HALEY & ALDRICH, INC.
2033 N. Main Street
Suite 309
Walnut Creek, CA 94596
925.949.1012

15 June 2020
File No. 134361-002

City of Berkeley
Department of Planning and Development
Building and Safety Division
1947 Center Street, 3rd Floor
Berkeley, California 94704

Subject: SteelWave Acquisitions, LLC West Berkeley Project (Doug Herst/DC Properties)
701, 705, 705A Bancroft Way; 2212, 2216 5th Street; 2221, 2231 4th Street
Berkeley, California

Ladies and Gentlemen:

On behalf of SteelWave Acquisitions, LLC, Haley & Aldrich, Inc. is providing for your review our Phase I Environmental Site Assessment dated 18 November 2019 (Phase I) and Limited Phase II Environmental Investigation dated 3 January 2020 (Phase II) prepared for the subject site (Figure 1). Based on the results of the Phase I and Phase II, it is not anticipated that the recognized environmental conditions (RECs) identified in the Phase I or the soil conditions in the areas investigated through the Phase II will adversely affect the planned demolition and redevelopment of the subject site.

Please feel free to contact us if you have any questions.

Sincerely yours,
HALEY & ALDRICH, INC.

Adam Piestrzeniewicz, P.G.
Assistant Project Manager

Jason Grant, P.E.
Senior Project Manager

Attachments:
Figure 1 – Site Plan
ASTM Phase I Environmental Site Assessment, West Berkeley Project, Berkeley, California
Limited Phase II Environmental Investigation Report, West Berkeley Project, Berkeley, California

c: SteelWave; Attn: S. Dunn
SteelWave; Attn: B. Metz
Haley & Aldrich; Attn: V. Bajsarowicz

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DRAFT

LEGEND

- SITE BOUNDARY
- PROPOSED BUILDING DEMOLITION
- REC AREA
- PHASE II SOIL BORING (HALEY & ALDRICH, 2020)

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. ASSESSOR PARCEL DATA SOURCE: ALAMEDA COUNTY

3. AERIAL IMAGERY SOURCE: EAGLEVIEW, 2017

4. REC = RECOGNIZED ENVIRONMENTAL CONDITION REFERENCED IN NOVEMBER 2019 HALEY AND ALDRICH, INC. PHASE I ENVIRONMENTAL ASSESSMENT.

IT IS NOT ANTICIPATED THAT IDENTIFIED RECS WILL ADVERSELY AFFECT THE PROPOSED BUILDING DEMOLITION AND REDEVELOPMENT OF THE SITE.

5. SOIL BORINGS REPRESENT LOCATIONS OF SOIL SAMPLES COLLECTED IN 2020 HALEY AND ALDRICH, INC. LIMITED PHASE II INVESTIGATION.

SITE SOIL CONDITIONS IN THE AREAS INVESTIGATED ARE NOT ANTICIPATED TO ADVERSELY AFFECT THE PROPOSED BUILDING DEMOLITION AND REDEVELOPMENT OF THE SITE. BASED ON ANALYTICAL DATA FOR THE COLLECTED SOIL SAMPLES, SOIL EXCAVATED FROM THE INVESTIGATED AREAS FOR OFF-SITE DISPOSAL SHOULD BE CLASSIFIED AS NON-HAZARDOUS WASTE.

N

0 80 160

SCALE IN FEET

HALEY ALDRICH

HERST PROPERTIES
BERKELEY, CALIFORNIA

SITE PLAN

JUNE 2020

FIGURE 1

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\134361\134361-002\GIS\Maps\2020_06\134361_002_0002_SITE_PLAN_DEMO.mxd — USER: apiestrzeniewicz — LAST SAVED: 6/1/2020 5:54:07 PM

HALEY ALDRICH

www.haleyaldrich.com

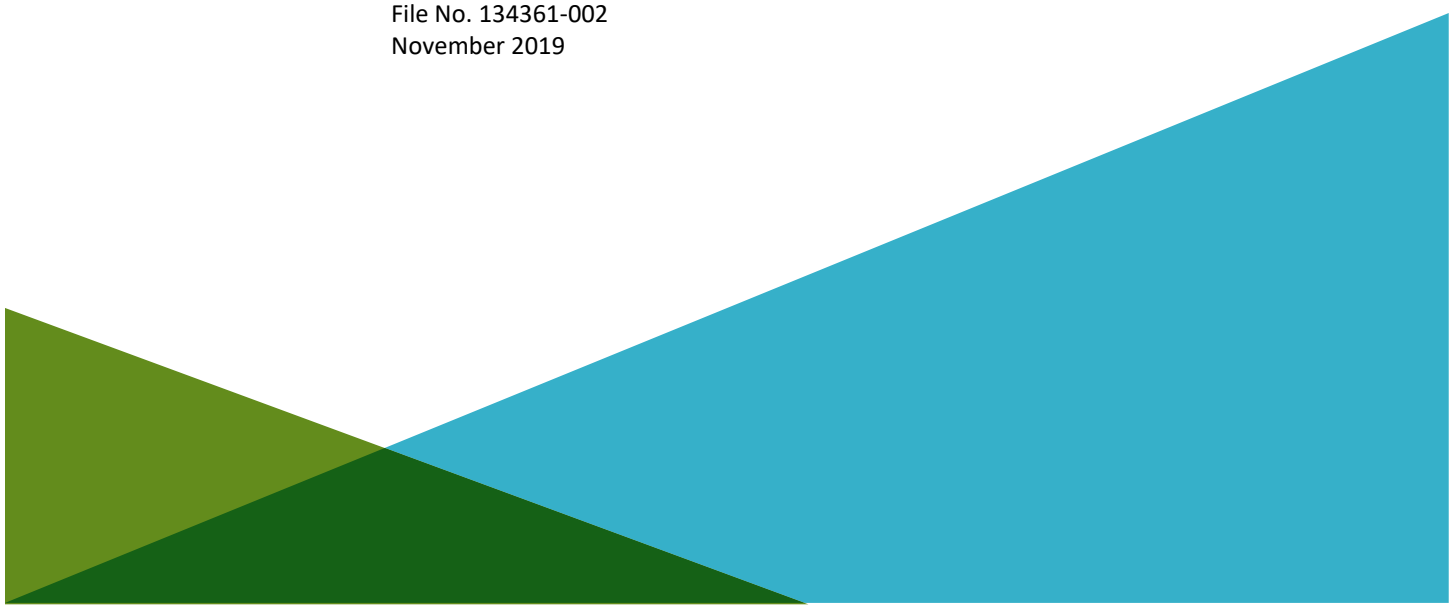
DRAFT REPORT ON

ASTM PHASE I ENVIRONMENTAL SITE ASSESSMENT
WEST BERKELEY PROJECT
BERKELEY, CALIFORNIA

by
Haley & Aldrich, Inc.
Walnut Creek, California

for
SteelWave, LLC
San Francisco, California

File No. 134361-002
November 2019



HALEY ALDRICH

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DRAFT REPORT ON

ASTM PHASE I ENVIRONMENTAL SITE ASSESSMENT
WEST BERKELEY PROJECT
BERKELEY, CALIFORNIA

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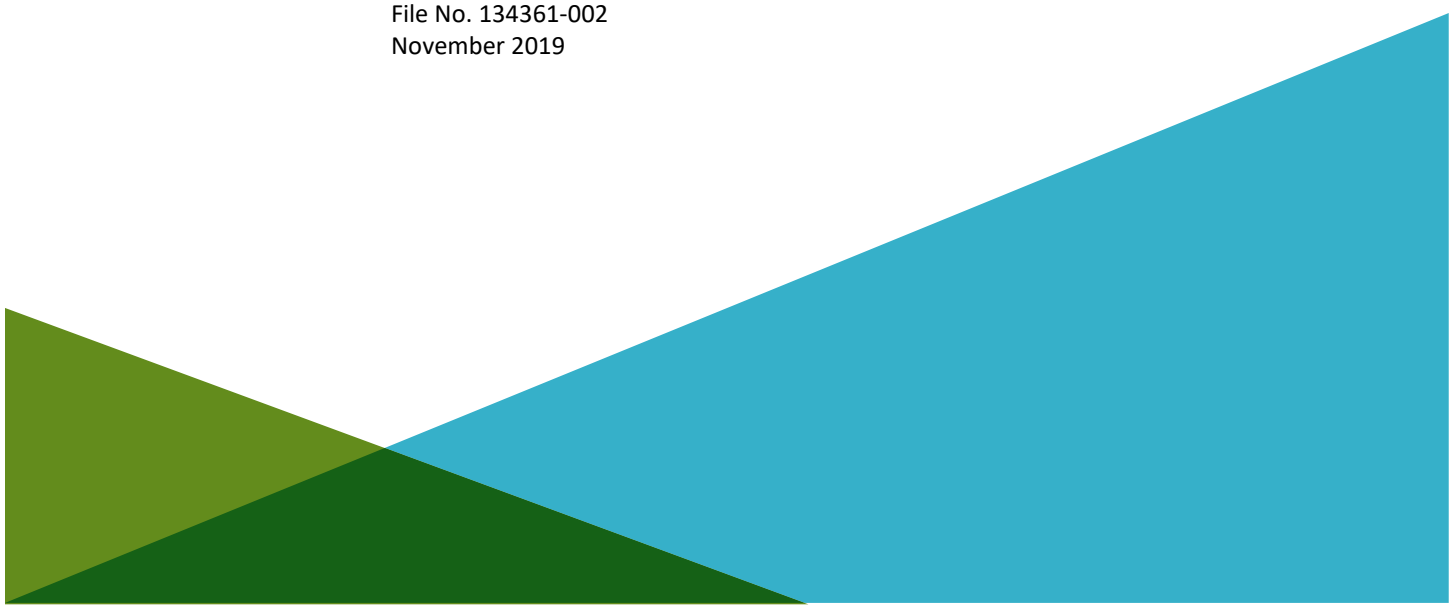

HALEY & ALDRICH, INC.
2033 N. Main Street
Suite 309
Walnut Creek, CA 94596
925.949.1012

18 November 2019
File No. 134361-002

SteelWave, LLC
101 California Street, Suite 800
San Francisco, California 94111

Attention: Steve Dunn

Subject: ASTM Phase I Environmental Site Assessment
West Berkeley Project
Berkeley, California

Dear Mr. Dunn:

The enclosed report presents the results of a Phase I Environmental Site Assessment (Phase I) conducted at the above-referenced property, located on two contiguous city blocks that are generally bounded by Allston Way to the north, Fifth Street to the east, Bancroft Way to the south, and the Union Pacific and Amtrak Railroad corridor to the west, in Berkeley, California (herein referred to as the "subject site"). This work was performed by Haley & Aldrich, Inc. (Haley & Aldrich), in accordance with our proposal to SteelWave, LLC dated 27 September 2019 ("Agreement"). This Phase I was conducted in conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process as referenced in 40 Code of Federal Regulations (CFR) Part 312 (the All Appropriate Inquiries [AAI] Rule).

The objective of a Phase I is to assess whether known and suspect "recognized environmental conditions" (REC), historical RECs (HREC), or controlled RECs (CREC) are associated with the subject site, as defined in the ASTM E 1527-13 Standard.

This Phase I has revealed evidence of three RECs, one HREC, and one CREC associated with the subject site.

Thank you for the opportunity to perform these services for you. Please do not hesitate to contact us if you have any questions or comments.

Sincerely yours,
HALEY & ALDRICH, INC.

Brooke Mellin, P.G.
Assistant Project Manager

Jason Grant, P.E.
Senior Project Manger

Enclosures

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Executive Summary

Haley & Aldrich, Inc. (Haley & Aldrich) has performed a Phase I Environmental Site Assessment (Phase I) of the property generally bounded by Allston Way to the north, Fifth Street to the east, Bancroft Way to the south, and the Union Pacific and Amtrak Railroad corridor to the west in Berkeley, California (herein referred to as the "subject site"; Figure 1). The scope of work is described and conditioned by our proposal dated 27 September 2019. This Phase I was performed for SteelWave, LLC in support of the potential purchase of the subject site. This Phase I was performed in conformance with the scope and limitations of the ASTM E 1527-13 Standard and All Appropriate Inquiries (AAI) Rule.[1]

SUBJECT SITE DESCRIPTION

The approximately 5.7-acre subject site consists of several large warehouse buildings, smaller warehouses, a single-family residential building, and parking lots, all located on two contiguous city blocks (referred to as the "West Block" and "East Block"; Figure 2). The subject site consists of multiple tenants, including an online wine retail business, a furniture fabrication business, and several light-industrial warehouses and workshops.

OBJECTIVE

The objective of a Phase I is to assess whether "recognized environmental conditions" (REC), historical RECs (HREC), and controlled RECs (CREC) are associated with the subject site. Our conclusions are intended to help the user evaluate the "business environmental risk" associated with the subject site. Our opinion regarding a REC's potential impact on the subject site is based on the scope of our work, the information obtained during the course of our work, the conditions prevailing at the time our work was performed, the applicable regulatory requirements in effect at the time our work was performed, our experience evaluating similar sites, and on our understanding of the client's intention to purchase the property.

RECOGNIZED ENVIRONMENTAL CONDITIONS

The ASTM E 1527-13 Standard defines a REC in part as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

The following RECs were identified in connection with the subject site:

[1] American Society for Testing and Materials (ASTM) E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process as referenced in 40 Code of Federal Regulations (CFR) Part 312 (the All Appropriate Inquiries [AAI] Rule) ("ASTM E 1527-13 Standard"). Specified terms as are used in ASTM E 1527-13 are highlighted in blue in this report and defined in the Glossary at the end of the report text.

REC #1: Chlorinated pesticides, and petroleum hydrocarbons impacting soil from the former site use as various pesticide companies, located at 2220 Fourth Street (West Block).

The Department of Toxic Substances Control (DTSC) reviewed data reports for the 2220 Fourth Street property and in February 2008 concurred with the responsible party's recommendation to cap the exposed soil on the embankment on the west side of the property with concrete and requested a Voluntary Cleanup Agreement (VCA) for property owner to prepare and record deed restrictions for the areas of the site where contamination remains above residential standards. However, the property owner declined to enter into a VCA.

REC #2: VOC impacts to groundwater at 2246 Fifth Street, in the southeast corner of the East Block of the subject site from the offsite former Veriflo facility (East Block).

The former Veriflo Facility is located approximately 200 feet east-southeast of the East Block of the subject site and operated as a metals-finishing plant. Historical metals finishing operations at the site resulted in the release of volatile organic compounds (VOCs), primarily trichloroethene (TCE), tetrachloroethene (PCE), and vinyl chloride (VC), to groundwater. Investigations indicate that groundwater impacts had migrated offsite towards the northwest. Soil vapor results indicated vapor concentrations of chemicals of potential concern (COPCs) were below respective environmental screening levels (ESLs), with the exception of VC which was detected at two offsite soil vapor sample locations at concentrations greater than the ESL. Due to the proximity and upgradient location of this site relative to the subject site, as well as known impacts to Veriflo's offsite groundwater monitoring wells (at the subject site), it is likely that the Veriflo site has impacted groundwater conditions at the subject site. The results of the recent PES Environmental, Inc. Phase II assessment indicate that groundwater in the southeastern portion of the eastern block is impacted with low level VOCs, which have likely migrated from the Veriflo site.

REC #3: Impacts to soil, soil vapor, groundwater, and indoor air from unknown onsite and/or offsite sources on West Block of subject site, including diesel range organics, chlorinated solvents, chlorinated pesticides, and heavy metals (West Block).

Several of the subject site facilities currently use chlorinated solvents, hazardous materials, and petroleum products. Additionally, historical site use of several subject site facilities has had documented uses of these products. No spills or evidence of any releases were reported for current or historical facilities. However, the current and historical uses of these chemical products at the subject site may have contributed to impacts identified during PES Environmental, Inc.'s Phase II Investigation conducted in 2019.

Nearby sites may have also contributed to these impacts, such as the Dalvin Paint Company/Dalvin Coatings site, which is located adjacent to the subject site to the northwest. The Dalvin Paint Company site has been used for paint manufacturing since the 1970s (see Section 5.3.2).

Recent data from the August 2019 PES Environmental, Inc. Phase II indicates that soil on the western edge of the West Block contains pesticides as described in REC #1. Groundwater results from the recent Phase II indicate that groundwater beneath the site is impacted with organochlorine pesticides, VOCs, and dissolved metals as described in REC #1. The general central portion of the West Block, including the property at 2220 Fourth Street and the area immediately to the east, contain the highest concentrations of elevated organochlorine pesticides and VOCs slightly above ESLs in groundwater.

Dissolved metals including arsenic, copper, lead, and zinc were detected at elevated levels across the site with the highest concentrations in the groundwater samples collected from the southwestern corner of the property. Arsenic was detected at up to 322 micrograms per liter (µg/L), copper at up to 3,160 µg/L, lead at up to 1,200 µg/L, and zinc at up to 8,900 µg/L in collected grab groundwater samples. Soil gas and sub-slab soil gas samples collected from beneath the site indicate that VOCs, primarily as benzene, 1,1-dichloroethane (DCE), TCE, and PCE are present above ESLs.

CONTROLLED RECOGNIZED ENVIRONMENTAL CONDITIONS

The ASTM E 1527-13 Standard defines a CREC as a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.

One CREC was identified in connection with the subject site.

CREC #1: Engineered cap present at the former Peerless Electric property located at 2220 Fourth Street (West Block).

A soil investigation conducted in 1983 identified aldrin, heptachlor, and chlordane at hazardous levels and chlordane and heptachlor were detected in the underlying groundwater. Voluntary remedial actions were undertaken to remove source area soils within the primary area where chemical mixing operations had been performed, including at the site, an unpaved area within the former building. About 80 cubic yards of soil were excavated and removed from the site in 1984 and the area was backfilled with imported soils. Following the soil removal action, the site was redeveloped with the existing building and a new concrete slab-on-grade floor was constructed as an engineered cap which fully covered the formerly unpaved area.

HISTORICAL RECOGNIZED ENVIRONMENTAL CONDITIONS

The ASTM E 1527-13 Standard defines an HREC as "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)."

One HREC was identified in connection with the subject site.

HREC #1: Case closure granted by Berkeley Toxics Management Division for former underground storage tank (UST) and impacts related to the former foundry in the southwest corner of the subject site (West Block).

Delicor, a vending machine sales and service company, occupied the approximately 1-acre southwest corner of the subject site (includes current buildings 701, 703, 705, and 705A Bancroft Way). Delicor installed a 5,000-gallon UST in 1984 to store unleaded gasoline for the company vehicles. The tank was permitted and inspected by the Berkeley Fire Department and is the only known UST to have been used at this site. Environmental investigation and remediation activities associated with this UST were performed in 1991 and 1993.

On 12 April 1995, a closure letter for the site was issued by the City of Berkeley Emergency and Toxic Management Program (now Berkeley Toxics Management Division). The letter indicated that confirmation sampling appeared to show background levels of metals and the City of Berkeley Emergency and Toxic Management Program had no further requirements for this site at that time.

DE MINIMIS CONDITIONS

The ASTM E 1527-13 Standard defines *de minimis* conditions as those conditions which "do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies." The ASTM E 1527-13 Standard notes that "conditions determined to be *de minimis* are not recognized environmental conditions."

The following *de minimis* conditions listed below were identified in connection with the subject site.

***De Minimis* #1: Staining on floors observed throughout various subject site buildings, including Ironies Fabrication (2222 Fifth Street), Keene Builders (2216 Fifth Street), and former Acuity Brands Lighting (2246 Fifth Street).**

De minimis staining was observed on the concrete slab floors of various subject site buildings, including Ironies Fabrication (2222 Fifth Street), Keene Builders (2216 Fifth Street), and former Acuity Brands Lighting (2246 Fifth Street). These concrete slabs were observed to be in good condition, with no cracks or exposure to the subsurface. No active leaks, odors, or pooling of liquid were observed.

***De Minimis* #2: Staining and odor observed in the multi-tenant warehouse building located at 703 Bancroft Way.**

De minimis staining and a faint hydrocarbon odor were observed near the vehicle storage area in the northeast area of the warehouse located at 703 Bancroft Way. Additionally, several cracks were observed in the concrete slab flooring. It is possible that releases of hazardous materials and/or petroleum products may have occurred through cracks in the building's foundation. If these buildings are demolished in the future, the underlying conditions should be inspected for signs of potential impacts and sampling should be performed as warranted in order to assess the subsurface environment for these potential releases.

***De Minimis* #3: Stained soil observed along the eastern side of the painting contractor's workshop located at 705 Bancroft Way.**

De minimis stained soil was observed in the unpaved alley on the east side of the 705 Bancroft Way building. No odors or obvious source of the staining was observed, though several bags of trash, debris, and two small containers of paint stripper were observed in the vicinity.

POTENTIAL ENVIRONMENTAL CONCERNS

Potential environmental concerns identified in association with the redevelopment of the subject site include:

- The central area of the East Block was used as a nursery from the early 1900s until sometime between 1929 and 1950. The nursery included several onsite greenhouses. Residual concentrations of pesticides and associated metals such as arsenic, copper sulfates, lead, and mercury, may be present in shallow soil as a result of past agricultural activities.
- The single residential building in the northeast corner of the subject site was constructed sometime before 1903. Given the age of this building, there is a potential for a historical home heating oil UST to exist in the vicinity of the structure.

SUMMARY AND RECOMMENDATIONS

In summary, we identified three RECs, one CREC and one HREC during this Phase I.

The remainder of this report contains additional information regarding the Phase I, the resulting findings summarized above, and limitations affecting this report.

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List of Figures

1. Introduction

This report presents the results of an ASTM Phase I (Phase I) conducted at the property generally bounded by Allston Way to the north, Fifth Street to the east, Bancroft Way to the south, and the Union Pacific and Amtrak Railroad corridor to the west in Berkeley, California (herein referred to as the "subject site"). The approximately 5.7-acre subject site consists of several large warehouse buildings, smaller warehouses, office buildings, a single-family residential building, and parking lots, all located on two contiguous city blocks (referred to as the "West Block" and "East Block"), as shown on the Project Locus, Figure 1. The subject site consists of multiple tenants, including an online wine retail business, a furniture fabrication business, and several light-industrial warehouses and workshops. This Phase I was conducted in consideration of SteelWave, LLC8's intention to purchase the subject site.

1.1 OBJECTIVE

The objective of a Phase I is to assess whether "recognized environmental conditions" (REC), historical RECs (HREC), and controlled RECs (CREC) are associated with the subject site by evaluating site history, interviews, existing observable conditions, current site use, and current and former uses of adjoining properties as well as potential releases at surrounding properties that may impact the subject site. Our conclusions are intended to help the user evaluate the "business environmental risk" associated with the subject site.

RECs are defined in the ASTM E 1527-13 Standard as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or under conditions that pose a material threat of a future release to the environment." The definitions of RECs, HRECs, and CRECs are included in the Glossary section of this report.

1.2 SCOPE OF SERVICES

This work was performed by Haley & Aldrich, Inc. (Haley & Aldrich) and this Phase I was performed in conformance with the scope and limitations of the ASTM E 1527-13 Standard and All Appropriate Inquiries (AAI) Rule[2] and in accordance with our proposal to SteelWave, LLC dated 27 September 2019 ("Agreement"). The Phase I limitations are attached hereto as Appendix A.

As part of this Phase I, Haley & Aldrich conducted visual observations of site conditions and of abutting property use and interviewed a key site manager (site reconnaissance); reviewed federal, state, tribal, and local environmental database information, federal and state environmental files, previous reports (if identified and provided), and site historical use records; and formulated conclusions regarding the potential presence and impact of RECs.

[2] American Society for Testing and Materials (ASTM) E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process as referenced in 40 Code of Federal Regulations (CFR) Part 312 (the All Appropriate Inquiries [AAI] Rule) ("ASTM E 1527-13 Standard"). Specified terms as are used in ASTM E 1527-13 are highlighted in blue in this report and defined in the Glossary at the end of the report text.

1.3 NON-SCOPE CONSIDERATIONS

The ASTM E 1527-13 Standard includes the following list of "additional issues" that are non-scope considerations outside of the scope of the ASTM Phase I practice: asbestos-containing materials, biological agents, radon, lead-based paint, lead in drinking water, wetlands, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality unrelated to releases of hazardous substances or petroleum products into the environment, and mold. These items were not included in this Phase I of the subject site.

A limited assessment of the presence of polychlorinated biphenyls (PCBs) is included in the ASTM work scope. Accordingly, our assessment of the presence of PCBs is limited to those potential sources specified in the ASTM E 1527-13 Standard as "electrical or hydraulic equipment known or likely to contain PCBs…to the extent visually and or physically observed or identified from the interview or records review."

Note that PCBs may be present in miscellaneous building materials such as caulking, sealants, insulation and sound dampening materials, paint, gaskets, roofing and siding materials, waterproofing compounds, enamel coatings, and other chemical products manufactured prior to 1979. Evaluating the subject site building for potential PCB-containing building materials and possible PCB-containing materials other than "electrical or hydraulic equipment known or likely to contain PCBs" was outside the scope of this Phase I.

1.4 LIMITING CONDITIONS/DEVIATIONS

Haley & Aldrich completed this Phase I in substantial conformance with the ASTM E 1527-13 Standard. In our opinion, no additions were made to or deviations and deletions made from the ASTM work scope in completing this Phase I.

1.5 USER RESPONSIBILITIES

The completion of this Phase I is only one component of the process required to satisfy the AAI Rule. In addition, the user must adhere to a set of user responsibilities as defined by the ASTM E 1527-13 Standard and the AAI Rule. User responsibilities are discussed in Section 6.6 of this report. A user seeking protection from Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) liability as an innocent landowner, bona fide prospective purchaser, or contiguous property owner must complete all components of the AAI process in addition to meeting ongoing obligations. AAI components, CERCLA liability relief, and ongoing obligations are discussed in the AAI Rule and in Appendix XI of the ASTM E 1527-13 Standard.

2. Site Description

A description of the subject site is detailed in the sections below. Refer to Figure 1 for a project locus and Figure 2 for a site plan showing relevant site features and adjacent properties.

2.1 SITE OWNERSHIP, LOCATION, AND VICINITY DESCRIPTION

Site Description		
Ownership Information	056-1957-002-03:	Sierra Garden Associates
	056-1957-002-04:	Herst Lighting Co.
	056-1957-003-01:	Herst Lighting Co.
	056-1957-007-01:	DC Properties
	056-1957-008:	Herst Lighting Company
	056-1958-004:	Douglas J Herst and Carolen L Herst, Trustees of the Herst Family, Revocable Trust
	056-1958-006-03:	Douglas J Herst, Trustee of the Douglas J Herst and Carolen J Herst Charitable Remainder Unitrust
	056-1958-006-04:	Sierra Garden Associates
	056-1958-014-01:	Sierra Garden Associates
	056-1958-012:	Douglas J Herst and Carolen L Herst, his Wife as a Community Property
Occupants and Current Site Use	Subject site occupants include: • WINE.COM, an online wine retailer located in connected warehouses at 2200 Fourth Street and 747 Bancroft Way, as well as a parking lot located across Fourth Street; • Ironies Fabrication, a high-end furniture assembly warehouse located in connected warehouses at 2229 Fourth Street and 2222 Fifth Street; • Glass blowing workshop located at 701 Bancroft Way; • Multiple subtenants, including vehicle storage, automobile repair, and other workshop businesses, located at 703 Bancroft Way; • Painting contractor's workshop located at 705 Bancroft Way; • Metal fabrication workshop located at 705A Bancroft Way; • and Keene Builders Inc., a building contractor located at 2216 Fifth Street. Vacant properties at the subject site include: • Warehouse, office buildings, and parking lot located at 2246 Fifth Street and 2213 Fourth Street (formerly occupied by Acuity Brands lighting); • A boarded-up residential building at 2213 Fifth Street; and • A small warehouse building at 2221 Fourth Street.	
Size	Approximately 5.7 acres	
Building Square Footage	Approximately 195,000 square feet	

Site Description		
USGS 7.5 Minute Topographic Map	5641112 Oakland West, CA, 2012	
Site County	Alameda County	
Zoning	West Block:	Mixed Use-Light Industrial
	East Block:	Western half: Mixed Use-Light Industrial Eastern half: Mixed Use-Residential
Parcel Information	West Block:	056-1957-002-03 (2200 Fourth Street, WINE.COM) 056-1957-002-04 (2200 Fourth Street, WINE.COM) 056-1957-003-01 (747 Bancroft Way, WINE.COM) 056-1957-008 (2200 Fourth Street, WINE.COM) 056-1957-007-01 (701, 703, 705, and 705A Bancroft Way, multiple tenants)
	East Block:	056-1958-004 (2212 Fifth Street, residence) 056-1958-014-01 (parking lot) 056-1958-006-03 (2229 Fourth Street and 2222 Fifth Street, Ironies Fabrication; and 2246 Fifth Street, former Acuity Brands Lighting) 056-1958-006-04 (2221 Fourth Street and 2216 Fifth Street, multiple tenants) 056-1958-12 (2213 Fourth Street, former Acuity Brands Lighting)
Utilities	Water:	East Bay Municipal Utility District (EBMUD)
	Sewerage:	EBMUD
	Electricity:	Pacific Gas & Electric (PG&E)
	Gas/Oil/LPG:	PG&E
Heating/Cooling System	Buildings either have individual heating units hung in warehouse areas or a central heating system. Some buildings have central air cooling. Systems are fueled by natural gas or electricity.	

Site Vicinity Description		
General Area Description	The subject site vicinity is mixed use, consisting of residential, commercial, and industrial properties.	
Adjoining Property Description	North:	Dalvin Coatings Inc., a specialty coatings and sealants manufacturer, is located adjacent to the northeast area of the subject site. Beyond Dalvin Coatings is Allston Way, which also bounds a portion of the subject site to the north. Beyond Allston Way is Takara Sake USA Inc., a sake brewery. The adjoining property to the northwest consists of a warehouse building with several separate tenant units and a parking lot.
	East:	The east side of the subject site is bounded by the Amtrak/Union Pacific railroad corridor. Beyond the railroad is American Soil Products.
	South:	The subject site is bounded to the south by Bancroft Way followed by several industrial warehouse buildings and an auto repair shop.
	West:	The subject site is bounded to the east by Fifth Street followed by a multi-family residential building, a parking lot, multi-tenant office buildings, and a café.

2.2 PHYSICAL SETTING

Subsurface explorations and/or hydrogeologic investigations were not performed for this Phase I. Subject site geology and hydrology were evaluated on the basis of readily available public information or references, and/or based upon our experience and understanding of subsurface conditions in the vicinity of the subject site. It is unknown to what extent localized variations in groundwater depth and flow occur on the subject site.

Physical Setting		Source
Topography Summary	The subject is generally flat, with the topographic gradient towards the west.	1
Site Elevation	Approximately El. 25 feet (above mean sea level).	1
Overburden Soils	Boring logs from a 2019 Phase II Investigation indicate the soil beneath the site consists primarily of clay, clayey sand, and sandy clay.	2
Bedrock Formation	The subject site is located in an area consisting of Quaternary alluvial fan deposits. At depth, the subject site is underlain by bedrock of the Franciscan Formation.	1, 3
Depth to Bedrock	Depth to bedrock was not determined for this Phase I.	

Physical Setting		Source
Depth to Groundwater	Depth to groundwater ranges from about 5 to 12 feet below ground surface (bgs).	4
Surface Water Flow Direction	Surface water appears to flow towards the west based on observed surface topography.	1
Regional Groundwater Flow Direction	Regional groundwater flow appears to flow to the west based on proximity to the Berkeley Aquatic Park and San Francisco Bay. Groundwater flow direction has also been reported to the west and northwest.	1, 4
Nearest Surface Water Body	The Berkeley Aquatic Park is located approximately 350 feet west of the subject site. The San Francisco Bay is located approximately 0.2 miles west of the subject site.	1
Floodplain	The subject site is not located in a 100- or 500-year flood zone.	1
Mapped Wetlands	The subject site is not located in a National Wetland Inventory or State Wetlands area.	1

Sources:

1. *Environmental Data Resources Inc., Radius Map Report, dated 17 October 2019.*
2. *PES Environmental, Inc., Draft Boring Logs, dated August 2019.*
3. *The Mark Group Engineers & Geologists, Inc., Site Characterization Report, 2220 Fourth Street, Berkeley, California, dated 11 October 1988.*
4. *Baseline Environmental Consulting, Phase I Environmental Site Assessment, Peerless Research and Community Development Project, Berkeley, California, dated 6 April 2015.*

3. Previous Reports

The following reports previously prepared for the subject site were reviewed for this Phase I. Information contained in these reports is included herein. Relevant excerpts from these reports are included in Appendix B. Pertinent issues identified in those reports are summarized below.

1. *Phase I Environmental Site Assessment, Peerless Research and Community Development Project, Berkeley, California, 6 April 2015, Prepared by Baseline Environmental Consulting, Prepared for LSA Associates, Inc.*
2. *Draft Limited Phase II Investigation (Draft Tables, Figures, and Boring Logs Only), Fourth and Fifth Streets, Berkeley, California, August 2019, Prepared by PES Environmental, Inc.*
3. *Supplemental Site Information Report and Soil and Groundwater Management Plan, 2220 Fourth Street, Berkeley, California, July 2016, Prepared by Fugro USA Land, Inc.*

3.1 PHASE I ENVIRONMENTAL SITE ASSESSMENT, PEERLESS RESEARCH AND COMMUNITY DEVELOPMENT PROJECT, BERKELEY, CALIFORNIA, 6 APRIL 2015

The Baseline Environmental Consulting (Baseline) Phase I identified the following RECs during their assessment of the subject site:

- Potential hazardous material releases from two former R&D laboratories and a plastic manufacturer on the East Block of the subject site (currently Ironies Fabrication [2229 Fourth Street and 2222 Fifth Street] and the northern portion of the former Acuity Brands Lighting facility [2213 Fourth Street]);
- Potential hazardous materials releases from a former die casting factory on the West Block of the subject site (currently the northern area of the WINE.COM warehouse [2200 Fourth Street]);
- Potential petroleum hydrocarbons and solvents in groundwater from the adjacent Dalvin Paint Company located at 700 Allston Way;
- Known chlorinated solvents in groundwater beneath the subject site from a regional groundwater plume;
- Known chlorinated pesticides, solvents, and petroleum hydrocarbons in soil and groundwater on the West Block of the subject site (currently the central area of the WINE.COM warehouse [2220 Fourth Street]);
- Known metals and oil and grease in soil and petroleum hydrocarbons in groundwater at 705 Bancroft Way on the subject site; and
- Known petroleum hydrocarbons in soil at 2213 Fourth Street (currently the northern portion of the former Acuity Brands Lighting facility).

Baseline recommended that, prior to construction and earthwork activities, a subsurface investigation should be performed to characterize impacts to soil and groundwater beneath the subject site.

3.2 DRAFT LIMITED PHASE II INVESTIGATION (DRAFT TABLES, FIGURES, AND BORING LOGS ONLY), FOURTH AND FIFTH STREETS, BERKELEY, CALIFORNIA, AUGUST 2019

A Phase II investigation was conducted by PES Environmental, Inc. in August 2019. This investigation included advancing 22 borings for the collection of soil samples in the unsaturated zone and/or grab groundwater samples from the first encountered groundwater-bearing unit. A total of three soil samples were collected from the former Peerless Electric site at 2220 Fourth Street and analyzed for volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), and organochlorine pesticides using standard United States Environmental Protection Agency (USEPA) methods. A total of 19 grab groundwater samples of first encountered groundwater (approximately 10 to 14 feet bgs) were collected and analyzed for VOCs and TPH using standard USEPA methods. Groundwater samples collected from the western block of properties were additionally analyzed for organochlorine pesticides and metals using standard USEPA methods. Soil vapor probes were installed and sampled at 5 feet bgs at 11 locations, sub-slab soil vapor probes were installed and sampled at 0.5 feet bgs at 32 locations, indoor air samples were collected at 15 locations, and ambient air samples were collected at four locations. Soil vapor, sub-slab soil vapor, indoor air, and ambient air samples were analyzed for VOCs using standard USEPA methods.

Soil results were compared to Regional Water Quality Control Board (RWQCB) Tier 1 and Commercial/Industrial Shallow Soil Exposure Environmental Screening Levels (ESLs), dated July 2019 (Revision 2). Concentrations of organochlorine pesticides (dieldrin, endrin, chlordane, pentachlorophenol) exceeded Tier 1 ESLS in one or more samples, but VOC and TPH concentrations were below Tier 1 ESLs. Concentrations of organochlorine pesticides (dieldrin, chlordane, and pentachlorophenol) exceeded Commercial/Industrial Shallow Soil Exposure ESLS in one or more samples, but VOC and TPH concentrations were below Commercial/Industrial Shallow Soil Exposure ESLs.

Groundwater results were compared to the most conservative of either California Maximum Contaminant Levels (MCLs) for drinking water or the RWQCB Tier I ESLs for groundwater and RWQCB Groundwater Vapor Intrusion Human Health Risk Levels. Concentrations of VOCs including vinyl chloride, 1,1-dichloroethene, 1,1-dichloroethane, cis-1,2-dichloroethene, 1,2-dichloroethane, trichloroethene, 1,4-dichlorobenzene, and 1,2-dichlorobenzene exceeded Tier 1 ESLs in at least one sample. TPH, organochlorine pesticides, and metals were only analyzed for groundwater samples collected from the western block of properties and concentrations of heavy and diesel range TPH, pentachlorophenol, heptachlor, aldrin, heptachlor epoxide, 4,4'-DDE, dieldrin, endrin, 4,4'-DDE, 4,4'-DDT, chlordane, arsenic, copper, lead, and zinc exceeded Tier 1 ESLs in one or more samples. Vinyl chloride 1,1-dichloroethene, 1,1-dichloroethane, trichloroethene, and 1,4-dichlorobenzene exceeded the RWQCB Groundwater Vapor Intrusion Human Health Risk Levels in one or more samples.

Soil vapor and sub-slab soil vapor results were compared to RWQCB ESLs for Commercial Properties, dated July 2019 (Revision 2). Concentrations of VOCs including benzene, 1,1-dichloroethane, chloroform, 1,1,1-trichloroethane, trichloroethene, tetrachloroethane, and vinyl chloride exceeded ESLs for Commercial Properties in one or more samples.

Indoor air results were compared to RWQCB ESLs for Commercial Properties. Concentrations of VOCs including benzene, chloroform, and naphthalene exceeded ESLs for Commercial properties in at least one sample.

3.3 SUPPLEMENTAL SITE INFORMATION REPORT AND SOIL AND GROUNDWATER MANAGEMENT PLAN, 2220 FOURTH STREET, BERKELEY, CALIFORNIA, JULY 2016

The Fugro USA Land, Inc. (Fugro) report was prepared for Herst Ventures, Inc. in response to a request from the RWQCB to present an overview of general site conditions, a summary of environmental investigations and inspections completed to date, and to provide case background information. Additionally, the document included a Soil and Groundwater Management Plan (SGMP) utilized by the property owner to mitigate risks posed to onsite workers if impacted soil and/or groundwater is encountered during routine property repair and maintenance until redevelopment of the site occurs. The summarized environmental investigations include:

- Report of Subsurface Soil Investigation, by Brown and Caldwell, dated 28 July 1983 (obtained from Preliminary Assessment, Peerless Electric, by the Department of Toxic Substances Control (DTSC), dated 24 December 2003).
  - In 1983 Brown and Caldwell, on behalf of Peerless Electric, conducted an initial investigation to evaluate the concentrations of pesticides in shallow soil in the former termite control manufacturing area. Soil samples collected from depths of up to 3 feet bgs contained detectable concentrations of organochlorine pesticides including aldrin, lindane, chlordane, dichlorodiphenyldichloroethane (DDD), and dieldrin. Groundwater samples contained detectable concentrations of chlordane, lindane, and heptachlor.
- Voluntary Removal Action (obtained from Preliminary Assessment, Peerless Electric, by DTSC, dated December 24, 2003).
  - In 1984, pesticide-contaminated soils within the unpaved area of the former warehouse building were removed during voluntary remedial actions completed under the supervision of the City of Berkeley Department of Health Services. A City of Berkeley Department of Health Services letter dated 28 December 1984 recommended that the excavation be backfilled based on review of confirmation soil samples. This report was also included in the DTSC's 2003 Preliminary Assessment. The excavation was backfilled with imported soil and impacted soil was transported and disposed of offsite as hazardous waste. Following completion of the remediation, the site was redeveloped, and the existing building was completed in 1989. The remediated area was covered by a layer of imported fill and the new concrete slab-on-grade floor.
- Groundwater Investigation Report – Peerless Electric Company, Berkeley, California, by Brown and Caldwell, dated 8 August 1985.
  - In 1985, under the oversight of the RWQCB, four groundwater monitoring wells (W-1 through W-4) were installed within the former termite control business warehouse to investigate the extent of pesticide-impacted groundwater. Groundwater samples collected after installation of the monitoring wells contained detections of trans-1,2-dichloroethene (trans-1,2-DCE), 1,2-dichloroethane (1,2-DCE), trichloroethene (TCE), pentachlorophenol (PCP), and TPH in the C14-C24 range in the groundwater samples analyzed.
- Analytical Results Letter to the City of Berkeley Environmental Health Division – Peerless Lighting, Berkeley, California by Tank Excavators, dated 1 July 1987.
  - In 1987, an approximately 100-gallon empty and not previously used underground storage tank (UST) was removed from the parking lot adjacent to the warehouse.

Limited soil from around the removed UST was excavated and one of two soil confirmation samples from the bottom of the excavation contained low levels of TPH. Excavated soil was allowed to aerate until concentrations of TPH were decreased to acceptable levels and it was used as backfill for the excavation.

- Analytical Results Letter – Peerless Lighting Corporation, Berkeley, California by Polymatrix Associates, dated 1987.
  - In 1987, soil samples were collected from the railroad embankment immediately west of the former warehouse in areas where mounding of soil and/or surface staining was observed. Five samples were collected from the surface to a maximum depth of 3.5 feet bgs and composited into four composite samples. The soil samples contained elevated concentrations of PCP. A more detailed soil investigation was performed in this area in 1994.
- Site Characterization Report for 2220 Fourth Street, Berkeley, California, by The Mark Group, dated 11 October 1988.
  - In 1988 six additional groundwater monitoring wells were installed; four within the current warehouse and two upgradient to the east and southeast of the warehouse along Fourth Street. Soil samples were collected during the well installation and contained detectable concentrations of 1,1,1-trichloroethane (1,1,1-TCA), trichlorofluoromethane, TCE, and PCP. Groundwater samples collected from the newly installed monitoring wells contained detectable concentrations of chloroform, 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), 1,1-dichloroethene (1,1-DCE), trans-1,2-DCE, 1,1,1-TCA, TCE, and PCP. The two upgradient wells contained detectable concentrations of TCE, trans-1,2-DCE, and vinyl chloride (VC).
- Groundwater Monitoring Report for Peerless Lighting, 2220 Fourth Street, Berkeley, California, by Subsurface Consultants, Inc. (SCI), dated 29 October 1993.
  - In 1993, the four onsite and two offsite groundwater monitoring wells were sampled. Groundwater samples collected during this monitoring event contained detectable concentrations of TCE, 1,1-DCE, 1,2-DCA, trans-1, 2-DCE, 1,1,1-TCA, methyl isobutyl ketone (MIBK), benzene, VC, total volatile petroleum hydrocarbons (TVH), and PCP. The presence of VOCs in both upgradient and onsite wells along with no documented historical use of VOCs onsite and known use and release of VOCs in the vicinity led to SCI concluding that the VOC impacts are associated with an offsite source.
- Results of Soil Sampling Adjacent to 2220 Fourth Street, Berkeley, California, by Levine Fricke, dated 27 April 1994.
  - In March 1994, the former Southern Pacific Transportation Company (SPTCo; now Union Pacific Railroad) completed a soil investigation to determine the vertical and lateral extent of contamination resulting from releases onto the SPTCo property, per the RWQCB's request. Soil samples were collected from three soil borings along the railroad right-of-way to the west of the site. Soil samples were collected from the ground surface to a maximum depth of 7 feet bgs. TPH and diesel and motor oil, ethylbenzene, xylenes, and PCP were detected in the soil samples.
- Soil and Groundwater Investigation, Borings 7, 8, 9, and 10 and October 1994 Groundwater Monitoring Event, 2220 Fourth Street, Berkeley, California, by Subsurface Consultants, Inc., dated 23 November 1994.

  - In October 1994, the RWQCB and the City of Berkeley requested an additional subsurface investigation at the site. The investigation consisted of advancing three borings along the west side of the warehouse and one boring in the approximate location of the previously unpaved portion of the former termite control business warehouse. Soil samples collected during the investigation contained total extractable hydrocarbons, PCP, dieldrin, chlordane, benzene, toluene, ethylbenzene, and xylenes (collectively, BTEX), MIBK, and 1,1,1-TCA. Piezometers were installed in the borings and groundwater samples were collected from the piezometers and other site monitoring wells. Groundwater samples contained detectable concentrations of PCP, total extractable petroleum hydrocarbons, dieldrin, heptachlor epoxide, chlordane, 1,1-DCE, cis- and trans-1,2-DCE, BTEX, TCE, 1,1,1-TCA, MIBK, and 1,2-DCA.

- Phase I Soil Investigation Report, Right-of-Way West of 2220 Fourth Street, Berkeley, California, by Industrial Compliance (Work Completed for Union Pacific), dated 30 January 1995.
  - In December 1994, a soil investigation consisting of collecting samples from 13 soil borings was completed to verify the results of the previous investigations along the SPTCo right-of-way. Soil samples were collected from the ground surface to a maximum depth of 6 feet bgs and contained detectable concentrations of chlordane, PCP, and TPH.
- Scope of Work to Determine Current Pentachlorophenol and Chlordane Impacts to Soil and Groundwater, 2220 Fourth Street, Berkeley, California, by Fugro West, Inc., dated 4 November 2005.
  - In 2005, Fugro and Herst Ventures presented a summary of investigations results from investigations conducted through March 1995 to the DTSC. In summary, the previously completed investigations showed that PCP and chlordane concentrations in soil beneath the concrete floor slab within the warehouse on the west side of the site exceed California Human Health Screening Levels (CHHSLs). Further, PCP and chlordane concentrations in the area west of the existing warehouse structure exceed MCLs. VOCs, including 1,1,1-TCA and 1,1-DCA have historically been detected at low levels at the site were not attributed to an onsite source but rather potential offsite sources in the site's vicinity. Based on review of the existing data, the DTSC requested collection of soil and groundwater samples from borings adjacent to outside of the existing structure, between the building and the railroad, and on the west side of the railroad right-of-way. Fugro prepared a workplan, which proposed completing eight borings for soil and groundwater sampling and collection of groundwater from existing monitoring wells and piezometers.
- Additional Site Study Report, Pentachlorophenol and Chlordane Concentrations, 2220 Fourth Street, Berkeley, California, by Fugro West, Inc., dated 27 February 2007.
  - In 2006, Fugro implemented the 2005 DTSC-approved workplan and completed eight borings to a maximum total depth of 14.5 feet bgs. Concentrations of chlordane and TPH were detected in at least one of the 25 total soil samples collected. Groundwater was collected from one boring in the railroad right-of-way and from existing groundwater monitoring wells and piezometers. Groundwater samples contained detectable concentrations of PCP, chlordane, and TPH. Based on the results of the investigation, Fugro recommended covering the exposed soil in the embankment on the

west side of the existing structure with a thin layer of concrete as a measure of further protection.

- Supplemental Data Report, 2220 Fourth Street, Berkeley, California, by Fugro West, Inc., dated 3 August 2007.
  - In May 2007, a meeting was held between Herst Ventures, Fugro, and the DTSC to discuss the findings of the 2006 investigation. Fugro concluded that based on the findings from the recent investigation along with the historical investigations, the site conditions are stable. At the request of the DTSC, Fugro submitted a Supplemental Data Report, which presented site-specific data including information related to topography, foundation and concrete slab construction, and the observed presence of the Union Pacific Railroad right-of-way acting as a groundwater recharge zone, as rationale in support of the conclusion that existing improvements are controlling the contaminant plume associated with releases from the former termite control business.
- Activities between 2008-2018:
  - In January 2008, based on their review of the Supplemental Data report, the DTSC agreed with Fugro's recommendation that the exposed soil along the embankment be capped as an interim remedial measure, until such time that the Site could be remediated along with Site redevelopment plans. No time limit was placed on the completion of the work. The DTSC also indicated that they would develop a Land Use Covenant (LUC) for the Site, which would likely cite the need for a site-specific Soil and Groundwater Management Plan when future redevelopment occurs.
  - In July 2008, the DTSC prepared a draft Voluntary Cleanup Agreement (VCA), which if executed, would require a LUC for future usage of the site to be prepared. The VCA was not formalized because the site owner had begun new plans to redevelop the site. The redevelopment plans included installing a Fire Access Way west of the site at the request of the City of Berkeley, the construction of which would have removed or completely encapsulated the exposed embankment area. The redevelopment project was abandoned and no additional activities in or near the embankment area have been completed.
  - Fugro has been completing annual site inspections since 2008 to confirm that the site uses and surficial conditions have remained unchanged. The most recent inspection observations indicated that the site conditions have remained unchanged. Fugro also provided consulting to site ownership regarding the restrictions concerning contact with site soils and groundwater.

4. Site History

Haley & Aldrich assessed past usage of the subject site and adjoining properties through a review of:

- Sanborn Fire Insurance Maps dated 1903, 1911, 1929, 1950, and 1980;
- Topographic Maps dated 1895, 1899, 1915, 1948, 1949, 1959, 1968, 1973, 1980, 1996, and 2012;
- Aerial Photographs dated 1939, 1946, 1958, 1963, 1968, 1974, 1982, 1993, 1998, 2005, 2009, 2012, and 2016;
- City Directories dated 1920 through 2014;
- Previous Reports; and
- Interviews with subject site personnel.

Copies of information obtained from historical references reviewed are included in Appendix C. Unless otherwise noted below, per the ASTM standard, sources were reviewed dating back to 1940 or first developed use, whichever is earlier, and at 5-year intervals if the use of the property has changed within the time period.

4.1 SUBJECT SITE

The subject site consisted primarily of small residential buildings, greenhouses, and industrial buildings until about the mid-1950s, when most of the subject site area was occupied by industrial warehouses.

The table below provides a detailed summary of pertinent information from the historical sources reviewed:

Dates	Description of Subject Site	Sources
1903 - 1950	By 1903, most of the subject site area appears to be undeveloped, with the exception of a few small residential buildings on both the West Block and East Block. One of these residential buildings, located at 2212 Fifth Street, appears to be the same residential building that exists today. A group of greenhouses is located on the north side of the West Block. By 1911, there are more structures occupying the subject site. On the West Block there is a foundry, blacksmith, and pattern shop (now the site of the 2220 Fourth Street warehouse); "Century Mercantile Co." (now the site of 701 Bancroft Way), another warehouse, and a few more small residential buildings. In the center of the East Block, another nursery with several greenhouses appears. By 1929, "Oakland Furnace & Foundry Co." appears on the south end of the West Block, and consists of a foundry, pattern storage, office, and warehouse. On the East Block, more greenhouses are added to the center nursery, now labeled "Carbona Nursery." By 1950, the greenhouse areas no longer appear. On the West Block, "Oakland Furnace & Foundry Co." is replaced by Armco Drainage & Metal Products, Inc., and the current 703 Bancroft Way building appears, labeled as a foundry.	Sanborn Fire Insurance Maps, Aerial Photographs
1955 - 1984	By 1958, most of the subject site is occupied by its current warehouse buildings, including the buildings at 705 Bancroft Way, 747 Bancroft Way (Peerless Electric from 1970 to 2006), 2221 Fourth Street, 2216 Fifth Street (Electrical Insulating from 1970 to 1975), 2229 Fourth Street and 2222 Fifth Street (Physics Research Lab and Plastic Cup Molding Factory in 1980), and 2246 Fifth Street (larger southern building, Finished Product Warehouse). By 1968, the 701 and 705A Bancroft Way buildings appear, as well as the 2200 Fourth Street building (Die Casting Factory in 1980). The 2213 Fourth Street (Research Lab) and the northern part of the 2246 Fifth Street (Miscellaneous Parts Storage) buildings also appear. Able Termite Control is listed in the City Directories at the 2220 Fourth Street building from 1955 to 1962. In the 1980 Sanborn Map, this building is labeled as an "Exterminator Contractor Warehouse." From at least 1984, Delicor, a vending machine sales and service company, occupied the five buildings in the southwest corner of the subject site (including 701, 703, 705, and 705A Bancroft Way).	Sanborn Fire Insurance Maps, Aerial Photographs, City Directories, Previous Reports

Dates	Description of Subject Site	Sources
1992 - Present	Peerless Electric closed down its operations in the 747 Bancroft Way building in 2006, but still occupied the buildings across the street at 2246 Fifth Street and 2213 Fourth Street. They are listed there until 2014, along with Acuity Brands Lighting in the City Directories. The Acuity Brands Lighting buildings have been vacant since approximately 2017 or 2018. Arms Pumps/All Repair Machine Shop occupied the 2221 Fourth Street building from at least 1996 to 2013. Ironies Fabrication occupied the 2222 Fifth Street building from at least 2000 to present day. WINE.COM is listed in the City Directories at the 2220 Fourth Street building in 2014, the 747 Bancroft Way and 2230 Fourth Street buildings in 2010. WINE.COM currently occupies these buildings. The single-family residential building at 2212 Fifth Street was occupied by residents at least until 2006. In 2014 it was occupied by an architecture business. It has been vacant since approximately 2014.	City Directories, interview with subject site personnel

4.2 ADJOINING PROPERTIES

The table below provides a summary of pertinent information from the historical sources reviewed regarding adjacent properties:

Dates	Description of Adjacent Properties	Sources
1903	Adjoining properties consisted mostly of undeveloped land and a few small residential buildings. West Berkeley Rose Nursery, consisting of a small group of greenhouses, is located in the adjoining property to the northeast. The subject site is bounded to the west by railroad tracks.	Sanborn Fire Insurance Maps, Topographic Maps
1911	By 1911, adjoining properties consist of several industrial warehouse buildings, including a machine shop to the northwest, “Tilman & Bendel Warehouse” to the west-southwest, and the West Berkeley Macaroni Factory to the east.	Sanborn Fire Insurance Maps
1929	By 1929, the adjoining property to the northwest is now Solano Iron Works; the adjoining property to the west-southwest is Suncrest Packers, a dried fruit packing warehouse; the macaroni factory is now a Chemical Works building and a greenhouse.	Sanborn Fire Insurance Maps

Dates	Description of Adjacent Properties	Sources
1950	BY 1950, adjoining properties to the south are now developed with industrial buildings, including a brush and metal products manufacturing warehouse and a metal fabricating facility. Solano Iron Works still remains to the northwest, and the adjoining property to the west-southwest is now Westinghouse Electric Corp., a manufacturer of blowers and ventilating systems. The nursery to the northeast is now labeled, "C. & A. Warren Nursery." Adjoining properties to the east consist of several buildings of the Berkeley Pump Co. Facilities include a paint spray booth, pattern shop, machine shops, coal storage area, and other warehouses.	Regulatory Records, Sanborn Fire Insurance Maps
1980 - Present	By 1980, Solano Iron Works has been replaced by Standard Paint Co., which becomes Dalvin Paint/Coatings sometime in the mid-1980s, which currently occupies this area. Adjoining properties to the north consist of offices and warehouse buildings, and the nursery no longer appears. Berkeley Pump Co. still occupies the adjoining property to the east. Adjoining properties have remained relatively unchanged, consisting of mixed use residential, commercial/office, and industrial.	Sanborn Fire Insurance Maps, City Directories

5. Environmental Records Review

5.1 ENVIRONMENTAL DATABASE RECORDS SEARCH

Haley & Aldrich used the electronic database service, Environmental Data Resources (EDR) to complete the environmental records review. The database search was used to identify properties that may be listed in the referenced agency records, located within the ASTM-specified approximate minimum search distances as shown in the table below. A description of each database searched is in Section 11.2 of this report. The complete environmental database report is provided in Appendix D. Pertinent information obtained from the database is summarized in Section 5.3 below.

Database Searched	Approximate Minimum Search Distance	Subject Site Listed?	Number of Sites within Search Distance[1]
1. NPL Sites	1 mile	No	0
2. Delisted NPL Sites	0.5 mile	No	0
3. CERCLIS[2] Sites	0.5 mile	No	0
4. CERCLIS-NFRAP[2] Sites	0.5 mile	Yes	4
5. Federal ERNS	Site only	No	Not Applicable
6. RCRA non-CORRACTS TSD Facilities	0.5 mile	No	0
7. RCRA CORRACTS TSD Facilities	1 mile	No	1
8. RCRA Generators	Site & Adjoining	Yes	2
9. Federal Institutional/Engineering Controls	Site Only	No	Not Applicable
10. State/Tribal Equivalent NPL Sites	1 mile	No	7
11. State/Tribal Equivalent CERCLIS[2] Sites	0.5 mile	Yes	10
12. State/Tribal Registered Storage Tanks	Site & Adjoining	No	1
13. State/Tribal Landfills and Solid Waste Disposal Sites	0.5 mile	No	1
14. State/Tribal Leaking Storage Tanks	0.5 mile	Yes	52
15. State/Tribal Voluntary Cleanup Sites	0.5 mile	Yes	4
16. State/Tribal Brownfield Sites	0.5 mile	No	1
17. Orphan Site List[3]	Site & Adjoining	No	0
18. HAZNET[4]	Site Only	Yes	9

Notes:

1. *Some sites may be included on multiple databases.*
2. *The USEPA retired the CERCLIS database in October 2013. In January 2016, the Superfund Enterprise Management System (SEMS), which replaces the CERCLIS database, became active. The CERCLIS database records search included as part of this assessment includes currently ascertainable data from the SEMS and SEMS-Archive databases as reported through the database vendor.*

3. *Haley & Aldrich also searched the Orphan Site List provided in the database report for the subject site and sites adjoining the subject site. Orphan sites are those that, due to incorrect or incomplete addresses, could not be mapped.*
4. *If applicable, other relevant databases, not specifically required by ASTM were included in the database review.*

5.2 ADDITIONAL ENVIRONMENTAL RECORDS OR FILE REVIEW

To supplement the environmental record search, we contacted the following state and local government agencies and searched applicable online databases. If copies of the documents reviewed were obtained, pertinent material is included in Appendix D. Relevant information obtained is included in the appropriate sections of the report and/or discussed in Section 5.3 below.

Agency	Request Sent or Files Searched		Files Exist and are Available for Review	Files Reviewed
	Subject Site	Adjoining Properties		
California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region[1]	Yes	Yes	On 6 November 2019, the RWQCB responded that they had no files; however, the RWQCB's website, GeoTracker, contains information on sites that impact groundwater, especially those that require groundwater cleanup, and permitted facilities. Information pertaining to the subject site and nearby sites is discussed in Section 5.3.1 and 5.3.2.	Yes
Department of Toxic Substances Control (DTSC)[2]	Yes	Yes	On 6 November 2019, the DTSC responded that they had records for the 2220 Fourth Street facility. These records, along with files available on the DTSC's website, EnviroStor, which generally contains all existing DTSC information on permits and corrective action at hazardous waste facilities, as well as site cleanup projects, were reviewed. Pertinent information is discussed in Sections 5.3.1 and 5.3.2.	Yes
Bay Area Air Quality Management District (BAAQMD)[3]	Yes	Yes	On 29 October, 1 and 4 November 2019, BAAQMD responded with records for several of the subject site tenants. Pertinent information is discussed in Section 5.3.1.	Yes

Agency	Request Sent or Files Searched		Files Exist and are Available for Review	Files Reviewed
	Subject Site	Adjoining Properties		
Alameda County Department of Environmental Health (ACEH) Local Oversight Program (LOP)[4]	Yes	Yes	On 29 October 2019, the ACEH LOP database was searched for files pertaining to the subject site and adjoining properties. No records were found.	N/A
Berkeley Toxics Management District (TMD)[5]	Yes	Yes	On 31 October Berkeley Toxics Management District responded that files exist for the subject site. Files were reviewed on 7 November 2019 and pertinent information is included in Section 5.3.1.	Yes

Notes:

1. *The Regional Water Quality Control Board, San Francisco Bay Region maintains information regarding water, monitoring wells, USTs, and cleanups.*
2. *The California Department of Toxic Substances Control maintains information regarding site cleanups, hazardous waste, and USTs.*
3. *The Bay Area Air Quality Management District maintains information regarding air emissions data, permits, and air quality violations.*
4. *The Alameda County Department of Environmental Health coordinates and enforces numerous local, state, and federal hazardous materials management and environmental protection programs in the county. The ACEH also implements a Local Oversight Program (LOP), which provides regulatory oversight of the investigation and cleanup of soil and groundwater contamination from leaking petroleum USTs.*
5. *The Berkeley Toxics Management District is the Certified Unified Program Agency (CUPA) that administers different hazardous materials program areas including Hazardous Material Release Response Plans and Inventories (HMRRP), California Accidental Release Prevention (CalARP) Program, UST Program, Aboveground Petroleum Storage Act Requirement for Spill Prevention, Hazardous Waste Generator and Onsite Hazardous Waste Treatment Programs, and Hazardous Material Management Plans (HMMP) and Hazardous Materials Inventory Statements.*

5.3 DETAILED DESCRIPTION OF RELEVANT INFORMATION

5.3.1 Subject Site

The subject site was listed in several of the databases searched. Pertinent information is discussed below.

Listing	Description	Potential Impact
Peerless Electric, 2220 Fourth Street: EnviroStor, VCP	A succession of pesticide companies including Able Termite Control Company, Able Termite Control, Inc., Terminix Norcal, and its successor Terminix International occupied this property, located at 2220 Fourth Street on the West Block of the subject site. These companies mixed pesticides with thinners (solvents) on the site. In particular, PCP was mixed with kerosene and diesel to a 0.5 and 1.0 percent mixture. Additionally, use of heavy metals, hydrocarbon fuels, oils, lubricant, degreasers, cutting fluids, solvents, acids, bases, and dyes/paint intermediates were utilized by previous on-site business operations. Peerless Electric Company bought the property from Terminix in 1981. Peerless became aware of contamination after it purchased the site because of unpleasant odors and stains observed in an unpaved area within the warehouse where chemicals had been stored. A soil investigation conducted in 1983 identified aldrin, heptachlor, and chlordane at hazardous levels and the underlying groundwater detected chlordane and heptachlor. Voluntary remedial actions were undertaken to remove source area soils within the primary area where chemical mixing operations had been performed, including an unpaved area within the former building. About 80 cubic yards of soil were excavated and removed from the site in 1984 and the area was backfilled with imported soils. Following the soil removal action, the site was redeveloped with the existing building and a new concrete slab-on-grade floor was constructed which fully covered the formerly unpaved area. Later investigations indicated the presence of residual contamination in the excavated area. This work was approved by the Department of Health Services, Toxic Substances Control Division (DHS), predecessor to the California Department of Toxic Substances Control (DTSC) on 28 December 1984. Subsequent studies indicated that soil and groundwater within the adjacent SPTCo right-of-way to the west of the site was also impacted by PCP and TPH. The RWQCB asked SPTCo to investigate the extent of soil and groundwater contamination near the western boundary of the site. During these investigations, SPTCo detected PCP, chlorinated pesticides and TPH. These investigations were conducted between 1993 and 1994. DTSC reviewed data reports and in February 2008, concurred with the site's responsible party's recommendation to cap the exposed soil on the embankment on the west side of the property with concrete and requested a VCA for the property owner to prepare and record deed restrictions for the areas of the site where contamination remains above residential standards. However, the property owner declined to enter into a VCA.	Impacts to soil and groundwater still remain on site above RWQCB ESLs for commercial use. This constitutes a REC. In addition, the concrete foundation acts as an engineered cap to the underlying impacted soil conditions, which constitutes a CREC. See Section 7.3.

Listing	Description	Potential Impact
	On 12 June 2013, Berkeley TMD transferred this case to the RWQCB, although both the DTSC and the RWQCB have been involved in regulatory oversight of investigation and cleanup activities.	
Peerless Lighting/ Peerless Electric Company, 2220 Fourth Street: GeoTracker, LUST	Soil and groundwater on site have been impacted from vertical and lateral migration of these hydrocarbon and related contaminants. Detected concentrations of hydrocarbons include total petroleum hydrocarbons as diesel (TPHd) up to 39,000 micrograms per liter (µg/L) in groundwater (Tier 1 ESL for TPHd in groundwater is 100 µg/L). PCP was identified up to 460 milligrams per kilogram (mg/kg) in onsite soil samples. TPH as kerosene (jet fuel) was found up to 6,000 mg/kg in soil and other hydrocarbon ranges up to 10,000 mg/kg in soil. The most recent activity found on GeoTracker was a Supplemental Site Information Report and Soil and Groundwater Management Plan requested by the RWQCB. This document details a full history of site activities and is summarized in Section 3.	Impacts to soil and groundwater still remain on site above RWQCB ESLs for commercial use. This constitutes a REC. See Section 7.2.

Listing	Description	Potential Impact
Delicor, 701 to 705 Bancroft Way: Berkeley Toxics Management Division (TMD)	Delicor, a vending machine sales and service company, occupied the approximately 1-acre southwest corner of the subject site (includes current buildings 701, 703, 705, and 705A Bancroft Way). Delicor installed a 5,000-gallon UST in 1984 to store unleaded gasoline for the company vehicles. The tank was permitted and inspected by the Berkeley Fire Department and is the only known UST to have been used at this site. In September 1991, the 5,000-gallon gasoline UST was removed. Soil samples collected following removal of the UST contained no detectable levels of hydrocarbon contamination. In January 1992, Subsurface Consultants, Inc. (SCI) performed an additional environmental investigation including the drilling and sampling of 18 test borings. In their conclusions and recommendations, SCI listed three environmental concerns that would require further study and remediation. These three concerns were: foundry wastes, oil and grease contamination, and possible groundwater contamination. In April 1992, groundwater samples were collected downgradient of the former UST. Results indicated that there were no petroleum hydrocarbon impacts to either soil or groundwater in the vicinity of the former UST site. In September 1992, an additional investigation found that foundry material exists beneath the slab floor of the current 703 Bancroft Way building ranging in depth from 4 inches to 3.5 feet below the bottom of the slab. The soil and foundry material beneath this building contained metals at less than the established Total Threshold Limit. Concentration (TTLC) and Soluble Threshold Limit Concentration (STLC) levels, and did not require any remedial action. It was recommended that they be left in place underneath the concrete floor of the building. Total oil and grease results from a depth of 4 to 4.5 feet bgs ranged from 10 to 90 parts per million (ppm). In January of 1993, additional investigative and remedial work was conducted at this site, including the excavation and disposal of hydrocarbon impacted soil known to be present near the former compressor area. A groundwater investigation was conducted in early 1993 to determine groundwater gradients and quality beneath this site. The only detection of concern during this investigation was the presence of arsenic in one sample from one temporary piezometer at 80 parts per billion (ppb), exceeding the MCL for drinking water at 50 ppb. On 12 April 1995, a closure letter for the site was issued by the City of Berkeley Emergency and Toxic Management Program (now Berkeley Toxics Management Division). The letter indicated that confirmation sampling appeared to show background levels of metals and the City had no further requirements for this site at that time.	Even though closure was issued for this case, foundry material and residual impacts still remain at this area of the subject site. This constitutes an HREC.

Listing	Description	Potential Impact
Berkeley TMD	Hazardous Materials/Hazardous Waste Compliance Records • 701 Bancroft Way (Photosynthesis)-2016 request for a Hazardous Material Business Plan (HMBP) for acetylene gas, oxygen, and propane. • 705 Bancroft Way (Universe Painting Construction)-2016 request for an HMBP for paints stored outside the building. • 705A Bancroft Way (Melissa MacDonald Metal Work)-2018 request for an HMBP for argon cylinders. • 2216 Fifth Street (Berkeley Engineering and Research)-mid-2000s HMBP inspections included records of wood preservative, paints, miscellaneous oils and lubricants, miscellaneous liquid solvents, and tar pitch. • Several records related to Ironies operations, including hazardous material storage violations. Additionally, there are records detailing the 2014 repair of a sump pump, which formerly collected water intrusion to the site and discharges to the exterior. The record indicated that Ironies had disabled the sump pump in 2013. TMD believed this repair would ensure no release of hazardous material or waste to the environment and considers the violation and water intrusion issue to be closed, as of 14 October 2014. • Several records related to former Peerless operations. HMBP records indicated that Peerless had hazardous materials onsite and were a generator of hazardous waste. Hazardous materials included solvents, paints, machine oil, and propane. • 2220 Fourth Street (WINE.COM)-2008 request for an HMBP for propane storage. • 2370 Fourth Street (All Repair Machine Shop [ARMS])-record indicating they used and stored hazardous materials including cleaning solvents (15 gallons) waste oil (20 gallons), coal tar (5 gallons), and gasoline (5 gallons).	No spills or evidence of any releases were reported for these facilities. However, the current and historical uses of hazardous materials at the subject site may have contributed to de minimis staining, with the potential to leak through cracks in the building foundation and impact the subsurface.
BAAQMD Records	A permit application history for Acuity Brands Lighting (formerly Peerless), located at 2246 Fifth Street, includes approved permits for an emergency generator, a compressor oil/water evaporator, a cure oven, several spray booths, and a heat cleaning oven.	These features were not observed during the site reconnaissance.

Listing	Description	Potential Impact
HAZNET	The tenants listed below were listed in the HAZNET database for disposal of various hazardous wastes: • Delicor of Northern California (705 Bancroft Way): "aqueous solution with total organic residues less than 10 percent" (1991, 1994). • Peerless Electric/Lithonia Lighting (747 Bancroft Way): paint sludge, hydrocarbon solvents (benzene, hexane, Stoddard, etc.), halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc.), oxygenated solvents (acetone, butanol, ethyl acetate, etc.), and contaminated soil from site clean-up, and several other types of hazardous wastes (1984-1986). • Peerless Lighting (2246 Fourth Street): "off-specification, aged or surplus organics" and "other organic solids" (2010). • SKS Diecasting and Machining Inc (2200 Fourth Street): waste oil and mixed oil, halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc.), laboratory waste chemicals, liquids with chromium (VI) greater than 500 milligrams per liter (mg/L), and several other types of hazardous wastes (1984-1989). • Berkeley Engineering (2216 Fifth Street): Off-specification, aged or surplus organics (2006). • Ironies (2222 Fifth Street): paint sludge, waste oil and mixed oil, and several other types of hazardous wastes (2007-2017). • All Repair Machine Shop (2221 Fourth Street): waste oil and mixed oil, liquids with halogenated organic compounds greater than 1,000 mg/L, and other types of hazardous waste (2000-2011). • WINE.COM (2220 Fourth Street): specification, aged or surplus organics (2011). • Southern Pacific Transportation Co (2220 Fourth Street): contaminated soil from site cleanup (1995).	No spills or evidence of any releases were reported for these facilities. However, the current and historical uses of hazardous materials at the subject site may have contributed to de minimis staining, with the potential to leak through cracks in the building foundation and impact the subsurface.
RCRA-SQG	Peerless Electric/Lithonia Lighting (747 Bancroft Way) is listed as a RCRA Small Quantity Generator in 1999. Types of hazardous wastes include ignitable waste, benzene, methyl ethyl ketone, PCE, TCE, and other nonhalogenated solvents. No violations were noted.	No spills or evidence of any releases were reported for this facility. However, the current and historical uses these hazardous materials at this property may have contributed to impacts identified during PES Environmental, Inc.'s Phase II Investigation in 2019.

5.3.2 Nearby Sites

Several sites were listed in the database report within the applicable search radii or identified in regulatory records reviews. Due to their location with respect to the subject site (on the opposite side of a hydrogeologic barrier, distance from the site, location of the site relative to inferred groundwater

flow, subsurface utilities and building levels, etc.), or their status (closed out release, etc.), several of the sites are not likely to adversely affect the subject site and are not discussed herein. Only those sites adjacent to the subject site and sites with a potential to have impacted the subject site are discussed below. The complete database report and relevant records review information is included in Appendix D.

5.3.2.1 Dalvin Paint Company/Dalvin Coatings, 700 Allston Way

The Dalvin Paint Company/Dalvin Coatings site is located adjacent to the subject site to the northwest and consists of a warehouse and a building that have been used for paint manufacturing since the 1970s. In 2006, the City of Berkeley, Toxic Management Division ("TMD"), recommended a Preliminary Endangerment Assessment ("PEA") for the site based on the history of paint manufacturing activities and the absence of a previous site assessment or investigation. The following is a summary of previous activities on the site:

- In 1988, seven USTs that stored mineral spirits, xylenes, Stoddard solvent (mineral spirits), methanol, thinner, and toluene for paint manufacturing were removed from the site. Relatively low levels of petroleum hydrocarbons below the current ESLs were detected in soil and groundwater samples collected after removing the USTs. Regulatory closure was granted by the RWQCB on 16 November 1999.
- During the 1989 Loma Prieta earthquake, five cans containing a total of 20 gallons of paint containing toluene fell from a pallet and spilled open. The spill was reportedly cleaned up the next day.
- In April 2003, a 10,000-gallon UST containing methanol was removed from the site. Soil samples collected from the tank excavation and stockpile were analyzed for methanol. A grab groundwater sample was analyzed for methanol, volatile organics, benzene, toluene, ethylbenzene, total xylenes, and methyl tertiary-butyl ether. Concentrations of the analytes were not reported above laboratory reporting limits in the soil and groundwater samples.
- In 2004, TMD inspected the facility to assess the condition of hazardous materials being stored on the site. Old containers storing hazardous materials were observed to be in poor condition.

No additional site activities have been completed since the TMD's request for a PEA in 2006. Based on the site history and active regulatory status, soil and groundwater beneath the site could potentially be impacted by petroleum hydrocarbons and solvents used for paint manufacturing. Due to adjacent proximity of the site to the subject site, groundwater impacts (if any) could potentially migrate beneath the subject site.

5.3.2.2 Former Veriflo Facility/Dalvin Paint Company/Baum Electrolab, 800 Bancroft Way

The former Veriflo Facility is located approximately 200 feet east-southeast of the subject site and operated as a metals-finishing plant from 1968 to 1994. The metals finishing process included five sumps which stored acidic solutions. VOCs were also used at the Site and were stored in aboveground storage tanks (ASTs).

After Veriflo discontinued operations in 1994, soil and groundwater investigations revealed chemical impacts to soil and groundwater beneath the Site. Results of the investigations indicated elevated concentrations of zinc, nickel, and chrome in shallow soils beneath the former chrome plating room.

Elevated levels of VOCs, mostly TCE, were also detected in soil and groundwater sampled near the drain pipes, Sump F located in the pre-treatment room, and the sanitary sewer. In October and November 1996, soils were excavated to remove the heavy metals- and VOC-impacted soils outside the building. The plant building was demolished in 1999. Additional site investigation included the installation of 13 onsite and offsite groundwater monitoring wells. Onsite monitoring wells were decommissioned due to construction of a new building. There are four remaining offsite wells. In general, groundwater has been observed to flow in a northwesterly direction.

Groundwater remediation was conducted between 2000 and 2004, which included injections of potassium permanganate and later implementation of enhanced in situ bioremediation (EISB) to stimulate degradation of VOCs. In 2005, the site was redeveloped with a new building. The new building foundation was equipped with a vapor barrier and a passive vent system beneath the slab-on-grade foundation as an additional mitigation measure to protect onsite occupants from potential intrusion by VOC vapor.

In July 2015, groundwater sampling was conducted for the four existing offsite wells: MW-7, MW-8, MW-10, and MW-11; MW-10 and MW-11 are located in the sidewalk at the southeast corner of the subject site. In general, concentrations of TCE and VC have decreased significantly.

During a meeting on 9 August 2016, the RWQCB requested an additional investigation to evaluate the potential for vapor intrusion and impacts to human health. In January 2017, six soil vapor probes were installed adjacent to the former Veriflo buildings along Fifth Street near the former monitoring well MW-5 and between monitoring wells MW-7 and MW-8 along Fifth Street. Soil vapor results indicated vapor concentrations of chemicals of potential concern (COPCs) were below respective ESLs, with the exception of VC which was detected at two offsite soil vapor sample locations at concentrations greater than the ESL. However, concentrations at one location have decreased by 37 percent from 1,900 micrograms per cubic meter (µg/m^3) in May 2017 to 1,200 µg/m^3 in October 2017.

TCE had historically been the primary chemical of concern in groundwater. TCE was detected in previous soil vapor samples, but all detections were below the commercial/industrial ESL of 100 µg/m^3. TCE was not detected above laboratory reporting limits in the two probes sampled in October 2017.

The site's consultant, TRC, indicated that this site met the criteria for closure based on RWQCB's Assessment Tool for Closure of Low-Threat Chlorinated Solvent Sites (2009). TRC recommended and requested that this site be reconsidered for low threat closure. Case closure has not yet been granted.

Due to the proximity and upgradient location of this site to the subject site, as well as known impacts to Veriflo's offsite groundwater monitoring wells (at the subject site), it is likely that this site has impacted groundwater conditions at the subject site.

5.3.2.3 Aquatic Park Science Center/Triangle Coating Site, 2222 Third Street

In 1979, Aquatic Park Science Center, LLC acquired parcel 56-1952-2-1 and leased it to various tenants including paint, forensic product testing and biotechnology companies. In 2006, DTSC requested that a PEA be conducted for the parcel based on its use. The 8.2-acre parcel was divided into four areas (Area 1, 2, 3 and 4) during the PEA investigation. Areas 1,2 and 4 cover about 5.7 acres and Area 3 is about 2.5 acres. Areas 3 and 4 are located adjacent to the west of the subject site, beyond the Amtrak/Union

Pacific railroad corridor. In 2008, based on the findings of the PEA, DTSC issued a no further action letter for Areas 1,2 and 4.

The Triangle Coatings Site includes Area 3 where TPH contamination was found during the PEA investigation. Triangle Coatings occupied Area 3 until 1984 and manufactured paints using solvents, pigments, and resin. The PEA report recommends removal of TPH contaminated soil at two locations in Area 3. The TPH contamination appeared to be associated with the former underground storage tanks that were removed from this area in 1999 under the City's oversight. DTSC referred the TPH contamination in Area 3 to the City of Berkeley, Toxics Management Division.

No additional information was found. The apparent source of TPH contamination (former USTs) has been removed. Additionally, this site is downgradient of the subject site, and on the other side of the Amtrak/Union Pacific railroad corridor. Therefore, this does not appear to impact the subject site.

5.3.2.4 Berkeley Pump, 829 Bancroft Way

The former Berkeley Pump site is located approximately 426 feet east of the subject site and included a former coal storage area, two pump test pits, a former chemical manufacturing area, a machine shop, an abandoned building formerly used as a macaroni factory and a former greenhouse area.

In 1987, a soil and groundwater investigation was conducted at this site. Based on that investigation, it was recommended that further actions would be required to characterize impacts to the site. In April 1988, soils were excavated which contained petroleum hydrocarbons greater than 100 mg/kg from beneath the machine shop floor. Also, an underground fuel storage tank located southeast of the machine shop was excavated and removed in April 1988. A Phase II Environmental Site Assessment was conducted in 1988. As part of that assessment the excavation in the machine shop building was expanded. Approximately 35 cubic yards of soil was excavated. Following the excavation, five soil samples from the walls and floor of the new excavation were collected. The samples were analyzed for petroleum hydrocarbon and VOCs. No petroleum hydrocarbons or VOCs were detected in any of the five soil samples. The excavated soils were aerated onsite and one soil sample was collected. No VOCs or petroleum hydrocarbons were detected. Kerosene was detected at a concentration of 0.3 µg/L in a groundwater sample collected from a supply well in the machine shop. The RWQCB's Tier 1 ESL for kerosene is 100 µg/L. Two monitoring wells were constructed and samples were collected in May and August 1988. No petroleum hydrocarbons or VOCs were detected. A year of quarterly groundwater sampling was conducted at the Berkeley Pump site starting in March 1989 to provide the City of Berkeley with a data set to evaluate groundwater quality. Four monitoring events detected 0.36 mg/L to 2.3 mg/L of kerosene in MW-2. 1.2 to 1.3 mg/L of motor oil were detected in MW-1. Seven µg/L of xylene was detected in well MW-2 in March 1989. However, no xylene has been found in subsequent monitoring. The City of Berkeley approved the site closure for 829 Bancroft Way in May 1990.

The source of initial soil and groundwater impacts was removed, and the case was granted regulatory closure. Therefore, this does not appear to impact the subject site.

5.4 VAPOR MIGRATION

The ASTM 1527-13 standard states that "for the purposes of this practice, “migrate” and “migration” refers to the movement of hazardous substances or petroleum products in any form, including, for example, solid and liquid at the surface or subsurface, and vapor in the subsurface." Thus, this section specifies whether or not we perceive a risk of vapor migration to the subject site.

To assess a vapor migration risk we conducted a detailed review and analysis of the site-specific environmental database report and/or other reasonably ascertainable records to assess whether:

1. Off-site properties have documented chlorinated VOC contamination located within 100 feet of the subject property, or

2. Off-site properties have documented volatile petroleum hydrocarbon contamination within 30 feet of the subject property.

Given the subsurface impacts associated with the nearby Former Veriflo Facility, a vapor migration risk exists for the subsurface site. In addition, as discussed in Section 3, a Phase II Investigation was conducted by PES Environmental, Inc. in 2019, which included soil vapor, sub-slab, and indoor air sampling. Soil vapor samples were collected between 4.5 and 5.5 feet bgs and sub-slab samples were collected directly beneath the concrete slab at approximately 0.5 feet bgs. Samples were analyzed for VOCs. Concentrations of benzene, 1,1-DCA, chloroform, 1,1,1-TCA, TCE, PCE, and VC in some soil vapor and sub-slab samples exceeded 2019 RWQCB ESLs for commercial properties. Additionally, concentrations of benzene, chloroform, and naphthalene in some indoor air samples exceeded 2019 RWQCB ESLs for commercial properties. Given these detected soil vapor concentrations, an onsite vapor migration risk exists for the subject site.

5.5 ENVIRONMENTAL LIENS

According to the EDR Report dated 22 October 2019, there are no environmental liens or Activity and Use Limitations (AULs) for the subject site. This research was completed by EDR using the following Assessor Parcel Numbers provided by Haley & Aldrich:

- 056-1957-002-03
- 056-1957-002-04
- 056-1957-003-01
- 056-1957-007-01
- 056-1958-004
- 056-1958-006-03
- 056-1958-006-04
- 056-1958-014-01
- 056-1958-12
- 056-1958-3-1

A copy of the EDR Report is included in Appendix D.

6. Site Reconnaissance and Key Personnel Interview(s)

A site visit to observe subject site conditions was conducted by Brooke Mellin, P.G. of Haley & Aldrich, on 29 October 2019. Access to the subject site was provided by Jim Clark of Newmark Knight Frank.

Haley & Aldrich personnel observed accessible interior areas of the subject site buildings, including warehouses areas, offices, mechanical spaces, and common areas. Haley & Aldrich also observed the exterior portions of the subject site buildings, including the property boundaries, and observed adjoining property conditions from the subject site boundaries and/or public thoroughfares. No weather-related conditions or other conditions that would limit our ability to observe the subject site or adjoining properties occurred during our site visit.

An interview with Jim Clark of Newmark Knight Frank, the key site manager, was performed in conjunction with the site visit. Representatives from tenants Wine.Com and Ironies Fabrication were also interviewed. Per the ASTM Standard, past owners, operators, and occupants of the subject site who are likely to have material information regarding the potential for contamination at the subject property shall be contacted to the extent that they can be identified and that the information likely to be obtained is not duplicative of information already obtained from other sources. Haley & Aldrich was not provided with contact information in order to interview past owners and/or operators at the subject site. Based upon historical data collected from other sources, this potential data gap is not expected to adversely impact the results of this assessment.

The findings of the site visit and interviews are discussed below. Site photographs are included in Appendix E.

ASTM E 1527-13 Standard Section 10.8 requires that, prior to the site visit, the current subject site owner or key site manager and user, if different from the current owner or key site manager, be asked if there are any helpful documents that can be made available for review. Documents were not provided.

6.1 CURRENT USE OF THE PROPERTY

The property is currently occupied by several different tenants.

Address	Uses
747 Bancroft Way 2200 Fourth Street 2220 Fourth Street	The WINE.COM tenant space consists of several interconnected warehouses, where bottled wines are received, stored, and shipped. The warehouse has several loading docks and uses propane-powered forklifts.
701 Bancroft Way	This building is used as a glass blowing workshop.
703 Bancroft Way	This warehouse building has been subdivided into smaller workshop bays. Uses include vehicle storage, auto repair, and workshops.
705 Bancroft Way	This building is used as a painting contractor's warehouse and office area.
705A Bancroft Way	This building is used as a metal fabrication workshop.
2212 Fifth Street	This single-family residential building is currently vacant.

Address	Uses
2221 Fourth Street	This building is currently vacant.
2216 Fifth Street	This building is used as a contractor's workshop.
2222 Fifth Street 2229 Fourth Street	Ironies Fabrication currently uses this warehouse building for the fabrication of high-end furniture. Onsite operations include furniture painting, furniture assembly, storage, and office use.
2246 Fifth Street 2213 Fourth Street	These three interconnected buildings are currently vacant. They were formerly used by Acuity Brands Lighting (formerly Peerless Lighting).

6.2 GENERAL DESCRIPTION OF STRUCTURES

The subject site consists of approximately 195,00-square feet of warehouse, office, and other smaller industrial buildings, mostly constructed in the 1950s and 1960s. A single residential building exists in the northeast corner of the subject site which was constructed sometime before 1903. There are no other structures at the subject site.

6.3 USE, STORAGE, AND DISPOSAL OF PETROLEUM PRODUCTS AND HAZARDOUS MATERIALS

Petroleum products and/or hazardous materials were observed or reported to be used, stored, and/or disposed of at the subject site as described below.

6.3.1.1 Ironies Fabrication, 2229 Fourth Street & 2222 Fifth Street

Ironies uses and stores several small containers of paints (including aerosol spray paints), acrylic additive, paint thinner, paint remover, liquid silicone for molds, casting resin, and other flammable liquids, all used as part of their furniture fabrication operations. All observed containers were less than 5 gallons. These items were stored in secondary containment when not in use. *De minimis* staining was noted on the floors in several of the painting and storage rooms. Three 55-gallon drums placed on top of a plastic secondary containment pallet were also observed. The drums contained waste cleaning liquid and were labeled "water with Simple Green and coolant." Ironies personnel indicated that the drums are picked up and transported to an offsite disposal facility by a third party. The concrete slab floor throughout the Ironies warehouse was observed to be in good condition. No floor drains were observed in the vicinity of these areas.

6.3.1.2 Former Acuity Brands Lighting Warehouse Building, 2246 Fifth Street

Two 55-gallon drums were observed in the southwest corner of the former Acuity Brands Lighting parking lot, just outside the 2246 Fifth Street warehouse building. The drums were labeled and contained soil cuttings (under analysis), likely from the recent Phase II investigation conducted at the site in 2019. Results of the Phase II investigation are discussed in Section 3. The drums appeared to be in good condition with lids on and tightened.

6.3.1.3 Keene Builders Building, 2216 Fifth Street

Small amounts of paints, spray paints, wood stain, paint thinner, kerosene, and wood preservative were observed inside the building on open shelving. All containers inside were less than 1 gallon. A few containers of paint were also stored outside along the northern exterior of the building. These containers were up to 5 gallons in size. *De minimis* staining was observed along the northern exterior of the building, next to where containers were being stored. No odors or pooling of liquid was observed.

6.3.1.4 Multi-subtenant Warehouse, 703 Bancroft Way

Small amounts (less than 2 gallons) of gasoline and other car care products were observed throughout the warehouse area. A faint hydrocarbon odor was observed, as well as some staining near the vehicle storage area in the northeast corner of the warehouse. Additionally, several cracks were observed in the concrete slab flooring.

6.3.1.5 Painting Contractor's Workshop, 705 Bancroft Way.

Approximately 50 one-gallon paint cans, including house paints, paint thinner, and paint brush cleaner were observed in the shelving and on the floor at the south end of the building. Approximately six 1- to 3-gallon containers of motor oil and other car care products were observed on the floor near the entrance of the building. These items are used as part of the paint contractor's business. Painting is not conducted onsite. No spills, staining, or odors were noted inside the building, and the concrete slab floor was generally in good condition.

Waste paint stored in secondary containment containers were observed outside the building in the adjacent parking lot to the west. These containers are labeled "Latex Paint Loose Packer."

Three 55-gallon drums were observed in the southeast corner of the above-mentioned parking lot.

6.3.1.6 Metal Fabrication Workshop, 705A Bancroft Way

Small amounts (less than 1 gallon) of various chemicals and paints related to onsite operations were observed throughout the workshop. No spills, staining, or odors were noted inside the building, and the concrete slab floor was observed to be in good condition.

6.4 OTHER SUBJECT SITE OBSERVATIONS

The table below summarizes items that were observed and/or reported at the subject site during the site visit other than those items related to use, storage, and disposal of petroleum or hazardous materials (described in Section 6.3 above). If items were observed or reported, they are further described either in the table or below.

Description	Observed or Reported at Time of Site Visit	Observations/Comments
Potable Water Supply	Yes	East Bay Municipal Utility District (EBMUD)
Nearest Drinking Water Source	Yes	EBMUD
Sewage Disposal System	Yes	EBMUD
Septic System	No	
Unidentified Storage Containers	No	
Wastewater Discharge	No	
Stormwater Discharge	No	
Odors	Yes	A faint hydrocarbon odor was observed during the site walk through the 703 Bancroft Way building, likely due to onsite automobile repair and vehicle storage operations.
PCBs Associated with Electrical or Hydraulic Equipment	No	
Elevators (Traction or Hydraulic)	No	
Vehicle Maintenance Lifts	Yes	Vehicle maintenance lifts were observed in the 703 Bancroft Way warehouse. The lifts did not appear to have underground components.
Emergency Generators	No	
Sprinkler System Pumps	No	
Heating System	Yes	Buildings either have individual heating units hung in warehouse areas or a central heating system. Systems are fueled by natural gas or electricity.
Cooling System	Yes	Some buildings have central air cooling. Systems are fueled by natural gas or electricity.
Stains or Corrosion on Floors, Walls, or Ceilings	Yes	*De minimis* staining was observed on the concrete slab of the 703 Bancroft Way building, the concrete slab near the decommissioned laboratory equipment of the former Acuity Brands Lighting facility (2246 Fifth Street), on the floors in several of the painting and storage rooms in the Ironies facility (2222 Fifth Street), and along the northern exterior of the 2216 Fifth Street building. These floors were observed to be in good condition, with no exposure to the subsurface. The concrete slab in the 703 Bancroft Way building did have several cracks. No active leaks or pooling of liquid was observed. Haley & Aldrich considers this a *de minimis* condition.
Floor Drains	No	

Description	Observed or Reported at Time of Site Visit	Observations/Comments
Sumps	Yes	A manhole cover to a sump was observed in the northwest corner of the former Acuity Brands Lighting parking lot.
Catch Basins	No	
Pits, Ponds, Lagoons, and Pools of Liquid	No	
Stained Soil or Pavement	Yes	*De minimis* stained soil was observed in the unpaved alley on the east side of the 705 Bancroft Way building. No odors or obvious source of the staining was observed, though several bags of trash, debris, and two small containers of paint stripper were observed in the vicinity.
Stressed Vegetation	No	
Solid Waste and Evidence of Waste Filling	Yes	A pile consisting of several bags of trash and debris was observed on the paved part of the alley on the east side of the 705 Bancroft Way building.
Dry Wells	No	
Monitoring Wells	Yes	Evidence from previous investigations at the subject site, including monitoring wells, soil vapor locations, and piezometers, were observed in the 2220 Fourth Street building and along the perimeter of the subject site.
Water Supply Wells	No	
Irrigation Wells	No	
Injection Wells	No	
Abandoned Wells	No	

Notes:

1. *N/A items are those that were not observed or reported and/or not anticipated to be present given the nature of the site (e.g., building features not present on an undeveloped property).*

6.5 ADJOINING PROPERTY OBSERVATIONS

The subject site vicinity is mixed use, consisting of residential, commercial, and industrial properties. Dalvin Coatings Inc., a specialty coatings and sealants manufacturer, is located adjacent to the northeast area of the subject site. Beyond Dalvin Coatings is Allston Way, which also bounds a portion of the subject site to the north. Beyond Allston Way is Takara Sake USA Inc., a sake brewery. The adjoining property to the northwest consists of a warehouse building with several separate tenant units and a parking lot. The east side of the subject site is bounded by the Amtrak/Union Pacific railroad corridor. Beyond the railroad is American Soil Products. The subject site is bounded to the south by Bancroft Way followed by several industrial warehouse buildings and an auto repair shop. The subject site is bounded to the east by Fifth Street followed by a multi-family residential building, a parking lot, multi-tenant office buildings, and a café.

6.6 USER RESPONSIBILITIES

The AAI Rule requires that the User of the report consider the following:

- Whether the user has specialized knowledge about previous ownership or uses of the subject site that may be material to identifying RECs;
- whether the user has determined that the subject site's Title contains environmental liens or other information related to the environmental condition of the property, including engineering and institutional controls and Activity and Use Limitations (AULs), as defined by ASTM;
- whether the user is aware of commonly known or reasonably ascertainable information about the subject site including whether or not the presence of contamination is likely on the subject site and to what degree it can be detected; and
- whether the user has prior knowledge that the price of the subject site has been reduced for environmentally related reasons.

While such information is not required to be provided by the environmental professional(s), the information can assist the environmental professional in identifying recognized environmental conditions. The "All Appropriate Inquiries" Final Rule (40 CFR Part 312) requires that these tasks be performed by or on behalf of a party seeking to qualify for a landowner liability protection (LLP) to CERCLA liability.

Haley & Aldrich did not receive a completed questionnaire; however, the absence of this information is not considered significant to our conclusions.

7. Findings and Opinions

7.1 DATA GAPS

Our ability to identify and evaluate RECs at the subject site is conditioned upon data gaps identified as part of this Phase I.

No significant data gaps were identified during the performance of this Phase I. Thus, it is our opinion that sufficient information was obtained to identify subject site conditions indicative of releases or threatened releases of hazardous substances and petroleum hydrocarbons. Our opinion is limited by the conditions prevailing at the time our work is performed and the applicable regulatory requirements in effect.

7.2 RECOGNIZED ENVIRONMENTAL CONDITIONS

The ASTM E 1527-13 Standard defines a REC in part as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

Our opinion regarding a REC's potential impact on the subject site is based on the scope of our work, the information obtained during the course of our work, the conditions prevailing at the time our work was performed, the applicable regulatory requirements in effect at the time our work was performed, our experience evaluating similar sites, and on our understanding of the client's intended use for the subject site.

The following RECs were identified in connection with the subject site:

REC #1: Chlorinated pesticides, solvents, and petroleum hydrocarbons impacting soil and groundwater from the former site use as various pesticide companies, located at 2220 Fourth Street (West Block).

Historical site uses including former pesticide mixing has resulted in the release of chlorinated pesticides, solvents, and petroleum hydrocarbons to soil and groundwater beneath the property at 2220 Fourth Street on the West Block. The previous onsite business operations historically used PCP, kerosene, diesel, metals, hydrocarbon fuels, oils, lubricant, degreasers, cutting fluids, solvents, acids, bases, and dyes/paint intermediates. Historical and more recent soil and groundwater investigations indicate that soil and groundwater onsite have been impacted from vertical and lateral migration of these hydrocarbon and organochlorine pesticide contaminants.

Historically detected concentrations of hydrocarbons include TPHd up to 39,000 µg/L in groundwater. PCP was identified up to 460 mg/kg in onsite soil samples. TPH as kerosene (jet fuel) was found up to 6,000 mg/kg in soil and up to 10,000 mg/kg of other hydrocarbon ranges were found in soil. More recent data from the August 2019 PES Environmental, Inc. Phase II indicates that soil on the western edge of the property contains PCP at up to 369 mg/kg, chlordane at up to 44 mg/kg, endrin at up to 3.4 mg/kg, and dieldrin at up to 6.81 mg/kg at the locations sampled. Groundwater results from the recent

Phase II indicate that groundwater beneath the site is impacted with organochlorine pesticides, primarily as PCP (up to 4,590 µg/L).

REC #2: VOC impacts to groundwater at 2246 Fifth Street, in the southeast corner of the East Block of the subject site from the offsite former Veriflo facility (East Block).

The former Veriflo Facility is located approximately 200 feet east-southeast of the East Block of the subject site and operated as a metals-finishing plant. Historical metals finishing operations at the site resulted in the release of VOCs, primarily TCE, PCE, and VC, to groundwater. Investigations indicate that groundwater impacts had migrated offsite towards the northwest. Soil vapor results indicated vapor concentrations of COPCs were below respective ESLs, with the exception of VC which was detected at two offsite soil vapor sample locations at concentrations greater than the ESL. Due to the proximity and upgradient location of this site relative to the subject site, as well as known impacts to Veriflo's offsite groundwater monitoring wells (at the subject site), it is likely that this site has impacted groundwater conditions at the subject site. The results of the recent PES Environmental, Inc. Phase II assessment indicate that groundwater in the southeastern portion of the eastern block is impacted with low level VOCs, which have likely migrated from the Veriflo site.

REC #3: Impacts to soil, soil vapor, groundwater, and indoor air from unknown onsite and/or offsite sources on West Block of subject site, including diesel range organics, chlorinated solvents, chlorinated pesticides, and heavy metals (West Block).

Several of the subject site facilities currently use chlorinated solvents, hazardous materials, and petroleum products. Additionally, historical site use of several subject site facilities has had documented uses of these products. No spills or evidence of any releases were reported for current or historical facilities. However, the current and historical uses of these chemical products at the subject site may have contributed to impacts identified during PES Environmental, Inc.'s Phase II Investigation conducted in 2019.

Nearby sites may have also contributed to these impacts, such as the Dalvin Paint Company/Dalvin Coatings site, which is located adjacent to the subject site to the northwest. The Dalvin Paint Company site has been used for paint manufacturing since the 1970s (see Section 5.3.2).

Recent data from the August 2019 PES Environmental, Inc. Phase II indicates that soil on the western edge of the West Block contains pesticides as described in REC #1. Groundwater results from the recent Phase II indicate that groundwater beneath the site is impacted with organochlorine pesticides, VOCs, and dissolved metals as described in REC #1. The general central portion of the West Block including the property at 2220 Fourth Street and the area immediately to the east contain the highest concentrations of elevated organochlorine pesticides and VOCs slightly above ESLs in groundwater. Dissolved metals including arsenic, copper, lead, and zinc were detected at elevated levels across the site with the highest concentrations in the groundwater samples collected from the southwestern corner of the property. Arsenic was detected at up to 322 µg/L, copper at up to 3,160 µg/L, lead at up to 1,200 µg/L, and zinc at up to 8,900 µg/L in collected grab groundwater samples. Soil gas and sub-slab soil gas samples collected from beneath the site indicate that VOCs, primarily as benzene, 1,1-DCE, TCE, and PCE are present above ESLs.

7.3 CONTROLLED RECOGNIZED ENVIRONMENTAL CONDITIONS

The ASTM E 1527-13 Standard defines a CREC as a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.

One CREC was identified in connection with the subject site.

CREC #1: Engineered cap present at the former Peerless Electric property located at 2220 Fourth Street (West Block).

A soil investigation conducted in 1983 identified aldrin, heptachlor, and chlordane at hazardous levels and chlordane and heptachlor were detected in the underlying groundwater. Voluntary remedial actions were undertaken to remove source area soils within the primary area where chemical mixing operations had been performed, including at the site, an unpaved area within the former building. About 80 cubic yards of soil were excavated and removed from the site in 1984 and the area was backfilled with imported soils. Following the soil removal action, the site was redeveloped with the existing building and a new concrete slab-on-grade floor was constructed as an engineered cap which fully covered the formerly unpaved area.

7.4 HISTORICAL RECOGNIZED ENVIRONMENTAL CONDITIONS

The ASTM E 1527-13 Standard defines an HREC as "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)."

One HREC was identified in connection with the subject site.

HREC #1: Case closure granted by Berkeley Toxics Management Division for former UST and impacts related to the former foundry in the southwest corner of the subject site (West Block).

Delicor, a vending machine sales and service company, occupied the approximately 1-acre southwest corner of the subject site (includes current buildings 701, 703, 705, and 705A Bancroft Way). Delicor installed a 5,000-gallon UST in 1984 to store unleaded gasoline for the company vehicles. The tank was permitted and inspected by the Berkeley Fire Department and is the only known UST to have been used at this site.

In September 1991, the 5,000-gallon gasoline UST was removed. Soil samples collected following removal of the UST contained no detectable levels of hydrocarbon contamination. In January 1992, Subsurface Consultants, Inc. (SCI) performed an additional environmental investigation including the drilling and sampling of 18 test borings. In their conclusions and recommendations, SCI listed three environmental concerns that would require further study and remediation. These three concerns were: foundry wastes, oil and grease contamination, and possible groundwater contamination. In April 1992, groundwater samples were collected downgradient of the former UST. Results indicated that there were no petroleum hydrocarbon impacts to either soil or groundwater in the vicinity of the former UST

site. In September 1992, an additional investigation found that foundry material exists beneath the slab floor of the current 703 Bancroft Way building ranging in depth from 4 inches to 3.5 feet below the bottom of the slab. The soil and foundry material beneath this building contained metals at less than the established TTLC and STLC levels, and did not require any remedial action. It was recommended that they be left in place underneath the concrete floor of the building. Total oil and grease results from a depth of 4 to 4.5 feet bgs ranged from 10 to 90 ppm.

In January of 1993, additional investigative and remedial work was conducted at this site, including the excavation and disposal of hydrocarbon impacted soil known to be present near the former compressor area. A groundwater investigation was conducted in early 1993 to determine groundwater gradients and quality beneath this site. The only detection of concern during this investigation was the presence of arsenic in one sample from one temporary piezometer at 80 ppb, exceeding the MCL for drinking water at 50 ppb.

On 12 April 1995, a closure letter for the site was issued by the City of Berkeley Emergency and Toxic Management Program (now Berkeley Toxics Management Division). The letter indicated that confirmation sampling appeared to show background levels of metals and the City had no further requirements for this site at that time.

Even though closure was issued for this case, foundry material and residual impacts still remain at this area of the subject site.

7.5 DE MINIMIS CONDITIONS

The ASTM E 1527-13 Standard defines *de minimis* conditions as those conditions which "do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies." The ASTM E 1527-13 Standard notes that "conditions determined to be *de minimis* are not recognized environmental conditions."

The following *de minimis* conditions listed below were identified in connection with the subject site.

***De Minimis* #1: Staining on floors observed throughout various subject site buildings, including Ironies Fabrication (2222 Fifth Street), Keene Builders (2216 Fifth Street), and former Acuity Brands Lighting (2246 Fifth Street).**

De minimis staining was observed on the concrete slab floors of various subject site buildings, including Ironies Fabrication (2222 Fifth Street), Keene Builders (2216 Fifth Street), and former Acuity Brands Lighting (2246 Fifth Street). These concrete slabs were observed to be in good condition, with no cracks or exposure to the subsurface. No active leaks, odors, or pooling of liquid were observed.

***De Minimis* #2: Staining and odor observed in the multi-tenant warehouse building located at 703 Bancroft Way.**

De minimis staining and a faint hydrocarbon odor were observed near the vehicle storage area in the northeast area of the warehouse located at 703 Bancroft Way. Additionally, several cracks were observed in the concrete slab flooring. It is possible that releases of hazardous materials and/or petroleum products may have occurred through cracks in the building's foundation. If these buildings

are demolished in the future, the underlying conditions should be inspected for signs of potential impacts and sampling should be performed as warranted in order to assess the subsurface environment for these potential releases.

***De Minimis* #3: Stained soil observed along the eastern side of the painting contractor's workshop located at 705 Bancroft Way.**

De minimis stained soil was observed in the unpaved alley on the east side of the 705 Bancroft Way building. No odors or obvious source of the staining was observed, though several bags of trash, debris, and two small containers of paint stripper were observed in the vicinity.

7.6 POTENTIAL ENVIRONMENTAL CONCERNS

Potential environmental concerns identified in association with the redevelopment of the subject site include:

- The central area of the East Block was used as a nursery from the early 1900s until sometime between 1929 and 1950. The nursery included several onsite greenhouses. Residual concentrations of pesticides and associated metals such as arsenic, copper sulfates, lead, and mercury, may be present in shallow soil as a result of past agricultural activities.
- The single residential building in the northeast corner of the subject site was constructed sometime before 1903. Given the age of this building, there is a potential for a historical home heating oil UST to exist in the vicinity of the structure.

8. Conclusions

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of the ASTM Practice E 1527 of the property located on two contiguous city blocks that are generally bounded by Allston Way to the north, Fifth Street to the east, Bancroft Way to the south, and the Union Pacific and Amtrak Railroad corridor to the west, in Berkeley, California. Any exceptions to or deletions from, this practice are described in Section 1.4 of this report.

This assessment has revealed evidence of three RECs, one HREC, and one CREC in connection with the property. We do not recommend additional assessment at this time.

9. Environmental Professional Certification

The undersigned declare the following:

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of 40 CFR Part 312.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Brooke Mellin, P.G.
Assistant Project Manager

Jason Grant, P.E.
Senior Project Manager

10. Credentials

This Phase I report was prepared by Brooke Mellin, P.G., under the direct supervision of Jason Grant, who served as the Environmental Professional for this project. Qualification information for the project personnel is provided below.

Brooke Mellin, P.G.
Assistant Project Manager

Ms. Mellin holds a B.A. in Geology and an M.A. in Earth and Planetary Science from UC Berkeley and is a California Professional Geologist. Ms. Rumley has 6 years of environmental consulting experience and has been involved in a wide range of environmental investigation and remediation projects including soil, soil gas, and groundwater cleanup sites.

Jason Grant, P.E.
Senior Project Manager

Mr. Grant is senior project manager and environmental engineer with more than 19 years of environmental consulting experience. Mr. Grant has designed, managed, and implemented environmental investigations on a variety of project sites, including commercial/industrial facilities and research complexes, dry cleaning facilities, gas stations, electric substations, waterways, ports and harbors, lumber yards, and landfills.

11. Glossary and Other Descriptions

11.1 GLOSSARY

All Appropriate Inquiry (AAI) — that inquiry constituting "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined in CERCLA, 42 U.S.C §9601(35)(B), that will qualify a party to a commercial real estate transaction for one of threshold criteria for satisfying the LLPs to CERCLA liability (42 U.S.C §9601(35)(A) & (B), §9607(b)(3), §9607(q); and §9607(r)), assuming compliance with other elements of the defense.

Business Environmental Risk — a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice. Consideration of business environmental risk issues may involve addressing one or more non-scope considerations.

Controlled Recognized Environmental Condition (CREC) – a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

Data Gap — a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information. Data gaps may result from incompleteness in any of the activities required by this practice, including, but not limited to site reconnaissance (for example, an inability to conduct the site visit), and interviews (for example, an inability to interview the key site manager, regulatory officials, etc.).

De Minimis Conditions — conditions which do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* conditions are not recognized environmental conditions nor controlled recognized environmental conditions.

Environmental Professional — a person meeting the education, training, and experience requirements as set forth in 40 CFR §312.10(b).

Historical Recognized Environmental Condition (HREC) — a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

Key Site Manager — the person identified by the owner or operator of a property as having good knowledge of the uses and physical characteristics of the property.

Material Threat —a physically observable or obvious threat which is reasonably likely to lead to a release that, in the opinion of the environmental professional, is threatening and might result in impact to public health or the environment. An example might include an aboveground storage tank system that contains a hazardous substance and which shows evidence of damage. The damage would represent a material threat if it is deemed serious enough that it may cause or contribute to tank integrity failure with a release of contents to the environment.

Orphan Site — (not ASTM E 1527-13 definition) — sites that could not be mapped due to poor or inadequate address information.

Recognized Environmental Condition (REC) — the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. *De minimis* conditions are not recognized environmental conditions.

11.2 DESCRIPTIONS OF DATABASES SEARCHED

Numerous regulatory databases were searched during this Phase I. Each database reviewed is described in the database report presented in Appendix D. Those databases required by the ASTM E 1527-13 Standard are identified below.

1. **NPL Sites:** The National Priorities List (NPL) is a list of contaminated sites that are considered the highest priority for cleanup by the U.S. Environmental Protection Agency (USEPA).

2. **Delisted NPL Sites:** The Delisted National Priorities List (NPL) is a list of formal NPL sites formerly considered the highest priority for cleanup by the USEPA that met the criteria of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) for deletion from the NPL because a no further response was appropriate.

3. **CERCLIS Sites:** The Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) list identifies sites which are suspected to have contamination and require additional investigation to assess whether they should be considered for inclusion on the NPL.

4. **CERCLIS-NFRAP Sites:** CERCLIS-NFRAP status indicates that a site was once on the CERCLIS List but has No Further Response Actions Planned (NFRAP). Sites on the CERCLIS-NFRAP List were removed from the CERCLIS List in February 1995 because, after an initial investigation was performed, no contamination was found, contamination was removed quickly, or the contamination was not significant enough to warrant NPL status.

5. **Federal ERNS:** The Federal Emergency Response Notification System (ERNS) list tracks information on reported releases of oil and hazardous materials.

6. **RCRA non-CORRACTS TSD facilities:** The Resource Conservation and Recovery Act (RCRA) non-CORRACTS TSD Facilities List tracks facilities which treat, store, or dispose of hazardous waste and are not associated with corrective action activity.

7. **RCRA CORRACTS TSD facilities:** The RCRA CORRACTS TSD Facilities list catalogues facilities that treat, store, or dispose of hazardous waste and have been associated with corrective action activity.

8. **RCRA Generators:** The RCRA Generator list is maintained by the USEPA to track facilities that generate hazardous waste.

9. **Federal Institutional Controls/Engineering Controls:** The Federal Institutional Control list and Engineering Control list are maintained by the USEPA. Some Institutional Control and Engineering Control information may not be made publicly available and therefore will not be included on this registry.

10. **State and Tribal Equivalent NPL/CERCLIS Sites:** The (ASTM E 1527-13 Standard) requires searching "State and Tribal Equivalent NPL Sites." In California, the equivalent NPL is the Response/State Response Sites, which is maintained by the Department of Toxic Substances Control.

11. **State and Tribal Equivalent CERCLIS Sites:**

    The (ASTM E 1527-13 Standard) requires searching "State and Tribal Equivalent CERCLIS Sites." In California, the equivalent CERCLIS is the EnviroStor Database, which is maintained by the Department of Toxic Substances Control.

12. **State and Tribal Registered Storage Tanks:** The State Water Resources Control Board (SWRCB) maintains a list of aboveground and underground storage tanks registered with the SWRCB.

13. **State and Tribal Landfills and Solid Waste Disposal Sites:** SWRCB maintains a list of regulated waste disposal sites.

14. **State and Tribal Leaking Storage Tanks:** SWRCB maintains a list of Leaking Storage Tanks (LUST/LAST). The LUST/LAST lists are a listing of release sites that have an Underground or Aboveground Storage Tank listed as the source.

15. **State and Tribal Voluntary Cleanup Sites:** The DTSC maintains a list of Voluntary Cleanup sites.

16. **State and Tribal Brownfield Sites:** The SWRCB maintains a list of Brownfield sites which includes properties where redevelopment or re-use may be compromised by the presence or presumed presence of hazardous materials or petroleum.

12. References

1. Topographic Map, 5641112 Oakland West, United States Geological Survey 7.5 minute series, 2012.

2. Haley & Aldrich, Inc., site visit conducted by Brooke Mellin, P.G. on 29 October 2019.

3. Jim Clark of Newmark Knight Frank, interview with Haley & Aldrich, 29 October 2019.

4. Environmental Data Resources, Inc., Database Report, dated 17 October 2019.

5. Berkeley Toxics Management Division, 1947 Center Street, Berkeley, California, review of files by Haley & Aldrich, 7 November 2019.

6. Department of Toxic Substances Control, 700 Heinz Avenue, Berkeley, California, review of files by Haley & Aldrich, 8 November 2019.

7. Phase I Environmental Site Assessment, Peerless Research and Community Development Project, Berkeley, California, 6 April 2015, Prepared by Baseline Environmental Consulting, Prepared for LSA Associates, Inc.

8. Draft Limited Phase II Investigation (Draft Tables, Figures, and Boring Logs Only), Fourth and Fifth Streets, Berkeley, California, August 2019, Prepared by PES Environmental, Inc.

9. Supplemental Site Information Report and Soil and Groundwater Management Plan, 2220 Fourth Street, Berkeley, California, July 2016, Prepared by Fugro USA Land, Inc.

FIGURES

HALEY ALDRICH

HERST PROPERTIES
PHASE I ENVIRONMENTAL SITE ASSESSMENT
BERKELEY, CALIFORNIA

PROJECT LOCUS

MAP SOURCE: ESRI
SITE COORDINATES: 37°51'49"N, 122°17'52"W

APPROXIMATE SCALE: 1 IN = 2000 FT
NOVEMBER 2019

FIGURE 1

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\134361\134361_002\GIS\Maps\2019_11\134361_002_0001_PROJECT_LOCUS.mxd — USER: lphillips — LAST SAVED: 11/5/2019 4:22:20 PM

DRAFT

LEGEND

- FORMER ACUITY BRANDS LIGHTING
- IRONIES FABRICATION ASSEMBLY
- WINE.COM
- FORMER PEERLESS ELECTRIC SITE
- SITE BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ASSESSOR PARCEL DATA SOURCE: ALAMEDA COUNTY
3. AERIAL IMAGERY SOURCE: EAGLEVIEW, 2017

N

0 80 160

SCALE IN FEET

HALEY ALDRICH

HERST PROPERTIES
PHASE I ENVIRONMENTAL SITE ASSESSMENT
BERKELEY, CALIFORNIA

SITE PLAN

NOVEMBER 2019

FIGURE 2

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\134361\134361-002\GIS\Maps\2019_11\134361_002_0002_SITE_PLAN.mxd — USER: apiestrzeniewicz — LAST SAVED: 11/13/2019 11:31:32 AM

APPENDIX A

Limitations

APPENDIX A

Haley & Aldrich, Inc. Limitations

Environmental site assessment ("ESA") reports prepared by Haley & Aldrich, Inc. (Haley & Aldrich) are for the sole and exclusive use of its Client. Haley & Aldrich represents that the ESA was prepared in accordance with the ASTM International Standard E1527-13 entitled "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" ("ASTM E 1527 13"). The findings, opinions, conclusions and information contained in the ASTM E 1527-13 ESA are limited to, and solely based upon, information reasonably ascertainable by Haley & Aldrich at the time the ASTM E 1527-13 ESA was completed.

All users of this ASTM E 1527-13 ESA are bound to the terms and conditions and limitations contained in the accompanying Proposal, Terms & Conditions, and Limitations for this ASTM E 1527-13 ESA. The findings, opinions, conclusions and information contained in this report are based solely on the Scope of Services provided pursuant to the Proposal and its attachments and the information reasonably ascertainable by Haley & Aldrich at the time the ASTM E 1527-13 ESA was completed. Haley & Aldrich has not performed any additional observations, investigations, studies, or other testing not specified in the Scope of Services. Haley & Aldrich shall not be liable for the existence of any condition the discovery of which would have required the performance of services not authorized under the Scope of Services.

This ASTM E 1527-13 ESA is prepared for the exclusive use of Haley & Aldrich's client in connection with the subject property for the purpose of assessing the potential or existing environmental contamination liabilities associated with the subject property. There are no intended beneficiaries other than Haley & Aldrich's client. Haley & Aldrich shall owe no duty whatsoever to any other person or entity by issuing the ASTM E 1527-13 ESA. Use of this ASTM E 1527-13 ESA by any person or entity, including by Haley & Aldrich's client, for a purpose other than for the purpose of assessing the potential or existing environmental contamination liabilities associated with the subject property is expressly prohibited unless such person or entity obtains written authorization from Haley & Aldrich indicating that the ASTM E 1527-13 ESA is adequate for such other use. Use of this ASTM E 1527-13 ESA by any person or entity for such other purpose without written authorization by Haley & Aldrich shall be at such person's or entity's sole risk and shall be without legal exposure or liability to Haley & Aldrich.

Haley & Aldrich may authorize third-party reliance on the ASTM E 1527-13 ESA by providing reliance letters to third party(ies) provided that the third party(ies) agree: (1) to use the ASTM E 1527-13 ESA only for the purpose of assessing the potential or existing environmental contamination liabilities associated with real property; (2) to be bound by the terms and conditions and limitations contained in the ASTM E 1527-13 ESA and the Proposal and its attachments, Terms & Conditions, and Limitations; (3) to accept the form and substance of Haley & Aldrich's reliance letter; and (4) to deliver to Haley & Aldrich a signed copy of a reliance letter by an authorized representative of the relying party, within thirty (30) days after said reliance letter is provided to the relying party, signifying the relying party's acceptance of the aforementioned conditions. Upon Haley & Aldrich's receipt of the signed reliance letter by the relying party(ies), the relying party(ies) will be authorized to rely on Haley & Aldrich's ASTM E 1527-13 ESA for the limited purpose of identifying potential or existing environmental contamination liabilities associated with the subject property. The relying party(ies) agrees to bind each of its respective successors and assigns to the aforementioned terms and conditions.

This ASTM E 1527-13 ESA reflects site conditions observed and described by records available to Haley & Aldrich as of the date of ASTM E 1527-13 ESA preparation. The passage of time may result in significant changes in site conditions, technology, or economic conditions, which could alter the findings and/or recommendations of the ASTM E 1527-13 ESA. Accordingly, Haley & Aldrich's client and any other party to whom the ASTM E 1527-13 ESA is provided recognize and agree that Haley & Aldrich shall bear no liability for deviations from observed conditions or available records after the time of ASTM E 1527-13 ESA preparation. Haley & Aldrich makes no express or implied representation that the information contained in the ASTM E 1527-13 ESA has continued viability after 180 days of the ASTM E 1527-13 ESA's completion date, and any use or reliance on the ASTM E 1527-13 ESA after 180 days of the ASTM E 1527-13 ESA's completion date by Haley & Aldrich's client or any other authorized person or entity will be at that party's sole risk and without liability to Haley & Aldrich.

Notwithstanding anything contained herein, Haley & Aldrich shall not be liable for any claim or damage arising from environmental contamination liabilities that occurred on the subject property after the effective date of the ASTM E 1527-13 ESA. Likewise, Haley & Aldrich shall not be liable for any existing or future property owner's failure to satisfy any continuing obligation for CERCLA liability protection or under the Federal Environmental Protection Agency's All Appropriate Inquiries rule.

APPENDIX B

Previous Reports

PHASE I ENVIRONMENTAL SITE ASSESSMENT

6 APRIL 2015

PEERLESS RESEARCH AND COMMUNITY DEVELOPMENT PROJECT
Berkeley, California

For:

LSA Associates, Inc.

14201-00.002.02310

BASELINE ENVIRONMENTAL CONSULTING
5900 Hollis Street, Suite D, Emeryville, CA 94608 | P: (510) 420-8686 | F: (510) 420-1707 | www.baseline-env.com

PHASE I ENVIRONMENTAL SITE ASSESSMENT

6 APRIL 2015

PEERLESS RESEARCH AND COMMUNITY DEVELOPMENT PROJECT
Berkeley, California

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PHASE I ENVIRONMENTAL SITE ASSESSMENT

Peerless Research and Community Development Project
Berkeley, California

EXECUTIVE SUMMARY

A 5.5-acre mixed-use redevelopment, referred to as the Peerless Research and Community Development Project ("Project"), is being proposed by De Tienne Associates. The Project site is located on two contiguous city blocks (referred to as the "West Block" and the "East Block") that are generally bounded by Allston Way to the north, Fifth Street to the east, Bancroft Way to the south, and the Union Pacific and Amtrak Railroad corridor to the west (Figure 1). The purpose of this Phase I Environmental Site Assessment ("ESA") is to support environmental review of the proposed Project under the California Environmental Quality Act.

This Phase I ESA was performed in accordance with ASTM International's (2013) standard practice E1527-13 ("ASTM E1527-13"). In accordance with ASTM E1527-13, sources of environmental contamination in connection with the Project site were identified as Recognized Environmental Conditions ("RECs"). This Phase I ESA has identified the following RECs in connection with the Project site:

- Potential hazardous materials releases from two former R&D laboratories and a plastic manufacturer on the East Block of the Project site (Figure 4);
- Potential hazardous materials releases from a former die casting factory on the West Block of the Project site (Figure 4);
- Potential petroleum hydrocarbons and solvents in groundwater from the adjacent Dalbin Paint Company (also referred to as the Davlin Paint Company) at 700 Allston Way (Figure 2);
- Known chlorinated solvents in groundwater beneath the Project site from a regional groundwater plume (Figure 6);
- Known chlorinated pesticides, solvents, and petroleum hydrocarbons in soil and groundwater at 2220 Fourth Street on the Project site (Figures 6 – 9);
- Known metals and oil and grease in soil and petroleum hydrocarbons in groundwater at 705 Bancroft Way on the Project site (Figure 10); and
- Known petroleum hydrocarbons in soil at 2213 Fourth Street on the Project site (Figure 2).

Prior to Project construction and earthwork activities, a subsurface investigation should be performed to characterize the chemical quality of soil and groundwater beneath the Project site. The purposes of the subsurface investigation would be to:

1. Identify potentially undocumented releases of hazardous materials from historical land uses (if any) that may require response actions under regulatory oversight;

2. Pre-characterize soil quality to evaluate reuse and disposal options at permitted facilities;
3. Pre-characterize groundwater quality to evaluate proper storage and disposal options during construction dewatering activities;
4. Evaluate potential vapor intrusion concerns for future residents and commercial workers; and
5. Evaluate construction worker health and safety considerations.

ENVIRONMENTAL PROFESSIONAL STATEMENT

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental professional* as defined in §312.10 of 40 CFR § 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject project. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Yane Nordhav
Principal
Prof. Geologist No. 4009

Patrick Sutton
Environmental Engineer

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Peerless Research and Community Development Project
Berkeley, California

1. INTRODUCTION

A 5.5-acre mixed-use redevelopment, referred to as the Peerless Research and Community Development Project ("Project"), is being proposed by De Tienne Associates. The Project site is located on two contiguous city blocks (referred to as the "West Block" and the "East Block") that are generally bounded by Allston Way to the north, Fifth Street to the east, Bancroft Way to the south, and the Union Pacific and Amtrak Railroad corridor to the west (Figure 1). The Project site consists of 13 one- and two-story industrial buildings and a two-story residence located on portions of the two developed city blocks. There are currently 14 addresses associated with the Project site and the current tenants and land uses associated with each of the addresses are summarized in Table 1. The proposed Project would result in the demolition of all existing structures and pavement on the Project site and would redevelop the site for mixed uses, including: residential, office, commercial, retail, and manufacturing/industrial uses and associated at-grade and structured parking, landscaping, and infrastructure improvements.

BASELINE Environmental Consulting ("BASELINE") has prepared this Phase I Environmental Site Assessment ("ESA") for the Project site. This Phase I ESA was performed in accordance with ASTM International's (2013) Standard Practice E1527-13 ("ASTM E1527-13"). In accordance with ASTM E1527-13, sources of environmental contamination in connection with the Project site were identified as Recognized Environmental Conditions[1] ("RECs"). The purpose of this Phase I ESA is to support environmental review of the proposed Project under the California Environmental Quality Act.

2. METHODOLOGY

In accordance with ASTM E1527-13, standard data sources were reviewed to identify sites associated with hazardous materials within up to 1 mile of the Project site. The data sources included a site reconnaissance, United States Geological Survey topographic maps, Sanborn Fire Insurance Maps, historical aerial photographs, environmental records derived from regulatory agency databases, and previous environmental investigations. Based on the review of data

[1] RECs are defined in ASTM E1527-13 as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment." According to ASTM E1527-13, the term "REC" is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

sources, potential sites of concern were further evaluated to identify releases of hazardous materials that could result in a REC in connection with the Project site.

3. REVIEW OF DATA SOURCES

3.1 Physical Setting

The Project site consists of relatively flat terrain at an elevation of about 25 feet above mean sea level[2] (United States Geological Survey, 1993) and is underlain by Holocene alluvium (Graymer, R.W, et al., 2006). The Berkeley Aquatic Park is located about 415 feet west of the Project site. The general groundwater flow direction in the Project vicinity has been reported toward the west and northwest with groundwater depths ranging from about 5 to 12 feet below ground surface (Fugro West, Inc., 2007).

3.2 Site Reconnaissance

On 20 February 2015, BASELINE conducted a site reconnaissance to identify evidence of potential hazardous materials releases on the Project site and on adjoining properties. Evidence of potential hazardous materials releases could include on-site waste disposal, apparent odors, stained or discolored surfaces, and stressed or damaged vegetation. Patrick Sutton from BASELINE performed the site reconnaissance by walking through the interior and around the exterior of accessible buildings on the Project site. Darrell deTienne, the owner of De Tienne Associates, manages the tenant properties on the Project site and was present during the site reconnaissance to provide access to buildings and answer questions about the Project site.

Mr. deTienne reported that previous environmental assessments and investigations have been performed on portions of the Project site. Mr. deTienne was not aware of any hazardous materials releases on the Project site that were not previously investigated. A review of the previous environmental investigations on the Project site is provided under Section 4.2, *Known Releases*.

Current land uses observed on the Project site during the site reconnaissance primarily included manufacturing, research and development ("R&D"), storage, and office space. There were 19 facilities generally associated with 12 tenant spaces (two of which were vacant) observed during the site reconnaissance (Table 1 and Figure 2). Business owners and/or managers for each tenant space visited by BASELINE were interviewed regarding use and storage of hazardous materials (if any) at their facility. The mangers at each facility were not aware of any chemical releases or on-site disposal of chemicals (e.g., discharges to sink drains) during their operations. Small quantities (5 gallons or less) of paints, oils, and solvents used for manufacturing or R&D were observed at eight of the facilities (Table 1). Evidence of a release associated with the use of hazardous materials was only observed at one of the facilities: Ornamental Metal Fabrication at 703 Bancroft Way (Table 1 and Figure 2). Minor oil staining was observed on the concrete floor around the base of several machines and a work bench used for metal fabrication (Figure 3). Absorbent-powder materials had been spread over each

[2] Relative to the National Geodetic Vertical Datum of 1929.

stained area. Based on the relatively small areas of staining, it did not appear that the releases would present a significant environmental concern and could be considered *de minimus*.

A soil stockpile from excavation of a drainage line along the west side of the Peerless building at 2213 Fourth Street (on the East Block) was observed in the Peerless parking lot. On 23 January 2015, Fugro Consultants, Inc. collected a soil sample from the stockpile. The analytical results from the soil sample are discussed under Section 4.2, *Known Release Sites*, below.

As summarized in Table 1, not all buildings were accessible during the site reconnaissance; however, according to Mr. deTienne, the inaccessible buildings do not currently store or use hazardous materials. Surrounding land uses included light industrial, manufacturing, office, residential, and railroads. Evidence of potential hazardous materials releases adjacent to the Project site was not observed.

3.3 Historical Land Use Records

The Project site is located in the City's Environmental Management Area (City of Berkeley, 2015), which is known or suspected to have groundwater contamination due to a long history of hazardous materials users, such as manufacturers, laboratories, and auto repair shops (City of Berkeley, 1993). BASELINE reviewed historical land use records for the Project site to identify potential sources of hazardous materials that may have resulted in a REC in connection with the Project site. Historical land uses on the Project site were determined by reviewing Sanborn Fire Insurance Maps between 1903 and 1980 (Environmental Data Resources Inc. ["EDR"], 2015a) and historical aerial photographs between 1939 and 2012 (EDR, 2015b). Select Sanborn Fire Insurance Maps and aerial photographs were geocoded and imported into a Geographic Information System ("GIS") to spatially analyze land use developments relative to the Project site. Copies of the historical land use records reviewed for this Phase I ESA are included in Appendix A. The approximate locations of historical land uses potentially associated with hazardous materials are shown on Figure 4.

3.3.1 West Block

As early as 1911, the West Block of the Project site was developed for metal work operations, which have included a blacksmith, pattern shop, die casting factory, machine shop, and two foundries (Figure 4). The primary contaminants of concern associated with former metal work operations are chlorinated solvents, metals, total petroleum hydrocarbons as diesel ("TPHd"), total petroleum hydrocarbons as motor oil ("TPHmo"), cyanide, and acids (Oregon Department of Environmental Quality ["DEQ"], 2001). Circa 1980, an exterminator contractor occupied the central portion of the West Block (Figure 4). The primary contaminants of concern associated with an exterminator contractor are pesticides. As discussed under Section 4.2, *Known Release Sites*, soil and contamination from historical land uses on the central and southwest portions of the West Block have been identified during previous environmental investigations.

The adjacent properties to the Project site on the northwest portion of the West Block have also included metal work operations, as well as paint and oil storage (Figure 4). Previous

environmental investigations performed for Dalbin Paint Company in this area are discussed under Section 4.2, *Known Release Sites*.

As early as 1903, a railroad corridor has been located immediately west of the Project site on the West Block (Figure 4). The primary contaminants of concern associated with railway operations include TPHd and TPHmo from leaking engines and rail cars, creosote for preserving wood ties, and arsenic and organochlorine pesticides used for weed abatement (Oregon DEQ, 2001). Previous environmental investigation performed along the railroad corridor are discussed under Section 4.2, *Known Release Sites*. Areas of the West Block with a history of hazardous material uses that have not been previously investigated are discussed further under Section 4.1, *Potential Release Sites*.

3.3.2 East Block

As early as 1903, the East Block of the Project site was developed for plant nurseries (e.g., green houses). The first land uses potentially associated with hazardous materials were two R&D labs and a plastic cup molding factory developed circa 1980 (Figure 4). There is a relatively wide variety of potential contaminants that could be associated with both R&D laboratories and plastic manufacturers. Site-specific environmental investigations have not been performed on the East Block; therefore, these sites are discussed further under Section 4.1, *Potential Release Sites*.

3.4 Environmental Records

BASELINE reviewed environmental records that were reasonably ascertainable[3] from standard sources[4] to identify RECs in connection with the Project site. Standard environmental record sources for state-registered aboveground storage tank ("AST") sites were not reviewed, because the records were not reasonably ascertainable. All facilities that have registered ASTs are required to submit information annually to the California Environmental Reporting System ("CERS"). Information about facilities stored in the CERS database is not currently available to the public.

The United States Environmental Protection Agency ("USEPA") oversees facilities that generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act ("RCRA"). In California, the State Water Resources Control Board ("SWRCB") and Department of Toxic Substances Control ("DTSC") oversee the cleanup of contaminated properties. The SWRCB and DTSC also oversee the State's underground storage tank ("UST") program and permitted hazardous waste facilities, respectively, to minimize the potential threat of future hazardous materials releases. The environmental record sources reviewed for this Phase I ESA were derived from the USEPA (2015) *RCRAInfo Database*, SWRCB

[3] Information that is 1) publically available, 2) obtainable from its source within reasonable time and cost restraints, and 3) practically reviewable (ASTM E1527-13).

[4] Defined in Section 8 of ASTM E1527-13.

(2015) *GeoTracker Database*, and DTSC (2015) *EnviroStor Database*. A summary of the environmental record sources reviewed is provided in Table 2.

Site information from each record source was imported into a GIS program to spatially analyze sites within the minimum search distances defined by ASTM E1527-13 relative to the boundary of the Project site (Table 2). The spatial analysis did not identify any permitted UST facilities on or adjacent to the Project site. The spatial analysis identified one small-quantity RCRA generator on the Project site (Peerless Lighting Corporation) and four small-quantity RCRA generators adjacent to the Project site (Table 3).[5] The spatial analysis identified 53 hazardous materials release sites within up to 1 mile of the Project site (Table 4 and Figure 5). Sites identified during the review of environmental records are discussed further under Section 4.2, *Known Release Sites*.

3.5 Previous Environmental Investigations

Numerous environmental investigations have been performed on the West Block of the Project site between 1983 and 2006. The investigations include the "Peerless Lighting", "Peerless Electric", and "Peerless Electric Company" sites identified during the review of environmental records (Sites 1 through 3, respectively, on Table 4 and Figure 5). Investigations were also performed at the 705 Bancroft Way and 2213 Fourth Street properties on the Project site, which were not identified during the review of environmental records. The findings of the previous environmental investigations are summarized under Section 4.2, *Known Release Sites*. Copies of the previous environmental investigations are included in Appendix B.

4. EVALUATION OF RECOGNIZED ENVIRONMENTAL CONDITIONS

4.1 Potential Release Sites

The review of historical land use records identified two former R&D laboratories and a plastic manufacturer located on the central portion of the East Block and a die casting factory on the north portion of the West Block of the Project site (Figure 4). Environmental investigations have not been performed to evaluate potential releases of hazardous materials from these former land uses. Potential releases of hazardous materials from these former land uses (if any) could affect environmental conditions beneath the Project site.

4.2 Known Release Sites

The review of environmental records identified five small-quantity RCRA generators located on or adjacent to the Project site (Table 3). Two of five the RCRA generators, "Peerless Lighting Coporation" and "Davlin Paint Co Inc", were also identified as known hazardous materials release sites and are discussed further, below. Hazardous materials releases have not been

[5] Small Quantity Generators generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

reported at the other three RCRA generator facilities; therefore, these facilities are not expected to pose a threat of affecting environmental conditions beneath the Project site.

The review of environmental records identified 53 sites with known hazardous materials releases within up to 1 mile of the Project site (Tables 3 and 4 and Figure 5). Three active release sites were identified on the Project site, one active release site was identified adjacent to the Project site, and three active release sites were identified hydrologically upgradient (to the east) of the Project site. Pending further evaluation, these seven release sites were identified as sites of potential concern that could result in a REC in connection with the Project and are discussed further, below. The other 46 release sites are not expected to pose a threat of affecting environmental conditions beneath the Project site because the cases are closed (i.e., cleanup is complete) or a pathway for contaminant migration onto the Project site does not exist (i.e., the site is downgradient).

Available information for the seven release sites of potential concern was reviewed to determine if there are any RECs in connection with the Project. Soil and groundwater quality data was screened against the San Francisco Bay Regional Water Quality Control Board's ("Regional Water Board's") (2013) Environmental Screening Levels ("ESLs") where groundwater is a potential drinking water resource. The seven releases sites of potential concern identified during the review of environmental records are discussed, below.

In addition, the findings of previous environmental investigations performed at 705 Bancroft Way and 2213 Fourth Street on the Project site, which were not identified during the review of environmental records, are summarized below.

4.2.1 2220 Fourth Street

Soil and groundwater at the 2220 Fourth Street property (also referred to as 747 Bancroft Way) on the West Block of the Project site has been impacted by chlorinated pesticides, solvents, and petroleum hydrocarbons (Figures 6 through 9). Both the Regional Water Board and DTSC have been involved in the oversight of investigation and cleanup activities related to this property, which has been recorded as "Peerless Lighting", "Peerless Electric", and "Peerless Electric Company" (Sites 1 through 3, respectively, on Table 4 and Figure 5).

From approximately 1952 until 1981, the 2220 Fourth Street property was used by multiple pest control businesses. These companies included Able Termite Control Company, Able Termite Control, Inc., Terminix Norcal, and its successor Terminix International (Weston Solutions, Inc., 2006). An unpaved warehouse was located on the west side of the property, and a parking lot was located on the east side of the property. The pest control businesses reportedly stored, mixed, and repackaged termite control chemicals (Jemison, 2003).

In 1981, Peerless Electric Company ("Peerless") purchased the property. In 1989, the property was redeveloped and construction of the existing building was completed. Subsurface investigations performed between 1983 and 2006 indicate that soil and groundwater beneath the 2220 Fourth Street property and the railroad embankment area immediately west of the property have been impacted by chlorinated pesticides, solvents, and petroleum hydrocarbons

(Fugro West, Inc., 2007). The potential sources and extents of contamination are discussed below.

Chlorinated Pesticides

The former pest control businesses stored and mixed chlorinated pesticides in an unpaved warehouse located on the west side of the property (Figure 6). According to a former employee of Terminix Norcal, pesticides managed in the former warehouse at the Project site included, but were not limited to, the following: pentachlorophenol ("PCP"), chlordane, dieldrin, and aldrin (Beveridge & Diamond, 1994). In 1983, Peerless performed a shallow soil investigation in the former unpaved warehouse that identified concentrations of the following pesticides: chlordane, heptachlor, dieldrin, DDD, lindane, and aldrin. Concentrations of chlordane, lindane, and heptachlor were also reported in four groundwater samples (Brown and Caldwell, 1983).

In 1984, under the supervision of the City of Berkeley Department of Health Services, about 80 cubic yards of shallow soils were excavated from within the former unpaved warehouse where pesticides were stored and/or mixed (Figure 6). The excavated soils were transported off-site as hazardous waste to a permitted landfill. The excavation area was backfilled with imported soil and the warehouse floor was sealed with pavement (Fugro West, Inc., 2007).

In 1985, under the supervision of the Regional Water Board, four groundwater monitoring wells (W-1 through W-4) were installed in the former warehouse to investigate the extent of pesticide impacts to groundwater. No soil samples were collected for analysis. Groundwater sampling confirmed the presence of pesticides and identified previously undocumented presence of chlorinated solvents (as discussed further below) (Weston Solutions, Inc., 2006). Based on review of subsequent groundwater investigations, the four monitoring wells were not used after 1987, which may indicate that the wells were destroyed or abandoned.

In 1987, four shallow composite soil samples were collected from the railroad embankment immediately west of the former warehouse. Concentrations of PCP were reported as high as 460 milligrams per kilogram ("mg/kg"), which exceeds the Regional Water Board's residential (3.0 mg/kg), commercial (5.0 mg/kg), and construction worker (56 mg/kg) ESLs (Industrial Compliance, 1995). A more detailed soil investigation was performed in this area in in 1994 (see below).

In 1988, six additional groundwater monitoring wells were installed: four in the Peerless warehouse (M-1 through M-4) and two hydraulically upgradient to the east and southeast of the warehouse along Fourth Street (M-5 and M-6, respectively) (Figure 6). Soil samples were collected from three of the borings (M-1, M-2, and M-4) and analyzed for PCP. Concentrations of PCP were not identified above the current residential ESL of 3.0 mg/kg in any of the soil samples (The Mark Group, 1988).

The most recent groundwater sampling events that evaluated chlorinated pesticide impacts were in 1994 and 2006. As shown in Figure 6, the primary contaminants of concern analyzed during these events were PCP and chlordane. Concentrations of PCP were reported as high as 11,000 micrograms per liter ("µg/L"), which exceeds the Regional Water Board's ESL of 1.0 µg/L

where groundwater is a potential drinking water resource. Concentrations of chlordane were reported as high as 9.4 µg/L, which exceeds the Regional Water Board's ESL of 0.004 µg/L where groundwater is a potential drinking water resource (Fugro West, Inc., 2007).

Several soil investigations were performed in 1994. Three borings (S-7, S-8, and S-9) were located near the west wall of the former pesticide warehouse and one boring (S-10) was located within the previous area of soil excavation (Figure 7). Concentrations of PCP, dieldrin, and chlordane were reported above the Regional Water Board's residential, commercial, and construction worker ESLs (Subsurface Consultants, Inc., 1994). Thirteen borings (B-1 through B-13) were located along the railroad corridor west of the former pesticide warehouse. Soil samples collected from borings B-3 through B-5, which were located immediately west of the former pesticide warehouse (Figure 7), identified concentrations of PCP, chlordane, dieldrin, aldrin, and endrin above the Regional Water Board's residential and commercial ESLs. Concentrations of PCP, chlordane, and dieldrin in these borings also exceeded the Regional Water Board's construction workers ESLs. Concentrations of chlorinated pesticides were either not detected above the laboratory limit or were reported at relatively low concentrations below the Regional Water Board ESLs for residential land uses in the other borings (B-1, B-2, and B-6 through B-13) (Industrial Compliance, 1995).

Another soil investigation was performed in 2006 that evaluated soil impacts along the railroad corridor west of the former pesticide warehouse. Soil samples were collected and analyzed from a total of 8 borings (HA-1 through HA-8) along the railroad corridor (Figure 7) (Fugro West, Inc., 2007). Soil analytical results were similar to the results from the previous soil investigation performed along the railroad corridor in 1994.

As shown in Figures 6 and 7, previous soil and groundwater investigations indicate that soils and groundwater on the west side of the 2220 Fourth Street property and the railroad embankment immediately west of the property are impacted by chlorinated pesticides. As described above, concentrations of PCP, chlordane, dieldrin, aldrin, and endrin reported in soil samples both on and adjacent to the Project site exceed the Regional Water Board's residential, commercial, and/or construction worker ESLs. Concentrations of PCP and chlordane reported in groundwater on the Project site exceed the Regional Water Board's ESLs where groundwater is a potential drinking water resource.

Petroleum hydrocarbons

According to a former employee of Terminix Norcal, PCP was mixed with diesel or kerosene in the former warehouse on the Project site. The PCP pesticide solution consisted of about 0.5 to 1 percent PCP and 99 to 99.5 percent diesel or kerosene (Beveridge & Diamond, 1994).

In 1987, an excavation was performed in the former parking lot on the east side of the 2220 Fourth Street property to remove a UST reportedly used by the former pesticide businesses (Figure 8). Soils were excavated to about 10.5 feet below ground surface, however the UST was not found. A soil sample of the excavated materials was collected and analyzed for total fuel hydrocarbons (analytical method not reported). The reported concentration of total fuel hydrocarbons in the excavated materials was 1,800 mg/kg. In a letter to the City of Berkeley,

the excavation company recommended aerating the excavated materials before backfilling into the excavation pit (Tank Excavators, 1987). Documentation confirming the aeration and backfilling of excavated materials was not readily available on the Regional Water Board's GeoTracker database.

In 1994, soils samples were collected and analyzed for total extractable hydrocarbons by USEPA Method 8015M from three borings (S-7, S-8, and S-9) located near the west wall of the former pesticide warehouse and one boring (S-10) located within the previous area of soil excavation (Figure 7). Concentrations of total petroleum hydrocarbons as kerosene ("TPHk") were reported as high as 6,100 mg/kg (Subsurface Consultants, Inc., 1994). The Regional Water Board does not have an ESL for TPHk. However, it should be noted that the carbon range for TPHd analyzed by USEPA Method 8015M is C_9 to C_{25}, which generally includes the carbon range for TPHk. The reported concentrations of TPHk exceeded the Regional Water Board's residential (100 mg/kg), commercial (110 mg/kg), and construction worker (900 mg/kg) ESLs for TPHd.

In 1994, soils samples were also collected and analyzed for total extractable hydrocarbons by USEPA Method 8015M (with fuel fingerprinting) and aromatic volatile organic compounds ("VOCs") by USEPA Method 8020 from thirteen borings (B-1 through B-13) located along the railroad corridor west of the former pesticide warehouse (Figure 7). Elevated concentrations of TPHd were identified in soil samples collected from boring B-3 as high as 10,000 mg/kg, which exceeds the Regional Water Board's residential (100 mg/kg), commercial (110 mg/kg), and construction worker (900 mg/kg) ESLs. Concentrations of TPHd and TPHk were either not detected above the laboratory reporting limit or were reported at relatively low concentrations below the Regional Water Board's residential ESLs in the other borings (B-1, B-2, and B-4 through B-13). Concentrations of toluene, ethylbenzene, and total xylenes were reported in several soil samples below the Regional Water Board's residential ESLs. Benzene was not detected above the laboratory reporting limit in any of the soil samples (Industrial Compliance, 1995).

Kinder Morgan owns and operates two petroleum pipelines located on each side of the railroad corridor that were formerly owned and operated by Santa Fe Pacific Pipeline Partners, L.P. ("SFPP") (Figure 8). In a letter dated 10 June 1994 to the City of Berkeley, SFPP stated that the petroleum products transported in the SFPP pipelines near the 2220 Fourth Street property have included gasoline, diesel, and aviation fuels. These types of petroleum products contain relatively high concentrations of aromatic volatile organic compounds ("VOCs"): specifically benzene, toluene, ethylbenzene, and total xylenes. Kerosene contains much lower concentrations of aromatic VOCs and does not contain benzene. Since benzene has not been identified in soil samples collected at the 2220 Fourth Street property and the petroleum hydrocarbon impacts are predominantly attributed to kerosene, the existing petroleum pipelines do not appear to be a contributing source of petroleum hydrocarbon impacts at the 2220 Fourth Street property (SFPP, 1994).

Another soil investigation was performed in 2006 that evaluated soil impacts along the railroad corridor west of the former pesticide warehouse. Soil samples were collected and analyzed from a total of 8 borings (HA-1 through HA-8) along the railroad corridor (Figure 7). Relatively

low concentrations of petroleum hydrocarbons were identified in soil samples collected from each boring (Fugro West, Inc., 2007).

The most recent groundwater sampling events that evaluated petroleum hydrocarbon impacts were in 1994 and 2006. As shown in Figure 8, the primary contaminants of concern identified during these events were TPHk and TPHd. Concentrations of TPHk and TPHd were reported as high as 39,000 µg/L and 3,900 µg/L, respectively, which exceed the Regional Water Board's ESL of 100 µg/L for TPHd where groundwater is a potential drinking water resource (Fugro West, Inc., 2007).

As shown in Figures 7 and 8, previous soil and groundwater investigations indicate that soils and groundwater on the 2220 Fourth Street property and the railroad embankment immediately west of the property are impacted by petroleum hydrocarbons. As described above, concentrations of TPHd and TPHk in soil samples both on and adjacent to the Project site exceed the Regional Water Board's residential, commercial, and/or construction worker ESLs for TPHd. Concentrations of TPHd and TPHk reported in groundwater on the Project site exceed the Regional Water Board's ESL for TPHd where groundwater is a potential drinking water resource.

Solvents

In 1985, groundwater sampling identified previously undocumented chlorinated solvent impacts at the 2220 Fourth Street property (Weston Solutions, Inc., 2006). In 1988, soil samples were collected from three of the borings (M-1, M-2, and M-4) and analyzed for purgeable halocarbons, which includes chlorinated solvents. Relatively low concentrations of trichloroethene ("TCE"), 1,1,1-trichloroethane ("1,1,1,-TCA"), and trichlorofluoromethane were identified below the Regional Water Board's residential ESLs (The Mark Group, 1988).

The most recent groundwater sampling events that evaluated solvent impacts were in 1987, 1993, and 1994. As shown in Figure 9, solvents identified during these events included TCE, 1,1,1-TCA, and methyl isobutyl ketone ("MIBK"). TCE has been reported both on and upgradient of the 2220 Fourth Street property in groundwater at concentrations exceeding the Regional Water Board's ESL where groundwater is a potential drinking water resource (5.0 µg/L) and the residential vapor intrusion ESL (130 µg/L). The TCE impacts appear to be from an upgradient source. 1,1,1-TCA has been reported both on and upgradient of the 2220 Fourth Street property in groundwater at concentrations exceeding the Regional Water Board's ESL where groundwater is a potential drinking water resource (62 µg/L), but not the residential vapor intrusion ESL (720,000 µg/L). An elevated concentration of 1,1,1-TCA (17,000 µg/L) reported in a groundwater sample collected from former monitoring well W-1 (Figure 9) indicates that there may be a source of 1,1,1-TCA impacts located on the Project site near the east side of the 2220 Fourth Street property.

The following degradation products of TCE and/or 1,1,1-TCE were also identified in groundwater, but are not shown on Figure 9: 1,1-dichloroethene ("1,1-DCE"), cis-1,2-dichloroethene ("cis-1,2-DCE"), trans-1,2-dichloroethene ("trans-1,2-DCE"), 1,1-dichloroethane ("1,1,-DCA"), vinyl chloride. During the most recent groundwater monitoring events,

concentrations of these degradation products were identified on the Project site above the Regional Water Board's ESLs where groundwater is a potential drinking water resource (Fugro West, Inc., 2007). A copy of the environmental investigation report is included in Appendix B.

MIBK has been reported on the west side of the 2220 Fourth Street property where pesticides were formerly stored and mixed. According to the USEPA (1994), MIBK is sometimes used to make pesticides. An elevated concentration of MIBK (21,000 µg/L) was reported in a groundwater sample collected from boring S-7 (Figure 9) that exceeds the Regional Water Board's ESL where groundwater is a potential drinking water resource (120 µg/L), but nott he residential vapor intrusion ESL (11,000,000 µg/L). The elevated concentration of MIBK indicates that there may be a source of MIBK impacts located on the Project site near the southwest corner of the former pesticide warehouse (Figure 9).

4.2.2 705 Bancroft Way

Between about 1930 and 1950, foundries were located on the southwest portion of the West Block of the Project site (Figure 4). In 1992, Subsurface Consultants, Inc. performed a site assessment and subsurface investigation for the 705 Bancroft Way property to evaluate soil and groundwater impacts from former foundry operations. The property was not identified during the review of environmental records.

In 1984, a 5,000 gallon UST was installed at the site (Figure 10). The tank stored unleaded gasoline used to fuel delivery trucks. The UST was removed on 26 September 1991. Soil samples obtained from below the tank contained non-detectable concentrations of fuel constituents. Soil excavated from the tank area was disposed of at an appropriate landfill and the excavation was backfilled with clean imported soil (Subsurface Consultants, Inc., 1992).

In 1992, subsurface conditions were investigated by drilling and sampling 18 borings (B-1 through B-18 on Figure 10). Numerous soil samples were retained from the borings. In addition, a grab groundwater sample was collected from boring B-9. Based upon the results of the field exploration, the north and west portions the site appear to be underlain by a layer of foundry sand and debris ranging in thickness from 1 to 3 feet. Elevated concentrations of arsenic, copper, lead, and zinc above hazardous waste thresholds were identified in numerous soil samples collected from the foundry waste (Figure 10). The most prevalent contaminant exceeding hazardous waste thresholds was soluble lead (Subsurface Consultants, Inc., 1992).

Shallow soil samples collected near two former air compressor locations (borings B-5, B-6, and B-13) identified concentrations of oil and grease between 660 mg/kg and 12,000 mg/kg. A shallow soil sample collected from boring B-5 near one of the air compressors also identified an elevated concentration of lead above hazardous waste thresholds (Figure 10) (Subsurface Consultants, Inc., 1992).

A grab groundwater sample collected from boring B-9 (Figure 10) identified elevated concentrations of TPHd (54,000 µg/L) and total petroleum hydrocarbons as gasoline ("TPHg") (650 µg/L), which exceed the Regional Water Board ESL of 100 µg/L for TPHd and TPHg where groundwater is a potential drinking water resource. An elevated concentration of toluene

(260 µg/L) was also identified above the Regional Water Board ESL (40 µg/L) where groundwater is a potential drinking water resource (Subsurface Consultants, Inc., 1992). The petroleum hydrocarbon impacts could be from an on-site source or could potentially be related to the release of TPHk and TPHd reported on the 2220 Fourth Street property immediately north of the site.

4.2.3 2213 Fourth Street

In January 2015, soil was excavated to install a drainage line on the east side of the Peerless building at 2213 Fourth Street on the East Block. A soil sample collected and analyzed from the soil stockpile identified total petroleum hydrocarbons as motor oil at a concentration of 180 mg/kg, which exceeds the Regional Water Board's residential ESL of 100 mg/kg (Curtis & Tompkins, Ltd., 2015). Concentrations of TPHd, acetone, methylene chloride, and lead were also identified above reporting limits, but below the residential ESLs. In February 2015, the excavated soils were transported to a permitted landfill for disposal (De Tienne Associates, 2015b). The source and extent of TPHmo impacts has not been determined. The property was not identified during the review of environmental records.

4.2.4 Dalbin Paint Company

The Dalbin Paint Company site (also referred to as Davlin Coatings) at 700 Allston Way is located adjacent to the Project site (Site 4 on Table 4 and Figure 5). The site is paved and consists of a warehouse and a building that have been used for paint manufacturing since the 1970's. In 2006, the City of Berkeley, Toxic Management Division ("TMD"), recommended a Preliminary Endangerment Assessment ("PEA") for the site based on the history of paint manufacturing activities and the absence of a previous site assessment or investigation. The following is a summary of previous activities on the site:

- In 1988, seven USTs that stored mineral spirits, xylenes, Stoddard solvent (mineral spirits), methanol, thinner, and toluene for paint manufacturing were removed from the site. Relatively low levels of petroleum hydrocarbons below the current ESLs were detected in soil and groundwater samples collected after removing the USTs.
- During the 1989 Loma Prieta earthquake, five cans containing a total of twenty gallons of paint containing toluene fell from a pallet and spilled open. The spill was reportedly cleaned up the next day.
- In April 2003, a 10,000-gallon UST containing methanol was removed from the site. Soils samples collected from the tank excavation and stockpile were analyzed for methanol. A grab groundwater sample was analyzed for methanol, volatile organics, benzene, toluene, ethybenzene, total xylenes, and methyl tertiary-butyl ether. Concentrations of the analytes were not reported above laboratory reporting limits in the soil and groundwater samples.
- In 2004, TMD inspected the facility to assess the condition of hazardous materials being stored on the site. Old containers storing hazardous materials were observed to be in poor condition.

No additional site activities have been completed since the TMD's request for a PEA in 2006. Based on the site history and active regulatory status, soil and groundwater beneath the site could potentially be impacted by petroleum hydrocarbons and solvents used for paint manufacturing. Due to adjacent proximity of the site to the Project, groundwater contamination (if any) could potentially migrate beneath the Project site.

4.2.5 Kaplan Property

The Kaplan Property site at 2234 San Pablo Avenue is located about 2,200 feet east of the Project site (Site 5 on Table 4 and Figure 5). In 1987, soil contamination from buried waste oil drums was reported on the site (City of Berkeley, 1987). An investigation to define the extent of contamination has not been reported to date. Based on the distance to the release site from the Project site and the relatively low mobility of waste oil in groundwater, the release does not pose a likely threat of migrating beneath the Project site.

4.2.6 Tower Cleaners

The Tower Cleaners site at 1110 University Avenue is located about 2,400 feet northeast of the Project site (Site 6 on Table 4 and Figure 5). In 2003, a release of chlorinated solvents was reported at the dry cleaning facility that impacted soil and groundwater. Concentrations of tetrachloroethylene, the primary contaminant of concern, has been reported as high as 18,000 µg/L in groundwater samples collected from monitoring wells on the site (Gribi Associates, 2013), which exceeds the ESL of 5 µg/L where groundwater is a potential drinking water resource. In November 2014, the Regional Water Board approved a Workplan to further investigate the extent of contamination, which includes groundwater sampling on adjacent downgradient properties to the southwest (Regional Water Board, 2014a). The scope of the approved Workplan suggests that groundwater contamination has not likely migrated a significant distance away from the release site. Therefore, the release does not pose a likely threat of migrating beneath the Project site.

4.2.7 Former Chevron

The Former Chevron site at 1900 San Pablo Avenue is located about 2,600 feet northeast of the Project site (Site 7 on Table 4 and Figure 5). In 2003, a release of petroleum hydrocarbons from a UST was reported at the site. The Regional Water Board (2014b) has determined that the site meets the SWRCB's Low-Threat Underground Storage Tank Case Closure Policy and is in the process of closing the site; therefore, contamination from the release site would not likely impact the Project Site.

5. ASTM E1527-13 DATA GAPS

The ASTM E1527-13 requires the identification of data gaps, along with actions taken to address these gaps, and an opinion as to whether these gaps are significant. A data gap may result from a lack of or inability to obtain information during any of the activities required by ASTM E1527-13. In particular, review of reasonably ascertainable historical land use information from the first developed land use to the present that does not provide sufficient

detail to assess potential land use changes at five year intervals may be considered a data gap. Data gaps identified during the preparation of this Phase I ESA are described, below.

5.1 Historical Land Use Records Review

The time intervals between some of the historical land uses records exceeded 5 years. These data gaps are not considered significant because the land uses were relatively consistent between the extended time intervals.

5.2 Environmental Records Review

ASTM E1527-13 requires the review of state-registered aboveground storage tank records for properties located on or adjacent to the Project site. These records were not reviewed, because the records were not *reasonably ascertainable* as described in Section 3.4. This exclusion does not pose a significant data gap because general land uses associated with hazardous materials (which could include the use of ASTs) were identified during the site reconnaissance and review of historical land use records (Sections 3.2 and 3.3, respectively).

5.3 Interviews with Government Regulatory Officials

ASTM E1527-13 requires interviews with state or local government regulatory agency officials regarding the potential for contamination on a project site. These interviews were not conducted (see Section 6, below) because any information obtained would likely duplicate information already reviewed from other standard sources.

6. ASTM E1527-13 DEVIATIONS

The following deviations from ASTM E1527-13 do not have a significant effect on the findings or conclusions of this Phase I ESA:

- A title search to identify potential environmental liens and activity and use limitations associated with commercial parcels was not conducted because land use restrictions for contaminated properties are also reported by both the SWRCB and DTSC, which would be identified during the review of environmental records;
- Standard environmental record sources associated with state-registered aboveground storage tanks were not reviewed, because the records were not *reasonably ascertainable* (see Section 3.4);
- Interviews with state or local government regulatory agency officials regarding the potential for contamination in the Project site vicinity were not conducted, because any information obtained would likely duplicate information already reviewed from federal, state, and local regulatory agency environmental records.

7. CONCLUSIONS

We have performed this Phase I ESA in conformance with the scope and limitations of ASTM E1527-13 for the Project site located in the City of Berkeley. Any exceptions to, or deletions

from, this practice are described in Section 6 of this report. This assessment has identified the following RECs in connection with the Project site:

- Potential hazardous materials releases from two former R&D laboratories and a plastic manufacturer on the East Block of the Project site (Figure 4);
- Potential hazardous materials releases from a former die casting factory on the West Block of the Project site (Figure 4);
- Potential petroleum hydrocarbons and solvents in groundwater from the adjacent Dalbin Paint Company (also referred to as the Davlin Paint Company) at 700 Allston Way (Figure 2);
- Known chlorinated solvents (e.g., TCE) in groundwater beneath the Project site from a regional groundwater plume (Figure 6);
- Known chlorinated pesticides (e.g., PCP and chlordane), solvents (e.g., 1,1,1-TCA and MIBK), and petroleum hydrocarbons (e.g., TPHk and TPHd) in soil and groundwater at 2220 Fourth Street on the Project site (Figures 6 – 9);
- Known metals (e.g., arsenic, copper, lead, and zinc) and oil and grease in soil and petroleum hydrocarbons (e.g., TPHg, TPHd, and toluene) in groundwater at 705 Bancroft Way on the Project site (Figure 10); and
- Known petroleum hydrocarbons (e.g., TPHmo) in soil at 2213 Fourth Street on the Project site (Figure 2).

8. RECOMMENDATIONS

Based on the findings of this Phase I ESA, there are both known and potential releases of hazardous materials from historical land uses on the Project site. Prior to construction and earthwork activities, a subsurface investigation should be performed to characterize the chemical quality of soil and groundwater beneath the Project site. The purposes of the subsurface investigation would be to:

1. Identify potentially undocumented releases of hazardous materials from historical land uses (if any) that may require response actions under regulatory oversight;
2. Pre-characterize soil quality to evaluate reuse and disposal options at permitted facilities;
3. Pre-characterize groundwater quality to evaluate proper storage and disposal options during construction dewatering activities;
4. Evaluate potential vapor intrusion concerns for future residents and commercial workers; and
5. Evaluate construction worker health and safety considerations.

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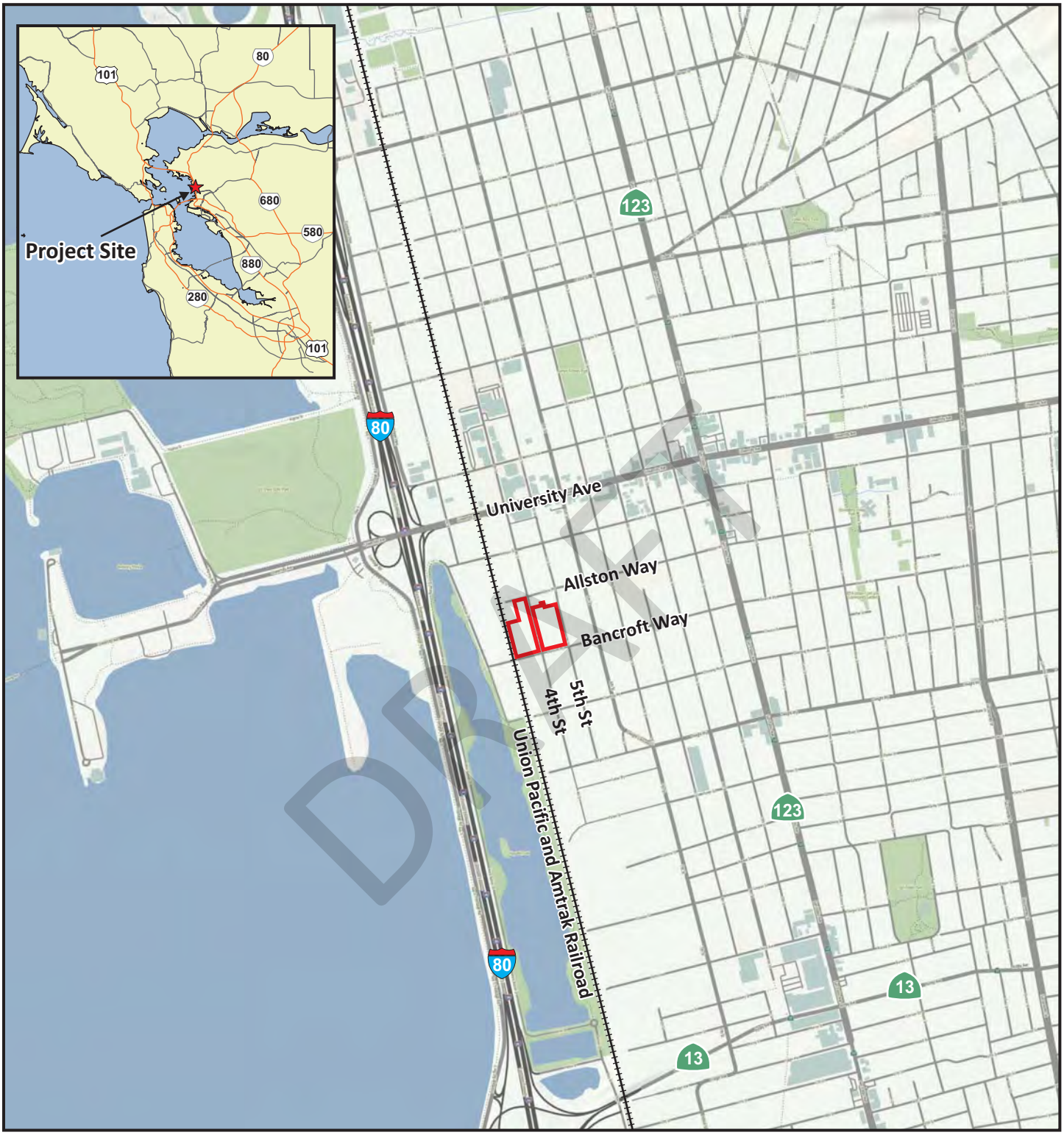
FIGURES

Project Site Location

Figure 1



Legend

Project Site

Base: Stamen Design, 2011

N

0 1,600 Feet

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14201-00.002.02310 Figure 1.cdr 4/2/15

Current Land Uses on the Project Site

Figure 2

Legend

Project Site

Base: LSA Associates, Inc., 2014
Source: De Tienne Associates, 2015a.

N

0 130 Feet

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Site Reconnaissance Observations at 703 Bancroft Way

Figure 3

Oil staining around base of machinery.

Oil staining around base of work bench.

Note: Pictures taken during a site reconnaissance on 20 February 2015.

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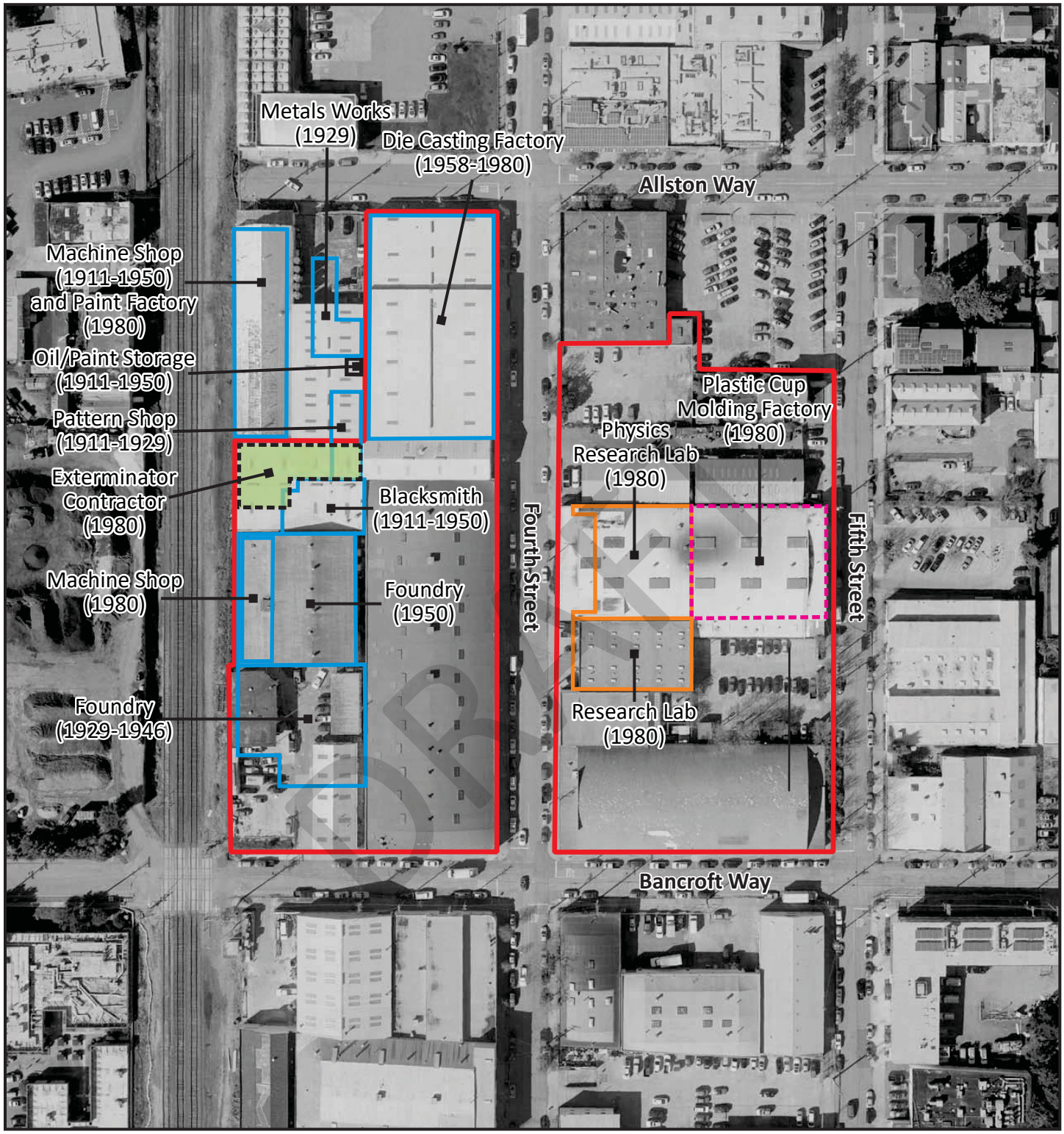
Historical Land Uses Associated with Hazardous Materials

Figure 4



Legend

- Project Site
- Metal Works
- Oil/Paint Storage
- Research and Development
- Pesticide Manufacturing
- Plastic Works
- (1980) Year of Observed Record

Base: LSA Associates, Inc., 2014
Sources: Historical land use records (Appendix A)

N

0 130 Feet

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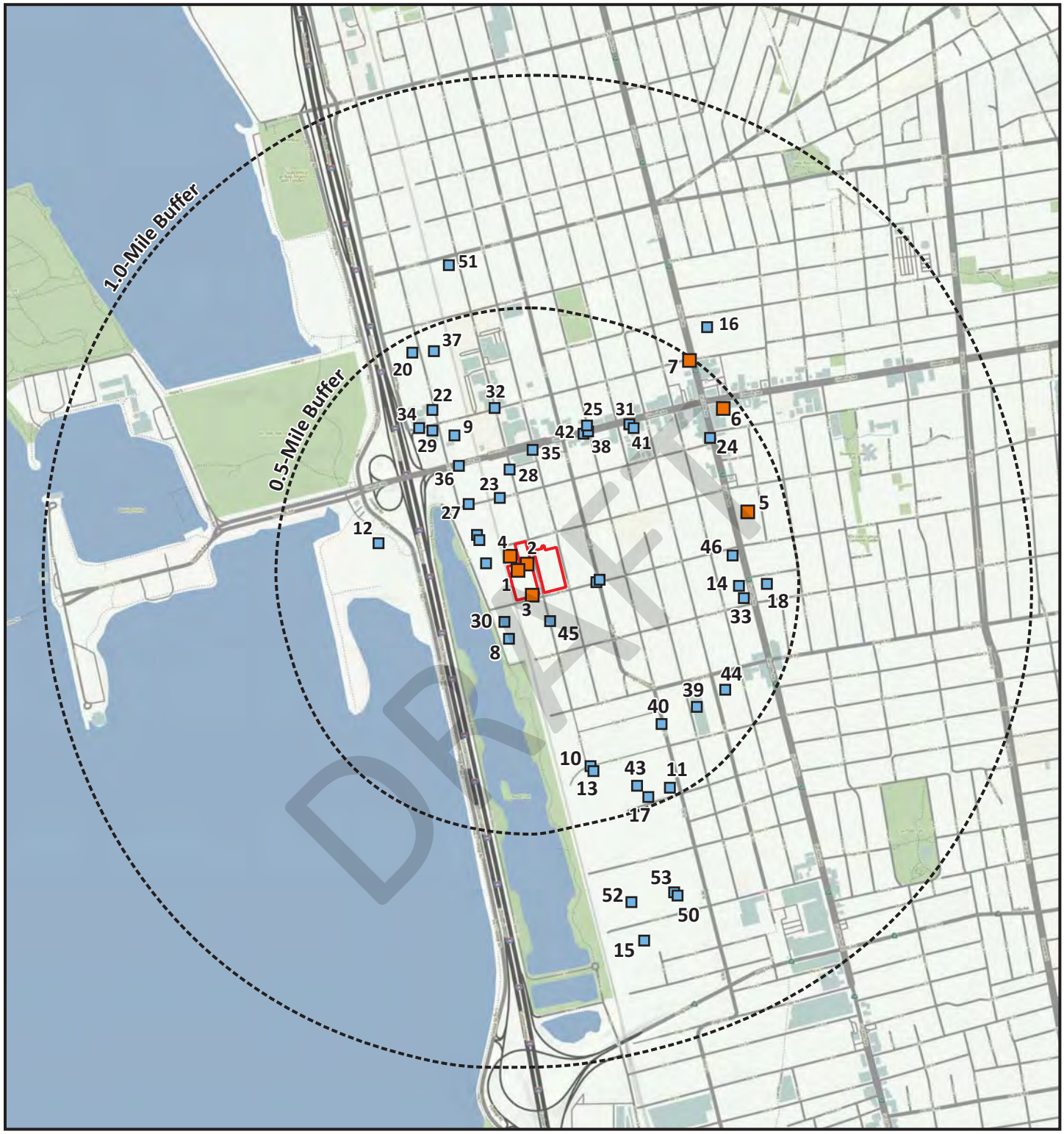
Environmental Records of Hazardous Materials Release Sites Figure 5



Legend

- Project Site
- 1 Release Site ID
- Release Site of Potential Concern
- Closed and/or Downgradient Release Site

Base: Stamen Design, 2011
Sources: Release site locations from SWRCB (2015) and DTSC (2015)
Note: Release site of potential concern include sites located on the Project site and active sites located adjacent to or hydrogeologically upgradient of the Project site.

N

0 1,600 feet

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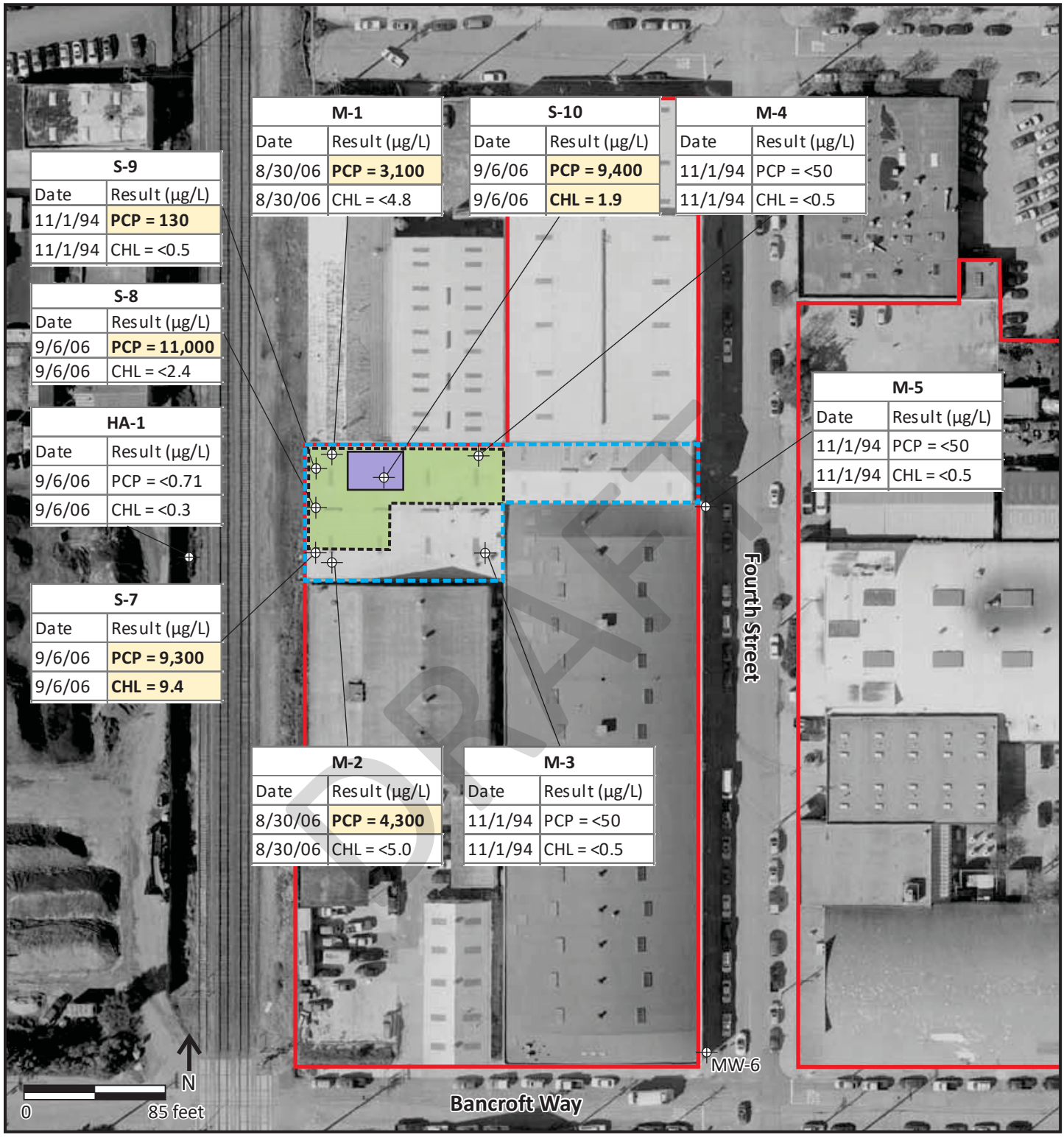
2220 Fourth Street - Chlorinated Pesticides in Groundwater

Figure 6



Legend

- Project Site
- 2220 4th Street Property
- Approximate Location of Former Pesticide Warehouse[1]
- Approximate Area of 1984 Soil Excavation
- Concentration Exceeds Regional Water Board ESL[2]
- Groundwater Sample Location

Base: LSA Associates, Inc., 2014
Source: Fugro West, Inc., 2007 (Appendix B)
Notes: µg/L = micrograms per liter; PCP = pentachlorophenol; CHL = chlordane; <xx = less than laboratory reporting limit of xx; Only results from the most recent sampling events are shown. Laboratory data qualifiers not shown (see Appendix B).
[1] Historical land use records (Appendix A)
[2] Regional Water Board (2013) Environmental Screening Level (ESL) where groundwater is a potential source of drinking water.

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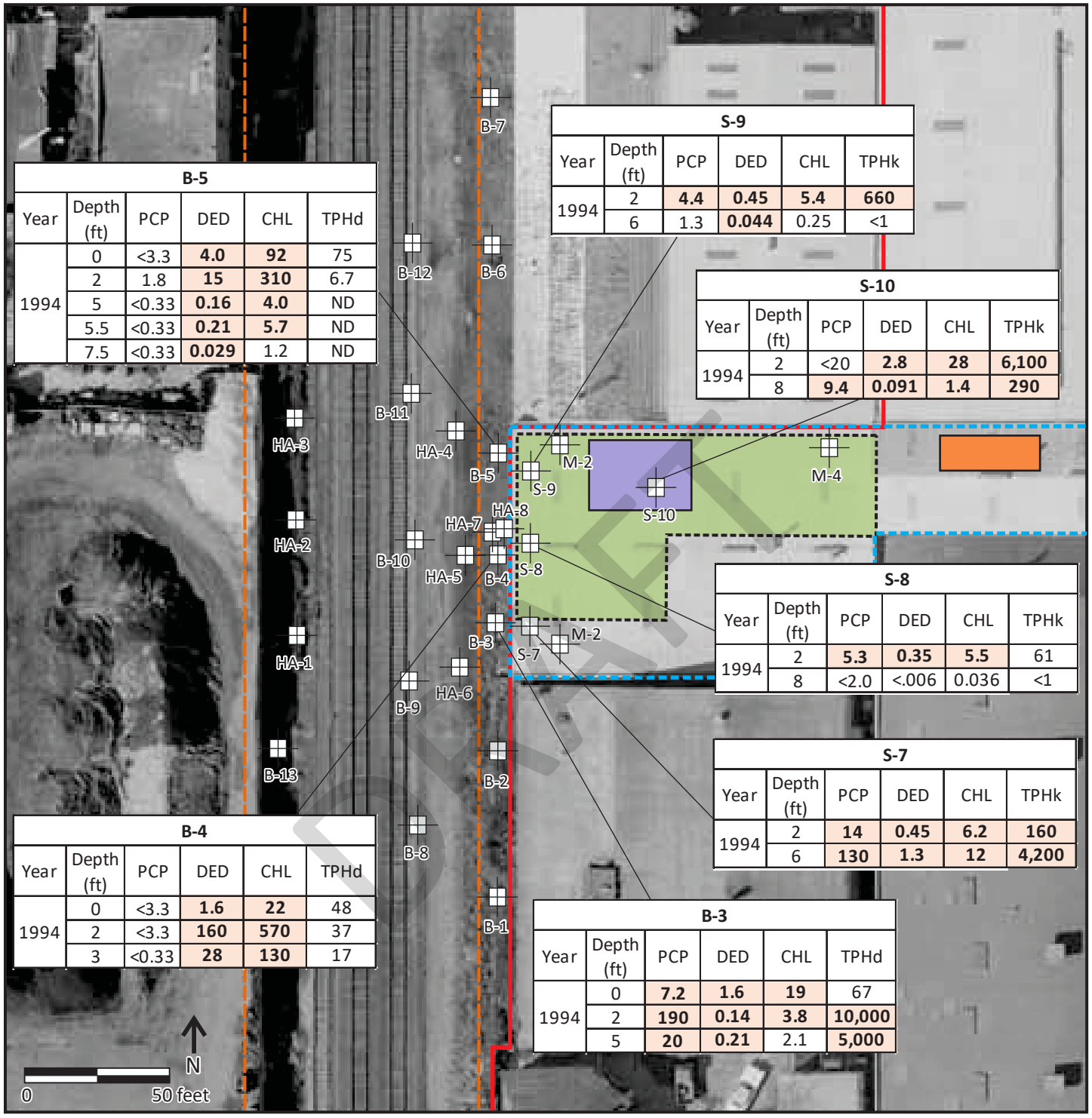
2220 Fourth Street - Soil Investigations

Figure 7



B-5

Year	Depth (ft)	PCP	DED	CHL	TPHd
1994	0	<3.3	**4.0**	**92**	75
	2	1.8	**15**	**310**	6.7
	5	<0.33	**0.16**	**4.0**	ND
	5.5	<0.33	**0.21**	**5.7**	ND
	7.5	<0.33	**0.029**	1.2	ND

S-9

Year	Depth (ft)	PCP	DED	CHL	TPHk
1994	2	**4.4**	**0.45**	**5.4**	**660**
	6	1.3	**0.044**	0.25	<1

S-10

Year	Depth (ft)	PCP	DED	CHL	TPHk
1994	2	<20	**2.8**	**28**	**6,100**
	8	**9.4**	**0.091**	**1.4**	**290**

S-8

Year	Depth (ft)	PCP	DED	CHL	TPHk
1994	2	**5.3**	**0.35**	**5.5**	61
	8	<2.0	<.006	0.036	<1

S-7

Year	Depth (ft)	PCP	DED	CHL	TPHk
1994	2	**14**	**0.45**	**6.2**	**160**
	6	**130**	**1.3**	**12**	**4,200**

B-4

Year	Depth (ft)	PCP	DED	CHL	TPHd
1994	0	<3.3	**1.6**	**22**	48
	2	<3.3	**160**	**570**	37
	3	<0.33	**28**	**130**	17

B-3

Year	Depth (ft)	PCP	DED	CHL	TPHd
1994	0	**7.2**	**1.6**	**19**	67
	2	**190**	**0.14**	**3.8**	**10,000**
	5	**20**	**0.21**	2.1	**5,000**

Legend

- Project Site
- 2220 4th Street Property
- Approximate Location of Former Pesticide Warehouse[1]
- Approximate Area of 1984 Soil Excavation
- Approximate Area of 1987 UST Excavation
- Concentration Exceeds Regional Water Board ESL[2]
- Kinder Morgan Petroleum Pipeline
- Soil Sample Location

Base: LSA Associates, Inc., 2014
Source: Fugro West, Inc., 2007 (Appendix B)
Notes: PCP = pentachlorophenol; DED = dieldrin; CHL = chlordane; TPHd = total petroleum hydrocarbons as diesel; TPHk = total petroleum hydrocarbons as kerosene; <xx = less than laboratory reporting limit of xx.
Only select soil results are shown.
Laboratory data qualifiers not shown (see Appendix B).
All concentrations reported in milligrams per kilogram.
[1] Historical land use records (Appendix A)
[2] Regional Water Board (2013) Environmental Screening Level (ESL) for residential land uses. The ESL for TPHd also applied to TPHk.

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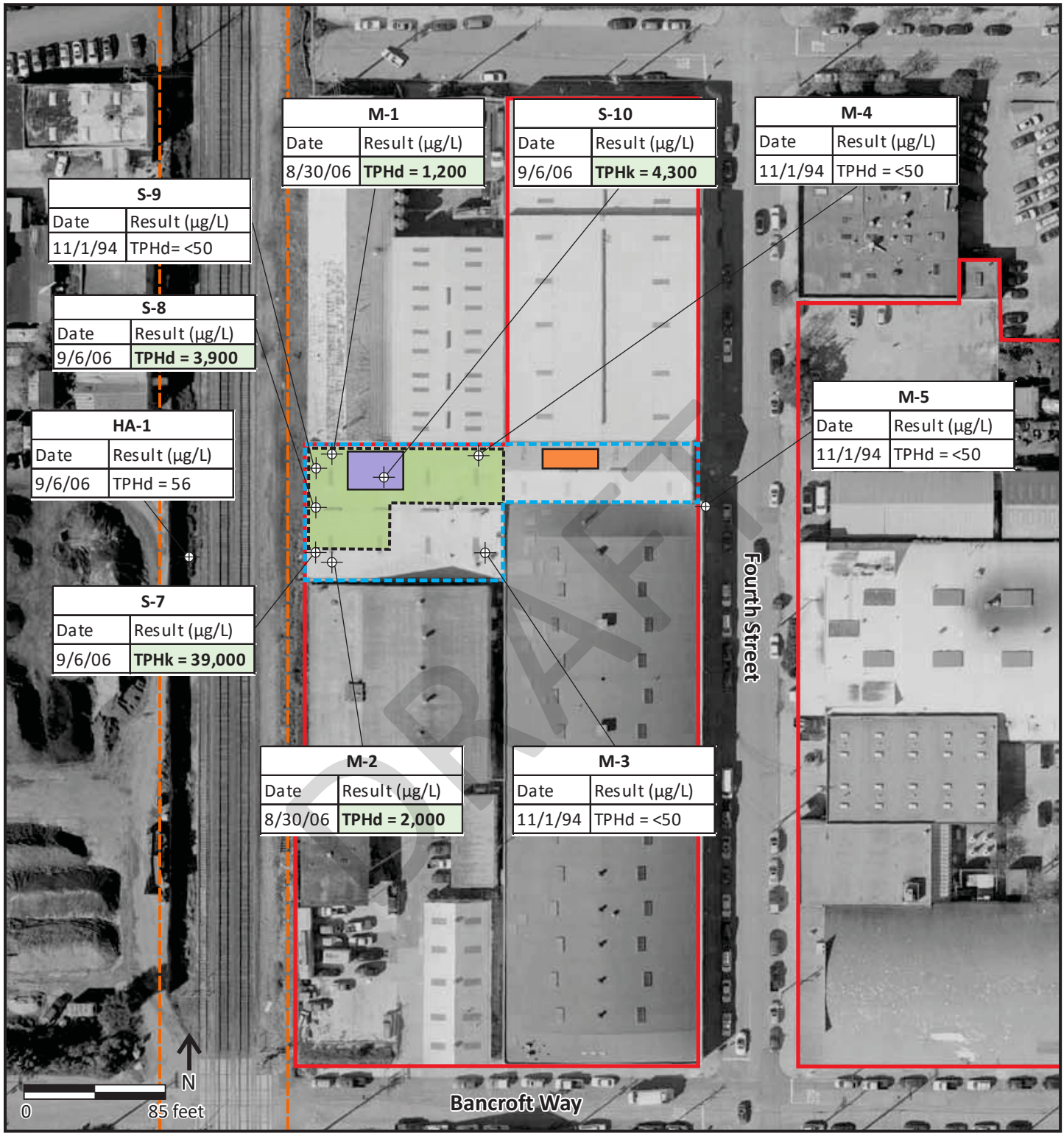
2220 Fourth Street - Petroleum Hydrocarbons in Groundwater Figure 8



Legend

- Groundwater Sample Location
- Project Site
- Kinder Morgan Petroleum Pipeline
- 2220 Fourth Street Property
- Approximate Location of Former Pesticide Warehouse[1]
- Approximate Area of 1984 Soil Excavation
- Approximate Area of 1987 UST Excavation
- Concentration Exceeds Regional Water Board ESL[2]

Base: LSA Associates, Inc., 2014
Source: Fugro West, Inc., 2007 (Appendix B)
Notes: µg/L = micrograms per liter; TPHd = total petroleum hydrocarbons as diesel; TPHk = total petroleum hydrocarbons as kerosene; <xx = less than laboratory reporting limit of xx;
Only results from the most recent sampling events are shown.
Laboratory data qualifiers are now shown (see Appendix B).
[1] Historical land use records (Appendix A)
[2] Regional Water Board (2013) Environmental Screening Level (ESL) for residential land uses. The ESL for TPHd also applied to TPHk.

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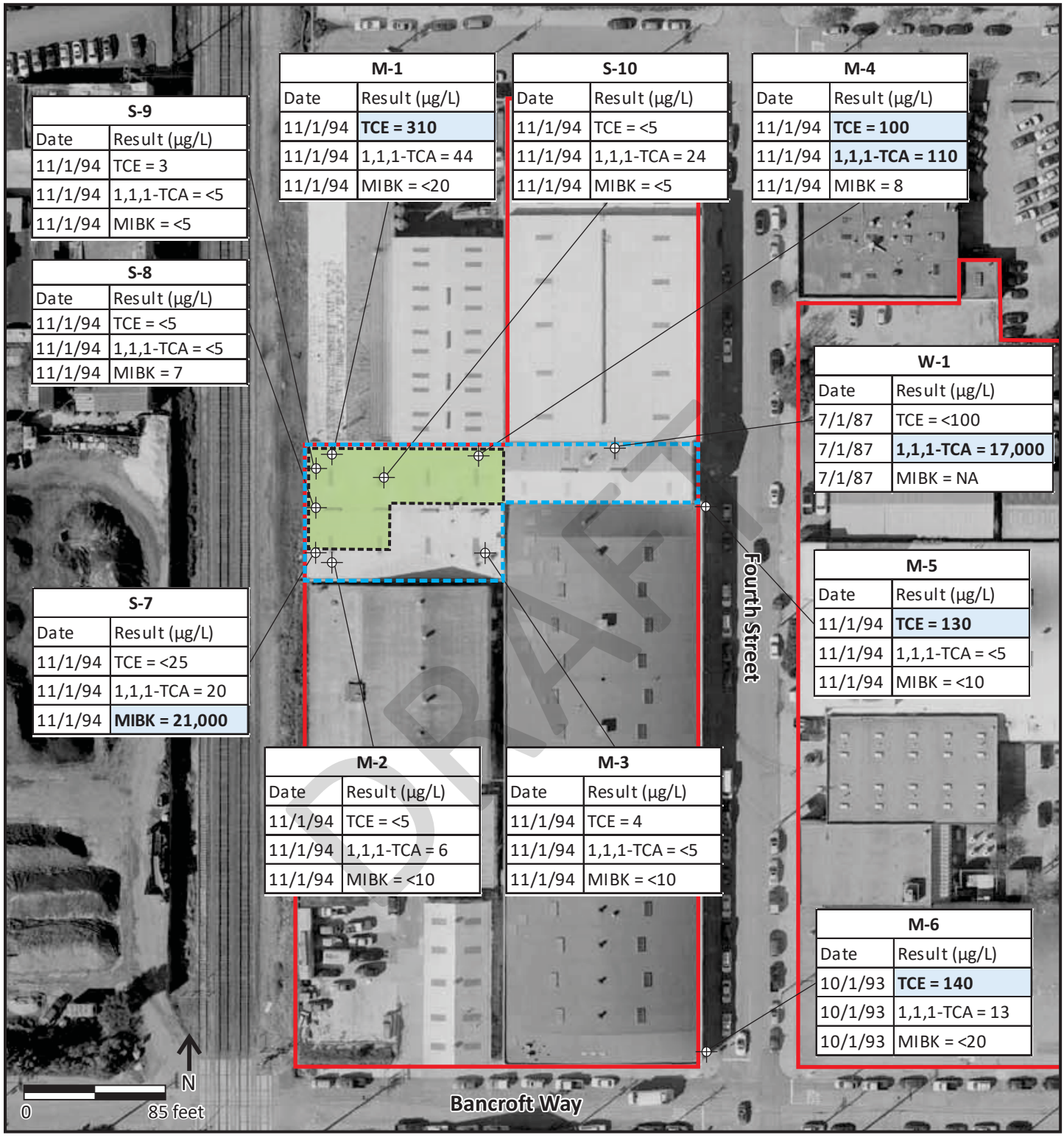
2220 Fourth Street - Solvents in Groundwater

Figure 9



Legend

- Project Site
- 2220 4th Street Property
- Approximate Location of Former Pesticide Warehouse[1]
- Concentration Exceeds Regional Water Board ESL[2]
- Groundwater Sample Location

Base: LSA Associates, Inc., 2014
Source: Fugro West, Inc., 2007 (Appendix B)
Notes: µg/L = micrograms per liter; NA = not analyzed;
TCE = trichloroethylene; 1,1,1-TCA = 1,1,1-trichloroethane;
MIBK= methyl isobutyl ketone; <xx = less than laboratory reporting limit of xx.
Only select chlorinated solvents from the most recent sampling events are shown.
[1] Regional Water Board (2013) Environmental Screening Level (ESL) where groundwater is a potential source of drinking water.

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BASELINE ENVIRONMENTAL CONSULTING

705 Bancroft Way - Soil Boring Locations

Figure 10

Legend

- Project Site
- Approximate Locations of Former Foundries[1]
- Approximate Location of Former UST
- Boring Location

Base: LSA Associates, Inc., 2014
Source: Subsurface Consultants, Inc., 1992 (Appendix B)
[1] Historical land use records (Appendix A)

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BASELINE ENVIRONMENTAL CONSULTING

14201-00.002.02310 Figure 10.cdr 4/01/15

TABLES

Table 1: Summary of Current Land Uses on the Project Site

City Block	Title/Block/Parcel(s)	Address	Tenant	Current Land Use	Site Visit [1]	Hazardous Materials Storage
West	3/113/9,10,11,12,13,14,15,16	747 Bancroft	Wine.com	Internet Sales	Yes	No
	1/113/3,4,5,6,7,8	2200 4th Street	Wine.com	Internet Sales	Yes	No
	2/113/8,22,23,24	2220 4th Street	Wine.com sales	Manufacturing, Internet Sales, Storage	Yes	No
	2/113/25	2220 4th Street	Herst Ventures	Herst Storage	No	No[2]
	4/113/19,20	705-A Bancroft Way	Melissa Mc Donald Meta	Manufacturing	Yes	Yes
	4/113/20,21,22	703 Bancroft Way	Ornamental Metal Fabrication	Manufacturing	Yes	Yes
	4/113/19,20	701 Bancroft Way	Glass blower	Glass Fabrication	Yes	No
	4/113/16,17	705 Bancroft Way	Paint Company	Paint Storage	Yes	Yes
	4/113/16,17	705 Bancroft Way	Brake Fabrication	Manufacturing	No	No[2]
East	4/114/24,25,26	2213 4th Street	Wine.Com	Parking Lot	Yes	No
	4/114/26	2213 4th Street	Herst Ventures	Garage	No	No[2]
	1/114/14,15,16,17,18	2246 5th Street	Peerless Lighting	Office/R&D	Yes	Yes
	1/114/17,18,20	2231 4th Street	Peerless Lighting	R&D/ Model Shop & Cafeteria	Yes	Yes
	3/114/20,21	2223 4th Street	Peerless Lighting	R&D	Yes	Yes
	1/114/21,22,23	2229 4th Street	Ironies Fabrication	Manufacturing	Yes	Yes
	1/114/9,10,11,12	2222 5th Street	Ironies Fabrication	Manufacturing	Yes	Yes
	5/114/7,8	2212 5th Street	Vacant	Residential, shed	No	No[2]
	2/114/23,24	2221 4th Street	Vacant	Manufacturing	No	No[2]
	2/114/8,9	2216 5th Street	General Contractor	Office/Warehouse	No	No[2]

Source: Parcel, address, and tenant information provided by De Tienne Associates (2015).

Note: Site locations shown on Figure 2.

[1] "Site Visit" refers to the buildings that were accessed during the site reconnaisance.

[2] According to De Tienne Associates, there is no hazardous materials storage.

Table 2: Summary of Environmental Records Reviewed

Environmental Record Source	Search Distance	Reference	Record Source Description
Permitted USTs	On or Adjacent	SWRCB, 2015	Facilities/sites that have a current permit to operate a UST(s) issued by the local permitting agency.
Hazardous Waste Facilities	On or Adjacent	DTSC, 2015	Facilities/sites that were required to obtain a permit or have received a hazardous waste facility permit from the DTSC or U.S. EPA.
RCRA Facilities	On or Adjacent	USEPA, 2015	Facilities/sites that generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act.
Cleanup Program Site (formerly SLIC)	0.5 mile	SWRCB, 2015	Contaminated sites generally not associated with petroleum USTs with Regional Water Board oversight for investigation and/or remediation.
Evaluation	0.5 mile	DTSC, 2015	Suspected, but unconfirmed, contaminated sites that need or have gone through a limited investigation and assessment process.
FUDS	0.5 mile	DTSC, 2015	Military facilities that were FUDS with confirmed or unconfirmed releases and where DTSC is involved in investigation and/or remediation.
HWP / BZP Evaluation	0.5 mile	DTSC, 2015	Significant hazardous waste properties (HWPs) and border zone properties (BZPs) located within 2,000 feet of a significant HWP.
Land Disposal Site	0.5 mile	SWRCB, 2015	Regulated waste management units (e.g., waste piles, surface impoundments, and landfills) that discharge waste to land for treatment, storage and disposal.
LUST Cleanup Site	0.5 mile	SWRCB, 2015	Sites contaminated from leaking USTs with Regional Water Board oversight for investigation and/or remediation.
Military Sites (DTSC)	0.5 mile	DTSC, 2015	Closed and open military facilities with confirmed or unconfirmed releases with DTSC oversight for investigation and/or remediation.
Military Sites (SWRCB)	0.5 mile	SWRCB, 2015	Military UST sites, Military Privatized sites, and Military Cleanup sites with Regional Water Board oversight for investigation and/or remediation.
School	0.5 mile	DTSC, 2015	Proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination.
Voluntary Cleanup	0.5 mile	DTSC, 2015	Sites with either confirmed or unconfirmed releases, and the project proponents have requested DTSC oversight for investigation and/or remediation.
Corrective Action	1.0 mile	DTSC, 2015	Investigation or cleanup activities at RCRA or state-only permitted hazardous waste facilities.
Expedited Remedial Action Program	1.0 mile	DTSC, 2015	High-priority and high potential risk sites requiring expedited cleanup with DTSC oversight. This is currently a pilot program.
Federal Superfund	1.0 mile	DTSC, 2015	Sites where the USEPA proposed, listed, or delisted a site on the NPL.
State Response	1.0 mile	DTSC, 2015	High-priority and high potential risk sites requiring cleanup with DTSC oversight.

Table 2: Summary of Environmental Records Reviewed

Notes:
Search distances are defined by ASTM E1527-13 and are relative to the boundary of the Project site.
Land use restrictions for contaminated properties are reported by both the SWRCB and DTSC under the status of an environmental record.

SWRCB = State Water Resources Control Board
DTSC = Department of Toxic Substances Control
RCRA = Resource Conservation and Recovery Act
FUDS = Formerly Used Defense Sites
NPL = National Priorities List
USEPA = United States Environmental Protection Agency
UST = Underground Storage Tank
SLIC = Spills, Leaks, Investigation, and Cleanup

Table 3: Summary of RCRA Generators On and Adjacent to the Project Site

Site Name	Address	City	Generator Type	Location	Waste Type
Peerless Lighting Corporation	747 Bancroft Way	Berkeley	Small Quantity	On Project site	Not Reported
California Dept Food & Agric	727 Allston Wy	Berkeley	Small Quantity	Adjacent to Project site	Not Reported
Davlin Paint Co Inc	700 Allston Way	Berkeley	Small Quantity	Adjacent to Project site	Paints, Varnishes, Lacquers, Enamels, And Allied Products
Photolab	2235 5Th St	Berkeley	Small Quantity	Adjacent to Project site	Not Reported
Veriflow Metal Finishing Div	800 Bancroft Wy	Berkeley	Small Quantity	Adjacent to Project site	Not Reported

Notes:

Site name, address, and status information (including spellings) are derived directly from the regulatory databases.

Small Quantity Generators generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

Table 4: Summary of Environmental Records for Hazardous Materials Release Sites

Site ID	Site Name	Address	Status	Project Impact Determination	Environmental Record Source						
					Cleanup Program Site	Corrective Action	Evaluation	Land Disposal Site	LUST Cleanup Site	State Response	Voluntary Cleanup
1	Peerless Lighting	2220 4th St	Open - Assessment & Interim Remedial Action	Known Impact					X		
2	Peerless Electric	2220 4th Street	Inactive - Action Required	Known Impact							X
3	Peerless Electric Company	747 Bancroft Wy	Open - Inactive	Known Impact	X						
4	Dalbin Paint Company	700 Allston Wy	Open - Inactive	Potential Impact	X						
5	Kaplan Property	2234 San Pablo Ave	Open - Inactive	No Impact					X		
6	Tower Cleaners	1110 University Avenue	Open - Site Assessment	No Impact	X						
7	Former Chevron	1900 San Pablo Avenue	Open - Eligible for Closure	No Impact					X		
8	Veriflo	800 Bancroft St	Open - Site Assessment	No Impact	X						
9	Berkeley Warehouse	1920 2nd St	Open - Eligible for Closure	No Impact					X		
10	Bayer, Former Miles/Cutter/ Berkeley Unified School District	800 Dwight Way	Open - Eligible for Closure	No Impact					X		
11	Electro Coatings	893 Carleton St	Open - Site Assessment	No Impact							
12	Berkeley Landfill	Berkeley Marina	Open - Verification Monitoring	No Impact				X			
13	Miles Labs Cutter	4th St & Parker St	Open - Inactive	No Impact	X						
14	Berkeley Auto Repair	2378/2366 San Pablo Avenue	Certified	No Impact						X	
15	Wareham Properties	700 Heinz Avenue	Certified	No Impact						X	
16	K & S Management	1138 Delaware St	Certified	No Impact						X	
17	Macaulay Foundry Inc	811 Carelton St	Completed - Case Closed	No Impact	X						
18	Chase Property	2366 78 San Pablo Ave	Completed - Case Closed	No Impact	X						
19	Transamerica Devaual	829 Bancroft Way	Completed - Case Closed	No Impact					X		
20	Kaiser Regional Laboratory	1725 Eastshore Hwy	Completed - Case Closed	No Impact					X		
21	Aquatic Park Science Center	2222 Third Street	Completed - Case Closed	No Impact					X		
22	Import Tile Site	1822 2nd St	Completed - Case Closed	No Impact					X		
23	Takara Sake	708 Addison St	Completed - Case Closed	No Impact					X		
24	U-Haul #710-52	2100 San Pablo Avenue	Completed - Case Closed	No Impact					X		
25	University Associates	901 21 University Ave	Completed - Case Closed	No Impact					X		
26	Davlin Coatings	700 Allston Wy	Completed - Case Closed	No Impact					X		
27	Block Property	651 Addison St	Completed - Case Closed	No Impact					X		
28	Sierra Designs Lily Wong	2039 4th St	Completed - Case Closed	No Impact					X		
29	Li Liquidation	620 Hearst Ave	Completed - Case Closed	No Impact					X		

Table 4: Summary of Environmental Records for Hazardous Materials Release Sites

Site ID	Site Name	Address	Status	Project Impact Determination	Environmental Record Source						
					Cleanup Program Site	Corrective Action	Evaluation	Land Disposal Site	LUST Cleanup Site	State Response	Voluntary Cleanup
30	Engineering Science	600 Bancroft Way	Completed - Case Closed	No Impact					X		
31	Super 7	950 University Ave	Completed - Case Closed	No Impact					X		
32	Pacific Coast Chemicals Co.	2424 Fourth Street	Completed - Case Closed	No Impact					X		
33	European Motors	2396 San Pablo Ave	Completed - Case Closed	No Impact					X		
34	Decanion Import Tile	611 Hearst Ave	Completed - Case Closed	No Impact					X		
35	Jim Doten Honda	2000 5th St	Completed - Case Closed	No Impact					X		
36	Berkeley Warehouse Drayage	636 University Ave	Completed - Case Closed	No Impact					X		
37	Kaiser Biomedical Facility	1795 2nd St	Completed - Case Closed	No Impact					X		
38	Tosco - Facility #3185	849 University Ave	Completed - Case Closed	No Impact					X		
39	West Coast Property Management	2547 8th St	Completed - Case Closed	No Impact					X		
40	Gary Steel Company	2560 7th St	Completed - Case Closed	No Impact					X		
41	Jiffy Lube #889	960 University Ave	Completed - Case Closed	No Impact					X		
42	Texaco	833 University Ave	Completed - Case Closed	No Impact					X		
43	Macaulay Foundry	811 Carleton	Completed - Case Closed	No Impact					X		
44	Consolidated Freightways	2515 9th St	Completed - Case Closed	No Impact					X		
45	Trust Security Management	2321 4th St	Completed - Case Closed	No Impact					X		
46	Former Exxon 7-8465	2300 San Pablo Ave	Completed - Case Closed	No Impact					X		
47	Berkeley Pump	829 Bancroft Way	No Further Action	No Impact			X				
48	Aquatic Park Science Center	2222 3rd Street	No Further Action	No Impact							X
49	Triangle Coatings	2222 Third Street	Refer: Local Agency	No Impact							X
50	Heinz/Grayson Plume	7th Street and Grayson Street	Refer: RWQCB	No Impact						X	
51	Courtaulds Aerospace Inc	1608 Fourth St	Refer: RWQCB	No Impact		X					
52	Berkeley Industrial Court	729 Heinz Avenue	Refer: RWQCB	No Impact						X	
53	Temescal Business Center	2850 7th Street	Refer: RWQCB	No Impact						X	

Notes:

Site name, address, and status information (including spellings) are derived directly from the regulatory databases.

All facilities are located in the City of Berkeley.

Site locations are shown in Figure 4.

APPENDICES

APPENDIX A

HISTORICAL LAND USE RECORDS

Peerless Research and Community Development
2200 4th Street
Berkeley, CA 94710

Inquiry Number: 4199240.3
February 04, 2015

Certified Sanborn® Map Report

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

2/04/15

Site Name:
Peerless Research and
2200 4th Street
Berkeley, CA 94710

Client Name:
Baseline Environmental Cons.
5900 Hollis Street
Emeryville, CA 94608

EDR Inquiry # 4199240.3

Contact: Patrick Sutton

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Baseline Environmental Cons. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Site Name: Peerless Research and Community
Address: 2200 4th Street
City, State, Zip: Berkeley, CA 94710
Cross Street:
P.O. # NA
Project: NA
Certification # F036-4506-8AF0

Maps Provided:

1980
1950
1929
1911
1903

Sanborn® Library search results
Certification # F036-4506-8AF0

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✓ Library of Congress
- ✓ University Publications of America
- ✓ EDR Private Collection

The Sanborn Library LLC Since 1866™

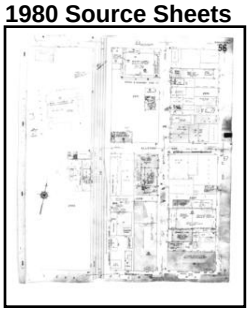
Limited Permission To Make Copies

Baseline Environmental Cons. (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

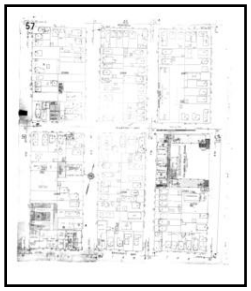
Sanborn Sheet Thumbnails

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

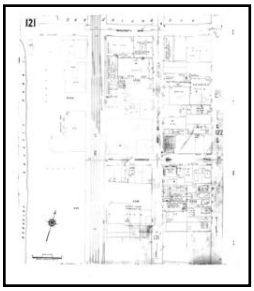
1980 Source Sheets



Volume 1, Sheet 56



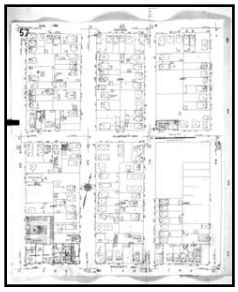
Volume 1, Sheet 57



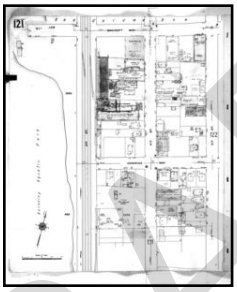
Volume 2, Sheet 121

1950 Source Sheets

Volume 1, Sheet 56



Volume 1, Sheet 57



Volume 2, Sheet 121

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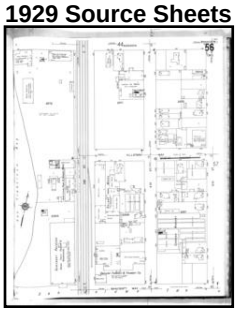

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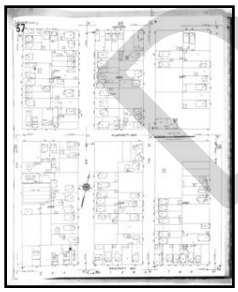

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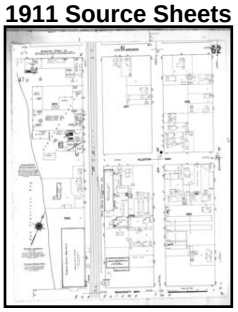
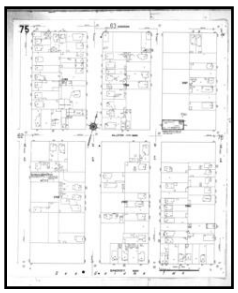
1911 Source Sheets



Volume 1, Sheet 62



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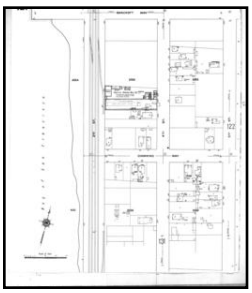
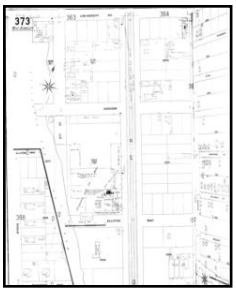


Volume 2, Sheet 121

1903 Source Sheets

Volume 3, Sheet 370

Volume 3, Sheet 372



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Site Name: Peerless Research and Community Development
Address: 2200 4th Street
City, ST, ZIP: Berkeley CA 94710
Client: Baseline Environmental Cons.
EDR Inquiry: 4199240.3
Order Date: 2/4/2015 6:27:00 PM
Certification # F036-4506-8AF0
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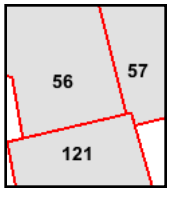

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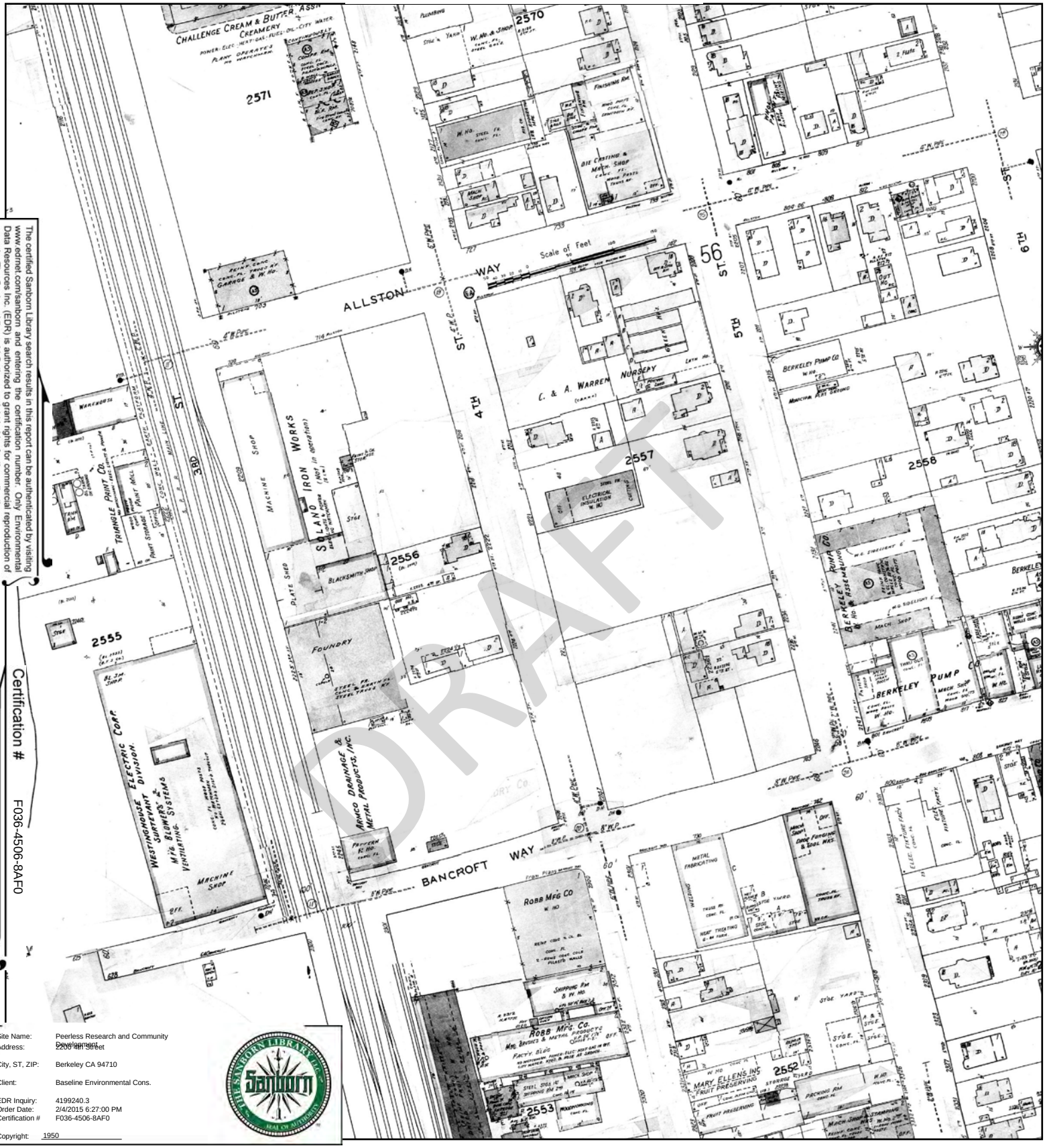
0 Feet 150 300 600

N

1950 Certified Sanborn Map



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City, ST, ZIP:	Berkeley CA 94710
Client:	Baseline Environmental Cons.
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Certification #	F036-4506-8AF0
Copyright:	1950

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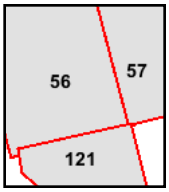

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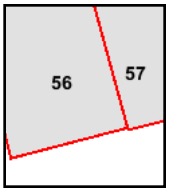

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Address: 2200 4th Street
City, ST, ZIP: Berkeley CA 94710
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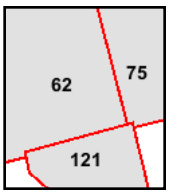

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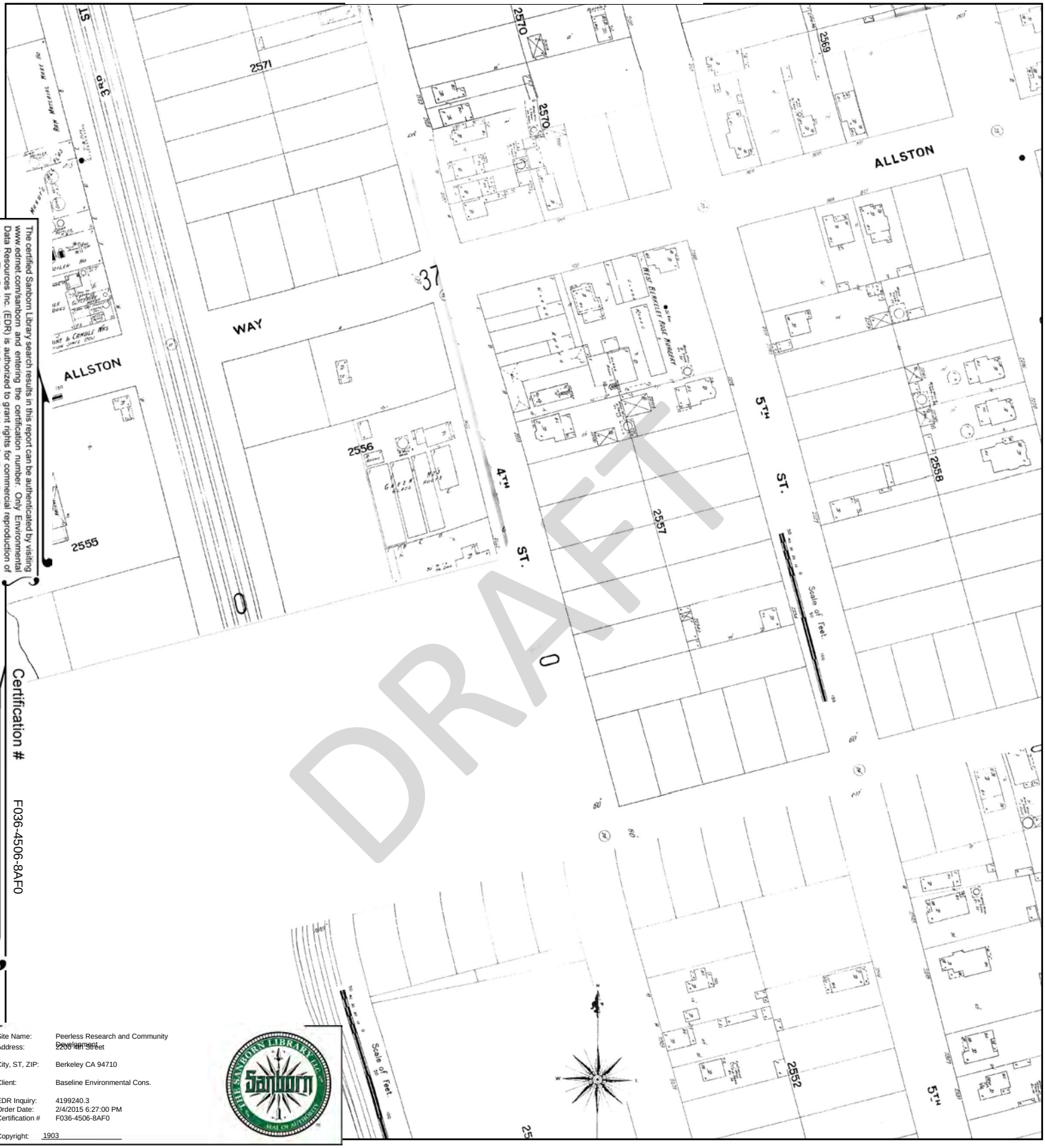
1903 Certified Sanborn Map



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Address: 2200 4th Street
City, ST, ZIP: Berkeley CA 94710
Client: Baseline Environmental Cons.
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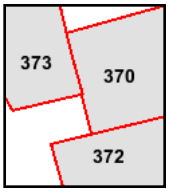

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Volume 3, Sheet 372
Volume 3, Sheet 373

0 Feet 150 300 600

N

Peerless Research and Community Development
2200 4th Street
Berkeley, CA 94710

Inquiry Number: 4199240.5
February 06, 2015

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Date EDR Searched Historical Sources:

Aerial Photography February 06, 2015

Target Property:

2200 4th Street

Berkeley, CA 94710

Year	***Scale***	***Details***	***Source***
1939	Aerial Photograph. Scale: 1"=500'	Flight Year: 1939	USGS
1946	Aerial Photograph. Scale: 1"=500'	Flight Year: 1946	USGS
1958	Aerial Photograph. Scale: 1"=500'	Flight Year: 1958	USGS
1968	Aerial Photograph. Scale: 1"=500'	Flight Year: 1968	USGS
1974	Aerial Photograph. Scale: 1"=500'	Flight Year: 1974	USGS
1982	Aerial Photograph. Scale: 1"=500'	Flight Year: 1982	USGS
1993	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1993	USGS/DOQQ
1998	Aerial Photograph. Scale: 1"=500'	Flight Year: 1998 Best Copy Available from original source	USGS
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
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EDR


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= 500'
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EDR


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EDR

INQUIRY #: 4199240.5

YEAR: 1968

= 500'

N

EDR


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EDR


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EDR


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EDR

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EDR


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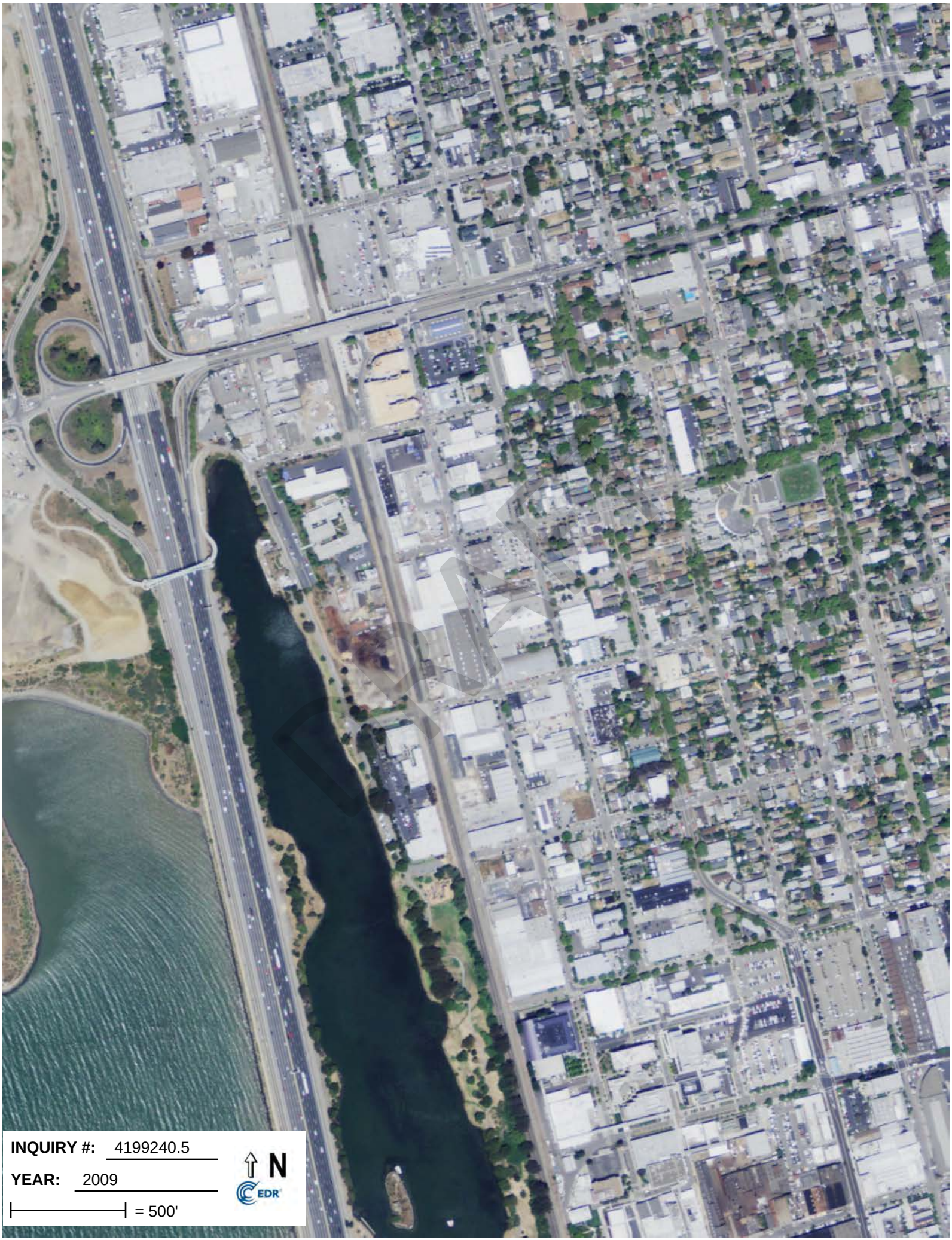
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EDR


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INQUIRY #: 4199240.5
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EDR

APPENDIX B

PREVIOUS ENVIRONMENTAL INVESTIGATIONS

2220 FOURTH STREET

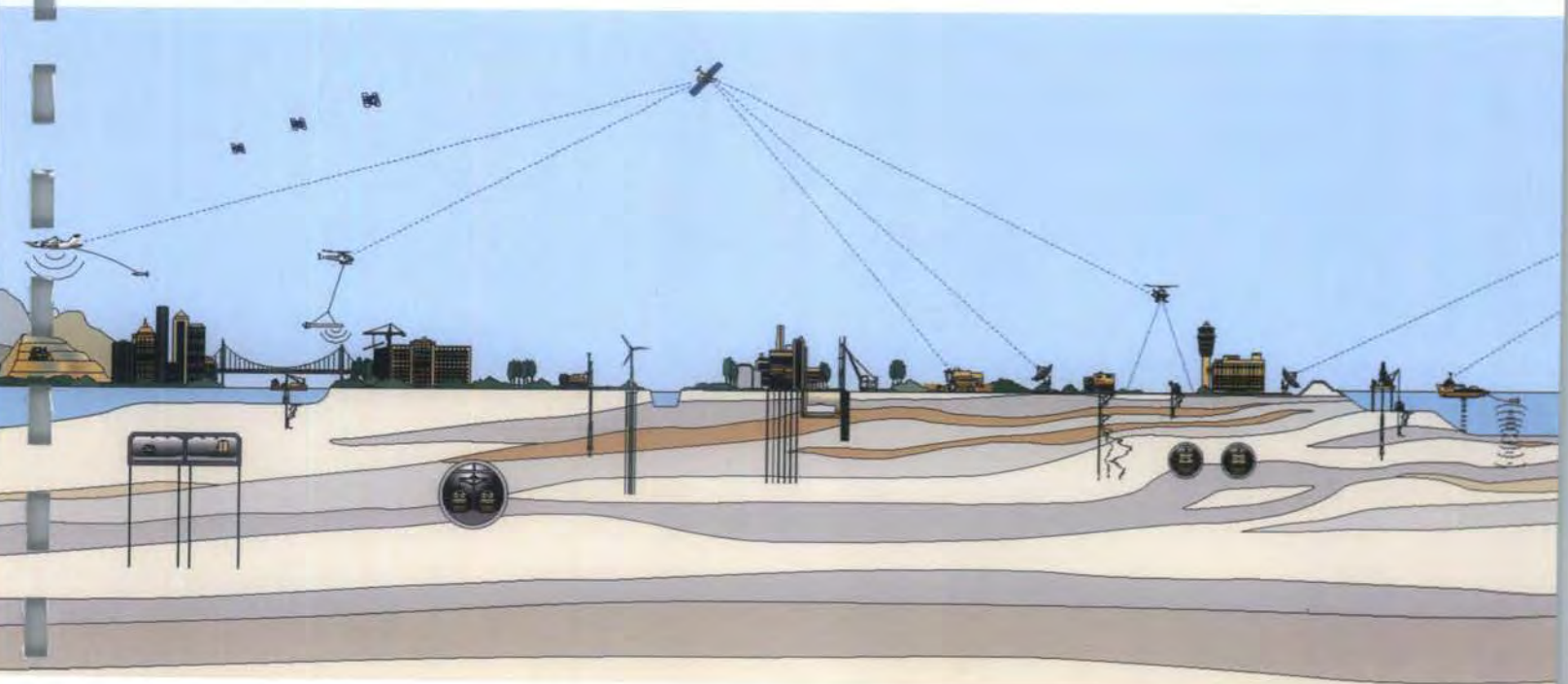
(FUGRO WEST, INC, 2007)

FUGRO WEST, INC.

ADDITIONAL SITE STUDY
2220 FOURTH STREET SITE
BERKELEY, CALIFORNIA

Prepared for:
Herst Ventures, Inc.

FEBRUARY 27, 2007
Fugro Project No. 698.004



FUGRO WEST, INC.

1000 Broadway, Suite 200
Oakland, California 94607
Tel: (510) 268-0461
Fax: (510) 268-0137

February 27, 2007
Project No. 698.004

Herst Ventures, Inc.
P.O. Box 2532
Berkeley, California 94702

Attention: Mr. Douglas Herst

Subject: Additional Site Study Report, Pentachlorophenol and Chlordane Concentrations
2220 Fourth Street, Berkeley, California

Dear Mr. Herst:

Fugro West, Inc., is pleased to present this Additional Site Study Report to describe the current levels of pentachlorophenol and chlordane in the soil and groundwater in the area of the 2220 Fourth Street property in Berkeley, California.

We appreciate the opportunity to provide environmental consultation services to Herst Ventures for this project. If you should have any questions regarding the information presented in this report, please call the undersigned at (510) 268-0461.

Sincerely,

FUGRO WEST, INC.

Jeriann. N. Alexander, P.E., R.E.A.
R.E.A. No. 03130 (exp. 7/07)
Civil Engineer 40469 (exp. 3/07)

JNA:rh

Copies Submitted: (2) Addressee

(1) Derek Van Horn, DTSC
(1) Mark Piros, DTSC
(1) Karen Toth, DTSC
(1) Claude Jemison, DTSC
(1) Andrea Sumits, Holland & Knight
(1) Geoffrey Fiedler, City of Berkeley

CONTENTS

CONTENTS (CONTINUED)

TABLES

PLATES

APPENDICES

1.0 EXECUTIVE SUMMARY

This report represents the results of a voluntary sampling and analysis effort undertaken by Herst Ventures, Inc. (Herst Ventures), the owner of 2220 Fourth Street in Berkeley, California (Site), to address concerns raised by the Department of Toxic Substances Control (DTSC). The DTSC requested the study to evaluate the current level of impacts to soil and groundwater resulting from past usage of termite control compounds by previous operators at the Site. Prior to the Site being purchased by a predecessor of Herst Ventures (Herst Lighting Corp., d.b.a. Peerless Electric Company) in 1981, the 2220 Fourth Street property was used by a variety of pest control businesses. These pest control businesses reportedly mixed and repackaged termite control compounds including aqueous pentachlorophenol (PCP) in a hydrocarbon matrix, and aqueous chlordane in a hydrocarbon matrix. The primary area of mixing was an unpaved area within a former warehouse building that was located on the west side of the property.

In 1984, voluntary remedial efforts were undertaken by a predecessor of Herst Ventures to remove about 80 cubic yards of source area soils. The excavation area was backfilled with imported soil, and the impacted soils were transported offsite to a licensed landfill. Following removal actions, the Site was redeveloped and the existing Site building was completed in 1989. The remediated area (primary area of mixing of termite control compounds) was completely covered by the new reinforced concrete slab-on-grade floor. The western edge of the floor slab was thickened and is supported on a system of drilled, cast-in-place concrete piers.

At the request of the DTSC, several phases of soil and groundwater investigation have been voluntarily conducted both onsite and in the immediately adjacent railroad right-of-way. Upon entering into a right-of-access agreement with the Union Pacific Railroad in 2006, Herst Ventures conducted the latest site investigation including obtaining groundwater samples from accessible existing wells located onsite, and soil samples and a grab groundwater sample from within the adjacent railroad right-of-way. The results of the recent study confirm the data previously generated by Herst Ventures and Union Pacific, and support the finding that impacts to soil and groundwater due to releases of termite control compounds occurring from past operations at the Site are localized to subsurface materials below the west side of the existing Site building and within the railroad embankment area immediately to the west of the existing building. In their present state the impacted materials do not appear to be posing a significant risk to human health and the environment.

Potential human contact with the impacted subsurface materials is effectively limited by a concrete slab and foundation system on the west side of the existing Site structure. We recommend that in the future, when redevelopment of the Site is contemplated, a Project-Specific Soil and Groundwater Management Plan should be developed and implemented. This plan should evaluate risks posed to future site occupants, construction workers and the environment as a result of proposed redevelopment plans. The plan should also present mitigation for risks that may be posed, and describe how impacted materials generated during redevelopment will be properly managed.

There are no current plans to alter the existing railroad right-of-way grade. This is an active railroad and subsurface utility corridor, and existing institutional controls effectively limit access to those with proper health and safety training. Studies completed to date have not identified PCP or chlordane concentrations in soil or groundwater that require further mitigation or monitoring.

While concentrations of PCP and chlordane in the shallow soil exposed in the railroad embankment area west of the existing Site building have decreased over the last 10 years, some concentrations are still elevated. The embankment area is also covered by institutional controls; however, these controls are more difficult to enforce. As such, we recommend that as a further measure of protection, the exposed soil in the embankment area on the west side of the existing structure be covered by a thin layer of concrete. This work will require that a right-of-access permit be obtained from the Union Pacific Railroad for this specific use.

2.0 INTRODUCTION

This report represents the results of a voluntary sampling and analysis study undertaken by Herst Ventures, the owner of 2220 Fourth Street in Berkeley, California (Site), to address concerns raised by the Department of Toxic Substances Control (DTSC). The DTSC requested the study to evaluate the current level of impacts to soil and groundwater resulting from past usage of termite control compounds by previous operators at the Site.

Fugro West, Inc., (Fugro), was retained by Herst Ventures to conduct a targeted investigation to document current levels of pentachlorophenol (PCP) and chlordane in soil and groundwater in the area of concern along the west side of the existing structure and within the adjacent railroad right-of-way. The Site is located within the city limits of Berkeley and within Alameda County, as shown on the Vicinity Map - Plate 1, and Site Plan - Plate 2.

2.1 GENERAL SITE AND CASE BACKGROUND INFORMATION

The Site is located in an area of West Berkeley with a known history of commercial and industrial businesses extending back to the 1940's. Businesses occupying properties in the immediate vicinity of the Site have included metal fabrication, machine shops, foundries, laboratories and paint manufacturing. These businesses have documented use of heavy metals, hydrocarbon fuels, oils, lubricants, degreasing agents, cutting fluids, solvents, acids, bases, and dye/pigment/paint intermediates. Environmental studies conducted in the Site vicinity have confirmed that releases of solvents, metals and petroleum hydrocarbon compounds have locally impacted soils at points of release and as a result shallow groundwater has become impacted due to vertical and lateral migration.

Prior to the Site being purchased by a predecessor of Herst Ventures (Herst Lighting Corp., d.b.a. Peerless Electric Company) in 1981, the 2220 Fourth Street property was used by a variety of pest control businesses. These pest control businesses reportedly mixed and repackaged termite control compounds including aqueous PCP in a hydrocarbon matrix, and aqueous chlordane in a hydrocarbon matrix.

At the request of the DTSC, several phases of soil and groundwater investigation have been voluntarily conducted both onsite and in the immediately adjacent railroad right-of-way. Findings from those investigations were presented in the following reports:

- Groundwater Investigation Report – Peerless Electric Company, Berkeley, California, by Brown and Caldwell, dated August 8,1985;
- Analytical Results Letter – Peerless Lighting Corporation, Berkeley, California by Polymatrix Associates, dated August 4, 1987;
- Site Characterization Report for 2220 Fourth Street, Berkeley, California, by The Mark Group, dated October 11, 1988;
- Groundwater Monitoring – Peerless Lighting, Berkeley, California, by Subsurface Consultants, Inc.,[1] dated September 14, 1993;
- Groundwater Monitoring – Peerless Lighting, Berkeley, California, by Subsurface Consultants, Inc., dated October 29, 1993;
- Soil and Groundwater Investigation, 2220 Fourth Street, Berkeley, California, by Subsurface Consultants, Inc., dated November 23, 1994; and
- Phase I Soil Investigation Report, Right-of-Way West of 2220 Fourth Street, Berkeley, California, by Industrial Compliance (for Union Pacific), dated January 30, 1995.

Voluntary remedial efforts were undertaken to remove source area soils within the primary area of mixing, which was an unpaved area within a former warehouse building. In 1984, about 80 cubic yards of soil were excavated and removed from within the Site building footprint as shown on Plate 2 ("Area of Excavation"). The excavation area was backfilled with imported soil, and the impacted soils were transported offsite to a licensed landfill. Following removal actions, the Site was redeveloped and the existing Site building was completed in 1989. The remediated area (primary area of mixing of termite control compounds) was completely covered by the new reinforced concrete slab-on-grade floor. The western edge of the floor slab was thickened and is supported on a system of drilled, cast-in-place concrete piers.

In June 2005, representatives of Herst Ventures, Inc., and their environmental professionals conducted a presentation to the DTSC that summarized analytical data from studies conducted through March 1995. The data showed that levels of PCP and chlordane in soil at concentrations exceeding California Human Health Screening Levels (CHHSL) existed beneath the concrete floor slab on the west side of the Site, and were present in the railroad embankment area immediately adjacent to the west side of the existing Site building. Similarly, levels of PCP and chlordane at concentrations in excess of Maximum Contaminant Levels (MCL) were present in groundwater below the west side of the existing Site structure.

2.2 SCOPE OF WORK

The work described in this report was conducted in general accordance with the Scope of Work dated November 4, 2005, and approved by the DTSC in a letter dated November 15, 2005 (Appendix A). The purpose of the study was to provide up-to-date data regarding PCP and chlordane concentrations in soil and groundwater in the railroad right-of-way immediately adjacent to the west side of the Site. Specifically, the DTSC requested that in addition to

[1] Subsurface Consultants, Inc., (SCI) is a wholly-owned subsidiary of Fugro West, Inc.

conducting groundwater sampling from existing wells/piezometers located within the Site building, both soil and groundwater samples needed to be collected from points located within the railroad right-of-way.

The sampling locations were to be sampled frequently to a depth of 5 to 7 feet below the ground surface (bgs), and then advanced until groundwater was encountered. Historical records suggested that the assumed groundwater depth was 8 to 12 feet below the existing floor slab of the Site building, and within 5 feet below the adjacent exposed groundsurface within the railroad right-of-way.

2.3 DEVIATIONS TO THE SCOPE OF WORK

No significant modification to the scope of groundwater sampling within the structure occurred; 5 groundwater samples were collected. Due to permitting issues and site constraints, the scope of soil and groundwater sampling within the railroad right-of-way was modified as discussed below. A right-of-entry agreement with Union Pacific (UP) was required to obtain the samples from within the railroad right-of-way. The UP right-of-way spans the entire distance (about 100 feet) between the west or rear wall of the Site building and a concrete retaining wall extending along the west side of the right-of-way. The UP Application for Environmental Right of Entry was submitted on December 5, 2005, and final approval took nearly 7 months to receive. The permit only provided access for the specified work and the permit expired in January 2007 (Appendix B).

To obtain final approval of the permit, the Union Pacific required all contractors to agree to work under strict insurance requirements. It became apparent that Fugro needed to conduct the scope of work without the benefit of a drilling subcontractor as Fugro was unable to retain a subcontractor within the waning contract period that would agree to adhere to the strict insurance requirements of UP. UP would not accept modified insurance requirements to be used for one of their own approved subcontractors (Vironex). Fugro contacted DTSC to alert them to this change in scope: allowing soil samples to be obtained from within hand-excavated holes and grab groundwater samples to be obtained from within slotted plastic well casings installed temporarily in the open holes to facilitate sample collection.

The sampling effort was coordinated with an UP flagman to begin at the end of August. The effort started with USA Alert Notification and a Site meeting for all utility companies with known lines running within the railroad right-of-way. Marking of the utilities proved to be challenging as the participating utility company representatives attempted to check their markings against their maps and discrepancies were noted. As a point of note, the East Bay Municipal Utility District was conducting maintenance work within the railroad right-of-way at Bancroft concurrently with our study and they encountered a mis-marked pipeline in their excavation that resulted in stopping their work. This finding confirmed our concern that care needs to be undertaken when working anywhere within the railroad right-of-way.

Sampling points within the railroad right-of-way were selected to provide coverage of the areas of interest and to avoid buried utility lines (active fiber optic cables, UP switching lines and pressurized petroleum product pipelines), buried rails and ties, and active rail line traffic. Sampling equipment included cleaned stainless steel equipment and slide hammers.

Sampling refusal was met in all but one of the sampling locations, and for several of the sampling locations multiple attempts were made to advance the holes without success. Buried concrete rubble, cobbles and miscellaneous debris with old shoreline fill material stopped borings from reaching their design depths. The sampling program was also constrained by the extreme steepness of the groundwater gradient (the assumed depth to groundwater was 3 to 5 feet below the railroad line grade, actual depth to groundwater was about 11 feet below the railroad grade). Groundwater was only obtained from one sampling point within the railroad right-of-way.

A comparison of the proposed and actual scope of soil and groundwater sampling points for the railroad right-of-way is shown below. Actual sampling locations are shown on Plate 2.

Areas of Investigation	Approved Sampling Plan	Actual Sampling Locations
Borings immediately west of the existing building.	2 borings sampled to 7ft bgs.	2 borings sampled to refusal at 2.5 ft bgs, staggered away from the wall.
Borings between base of slope and east side of the main rail lines.	3 borings sampled to 5ft bgs.	3 borings sampled to refusal at 3.5, 5.5 and 7.5 ft bgs, respectively, no groundwater encountered.
Borings between west side of main rail lines.	3 borings sampled to 5ft bgs.	3 borings sampled, 2 met refusal at 5.5 ft bgs and one was extended to 14.5 ft bgs to collect a groundwater sample.

3.0 ENVIRONMENTAL SETTING

3.1 REGIONAL SETTING

The City of Berkeley is located within the San Francisco Bay plain. The toe of the Berkeley Hills lies approximately 7.5 miles to the northeast. These hills are part of the Diablo Range, a small mountain range that separates the San Francisco Bay from the San Joaquin Valley. These features are part of a series of small basins and ranges within the Coast Ranges of California. The site is located about 500 feet east of the shoreline of a small inlet within the San Francisco Bay, which was formerly known as the Berkeley Embayment. The historical shoreline has typically been extended westward by fill placement during the past 140 years. Locally, fill placement in the early 1930's for highway construction isolated what is now Aquatic Park from open bay waters.

Geologic mapping by Radbruch (1957) indicates that the Site is underlain by thick alluvial deposits of the Temescal Formation. These alluvial deposits typically consist of well-consolidated, inter-fingered layers of gravel, sand, silt, and clay derived from erosion of the Berkeley Hills. These deposits are thickest at the foot of the Berkeley Hills and become thinner toward the shoreline.

3.2 SITE SETTING

The Site topographical elevation, relative to the 1929 National Geodetic Vertical Datum (NGVD) in the immediate vicinity of the Site is approximately 17 to 18 feet NGVD. The local topography slopes to the west.

A change in grade of about 4 to 6 feet exists between the location of the main rail lines and the existing floor slab; the floor slab is elevated above the rail lines. The change in grade is accommodated by a narrow embankment that extends from the west side of the building down to the location of a utility raceway located at the same grade as the main rail lines. The embankment is covered with sparse vegetation and tapers down toward the north.

3.2.1 Soil Conditions

Previous studies (Mark Group and Subsurface Consultants, Inc.) indicate that the Site building is underlain by up to 4 to 5 feet of fill underlain by alluvial soils. The fill comprises dark brown sandy and silty clays, and is noted to contain minor amounts of wood and other debris. The alluvium comprises alluvial fan materials carried down from the Berkeley Hills formations. Below the Site the alluvium consists of interbedded layers of medium stiff to stiff silty clays and clayey silts, and dense clays, sands and cobbles.

The depth and consistency of the fill, and the depth to the alluvium below the railroad grade is more difficult to ascertain, as studies to date have not successfully evaluated existing conditions to determine this data. The fill below the railroad grade is compressed due to loading and appears to contain appreciable cobbles and concrete rubble.

3.2.2 Groundwater Conditions

The general groundwater flow direction is to the west, toward the Aquatic Park. Past studies have inferred a groundwater flow direction toward the north west, however these studies did not address the significant influence rainfall and storm water infiltration have within the area of the exposed railroad right-of-way and other areas of the Site where water is allowed to infiltrate. It is a well-known phenomenon that surface water infiltration locally alters flow directions in a very limited manner. Based on a review of the current Site conditions and a review of historic field notations by other investigators, it is clear that water historically builds up and ponds on Site and within the railroad right-of way during storm events. This buildup and ponding of water alters the local gradient by impeding flow away from the Site during winter months.

During the UP studies in 1994 and 1995, water was encountered at very shallow depths (3 to 5 feet bgs) in the boreholes extended through the railroad grade, and was ponded in areas along the rail lines at low points and near where storm water flow ditches channel water to the railroad grade. Disregarding data from wells influenced locally by infiltration, and observing the difference in depth to groundwater below the Site and the water depth encountered within the railroad right-of-way near the lines, we believe the gradient should be considered as nearly flat during the winter months.

Conversely, the gradient is steeper during the summer months. As observed during this study, the difference between stabilized water levels within the Site wells and the stabilized depth of water in boring HA-1 (measured the day after drilling) was on the order of 5 to 6 feet.

Further, since no observed subsurface barriers to water flow have been identified, it appears that the general flow direction is toward Aquatic Park which is situated about 500 feet to the west.

4.0 FIELD ACTIVITIES

The subsurface exploration was conducted between August 29 and September 13, 2006. USA Alert notification for utility marking was conducted as described in Section 1.0 and Fugro notified the City of Berkeley that the field activities were to commence (Appendix B). The exploration program consisted of collecting soil and grab groundwater samples from hand-augered holes, and groundwater samples from five existing wells/piezometers. All drilling and sampling equipment was decontaminated prior to each use with a soap solution followed by water rinses. Investigation derived materials including soil cuttings and wash water were placed into DOT approved 55-gallon drums and temporarily stored within the building pending the results of the analytical testing.

Soil samples for chemical analyses were retained in stainless steel liners, and sealed with Teflon® sheeting and plastic end-caps. Groundwater samples were decanted into pre-cleaned containers provided by the analytical laboratory. Samples were stored in an ice-chilled cooler pending delivery to the analytical laboratory. All samples were delivered under appropriate chain-of-custody protocol to Curtis & Tompkins, Ltd (C&T) a state-certified analytical laboratory, for chemical analyses.

4.1 SOIL SAMPLING

The test borings, designated HA-1 through HA-8, were advanced with stainless steel hand augering equipment. The borings extended to depths ranging from about 2 feet to 14.5 feet below the adjacent ground surface (bgs). Boring HA-1 was extended into groundwater, which was initially encountered at a depth of about 13.9 feet bgs. Borings HA-2 through HA-8 were terminated upon drilling/sampling refusal and groundwater was not encountered. Upon completion of soil sampling in boring HA-1, a temporary well screen was installed into the boring to facilitate collection of a water sample as described in the next section. The remaining borings were backfilled with neat cement grout to the ground surface. Logs of the borings are presented in Appendix B. Boring locations are shown on Plate 2.

Soil samples were retrieved using a drive sampler fitted with 2-inch diameter stainless steel sleeves. Each sample was visually checked for evidence of staining, and selected samples were screened in the field with an organic vapor meter (OVM) to check for the presence of volatile organic compounds (VOCs). Stained soil was observed in Boring HA-5 from 5.5 to 7.0 feet bgs with a maximum OVM reading of 25 parts per million (ppm). No stained soil and no organic vapors above background levels were detected in any of the samples screened from all other borings.

Exposed soil was encountered at all boring locations within the railroad right-of-way. Shallow soils were comprised of silty gravel and sandy clay fill materials. The fill contained concrete rubble, cobbles and miscellaneous debris.

4.2 GROUNDWATER SAMPLING

Groundwater within the railroad right-of-way was encountered at a depth of approximately 13.9 feet bgs at boring HA-1. A temporary plastic well screen was placed into this boring to facilitate the collection of sufficient water samples. Clean, disposable bailers were lowered through the well screen to retrieve the water samples. Due to slow recharge conditions, water samples were collected over a several day period. Each bailer of water removed was checked for odors and the presence of sheen; no odor or sheen was observed. Following completion of groundwater sampling, the well screen was removed and the boring was backfilled with neat cement grout to the ground surface.

A groundwater monitoring event was also conducted during this study. The event comprised measuring the depth to groundwater, and purging and sampling upon sufficient recharge, two existing groundwater monitoring wells (M-1 and M-2) and three existing piezometers (S-7, S-8 and S-10), all located within the footprint of the existing Site structure as shown on Plate 2. The depth to water was measured with an electric sounder and recorded on Well Sampling Forms presented in Appendix C. The depth to groundwater varied from about 11 to 12.5 feet below the adjacent floor slab level. This depth is similar to depths historically recorded.

Purging during the monitoring event was conducted using clean, disposable bailers. Each bailer of water removed was checked for odors and the presence of sheen; comments are noted on the Well Sampling Forms. Three casing volumes of water were removed from the monitoring wells. Purge water from Wells M-1 and M-2 appeared "sudsy" or slightly foamy, no odors or sheen were noted. Piezometers S-7, S-8 and S-10 were purged dry. Purge water from piezometer S-7 was noted as being turbid and to possess a slight hydrocarbon sheen and odor. No odors or sheen were noted for purge water from piezometers S-8 and S-10.

4.3 INVESTIGATION DERIVED WASTE REMOVAL

Three DOT 55-gallon steel drums of investigation derived waste materials were stored onsite pending the results of the analytical testing. Two drums contained soil cuttings and one drum contained purge and decontamination water. The analytical data from the sampling event was submitted to Advanced Environmental Services (AES). AES required additional TCLP analyses for chlorinated pesticides. Upon review of all the data AES arranged for transportation and disposal of the drummed materials as "non-hazardous waste". Copies of the manifests are included in Appendix E.

5.0 CHEMICAL TESTING PROGRAM

In accordance with the approved Scope of Work all soil and groundwater samples collected during the field effort were analyzed for the following chemicals of concern:

- Pentachlorophenol using EPA Test Method 8270;
- Chlordane using EPA Test Method 8080; and
- Total Petroleum Hydrocarbons within the diesel range (TPHd) using EPA Method 8015m with silica gel cleanup.

Chemical laboratory reports and chain-of-custody documentation are included in Appendix D.

The lateral and vertical extent of PCP impacted soil appears to be relatively well defined and limited to soils at within the narrow embankment located immediately adjacent to the existing Site structure and soils located below the existing floor slab situated adjacent to the west side wall of the existing Site structure. These materials are not exposed to human receptors.

6.1.2 Chlordane Results

Detected concentrations of chlordane[5] ranged from 2.4 ug/kg (HA-6-2) to 4,300 ug/kg (HA-5-1) during this study for the railroad right-of-way. Chlordane concentrations for 22 of the 25 soil samples analyzed are below the respective PRG for an industrial land use, the CHHSL for a commercial/industrial land use, the TTLC value and the ESL values.

Two samples (HA-5-1 and HA-7-1) possessed elevated concentrations of chlordane above the TTLC value, a value used by the State of California to evaluate whether a material should be handled as a hazardous waste during transportation and disposal. One sample, HA-7-2, was above the respective PRG, CHHSL, and ESL values and below the TTLC. These three samples were obtained from soils located at the toe and at the top of the existing embankment immediately adjacent to the Site structure.

The data collected during this study confirmed previous studies that showed that the soils within the narrow embankment contain the highest concentrations of chlordane. Samples obtained from the west side of the main lines did not contain chlordane above laboratory reporting limits. Vertically, the chlordane concentrations decrease with depth with the exception of location HA-8 at the top of the embankment. No significant difference in concentration was measured between the HA-8 sample obtained at 0.5 feet bgs and the sample obtained from 1.5 feet bgs.

6.1.3 Total Petroleum Hydrocarbon Results

Nineteen of the 25 samples analyzed possessed TPHd concentrations ranging from 1.6 mg/kg (HA-6-1) to 170 mg/kg (HA-5-4) during this study of the railroad right-of-way. The detected concentrations are below the respective ESLs established by the RWQCB. No definitive correlation could be determined between the presence of the PCP and chlordane and these detected TPHd concentrations in soil.

6.2 GROUNDWATER SAMPLING RESULTS

6.2.1 Pentachlorophenol (PCP) Results

Pentachlorophenol (PCP) was not detected at the downgradient groundwater sample location HA-1 located on the west side of the railroad right-of-way.

PCP was detected in each groundwater sample tested from the selected wells and piezometers located within the existing Site building footprint. Detected concentrations of PCP ranged from 3,100 ug/l (M-1) to 11,000 ug/l (S-8). The concentrations of PCP have been detected at the well and piezometer locations in a mixture comprised of PCP, chlordane and petroleum hydrocarbons. The range of concentrations is similar to past studies.

[5] Chlordane values presented are the sum of alpha-Chlordane and gamma-Chlordane isomers.

6.2.2 Chlordane Results

Chlordane was not detected at the downgradient groundwater sample location HA-1 located on the west side of the railroad right-of-way.

Chlordane was also not detected in groundwater samples from wells M-1 and M-2, and piezometer S-8. Chlordane was detected in the groundwater samples from piezometer S-7 (9.4 ug/L) and piezometer S-10 (1.9 ug/L). Chlordane appears to exist in a hydrocarbon mixture and since chlordane adsorbs to sediment/soil, the relative amount of chlordane present historically has varied.

6.2.3 Total Petroleum Hydrocarbon Results

Detected TPHd concentrations in the groundwater ranged from 56 ug/l (HA-1) to 39,000 ug/l (S-7). Review of the laboratory chromatographs and discussions with the laboratory manager indicate that the relatively low TPHd concentration detected at the downgradient sampling location (HA-1) possessed a heavier petroleum fraction and did not have the same indicators (peaks) as the samples obtained from the wells and the piezometers. This strongly suggests that the source of the impacts at the downgradient sample location and the source of the impacts observed at the wells and piezometers are different.

7.0 CONCLUSIONS

The current study confirms that impacts to soil and groundwater due to releases of termite control compounds occurring from past operations at the Site are localized to those subsurface materials below the west side of the existing Site building and within the railroad embankment area immediately to the west of the existing building. In their present state the impacted materials do not appear to be posing a significant risk to human health and the environment. The prominent findings supporting this conclusion are presented below:

- Soils containing PCP and chlordane are either covered with a structurally reinforced concrete slab and thickened foundation system or are located within an embankment, which resides in a land and public use restricted area owned by the Union Pacific Railroad. The existing physical barriers and institutional controls effectively limit routine human contact with the impacted soils.
- The concentrations of PCP and chlordane in the shallow soil exposed in the embankment have decreased since the sampling conducted by the railroad in 1994/1995.
- The concentrations of the PCP, TPHd and chlordane mixture in groundwater have not significantly changed over the past 20 years. While the concentrations detected do exceed MCL's, the local groundwater is brackish and not considered a useable drinking water source. The closest potential receptor at potential risk would be an aquatic receptor located more than 500 feet to the west. However, since the plume has not significantly migrated, the risk of exposure to an aquatic receptor is low.
- Construction workers/maintenance workers, and environmental professionals are the potential receptors, who may come into contact with the impacted soil and groundwater. Based on a comparison of the concentrations of chemicals of concern

with published regulatory guidelines, it appears that incidental contact would not pose a significant risk to these receptors when following standard health and safety procedures.

8.0 RECOMMENDATIONS

Potential human contact with the impacted subsurface materials is effectively limited by a concrete slab and foundation system on the west side of the existing Site structure. We recommend that access to the existing wells be maintained. Further, we recommend that in the future, when redevelopment of the Site is contemplated, a Project-Specific Soil and Groundwater Management Plan should be developed and implemented. This plan should evaluate risks posed to future site occupants, construction workers and the environment as a result of proposed redevelopment plans. The plan should also present mitigation for significant risks that may be posed, and describe how impacted materials generated during redevelopment will be properly managed.

There are no current plans to alter the existing railroad right-of-way grade. This is an active railroad and subsurface utility corridor, and existing institutional controls limit access to those with proper health and safety training. Studies completed to date have not identified PCP or chlordane concentrations in soil or groundwater that require further mitigation or monitoring.

While concentrations of PCP and chlordane in the shallow soil exposed in the railroad embankment area west of the existing Site building have decreased over the last 10 years, some concentrations are still elevated. The embankment area is also covered by institutional controls; however, these controls are more difficult to enforce. As such, we recommend that as a further measure of protection, the exposed soil in the embankment area on the west side of the existing structure be covered by a thin layer of concrete. This work will require that a right-of-access permit be obtained from the Union Pacific Railroad for this specific use.

9.0 LIMITATIONS

Fugro has prepared this report in a professional manner, using that degree of skill and care exercised for similar projects under similar conditions by reputable and competent environmental consultants. Fugro shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the report was prepared. Fugro also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report. We believe the conclusions stated herein to be factual, but no guarantee is made or implied. This report has been prepared for the benefit of Herst Ventures, Inc. and the DTSC. The information contained in this report, including all exhibits and attachments, may not be used by any party other than the Herst Ventures, Inc., without the express written consent of Fugro.

TABLES

Table 1
Summary of Current Chemical Analytical Laboratory Results for Compounds in Soil Samples
2220 Fourth Street, Former Terminex Site
Berkeley, California

Sample Location	Sample Name	Sample Date	Sample Depth (feet bgs)	Pentachlorophenol (6270) ug/kg	alpha-Chlordane (8080) ug/kg	gamma-Chlordane (8080) ug/kg	Chlordane[5] (8080) ug/kg	TPHd[1] (8015m) mg/kg
HA-1	HA-1-1	Aug-29-06	0.5	<6,800	<17	<17	<17	**99$_{HY}$**
	HA-1-2	Aug-29-06	2.0	<660	<8.4	<8.4	<8.4	**6.2$_{HY}$**
	HA-1-3	Aug-29-06	5.0	<660	<1.7	<1.7	<1.7	<1.0
	HA-1-4	Aug-29-06	14.5	<680	<1.7	<1.7	<1.7	**2.0$_{HY}$**
HA-2	HA-2-1	Aug-29-06	0.5	<6,700	<17	<17	<17	**61$_{HY}$**
	HA-2-2	Aug-29-06	2.0	<670	<8.6	<8.6	<8.6	**21$_{HY}$**
	HA-2-3	Aug-29-06	5.0	<670	<1.7	<1.7	<1.7	<1.0
HA-3	HA-3-1	Aug-29-06	0.5	<3,400	<17	<17	<17	**46$_{HY}$**
	HA-3-2	Aug-29-06	2.0	<1,300	<8.4	<8.4	<8.4	**3.3$_{HY}$**
	HA-3-3	Aug-29-06	5.0	<660	<8.5	<8.5	<8.5	**4.0$_{HY}$**
HA-4	HA-4-1	Aug-30-06	0.5	<2,000	**230**	**270$_{C}$**	**500$_{C}$**	**30$_{HY}$**
	HA-4-2	Aug-30-06	2.0	<670	<1.7	<1.7	<1.7	<1.0
	HA-4-3	Aug-30-06	5.0	<670	<1.7	<1.7	<1.7	<1.0
HA-5	HA-5-1	Aug-30-06	0.5	<6,700	**2,400$_{C}$**	**1,900**	**4,300$_{C}$**	**140$_{HY}$**
	HA-5-2	Aug-30-06	2.0	<660	**23$_{C}$**	**23$_{C}$**	**46$_{C}$**	<1.0
	HA-5-3	Aug-30-06	5.0	<680	**70$_{C}$**	**61**	**131$_{C}$**	**2.4$_{HY}$**
	HA-5-4	Aug-30-06	5.5	<670	<1.7	**71$_{C}$**	**71.85$_{C}$**	**170$_{HY}$**
	HA-5-6	Aug-30-06	6.5	<670	**2.4$_{C}$**	**7.4**	**9.8$_{C}$**	**63$_{HY}$**
	HA-5-7	Aug-30-06	7.0	<670	<1.7	<1.7	<1.7	**13$_{HY}$**
HA-6	HA-6-1	Aug-31-06	0.5	<2,700	**290$_{C}$**	**230$_{C}$**	**520$_{C}$**	**1.6$_{HY}$**
	HA-6-2	Aug-31-06	2.0	<670	<1.7	**2.4**	**2.4**	**27$_{HY}$**
HA-7	HA-7-1	Aug-31-06	0.5	<2,700	**1,600**	**1,900**	**3,500**	**84$_{H}$**
	HA-7-2	Aug-31-06	2.0	<6,800	**1,000**	**1,200**	**2,200**	**65$_{HY}$**
HA-8	HA-8-1	Aug-31-06	0.5	<3,300	**550**	**710**	**1,260**	**29$_{HY}$**
	HA-8-2	Aug-31-06	1.5	<3,300	**590**	**740**	**1,330$_{C}$**	**38$_{HY}$**
Commercial/ Industrial Land Use CHHSL[2]				13,000	NE	NE	1,700	NE
Industrial PRG[3]				9,000	NE	NE	6,500	NE
Commercial ESL[4]				13,000	NE	NE	1,700	750
Construction Worker ESL[4]				150,000	NE	NE	21,000	750
TTLC[6]				17,000	NE	NE	2,500	NE

Notes:
[1] = with silica gel cleanup
[2] = California Human Health Screening Levels developed by the office of Environmental Health Hazard Assessment (OEHHA) January 2005
[3] = Preliminary Remediation goals established by the Unites State Environmental Protection Agency (USEPA) October 2004
[4] = Environmental Screening Levels established by the San Francisco Regional Water Quality Control Board (SFRWQCB) February 2005, Table K-2 for Commercial/Industrial Worker Exposure, Table K-3 for Construction Worker Risks
[5] = sum of alpha-chlordane and gamma-chlordane
[6] = Total Threshold Limit Concentration as established by the State of California
Detected concentrations listed in **bold**
<not detected at or above the listed analytical reporting limit
bgs = below ground surface
C = presence confirmed, but RPD between columns exceeds 40%
H = Heavier hydrocarbons contributed to the quantitation
L = Lighter hydrocarbons contributed to the quantitation
NE = Not Established
TPHd = Total Petroleum Hydrocarbons quantified as diesel range
ug/kg = microgram per kilogram
Y = Sample exhibits chromatographic pattern, which does not resemble standard

Table 2
Summary of Current Chemical Analytical Laboratory Results for Groundwater Samples
2220 Fourth Street, Former Terminex Site
Berkeley, California

Sample Location	Sample Date	Pentachlorophenol (6270) ug/l	alpha-Chlordane (8080) ug/l	gamma-Chlordane (8080) ug/l	Chlordane[4] (8080) ug/l	TPHd[1] (8015m) ug/l
M-1	Aug-30-06	**3,100**	<2.4	<2.4	<2.4	**1,200** YZ
M-2	Aug-30-06	**4,300**	<2.5	<2.5	<2.5	**2,000** YZ
S-7	Sept-01-06 through Sept-13-06	**9,300**	**5**	**4.4**	**9.4**	**39,000**
S-8	Aug-31-06 through Sept-07-06	**11,000**	<2.4	<2.4	<2.4	**3,900** YZ
S-10	Sept-01-06 through Sept-12-06	**9,400**	**0.7**	**1.2** C	**1.9** C	**4,300** LYZ
HA-1[2]	Aug-31-06 and Sept-01-06	<0.71	<0.3	<0.3	<0.3	**56** HY
	MCL[3]	1	NE	NE	0.10	NE

Notes:
[1] = with silica gel cleanup
[2] = Sample collected from PVC casing within open borehole HA-1
[3] = Maximum Contaminant Level
[4] = sum of alpha-chlordane and gamma-chlordane
<not detected at or above the listed analytical reporting limit
C = presence confirmed, but RPD between columns exceeds 40%
Detected concentrations listed in **bold**
H = Heavier hydrocarbons contributed to the quantitation
L = Lighter hydrocarbons contributed to the quantitation
NE = Not Established
TPHd = Total Petroleum Hydrocarbons quantified as diesel range
ug/l = micrograms per liter
Y = Sample exhibits chromatographic pattern, which does not resemble standard
Z = Sample exhibits unknown single peak or peaks

Table 3
Historical Contaminant Concentrations in Soil
2220 Fourth Street
Berkeley, California

Boring	Depth (feet)	O&G (mg/kg)	Pentachlorophenol (ug/kg)	Chlordane[1] (ug/kg)	Fuel Hydrocarbons TEH (mg/kg)
B&C Investigation 1983 (2220 Fourth Street) Located within Area of Excavation					
B-1	2	NA	NA	**980**	NA
	6	NA	NA	**1,500**	NA
	10	NA	NA	<20	NA
B-2	2	NA	NA	<130	NA
	5	NA	NA	<130	NA
B-3	2	NA	NA	**390**	NA
	5	NA	NA	**12,000**	NA
	7.5	NA	NA	**33,000**	NA
	10	NA	NA	**3,800**	NA
B-4	2	NA	NA	<130	NA
	4.5	NA	NA	<130	NA
B&C Investigation 1986 (2220 Fourth Street)					
1	0	NA	<2,000	NA	NA
	2.5	NA	<2,000	NA	NA
	4.5	NA	<2,000	NA	NA
2	0	NA	<2,000	NA	NA
	2.5	NA	<2,000	NA	NA
	5	NA	<2,000	NA	**350**
3	0	NA	<2,000	NA	NA
	2.5	NA	<2,000	NA	NA
	5	NA	<2,000	NA	NA
	6	NA	<2,000	NA	NA
Mark Group Investigation 1987 (2220 Fourth Street)					
M-1	7.5	NA	<1,600	NA	NA
	10	NA	<1,600	NA	NA
M-2	5	NA	<1,600	NA	NA
	10	NA	**2,200**	NA	NA
M-4	5	NA	<1,600	NA	NA
	10	NA	<1,600	NA	NA
Polymatrix Investigation 1987 (2220 Fourth Street)					
Comp 3	0	NA	**460,000**	NA	NA
Comp 4	3.5	NA	**21,000**	NA	NA
SCI Investigation 1994 (2220 Fourth Street)					
7	2	NA	**14,000**	**6,200[2]**	**160**
	6	NA	**130,000**	**12,000[2]**	**4,200**
8	2	NA	**5,300**	**5,500[2]**	**61**
	8	NA	<2,000	**36[2]**	<1
9	2	NA	**4,400**	**5,400[2]**	**660**
	6	NA	**1,300**	**250[2]**	**1**
10	2	NA	<20,000	**28,000[2]**	**6,100**
	8	NA	**9,400**	**1,400[2]**	**290**

Table 3
Historical Contaminant Concentrations in Soil
2220 Fourth Street
Berkeley, California

Boring	Depth (feet)	O&G (mg/kg)	Pentachlorophenol (ug/kg)	Chlordane[1] (ug/kg)	Fuel Hydrocarbons TEH (mg/kg)
Levine-Fricke 1994 Investigation (UP Property)					
SB1	0.5	180	5,100	NA	24
	3	57	ND	NA	10
	7	40	ND	NA	10
SB2	0.5	7	ND	NA	4
	5	7	3,800	NA	5
	6.5	ND	2,800	NA	23
SB3	3	78	18,000	NA	1,400
	5	90	110,000	NA	6,000
	7	10	28,000	NA	580
Industrial Compliance 1995 Investigation (UP Property)					
B-1	0.0	NA	<330	<210	<5.0
	2.0	NA	<330	<20	<5.0
	4.5	NA	<330	15	<5.0
B-2	0.0	NA	<330	<180	30*
	2.0	NA	<330	<200	<5.0
	5.0	NA	<330	<210	<5.0
	10.0	NA	<330	<20	<5.0
	10.5	NA	<330	<200	39*
B-3	0.0	NA	7,200	19,000	67*
	0.0	NA	4,400	18,000	42*
	2.0	NA	190,000	3,800	10000*
	5.0	NA	20,000	2,100	5000*
B-4	0.0	NA	<3,300	22,000	48*
	2.0	NA	<3,300	570,000	37*
	3.0	NA	<330	130,000	17*
B-5	0.0	NA	<3,300	92,000	75*
	2.0	NA	1,800	310,000	6.7*
	5.0	NA	<330	4,000	<5.0
	5.5	NA	<330	5,700	<5.0
	7.5	NA	<330	1,200	<5.0
B-6	0.0	NA	<3,300	<2,200	5.9*
	2.0	NA	<330	<20	<5.0
	5.0	NA	<330	<200	<5.0
	9.0	NA	<330	<21	65**
	10.0	NA	<330	<17	<5.0
B-7	0.0	NA	<3,300	<2,100	<5.0
	2.0	NA	<330	<20	<5.0
	5.0	NA	<330	<20	<5.0
	10.0	NA	<330	<20	<5.0
B-8	0.0	NA	<3,300	<1,900	96*
	2.0	NA	<330	<210	<5.0

Table 3
Historical Contaminant Concentrations in Soil
2220 Fourth Street
Berkeley, California

Boring	Depth (feet)	O&G (mg/kg)	Pentachlorophenol (ug/kg)	Chlordane[1] (ug/kg)	Fuel Hydrocarbons TEH (mg/kg)
Industrial Compliance 1995 Investigation (UP Property) - continued					
B-9	0.0	NA	<3,300	<2,000	**20***
	2.0	NA	<330	<200	<5.0
	3.0	NA	<330	<21	<5.0
	5.0	NA	<330	<20	<5.0
B-10	0.0	NA	<3,300	<2,000	**41***
	2.0	NA	<330	<200	<5.0
	5.0	NA	<330	<20	<5.0
B-11	0.0	NA	<330	<2,000	**19***
	2.0	NA	<330	<20	<5.0
B-12	0.0	NA		<1,900	**66***
	2.0	NA	<330	<210	**5.8***
	5.0	NA	<330	<19	<5.0
	6.0	NA	<330	<20	<5.0
	8.0	NA	<330	<21	<5.0
B-13	0.0	NA	<3,300	<3,100	**200***
	2.0	NA	<3,300	<2,400	**200***
Fugro West, Inc 2006 (2220 Fourth Street)					
HA-1	0.5	NA	<6,800	<17	**99_{HY}**
	2.0	NA	<660	<8.4	**6.2_{HY}**
	5.0	NA	<660	<1.7	<1.0
	14.5	NA	<680	<1.7	**2.0_{HY}**
HA-2	0.5	NA	<6,700	<17	**61_{HY}**
	2.0	NA	<670	<8.6	**21_{HY}**
	5.0	NA	<670	<1.7	<1.0
HA-3	0.5	NA	<3,400	<17	**46_{HY}**
	2.0	NA	<1,300	<8.4	**3.3_{HY}**
	5.0	NA	<660	<8.5	**4.0_{HY}**
HA-4	0.5	NA	<2,000	**500_{C}**	**30_{HY}**
	2.0	NA	<670	<1.7	<1.0
	5.0	NA	<670	<1.7	<1.0
HA-5	0.5	NA	<6,700	**$4,300_{C}$**	**140_{HY}**
	2.0	NA	<660	**46_{C}**	<1.0
	5.0	NA	<680	**131_{C}**	**2.4_{HY}**
	5.5	NA	<670	**71.85_{C}**	**170_{HY}**
	6.5	NA	<670	**9.8_{C}**	**63_{HY}**
	7.0	NA	<670	<1.7	**13_{HY}**
HA-6	0.5	NA	<2,700	**520_{C}**	**1.6_{HY}**
	2.0	NA	<670	**2.4**	**27_{HY}**
HA-7	0.5	NA	<2,700	**3,500**	**84_{H}**
	2.0	NA	<6,800	**2,200**	**65_{HY}**

Table 3
Historical Contaminant Concentrations in Soil
2220 Fourth Street
Berkeley, California

Boring	Depth (feet)	O&G (mg/kg)	Pentachlorophenol (ug/kg)	Chlordane[1] (ug/kg)	Fuel Hydrocarbons TEH (mg/kg)
HA-8	0.5	NA	<3,300	**1,260**	**29_{HY}**
	1.5	NA	<3,300	**$1,330_{C}$**	**38_{HY}**
CHHSL Commercial/Indust. Land Use			**13,000**	**1,700**	NE
PRG Industrial			**9,000**	**6,500**	NE
ESL Commercial (Table K-2)			**13,000**	**1,700**	**750**

Notes:
[1] = sum of alpha-chlordane and gamma-chlordane isomers
[2] = Total Chlordane
* = C18-C24 Diesel
** = C-8-C14 Kerosene
< = not detected at or above the listed analytical reporting limit
C = presence confirmed, but RPD between columns exceeds 40%
CHHSL = California Human Health Screening Levels developed by the Office of Environmental Health Hazard Assessment (OEHHA) January 2005
Detected concentrations in **bold**
ESL = Environmental Screening Levels established by the San Francisco Regional Water Quality Control Board (SFRWQCB) February 2005
H = Heavier hydrocarbons contributed to the quantitation
L = Lighter hydrocarbons contributed to the quantitation
mg/kg = Milligrams per kilogram
NA = Not analyzed
ND = Not Detected
PRG = Preliminary Remediation goals established by the Unites State Environmental Protection Agency (USEPA) October 2004
TEH = Total extractable hydrocarbons
ug/kg = Micrograms per kilogram
Y = Sample exhibits chromatographic pattern, which does not resemble standard

Table 4
Historical Chemical Concentrations in Groundwater
2220 Fourth Street
Berkeley, California

Well	Date	DTW (feet)	Volatile Organics								Mfg of Plastics	Wood Preservative Pesticide	Fuel Hydrocarbons						Pesticides		
			1,1,1-TCA (ug/l)	1,1-DCA (ug/l)	TCE (ug/l)	Cis 1,2-DCE (ug/l)	Trans 1,2-DCE (ug/l)	MIBK (ug/l)	1,2-DCA (ug/l)	Vinyl Chloride (ug/l)	1,1-DCE (ug/l)	PCP (ug/l)	TVH (ug/l)	TEH (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl Benzene (ug/l)	Total Xylenes (ug/l)	Chlordane[1] (ug/l)	Dieldrin (ug/l)	Heptachlor Epoxide B[2] (ug/l)
Well Samples																					
W-1	Jun-1-85	10.44	<0.5	<0.5	**34**	NA	<0.5	NA	<0.5	<0.5	<0.5	<10	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.3	<0.05	<0.05
	Feb-1-86	8.82	<0.5	<0.5	**18**	NA	<0.5	NA	**24**	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA
	May-87	--	**30,000**	<100	<100	NA	<100	NA	<100	<100	**2,000**	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Jul-1-87	--	**17,000**	<100	<100	NA	<100	NA	<100		**2,000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-2	Jun-1-85	11.41	<0.5	<0.5	**28**	NA	<0.5	NA	<0.5	<0.5	<0.5	**26,000**	NA	NA	<0.5	<0.5	2.3	<0.5	NA	NA	NA
	Feb-1-86	8.26	<0.5	<0.5	<0.5	NA	<0.5	NA	<0.5	<0.5	<0.5	**3,400**	NA	NA	NA	NA	NA	NA	NA	NA	NA
	May-87	--	**91**	<10	**1,200**	NA	<10	NA	<10	<10	<10	**1,500**	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Jul-1-87	--	<0.5	<0.5	**12**	NA	<0.5	NA	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-3	Jun-1-85	11.99	<25	<25	**420**	NA	<25	NA	<25	**1,400**	<25	**200**	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.3	<0.05	<0.05
	Feb-1-86	10.18	<2	<2	**280**	NA	<2	NA	<2	<2	<2	**11,000**	NA	NA	NA	NA	NA	NA	NA	NA	NA
	May-87	--	**65**	<2.5	**260**	NA	<2.5	NA	<2.5	<2.5	**5.5**	**8,000**	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Jul-1-87	--	**65**	<2.5	**340**	NA	<2.5	NA	<2.5	<2.5	<2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-4	Jun-1-85	11.73	<25	<25	**950**	NA	<25	NA	<25	<25	<25	**120**	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.3	<0.05	<0.05
	Feb-1-86	10.02	<5	<5	**440**	NA	<5	NA	<5	<5	<5	**860**	NA	NA	NA	NA	NA	NA	NA	NA	NA
	May-87	--	<0.5	<0.5	<0.5	NA	<0.5	NA	<0.5	<0.5	<0.5	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Jul-1-87	--	<10	<10	**1,300**	NA	<10	NA	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M-1	May-88	12.74	<0.5	<0.5	**184**	<0.5	<0.5	<0.5	**3.3**	<0.5	<0.5	**216**	NA	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	Aug-1-93	12.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5,000**	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Oct-1-93	12.41	**30**	<5	**300**	**50**	<5	**200**	<5	<10	**40**	NA	**320**	**2,300**	<5	<5	<5	<5	NA	NA	NA
	Nov-1-94	12.43	**44**	<5	**310**	**54**	<5	<20	<5	<10	**45**	**800**	NA	**440**	<5	<5	<5	<5	<5	<1	<0.5
	Aug-30-06	12.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3,100**	NA	**1,200** YZ	NA	NA	NA	NA	<4.8	NA	NA
M-2	May-88	13.29	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1,740**	NA	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	Aug-1-93	11.90	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1,900**	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Oct-1-93	12.30	**10**	<5	<5	<5	<5	<10	<5	<10	<5	NA	240	**70,000**	<5	<5	<5	<5	NA	NA	NA
	Nov-1-94	12.37	**6**	<5	<5	<5	<5	<10	<5	<10	<5	**9,000**	NA	**52,000**	<5	<5	<5	32	<50	<10	<5
	Aug-30-06	11.91	NA	NA	NA	NA	NA	NA	NA	NA	NA	**4,300**	NA	**2,000** YZ	NA	NA	NA	NA	<5.0	NA	NA
M-3	May-88	12.73	<0.5	<0.5	**2.6**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	NA	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	Aug-1-93	11.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Oct-1-93	11.45	<5	<5	**4**	<5	<5	<10	<5	<10	<5	NA	<50	<50	<5	<5	<5	<5	NA	NA	NA
	Nov-1-94	11.47	<5	<5	**4**	<5	<5	<10	<5	<10	<5	<50	NA	<50	<5	<5	<5	<5	<0.5	<0.1	<0.05
M-4	May-88	12.36	**115**	**0.8**	**82**	<0.5	**0.6**	<0.5	**5.2**	<0.5	**68**	<3	NA	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	Aug-1-93	11.44	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Oct-1-93	11.78	**110**	**12**	**130**	<5	<5	<10	10	<10	**160**	NA	**120**	**120**	**11**	<5	<5	<5	NA	NA	NA
	Nov-1-94	11.82	**110**	**18**	**100**	<5	<5	**8**	**10**	<10	**170**	<50	NA	<50	**4.6**	<5	<5	<5	<0.5	<0.1	<0.05

Table 4
Historical Chemical Concentrations in Groundwater
2220 Fourth Street
Berkeley, California

Well	Date	DTW (feet)	Volatile Organics								Mfg of Plastics	Wood Preservative Pesticide	Fuel Hydrocarbons						Pesticides		
			1,1,1-TCA (ug/l)	1,1-DCA (ug/l)	TCE (ug/l)	Cis 1,2-DCE (ug/l)	Trans 1,2-DCE (ug/l)	MIBK (ug/l)	1,2-DCA (ug/l)	Vinyl Chloride (ug/l)	1,1-DCE (ug/l)	PCP (ug/l)	TVH (ug/l)	TEH (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl Benzene (ug/l)	Total Xylenes (ug/l)	Chlordane[1] (ug/l)	Dieldrin (ug/l)	Heptachlor Epoxide B[2] (ug/l)
M-5	May-88	10.15	**1.2**	<0.5	**102**	<0.5	**10**	<0.5	<0.5	19	**1.6**	<3	NA	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	Aug-1-93	9.57	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Oct-1-93	9.93	**16**	<5	**170**	**38**	**4**	<10	<5	<10	<5	NA	120	<50	<5	<5	<5	<5	NA	NA	NA
	Nov-1-94	9.93	<5	<5	**130**	**31**	**3**	<10	<5	<10	<5	<50	NA	<50	<5	<5	<5	<5	<0.5	<0.1	<0.05
M-6	May-88	10.61	<0.5	<0.5	**67**	<0.5	**7.4**	<0.5	<0.5	**46**	**1.7**	<3	NA	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	Aug-1-93	9.62	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Oct-1-93	10.04	**13**	<10	**140**	**450**	**13**	<20	<10	**24**	<10	NA	100	<50	<10	<5	<5	<5	NA	NA	NA
	Nov-1-94	9.91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grab Samples																					
S-7	Nov-1-94		**20**	<25	<25	<25	<25	**21,000**	<25	<50	<25	**7,000**	NA	**1,700,000**	<25	**24.9**	**180**	**820**	**620**	<9.8	<12
	Sep-6-06	11.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	**9,300**	NA	**39,000**	NA	NA	NA	NA	**9.4**	NA	NA
S-8	Nov-1-94		<5	<5	<5	<5	<5	**7**	<5	<5	<5	**2,300**	NA	**32,000**	<5	<5	<5	**15**	<49	<9.8	<4.9
	Sep-6-06	11.95	NA	NA	NA	NA	NA	NA	NA	NA	NA	**11,000**	NA	**3,900** YZ	NA	NA	NA	NA	<2.4	NA	NA
S-9	Nov-1-94		<5	<5	**3**	<5	<5	<5	<5	<5	<5	**130**	NA	<50	<5	<5	<5	<5	<0.5	**2.5**	**0.27**
S-10	Nov-1-94		**24**	<5	<5	<5	<5	<5	<5	<5	<5	**5,000**	NA	**30,000**	**7**	<5	<5	**41**	**56**	<0.94	<0.94
	Sep-6-06	11.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	**9,400**	NA	**4,300** LYZ	NA	NA	NA	NA	**1.9** C	NA	NA
HA-1	Sep-6-06	13.90	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.71	NA	**56** HY	NA	NA	NA	NA	<0.3	NA	NA
		MCL	**200**	**5**	**5**	**70**	**100**	**120**	**5**	**2**	**7**	**1**	NE	NE	**5**	**1,000**	**700**	**10,000**	**0.1**	**0.0022**	**0.2**

Notes:
[1] = sum of alpha-chlordane and gamma-chlordane isomers
[2] = Breakdown product of Heptachlor; Heptachlor is a component in chlordane and a breakdown product of chlordane
<not detected at or above the listed analytical reporting limit
C = presence confirmed, but RPD between columns exceeds 40%
COC listed by DTSC
DCA = Dichloroethane
DCE = Dichloroethene
Detected concentrations listed in **bold**
DTW = Depth to water below TOC for wells and below floor slab for piezometers
ESL = Environmental Screening Levels established by the San Francisco Regional Water Quality Control Board (SFRWQCB) Table F-2, February 2005.
H = Heavier hydrocarbons contributed to the quantitation
L = Lighter hydrocarbons contributed to the quantitation
MIBK = Methyl isobutyl ketone or 4-methyl-2-pentanone
NA = Not analyzed
ND = Not detected at concentrations above the reporting limits
NE = Not Established
PCP = Pentachlorophenol
TCA = Trichloroethane
TCE = Trichloroethene
TEH = Total extractable hydrocarbons
TVH = Total volatile hydrocarbons
ug/l = Micrograms per liter
Y = Sample exhibits chromatographic pattern, which does not resemble standard
Z = Sample contains unknown peak or peaks

PLATES

G:\jobdocs\698\698.004\Drawing\A698_004_001.dwg 2-28-07 09:29:22 AM rwong

SOURCE: This Vicinity Map was based on 2006 Street Guide, Bay Area Counties, The Thomas Guide.

NORTH

0 2000 4000

FEET

VICINITY MAP
2220 4th Street
Berkeley, California

PLATE 1

APPENDIX A
WORK PLAN AND DTSC COORESPONDENCE

FILE

FUGRO WEST, INC.

1000 Broadway, Suite 200
Oakland, California 94607
Tel: (510) 268-0461
Fax: (510) 268-0137

November 4, 2005
Project No. 698.004

Department of Toxic Substances Control
700 Heinz Avenue, Suite 200
Berkeley, California 94710

Attention: Mr. Claude Jemison

Subject: Scope of Work to Determine Current Pentachlorophenol and Chlordane Impacts to Soil and Groundwater
2220 Fourth Street
Berkeley, California

Dear Mr. Jemison:

On behalf of the owner of 2220 Fourth Street property, Herst Ventures, Fugro West, Inc., (Fugro) is pleased to present this letter summarizing our proposed scope of work to determine the current soil and groundwater impacts of pentachlorophenol and chlordane below the Site and in the adjacent railroad right-of-way to the west. As we have discussed with you and other DTSC representatives, the objective of the work proposed is to conduct a final voluntary sampling effort that will complete Herst Ventures' role in characterizing contamination at and adjacent to the site, and provide technical data that DTSC may need to pursue dischargers in the area who may be responsible for the historical contamination.

BACKGROUND

The 2220 Fourth Street property (Site) is located in an area of West Berkeley with a known history of commercial and industrial uses extending back to the 1940's. Businesses occupying properties in the immediate vicinity of the Site have included metal fabrication and machining, foundries, laboratories and paint manufacturing. These businesses have well-documented historical use of heavy metals, hydrocarbon fuels, oils, lubricants, degreasing agents, cutting fluids, solvents, acids, bases, and dyes, pigments, paints, and chemical intermediates. Environmental studies conducted in the Site vicinity in the 1980's and 1990's confirmed that releases of solvents, metals and petroleum hydrocarbon compounds had impacted soils at their points of release, and as a result shallow groundwater had become impacted due to lateral and vertical migration.

Prior to the Site being purchased by the predecessor to Herst Ventures (Herst Lighting Corp., d.b.a. Peerless Electric Company) in 1981, the 2220 Fourth Street property was used by a variety of pest control businesses. These pest control businesses reportedly mixed and repackaged termite control compounds including pentachlorophenol (PCP) in a hydrocarbon matrix, and chlordane in a hydrocarbon matrix. Historical investigations conducted at the Site identified that both chlordane and PCP mixtures locally impacted soil and groundwater.