	28.90	0.37	1.1	ND<0.2	1.1	ND
MW-7 *36.82*	MW-7-GW	7/10/2007	8.24	28.58	ND<0.2	ND<0.2	ND<0.2	ND<0.2	ND
MW-8 *36.81*	MW-8-GW	7/9/2007	8.16	28.65	ND<0.2	0.29	40	0.32	ND

Notes and Abbreviations:
PAHs = polycyclic aromatic hydrocarbons analyzed by EPA Method 8270C-SIM
ft btoc= feet below top of casing
ft msl = feet above mean sea level
µg/L = micrograms per liter
-- = not analyzed, not available, not applicaple
ND< X = not detected, below laboratory reporting limit of X

TABLE 5. SOIL VAPOR ANALYTICAL DATA - VOCs - Former Holland Oil Facility, 16301 East 14th Street, San Leandro, California

	Sample ID					
	SV-1	**SV-2**	**SV-3**	**SV-4**	**SV-5**	**SV-6**
Analyte	**Analytical Results (µg/m³)**					
1,1 - Dichloroethene	ND<2.0	ND<2.0	ND<40	ND<2.0	ND<2.0	ND<10
1,1,1,2-Tetrachloroethane	ND<3.4	ND<3.4	ND<34	ND<3.4	ND<3.4	ND<170
1,1,1-Trichloroethane	ND<2.7	ND<2.7	ND<41	ND<2.7	ND<2.7	ND<14
1,1,2,2-Tetrachloroethane	ND<3.4	ND<3.4	ND<52	ND<3.4	ND<3.4	ND<170
1,1,2-Trichloroethane	ND<2.7	ND<2.7	ND<52	ND<2.7	ND<2.7	ND<14
1,1-Dichloroethane	ND<2.0	ND<2.0	ND<34	ND<2.0	ND<2.0	ND<10
1,1-Difluoroethane	ND<27	ND<27	ND<1400	ND<27	ND<27	ND<140
1,2,4-Trichlorobenzene	ND<3.6	ND<3.6	ND<25	ND<3.6	ND<3.6	ND<180
1,2,4-Trimethylbenzene	ND<2.5	ND<2.5	ND<44	ND<2.5	ND<2.5	ND<120
1,2-Dibromoethane(Ethylene dibromide)	ND<3.8	ND<3.8	ND<54	ND<3.8	ND<3.8	ND<19
1,2-Dichlorobenzene	ND<3.0	ND<3.0	ND<30	ND<3.0	ND<3.0	ND<150
1,2-Dichloroethane	ND<2.0	ND<2.0	ND<32	ND<2.0	ND<2.0	ND<10
1,2-Dichloropropane	ND<2.3	ND<2.3	ND<51	ND<2.3	ND<2.3	ND<12
1,3,5-Trimethylbenzene	ND<2.5	ND<2.5	ND<34	ND<2.5	ND<2.5	ND<120
1,3-Butadiene	ND<4.4	ND<4.4	ND<30	ND<4.4	ND<4.4	ND<22
1,3-Dichlorobenzene	ND<3.0	ND<3.0	ND<18	ND<3.0	ND<3.0	ND<150
1,4-Dichlorobenzene	ND<3.0	ND<3.0	ND<33	ND<3.0	ND<3.0	ND<150
1,4-Dioxane	ND<1.8	ND<1.8	ND<25	ND<1.8	ND<1.8	ND<9
2-Butanone (MEK)	**13**	**11**	ND<22	**4.3**	**6.2**	ND<7.4
2-Hexanone	ND<2.0	ND<2.0	ND<43	ND<2.0	ND<2.0	ND<10
4-Ethyl Toluene	ND<2.5	ND<2.5	ND<37	ND<2.5	ND<2.5	ND<120
4-Methyl-2-Pentanone (MIBK)	ND<2.0	ND<2.0	ND<33	ND<2.0	ND<2.0	ND<10
Acetone	**59**	**95**	**610**	**86**	**54**	**460**
Benzene	**2**	ND<1.6	ND<45	ND<1.6	ND<1.6	ND<8
Bromodichloromethane	ND<3.4	ND<3.4	ND<44	ND<3.4	ND<3.4	ND<17
Bromoform	ND<5.2	ND<5.2	ND<88	ND<5.2	ND<5.2	ND<260
Bromomethane	ND<1.9	ND<1.9	ND<39	ND<1.9	ND<1.9	ND<9.7
Carbon Disulfide	ND<1.6	**4.60**	ND<25	ND<1.6	ND<1.6	ND<7.8
Carbon Tetrachloride	ND<3.2	ND<3.2	ND<47	ND<3.2	ND<3.2	ND<16
Chlorobenzene	ND<2.3	ND<2.3	ND<21	ND<2.3	ND<2.3	ND<120
Chloroethane	ND<1.3	ND<1.3	ND<20	ND<1.3	ND<1.3	ND<6.6
Chloroform	ND<2.4	ND<2.4	ND<98	ND<2.4	ND<2.4	ND<12
Chloromethane	ND<1.0	ND<1.0	ND<36	ND<1.0	ND<1.0	ND<5.2
cis-1,2-dichloroethene	ND<2.0	ND<2.0	ND<28	ND<2.0	ND<2.0	ND<9.9
cis-1,3-Dichloropropene	ND<2.3	ND<2.3	ND<18	ND<2.3	ND<2.3	ND<11
Dibromochloromethane	ND<4.3	ND<4.3	ND<47	ND<4.3	ND<4.3	ND<21
Dichlorodifluoromethane	ND<2.5	ND<2.5	ND<37	ND<2.5	ND<2.5	ND<12
Diisopropyl ether (DIPE)	ND<2.1	ND<2.1	ND<33	ND<2.1	ND<2.1	ND<10
Ethyl Acetate	ND<1.8	ND<1.8	ND<21	ND<1.8	ND<1.8	ND<9
Ethyl Benzene	ND<2.2	ND<2.2	ND<16	ND<2.2	ND<2.2	ND<110
Ethyl tert-butyl ether (ETBE)	ND<2.1	ND<2.1	ND<33	ND<2.1	ND<2.1	ND<10
Freon 113	ND<3.8	ND<3.8	ND<46	ND<3.8	ND<3.8	ND<19
Hexachlorobutadiene	ND<5.3	ND<5.3	ND<91	ND<5.3	ND<5.3	ND<270
Hexane	ND<14	ND<14	ND<90	ND<14	ND<14	ND<70
Isopropanol*	**27**	ND<16	ND<82	ND<16	ND<16	ND<82
m,p-Xylene	**11**	**17**	ND<25	<2.0	**11**	ND<100
Methylene Chloride	ND<3.6	ND<3.6	ND<34	ND<3.6	ND<3.6	ND<18
MTBE	ND<1.8	ND<1.8	ND<25	ND<1.8	ND<1.8	**50**
Naphthalene	ND<2.6	ND<2.6	ND<130	ND<2.6	ND<2.6	ND<130
o-xylene	ND<2.2	ND<2.2	ND<31	ND<2.2	ND<2.2	ND<110
Styrene	ND<2.1	ND<2.1	ND<32	ND<2.1	ND<2.1	ND<110
t-Butyl alcohol (t-Butanol)	ND<6.1	ND<6.1	ND<24	ND<6.1	ND<6.1	ND<30
tert-Amyl methyl ether (TAME)	ND<2.1	ND<2.1	ND<33	ND<2.1	ND<2.1	ND<10
Tetrachloroethene (PCE)	ND<3.4	ND<3.4	ND<64	ND<3.4	ND<3.4	ND<17
Toluene	**15**	**16**	ND<26	**3.2**	**19**	ND<9.4
trans-1,2-Dichloroethene	ND<2.0	ND<2.0	ND<28	ND<2.0	ND<2.0	ND<9.9
Trichloroethene	ND<2.7	ND<2.7	ND<26	ND<2.7	ND<2.7	ND<13
Trichlorofluoromethane	ND<2.5	ND<2.5	ND<35	ND<2.5	ND<2.5	ND<12
Vinyl Acetate	ND<1.8	ND<1.8	ND<32	ND<1.8	ND<1.8	ND<8.8
Vinyl Chloride	ND<1.3	ND<1.3	ND<12	ND<1.3	ND<1.3	ND<6.4

Notes:
ND< X = not detected, below laboratory reporting limit of X
µg/m³ = micrograms per cubic meter
Soil gas samples analyzed using US EPA Method TO-15
* indicates Isopropanol was used as a leak detection compound.
Bold indicates analysis above laboratory reporting limits