

CITY OF EMERYVILLE

INCORPORATED 1896

OFFICE OF THE CITY ATTORNEY
2200 POWELL STREET, 12TH FLOOR
EMERYVILLE, CALIFORNIA 94608

TEL: (510) 596-4370 FAX: (510) 596-3724

ENVIRONMENTAL
PROTECTION

00 MAY 31 PM 4:57

May 30, 2000

Ravi Arulanantham
Regional Water Quality Control Board, San Francisco Bay Region
1515 Clay Street, 14th Floor
Oakland, CA 94612

*SLIC
6417A
5406C*

Susan Hugo
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Room 227
Alameda, CA 94502-6577

Re: **Emery Village Center Project, San Pablo Avenue, Emeryville**

Dear Mr. Arulanantham and Ms. Hugo:

On behalf of Park Emery Associates, L.P. (more commonly known as the Castle Group), we are submitting a draft Deed Restriction and draft Risk Management Plan for the Emery Village Center Project for your review and comment. Your attention to this matter would be greatly appreciated.

Sincerely yours,

Lynn Tracy Nerland

Lynn Tracy Nerland
Assistant City Attorney/Assistant Agency Counsel

1) check vic's = to know Mels? - 13th DR

Enc.

cc: Jim Pollart, Castle Group
Patrick D. O'Keeffe
Ron Gerber



CASTLE GROUP

1777 | 4058

May 15, 2000

Mr. Pat O'Keeffe, Director
City of Emeryville Redevelopment Agency
2200 Powell Street, 12th Floor
Suite 1200
Emeryville, CA 94608 - 1806

RE: Emery Village Center
San Pablo Avenue
Emeryville, California

Dear Pat:

Attached is a draft Risk Management Plan for the project. This document was prepared by our environmental consultant, Peter Langtree of Lowney Associates. We are forwarding this document to you so that you can submit it, together with the draft Deed Restriction documents prepared by your office, for agency review.

I would appreciate your forwarding a copy of the submittal correspondence to us for our files. Thank you for your attention to this matter.

Sincerely,
PARK EMERY ASSOCIATES LIMITED PARTNERSHIP
a California limited partnership
By: Park Emery Associates, Inc.
a California corporation
Its General Partner

By: 
Jim Pollart, Vice President

C:\My Documents\Emeryville\Pollart\Okeefe11.doc

675 MARINERS ISLAND BLVD SUITE 109 SAN MATEO CA 94404 TEL 650.638.2100 FAX 650.638.2105

- 1) who will implement RMP
- 2) pg 6, verify what is in place soil
- 3) reuse of soil at site (sampled @ 150 yards) pg 6
- 4) drop last bullet

Risk Management Plan

Emery Village Center
Emeryville, California

- 5) pg 7 add TPA investigations CDE (exo)
- 6) pg 8 - pipe that can not be removed should be liquid/sludge pits to permanent capping

This report has been prepared for:

Park Emery Associates, L.P.

675 Mariners Island Boulevard, Suite 109, San Mateo, California 94404

May 15, 2000

Project No. 1103-5

- 7) procedures to develop to inform workers contractors who may contact site soil at RMP
- 8) Any change in landscape will require notification to REGULATORS
- 9) How about 1/2 of site will be removed

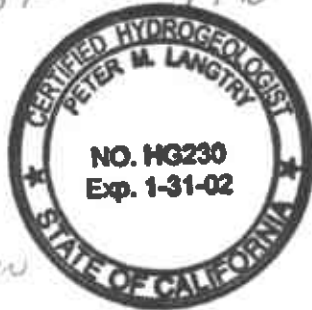
John Zuli for Peter Langtry

Peter M. Langtry, R.G., C.H.G.
Senior Project Geologist

510 267-1970

John Zuli for Stason Foster

Stason I. Foster, P.E.
Principal Engineer
Quality Assurance Reviewer



- 10) confirm w/low Grubbs change in plans 11/2 member fall in hammer 90 to member

page 2

Mountain View Oakland Pasadena San Ramon

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	Purpose.....	1
1.2	Background.....	1
1.3	Planned Development of the Site	2
2.0	RISK MANAGEMENT PLAN.....	2
2.1	Potential Contaminants of Concern	2
2.2	Applicability of the Risk Management Plan.....	2
2.3	Risk Management During Construction	3
2.3.1	Site-Specific Health and Safety Worker Requirements	3
2.3.2	Construction Impact Mitigation Measures.....	3
2.3.2.1	Dust Control.....	3
2.3.2.2	Equipment Decontamination	4
2.3.2.3	Prevention of Preferential Pathways.....	4
2.3.2.4	Storm Water Pollution Controls	4
2.3.2.5	Excavation De-Watering	5
2.3.3	Soil Management Protocols	5
2.3.3.1	Use of Clean Soil.....	5
2.3.3.2	Management of In-Place Soil.....	6
2.3.3.3	Management of Excavated Soils.....	6
2.3.3.4	Regulatory Agency Notification.....	7
2.3.3.5	Air Monitoring.....	7
2.3.3.6	Laboratory Analyses.....	7
2.3.4	Management of Abandoned Pipes and Tanks.....	7
2.4	Post-Construction Risk Management.....	8
2.4.1	Long-Term Risk to Human Health	8
2.4.2	Protocol for Future Subsurface Activities.....	8
2.4.3	Long-Term Compliance with Risk Management Plan	8
3.0	LIMITATIONS.....	9
4.0	REFERENCES.....	9
	FIGURE 1 — VICINITY MAP	
	FIGURE 2 — SITE PLAN	
	APPENDIX A — TABLE OF SSTLS AND MAXIMUM CONCENTRATIONS OF CONTAMINANTS DETECTED	
	APPENDIX B — SITE PLANS SHOWING EXTENT OF CONTAMINANTS DETECTED IN SOIL AND GROUND WATER	

**RISK MANAGEMENT PLAN
EMERY VILLAGE CENTER
EMERYVILLE CALIFORNIA**

1.0 INTRODUCTION

1.1 Purpose

The purpose of this risk management plan is to provide guidelines for the management of residual contaminants in soil and ground water detected beneath the Emery Village Center in Emeryville, California.

1.2 Background

The approximately 4.6-acre site, shown on Figures 1 and 2, is located at 4301, 4303, 4309, 4321, 4331, 4343 San Pablo Avenue and 1150 Park Avenue in Emeryville, California. The site is currently composed of several parcels owned by the City of Emeryville Redevelopment Agency (CERA) and Kaiser Foundation Health Plan. The site was formerly occupied by a Standard Brands Paint store (4343 San Pablo Avenue), a fire station (4331 San Pablo Avenue), a New Century Beverage Company facility (1150 Park Avenue), and a Kentucky Fried Chicken store (4301 San Pablo Avenue). The 4303 San Pablo Avenue parcel is occupied by the vacant Broom Brush coffee shop. The parcels are shown on Figure 2.

Based on historical information reviewed during our Phase I environmental site assessment, the site was developed with single family residences by 1903 and a fire station by 1911. Subsequent historical uses included a semi-professional baseball stadium and soft-drink bottling plant (on the New Century Beverage Parcel), a tire manufacturing facility and a service station (on Standard Brands parcel), a service station on the former Kentucky Fried Chicken parcel, restaurants, and a hotel. The majority of the on-site structures have been demolished, with the exception of the vacant Standard Brands Store, vacant Kentucky Fried Chicken restaurant, and the vacant Broom Brush coffee shop (Lowney Associates, 1999).

Underground storage tanks (USTs) historically have been present on-site, including the USTs at the former Standard Brands parcel, the former fire department parcel, and the former Kentucky Fried Chicken (ARCO) parcel. Based on the information reviewed during our Phase I environmental site assessment, the on-site USTs have been removed. Although there was no record of the removal of the USTs from the Kentucky Fried Chicken parcel, a geophysical investigation and excavation with a backhoe in 1994 by others reportedly did not find evidence of a fuel system, indicating that the USTs had been removed (Lowney Associates, 1999).

Based on the information reviewed, petroleum impacted soil and ground water are present beneath the site. The residual contaminants present are summarized in Section 2.1. The most highly impacted soil is primarily located beneath and immediately east of the vacant Standard Brands store. In addition, low concentrations of petroleum hydrocarbons were detected in the former UST areas at the former fire department and former Kentucky Fried Chicken parcels. Low concentrations of VOCs were also detected in the upper approximately 2 feet of soil beneath the southern portion of the New Century Beverages parcel. Based on the contaminants present at the site, a health risk assessment was prepared by Environ. For a residential exposure scenario, Environ concluded that the level of risk to human health was within acceptable limits established by the EPA.

1.3 Planned Development of the Site

Park Emery Associates, LP currently plans to build a residential and retail development on the approximately 4.3-acre parcel. The current site development plans include the following:

- ▼ Construction of 90 townhouses, each of which will have two stories of living space over a two-car garage. *closed car - garage* }
- ▼ Construction of landscaped and communal areas.
- ▼ Construction of approximately 30,000 square-feet of retail space with 10 to 15 residential units on the second level and associated parking areas along San Pablo Avenue. }
- ▼ Extension of Emery Street, which is currently a dead-end, from 45th Street south to Park Avenue.

2.0 RISK MANAGEMENT PLAN

2.1 Potential Contaminants of Concern

Potential contaminants present in soil and ground water beneath the site are listed in Table A-1 in Appendix A, based on previous on-site investigations. Table A-1 also lists Site-Specific Target Levels (SSTLs) for the potential contaminants of concern. The SSTLs are human health risk based concentrations developed by Environ (Environ, 1999), and have been approved by the Alameda County Health Care Services (ACHCS) and the California Regional Water Quality Control Board (CRWQCB). Site plans showing the concentrations and locations of the compounds detected are presented in Appendix B.

2.2 Applicability of the Risk Management Plan

This risk management plan is applicable to site activities that may result in contact with contaminated soil and ground water, both during and after the construction of

the planned development. These activities include but are not limited to the following:

- ▼ Excavation and grading;
- ▼ Subsurface utility installation, maintenance, or repair;
- ▼ Landscaping, and;
- ▼ Building foundation construction.

2.3 Risk Management During Construction

This section presents the risk management procedures to be followed during construction of the on-site development, including worker training, construction impact mitigation measures, excavation de-watering, and soil management protocol.

2.3.1 Site-Specific Health and Safety Worker Requirements

Prior to beginning construction, a site-specific health and safety plan (HSP) for construction workers who encounter on-site soils will be prepared by the contractors. Contractor's are responsible for the health and safety of their own employees and are required to have their own health and safety plans, and Injury and Illness Prevention Plans (IIPPs).

2.3.2 Construction Impact Mitigation Measures

During construction, measures will be taken to minimize dust generation, storm water runoff, and tracking of soil off-site. In addition, measures will be taken to prevent the creation of preferential migration pathways (vertical and horizontal) for contaminants detected on-site. The construction impact mitigation measures are summarized below.

2.3.2.1 Dust Control

Construction operations will be conducted so as to minimize the creation and dispersion of dust, including the following measures:

- ▼ Application of water while grading, excavating, and loading, as needed;
- ▼ Limiting vehicle speeds to 5 miles per hour on unpaved portions of the site;
- ▼ Minimizing drop heights while loading/unloading soil;
- ▼ Covering stockpiles of soil with residual contaminants with visqueen.

2.3.2.2 Equipment Decontamination

Contractors whose vehicles and construction equipment contact impacted site soil will be required to clean the equipment prior to leaving the site. Decontamination may include dry methods, such as brushing, scraping, or vacuuming. If the dry methods are not effective, the contractor may use wet methods, such as steam cleaning or pressure washing. The contractor, however, will be required to collect and appropriately manage the wash water. Wash water management methods may include use for dust control in areas of impacted soil and/or off-site disposal at an appropriate facility.

2.3.2.3 Prevention of Preferential Pathways

The current development plans do not include the construction of deep foundations, such as piers or piles. In addition, deed restrictions will not allow the installation of water supply wells on-site. Therefore, no vertical preferential pathways will be created.

Ground water has historically been present at depths of approximately 4 to 18 feet. During February 1999, ground water was encountered at a depth of approximately 12 feet (Environ, 1999). To reduce the likelihood of creating lateral preferential pathways for the migration of contaminants, any utility trench greater than 4 feet in depth will be backfilled with a low-permeability soil approved by the geotechnical engineer below a depth of 4 feet; backfill in the upper 4 feet can be composed of any soil type approved by the geotechnical engineer. Contractors installing utilities below a depth of 4 feet may use sand or gravel bedding for pipes and/or conduits; however, where sand or gravel bedding is used below a depth of 4 feet, barriers of low permeable material, such as a bentonite grout seal, will be used where the utility exits the site. The low-permeability barriers will be at least five feet in length.

2.3.2.4 Storm Water Pollution Controls

The Urban Runoff Pollution Prevention Program, also called the Non-Point Source Program, was developed in accordance with the requirements of the 1986 San Francisco Bay Basin Water Quality Control Plan to reduce water pollution associated with urban storm water runoff. This program was also designed to fulfill the requirements of the Federal Clean Water Act, which mandated that the EPA develop National Pollution Discharge Elimination system (NPDES) Permit application requirements for various storm water discharges, including those from municipal storm drain systems and construction site.

For properties of 5 acres or greater, a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) must be prepared prior to commencement of construction. Although the site is less than 5 acres, storm water management controls will be implemented to reduce the potential for impacted soils to impact storm water runoff. These storm water controls will be based on best management practices (BMCs), such as those described in the *Erosion and Sediment Control*

Field Manual (CRWQCB, 1998) and the *Manual of Standards for Erosion and Sediment Control Measures, Second Edition* (ABAG, 1995). The BMPs implemented may include, but are not limited to, the following:

- ✓ ▼ Construction of berms or silt fences at the perimeter of the site, as appropriate;
- ✓ ▼ Placing of straw bale barriers around entrances to storm drains and catch basins;
- ✓ ▼ Covering stockpiles of contaminated soil with visqueen during rain events;
- ✓ ▼ Placement of gravel at project entrances/exits where soil can be removed from vehicles prior to leaving the site.

2.3.2.5 Excavation De-Watering

If excavation de-watering is required, a sample of the ponded water will be collected for laboratory analyses, as discussed in Section 2.3.3.6. Depending on the analytical results, the ponded water may be:

- ✓ ▼ Used for dust control on-site;
- ✓ ▼ Discharged to storm drain;
- ✓ ▼ Discharged to sanitary sewer; or
- ✓ ▼ Disposed at an appropriate off-site facility.

If used for dust control, prior approval would be obtained from the ACHCS agency. Discharge into the storm sewer or sanitary sewer would be performed under an approved permit from the CRWQCB or East Bay Municipal Utility District, respectively. If water is to be discharged into the sanitary sewer system, approval will also be requested from the City of Emeryville Public Works Department. If required, water will be treated prior to discharge.

2.3.3 Soil Management Protocols

As discussed in Section 1.2, soils with residual contaminants are present beneath the Standard Brands parcel and in the former UST areas of the Emeryville Fire Station and Kentucky Fried Chicken parcels, and in the southern portion of the New Century Beverage parcels; these areas are designated as Zone A (Figure 2). Areas with no identified significantly impacted soil are designated as Zone B.

2.3.3.1 Use of Clean Soil

Clean soil will be used for the top 3 feet of landscaped outdoor communal areas. Existing site soil from Zone B could be used anywhere on the site, including the upper 3 feet of landscaping areas, without further testing unless the soil is

subsequently observed to be visibly contaminated (e.g., stained, discolored, shiny, or oily) or has a noticeable solvent-like or hydrocarbon odor (suspect soil).

2.3.3.2 Management of In-Place Soil

Based on the analytical data collected to date, suspect soil may be encountered in Zone A during construction, particularly beneath portions of the former Standard Brands parcel. The previous analytical data did not show concentrations of VOCs or petroleum hydrocarbons exceeding the SSTLs (Table A-1). Therefore, unless soil that appears highly impacted is encountered in the excavations (such as free product), or if air monitoring indicates action levels are exceeded ("suspect soil"), further sampling of the in-place soil within Zone A will not be performed. Air monitoring is discussed in Section 2.3.3.5. If verification sampling is required, it will be performed as discussed below.

If suspect soil is encountered in Zone B, one soil sample will be collected for each approximately 50 lineal feet of trench excavation or 2,500 square feet of grading cut in the suspect area. The verification soil samples will be analyzed as discussed in Section 2.3.3.6.

If the analytical results of in-place verification samples exceed the SSTLs, the soil will be excavated until verification soil sampling indicates that soil concentrations are below the SSTLs or the top of ground water or a property boundary are reached. Alternatively, the impacted area shall be characterized through testing, then hypothetical risks to future population shall be recalculated to reflect the actual concentrations of VOCs and/or petroleum hydrocarbons present in the soil. If the estimated incremental cancer risk to future site occupants is less than 10^{-3} and the non-cancer hazard index is less than 1, then the soil will be left in-place.

2.3.3.3 Management of Excavated Soils

Suspect soil excavated during construction in Zones A and B will be stockpiled on-site on top of visqueen within a designated fenced enclosure. One discrete soil sample per approximately 50 cubic yards of stockpiled soil will be collected and analyzed as discussed in Section 2.3.3.6. If the volume of soil excavated exceeds 200 cubic yards, one discrete soil sample will be collected per approximately 100 cubic yards. If the contaminants of concern (COC) do not exceed the risk-based SSTLs, the soil may be used anywhere on-site except in the upper 3 feet of outdoor communal landscaped areas. If the analytical results of stockpiled soil exceed the SSTLs, the stockpiles shall either:

- ▼ Be disposed off-site an appropriate, permitted facility; or
- ▼ Treated on-site to levels below SSTLs with regulatory agency approval.
- ▼ Alternatively, the stockpiled soil shall be characterized through testing, then hypothetical risks to future population shall be recalculated to reflect the

actual concentrations of VOCs and/or petroleum hydrocarbons present in the soil.

2.3.3.4 Regulatory Agency Notification

If suspect soil is encountered in Zone B, or if soil exceeding the SSTLs is encountered within Zone A, the ACHCS and RWQCB will be notified. ✓

2.3.3.5 Air Monitoring

Air monitoring will be performed under the direction of the project certified industrial hygienist (CIH) while excavating and grading in Zone A and in suspect areas encountered in Zone B, if any. Periodic air monitoring will be performed in the worker breathing zone using an organic vapor meter (OVM). A Lower Explosive Limit (LEL) meter will also be used in trenches and excavations. If organic vapors exceed 50 ppmv or if an LEL of 10 percent or greater is measured, the work in the trench and within 20 feet of the trench/excavation will be stopped until levels dissipate to within acceptable limits. The project CIH may also upgrade the personal protective equipment (PPE) and/or perform personal air monitoring, as discussed in the health and safety plan.

2.3.3.6 Laboratory Analyses

Initial verification soil samples collected from a suspect area will be analyzed for total petroleum hydrocarbons in the gasoline range (TPHg); benzene, toluene, ethylbenzene, and xylenes (BTEX) plus MTBE (EPA Test Method 8015M/8020); total petroleum hydrocarbons in the diesel range (TPHd) and motor oil range (TPHmo) (EPA Test Method 8015M); and volatile organic compounds (VOCs) (EPA Test Method 8010). This set of analyses will be used to evaluate which VOCs and/or petroleum hydrocarbons are present in the suspect soil; subsequent samples would be analyzed only for those compounds detected.

TPH
monitored species
8020
8010

2.3.4 Management of Abandoned Pipes and Tanks

If an abandoned pipe (other than common utility lines) and/or tank is encountered during construction, the ACHCS and RWQCB will be notified. Any abandoned tank and associated piping encountered during construction will be removed in accordance with ACHCS and RWQCB guidelines. Abandoned pipes that do not appear to be associated with a tank will be managed as outlined below:

If the pipe contains liquid or sludge, the following steps will be taken:

- ▼ The liquid or sludge will be removed from the pipe, if feasible, and placed in appropriate containers.
- ▼ The liquid or sludge will be tested to evaluate appropriate disposal options.

- ▼ The pipe and liquid or sludge will be removed from the site for appropriate disposal/recycling.

If the entire pipe is not removed during construction (if approved by the geotechnical engineer), the ends of the pipe that are to remain in-place will be capped.

2.4 Post-Construction Risk Management

Post-construction risk management includes precautions that will be taken to reduce long-term risks to human health and the environment from residual VOCs and petroleum hydrocarbons in soil and ground water after the construction of the on-site residential and retail development.

2.4.1 Long-Term Risk to Human Health

Based on the HRA prepared by Environ, the concentrations of residual VOCs and petroleum hydrocarbons detected in the soil and ground water beneath the site are not a significant threat to the health of future residents of the townhomes or occupants of the retail stores.

2.4.2 Protocol for Future Subsurface Activities

Individuals who contact impacted on-site soil and/or ground water during future activities that require excavation will be required to follow the risk management procedures outlined in this document. Future activities may include, but are not limited to, modification or repair to utilities, construction of building foundations, and changes to paved areas. Because of the 3-foot cap of clean soil in communal outdoor landscaped areas, landscape workers are not expected to contact impacted soil during routine landscaping activities. If modifications to landscaping areas are performed that require excavation greater than 3 feet, however, landscaping contractors will be required to comply with the management protocol in this document.

2.4.3 Long-Term Compliance with Risk Management Plan

In order to ensure the long-term compliance with the risk management plan, the following measures will be implemented

- ▼ The risk management plan will be submitted to the RWQCB and the ACHCS for their files. *for review / approval*
- ▼ The risk management plan will be referenced in the Covenants, Conditions, and Restrictions (CCRs) for the townhouse development. *Sellers* of the townhouses and retail units will be required to disclose the risk management plan to buyers.

- ▼ Procedures will be developed to inform workers and contractors who may contact site soils about the risk management plan.
- ▼ The land-use of the site (90 residential townhouses and 30,000 square feet of retail space with 10 to 15 residential units above the retail level) will not be significantly changed without notifying the RWQCB and the ACHCS.
- ▼ Restrictions on site use, in the form of a deed restriction, will be implemented to prevent the use of on-site ground water for domestic, industrial, or irrigation purposes. The deed restriction will also prevent the construction of detached single-family residences with backyards on the site.

3.0 LIMITATIONS

This risk management plan was prepared for the sole use of Park Emery Associates, L.P. We make no warranty, expressed or implied, except that our services have been performed in accordance with environmental principles generally accepted at this time and location. We are not responsible for the accuracy of information provided by others.

4.0 REFERENCES

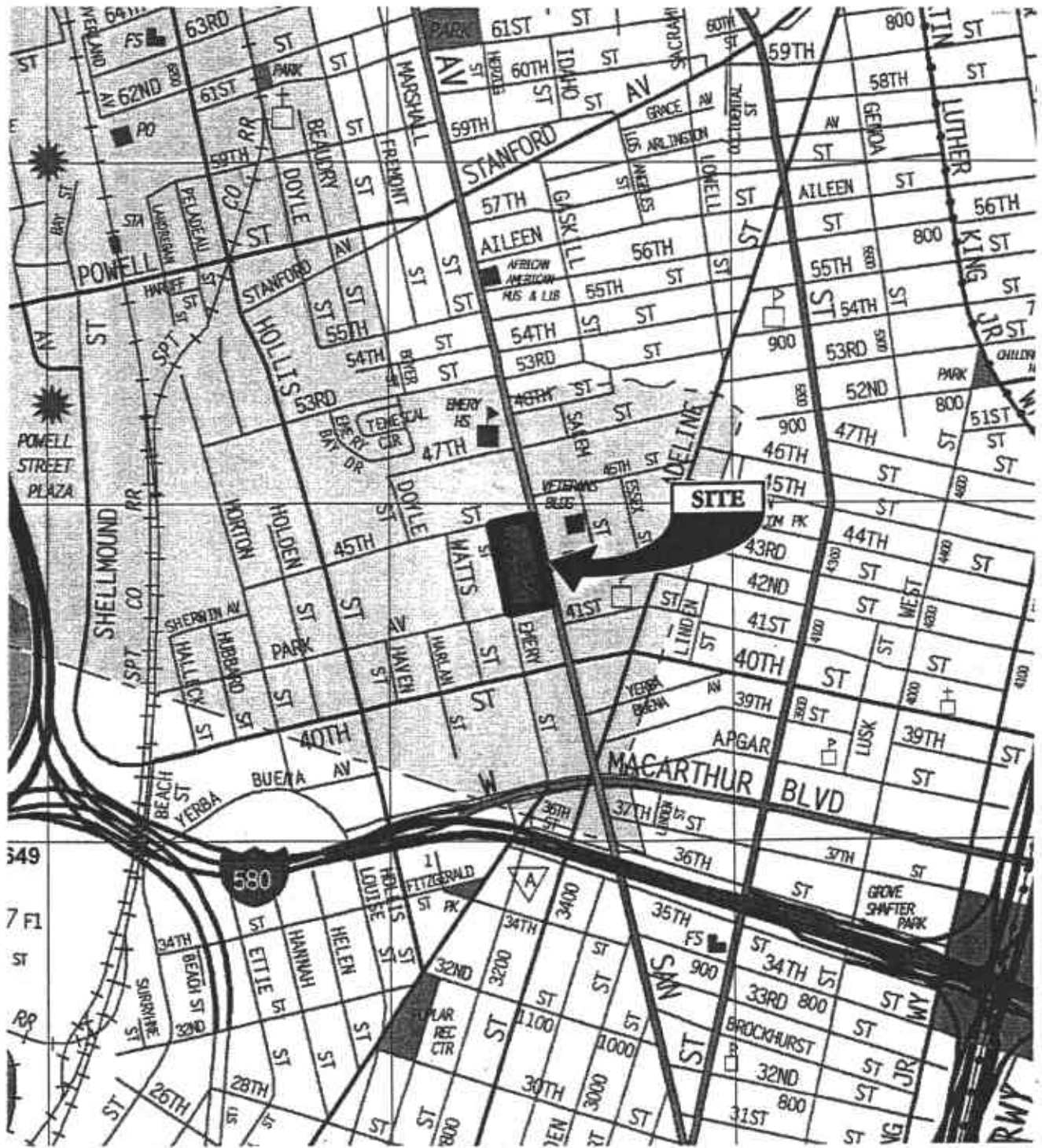
Association of Bay Area Governments. May 1995. *Manual of Standards for Erosion and Sediment Control Measures, 2nd Edition.*

California Regional Water Quality Control Board (CRWQCB), 1998. *Erosion and Sediment Control Field Manual.*

Environ, June 14, 1999. *Draft Human Health Risk Assessment Report, Proposed Emeryville Village Center, Emeryville, California.*

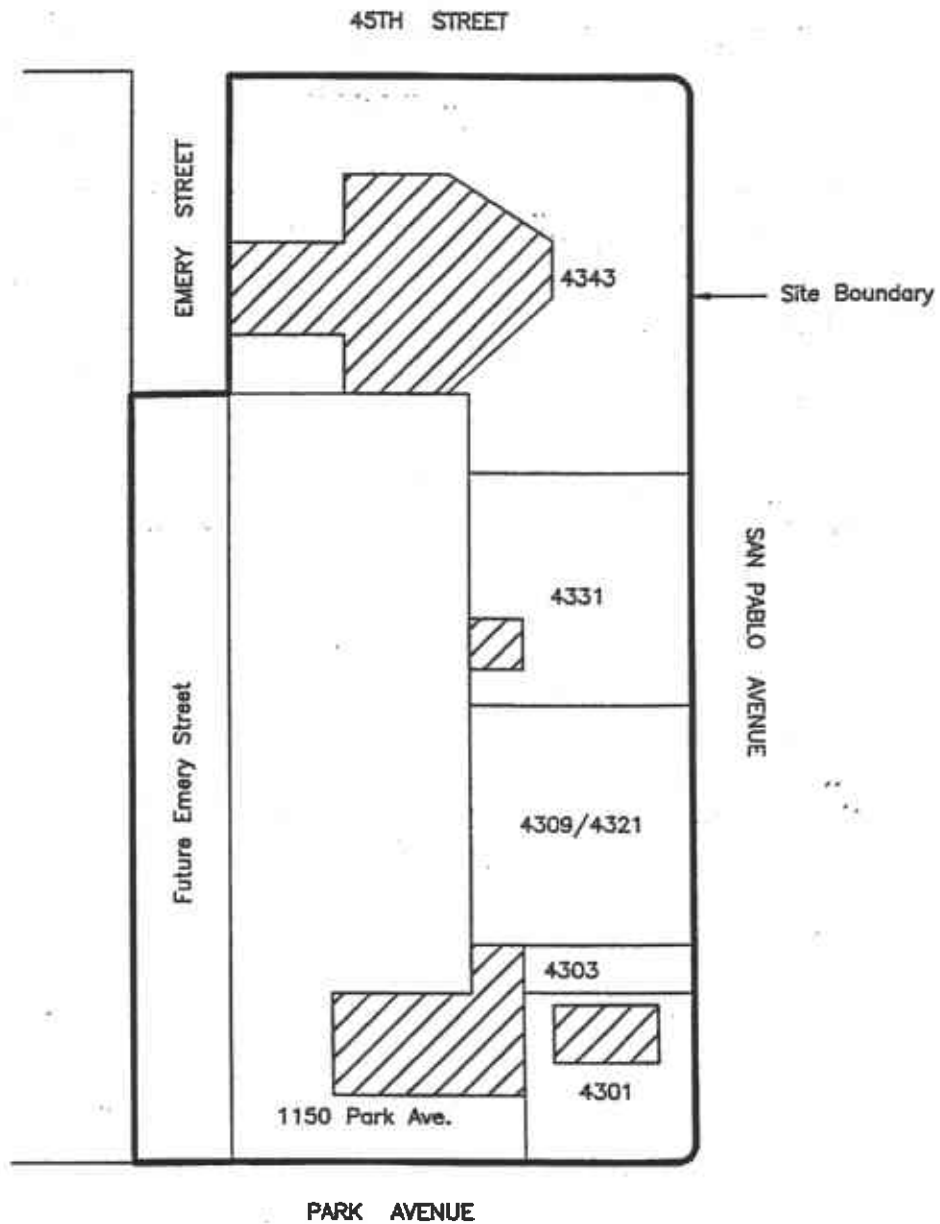
Lowney Associates, May 25, 1999. *Phase I Environmental Site Assessment, Emeryville Village Center, Emeryville, California.*


* * * * *



"Reproduced with permission granted by THOMAS BROS. MAP"

VICINITY MAP
EMERVILLE VILLAGE CENTER PHASE II
Emeryville, California



 - Zone A

0 350
Scale feet

Base by Environ, 1994.

3/00/02

SITE PLAN
EMERY VILLAGE CENTER PHASE I
Emeryville, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIGURE 2
1103-5

APPENDIX A
TABLE OF SSTLS AND MAXIMUM CONCENTRATIONS OF CONTAMINANTS DETECTED

TABLE 3
Site-Specific Target Levels (SSTLs) - Soil (mg/kg)
Proposed Emeryville Village Center
Emeryville, California

Chemical	Estimated SSTLs (mg/kg)			Site Data (mg/kg)	Comparison to Site Data		
	Carcinogens	Noncarcinogens			Carcinogen Risk Ratio	Noncarcinogen HI Ratio	
	Age Adjusted	Adult	Child	Lowest			Onsite Maximum
Benzene	2.43E+00	3.43E+01	4.19E+00	2.43E+00	4.20E-01	1.73E-06	1.00E-01
1,1-Dichloroethane	3.98E+01	2.01E+03	2.15E+02	3.98E+01	1.30E-02	3.27E-09	6.04E-05
trans-1,2-Dichloroethene	NC	4.01E+02	4.22E+01	4.22E+01	7.10E-02	NC	1.68E-03
Ethylbenzene	NC	7.73E+03	1.59E+03	1.59E+03	5.40E+00	NC	3.39E-03
Methylene chloride	6.45E+01	1.72E+04	1.83E+03	6.45E+01	6.70E-02	1.04E-08	3.66E-05
2-Methylnaphthalene	NC	6.92E+02	2.86E+02	2.86E+02	7.10E-01	NC	2.48E-03
Naphthalene	NC	6.92E+02	2.86E+02	2.86E+02	3.40E+00	NC	1.19E-02
Tetrachloroethene	1.13E+01	2.01E+02	2.34E+01	1.13E+01	3.20E-01	2.84E-07	1.37E-02
Toluene	NC	2.52E+03	4.35E+02	4.35E+02	9.80E-01	NC	2.25E-03
TPH(diesel)	NC	1.47E+05	5.68E+04	5.68E+04	2.50E+03	NC	4.40E-02
TPH(gasoline)	NC	6.11E+04	5.73E+03	5.73E+03	5.90E+02	NC	1.03E-01
TPH(motor oil)	NC	9.14E+05	3.75E+05	3.75E+05	4.50E+03	NC	1.20E-02
1,1,1-Trichloroethane	NC	5.82E+03	6.02E+02	6.02E+02	3.60E-02	NC	5.98E-05
Trichloroethene	2.70E+01	1.52E+02	2.22E+01	2.22E+01	1.20E-01	4.44E-08	5.41E-03
Xylenes (mixed)	NC	5.84E+04	1.26E+04	1.26E+04	3.50E+01	NC	2.79E-03
Cumulative						2.07E-06	3.03E-01

Notes:

NC = Not a carcinogen.

TABLE 4
Site-Specific Target Levels (SSTLs) - Ground Water (mg/L)
Proposed Emeryville Village Center
Emeryville, California

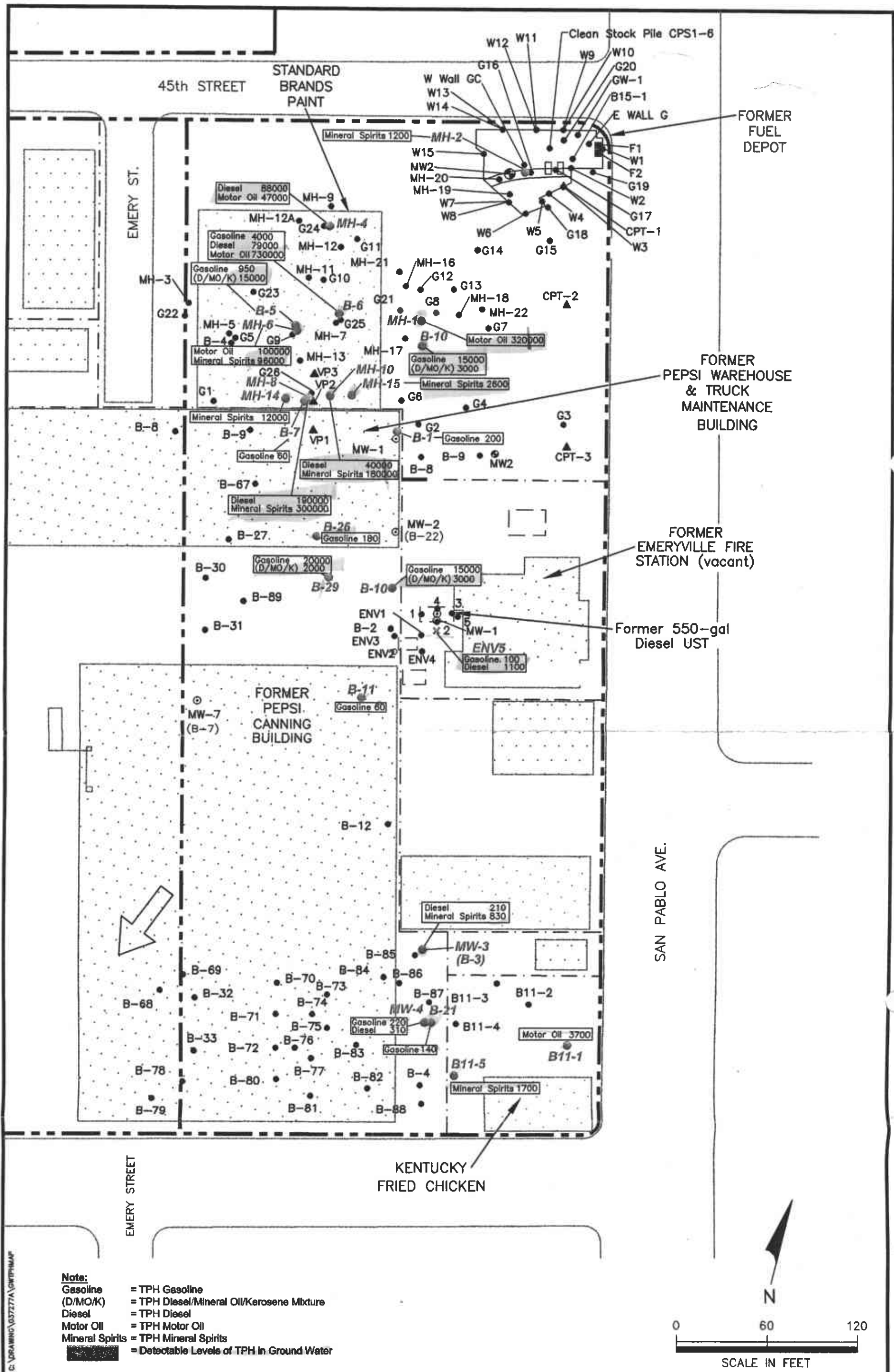
Chemical	Estimated SSTLs (mg/L)				Site Data (mg/L)	Comparison to Site Data	
	Carcinogens	Noncarcinogens		Lowest	Maximum	Carcinogen Risk Ratio	Noncarcinogen HI Ratio
	Age Adjusted	Adult	Child				
Acenaphthene	NC	1.58E+05	6.75E+04	6.75E+04	4.00E-03	NC	5.92E-08
Benzene	1.17E+00	1.08E+01	4.64E+00	1.17E+00	3.40E-01	2.90E-06	7.33E-02
Chlorobenzene	NC	6.56E+01	2.81E+01	2.81E+01	1.80E-02	NC	6.40E-04
Chloroform	7.93E+00	8.18E+01	3.51E+01	7.93E+00	3.40E-03	4.29E-09	9.69E-05
Chloromethane	9.44E+00	2.77E+02	1.19E+02	9.44E+00	1.00E-03	1.06E-09	8.43E-06
1,2-Dichlorobenzene	NC	9.54E+02	4.09E+02	4.09E+02	5.00E-03	NC	1.22E-05
1,1-Dichloroethene	1.40E-01	1.19E+01	5.12E+00	1.40E-01	2.60E-03	1.86E-07	5.08E-04
cis-1,2-Dichloroethene	NC	1.04E+02	4.46E+01	4.46E+01	1.60E-01	NC	3.59E-03
trans-1,2-Dichloroethene	NC	9.40E+01	4.03E+01	4.03E+01	5.30E-02	NC	1.32E-03
Ethylbenzene	NC	1.51E+03	6.47E+02	6.47E+02	7.70E-01	NC	1.19E-03
Fluoranthene	NC	4.26E+06	1.82E+06	1.82E+06	7.00E-03	NC	3.84E-09
Fluorene	NC	5.59E+05	2.40E+05	2.40E+05	1.20E-02	NC	5.01E-08
Naphthalene	NC	1.18E+02	5.04E+01	5.04E+01	1.30E+00	NC	2.58E-02
Tetrachloroethene	2.07E+00	2.35E+01	1.01E+01	2.07E+00	3.00E-03	1.45E-08	2.97E-04
Toluene	NC	6.16E+02	2.64E+02	2.64E+02	4.10E-02	NC	1.55E-04
TPH(diesel)	NC	1.14E+04	4.90E+03	4.90E+03	2.20E+02	NC	4.49E-02
TPH(gasoline)	NC	1.91E+03	8.18E+02	8.18E+02	2.00E+01	NC	2.44E-02
TPH(motor oil)	NC	1.34E+04	5.72E+03	5.72E+03	3.20E+02	NC	5.59E-02
Trichloroethene	7.06E+00	2.82E+01	1.21E+01	7.06E+00	1.40E-01	1.98E-07	1.16E-02
Vinyl chloride	7.41E-02	NA	NA	7.41E-02	1.40E-02	1.89E-06	NA
Xylenes (mixed)	NC	1.19E+04	5.09E+03	5.09E+03	1.90E+00	NC	3.73E-04
Cumulative						5.19E-06	2.44E-01

Notes:

NA = Not available.
 NC = Not a carcinogen.

*074 mg/L
 14 mg/L*

APPENDIX B
SITE PLANS SHOWING EXTENT OF CONTAMINANTS IN SOIL AND GROUND WATER



ENVIRON

6001 Shellmound St., Suite 700, Emeryville, CA 94608

Total Petroleum Hydrocarbons (TPH) in Ground Water ($\mu\text{g/L}$)
 Planned Emeryville Village Center
 Emeryville, California

Figure

7

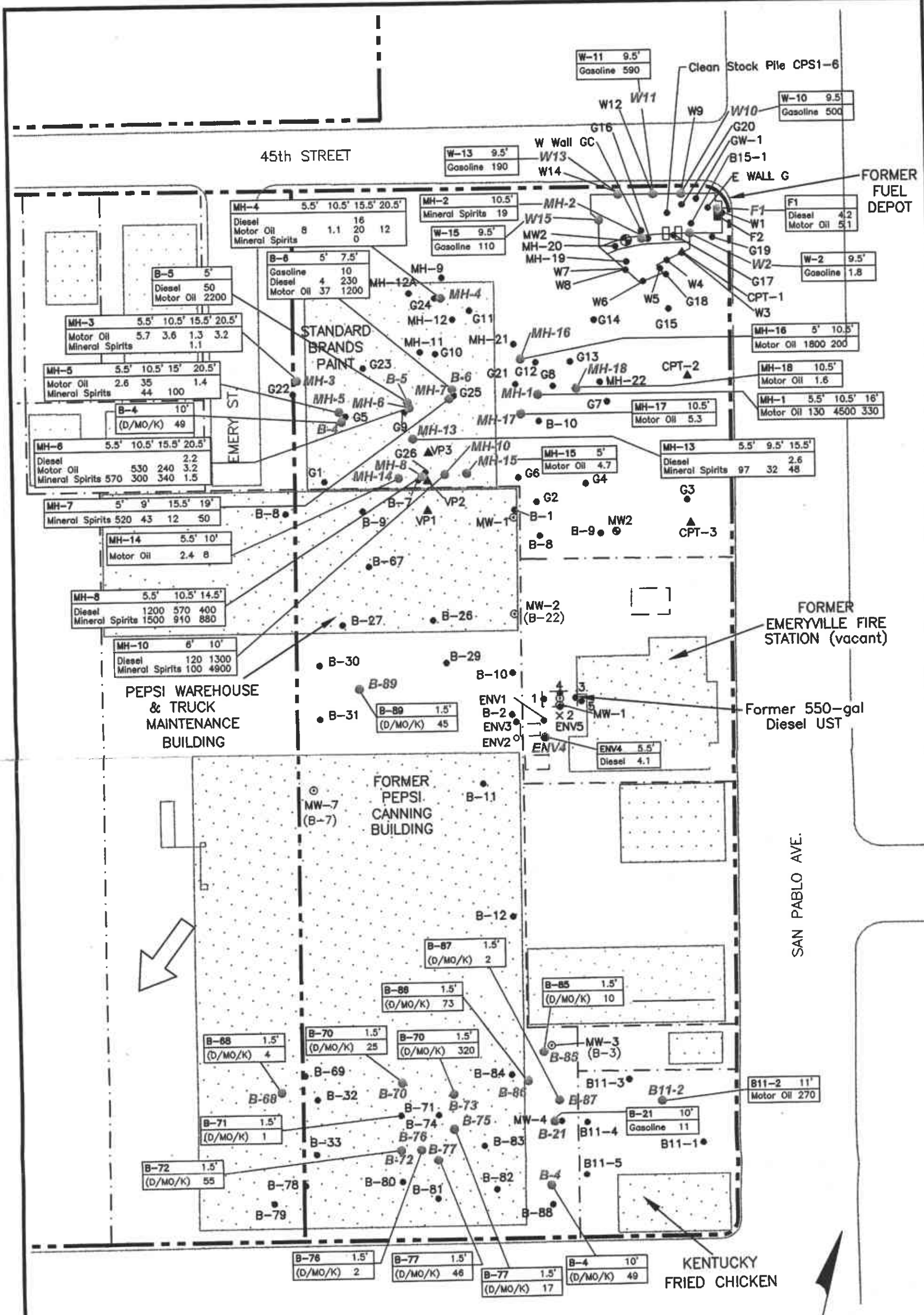
Drafter: RS

Date: 4/14/99

Contract Number: 03-7277A

Approved:

Revised:



ENVIRON

6001 Shellmound St., Suite 700, Emeryville, CA 94608

Drafter: RS

Date: 4/15/99

Contract Number: 03-7277A

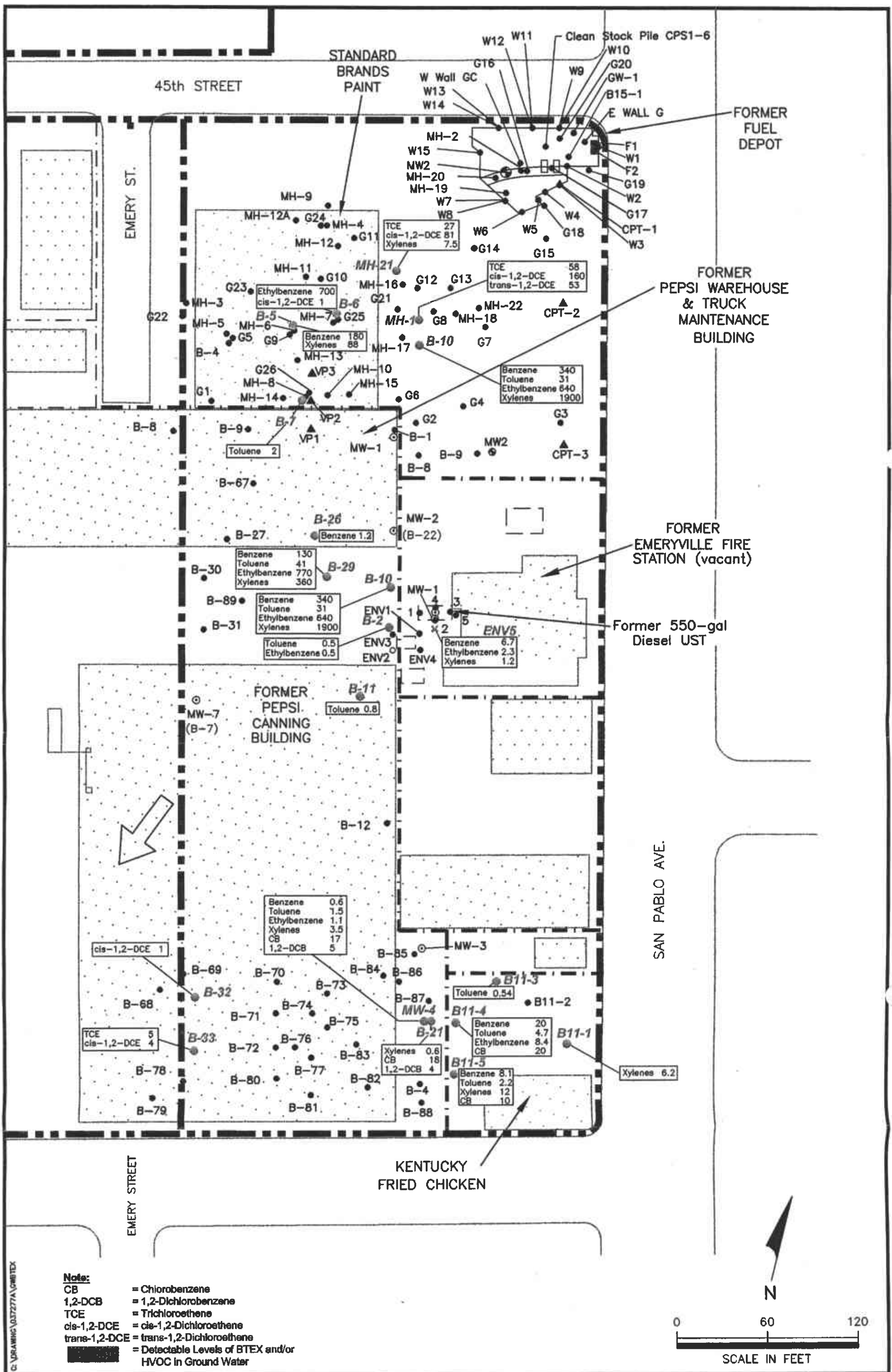
Approved:

Revised:

Total Petroleum Hydrocarbons (TPH) in Soil (mg/kg)
 Planned Emeryville Village Center
 Emeryville, California

Figure

7



Note:

- CB = Chlorobenzene
- 1,2-DCB = 1,2-Dichlorobenzene
- TCE = Trichloroethene
- cis-1,2-DCE = cis-1,2-Dichloroethene
- trans-1,2-DCE = trans-1,2-Dichloroethene
- = Detectable Levels of BTEX and/or HVOC in Ground Water

ENVIRON

6001 Shellmound St., Suite 700, Emeryville, CA 94608

BTEX and HVOC in Ground Water ($\mu\text{g/L}$)
 Planned Emeryville Village Center
 Emeryville, California

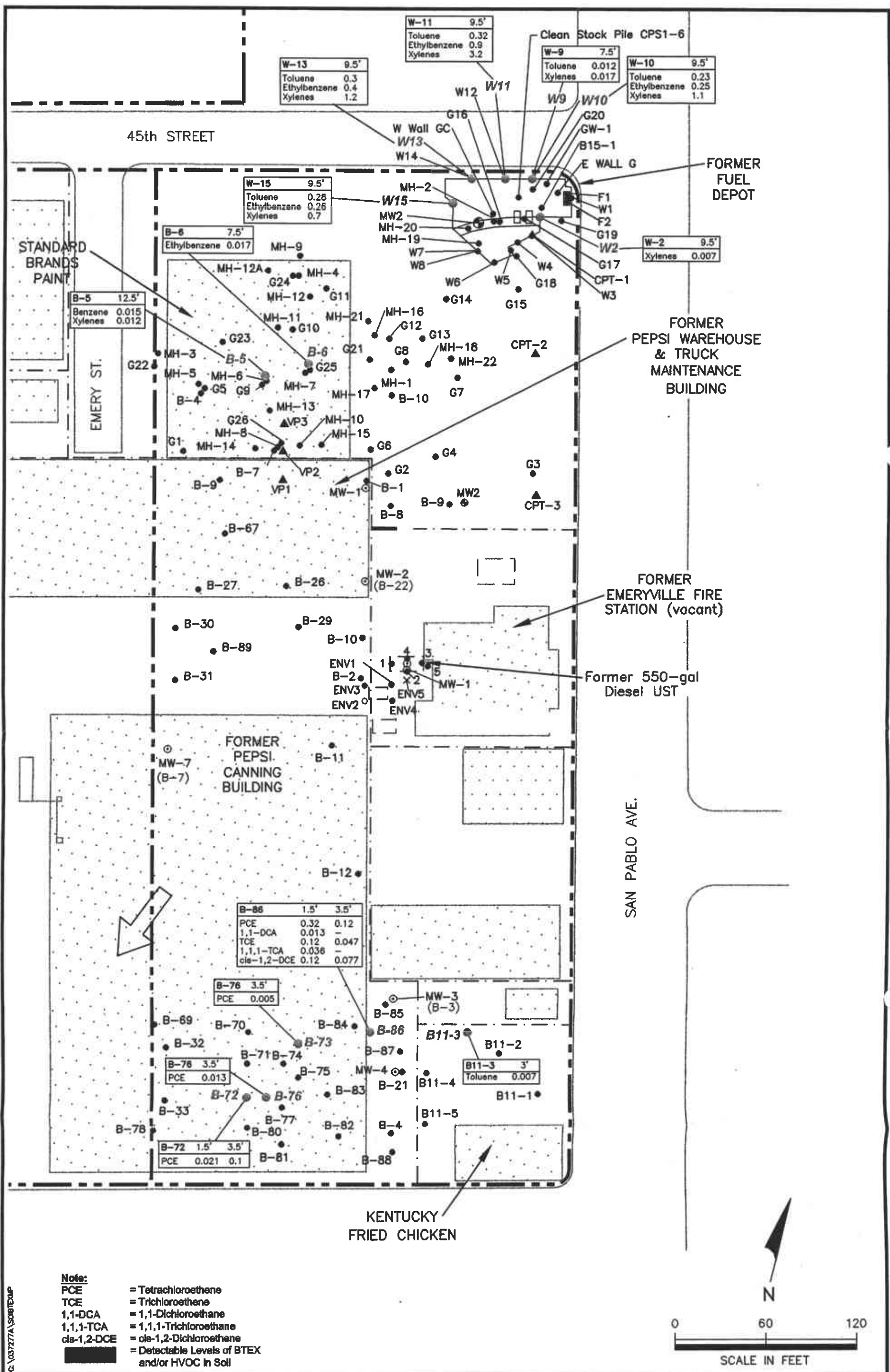
Drafter: RS

Date: 4/15/99

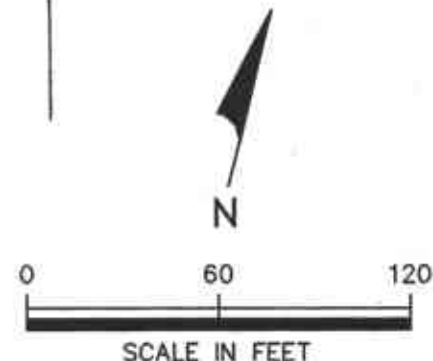
Contract Number: 03-7277A

Approved:

Revised:



Note:
 PCE = Tetrachloroethene
 TCE = Trichloroethene
 1,1-DCA = 1,1-Dichloroethane
 1,1,1-TCA = 1,1,1-Trichloroethane
 cis-1,2-DCE = cis-1,2-Dichloroethene
 [Symbol] = Detectable Levels of BTEX and/or HVOC in Soil



C:\037277A\SOILBTEX.DWG

ENVIRON

6001 Shellmound St., Suite 700, Emeryville, CA 94608

BTEX and HVOCs in Soil (mg/kg)
 Planned Emeryville Village Center
 Emeryville, California

Figure

7

Drafter: RS

Date: 4/15/99

Contract Number: 03-7277A

Approved:

Revised: