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## **INTERIM REMEDIAL ACTION WORKPLAN**

For the Site Located at:

**2145 35<sup>TH</sup> AVENUE**

**OAKLAND, CALIFORNIA 94601**

Prepared for:

Salisbury Avenue Associates LLC

Prepared by:

Eagle Environmental Construction (EEC)

1485 Bayshore Boulevard, Suite 374

San Francisco, CA 94124

May 2, 2014

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*FIGURE 1* SITE LOCATION

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*FIGURE 3* PLANNED SOIL EXCAVATION AREAS



# TABLE

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*TABLE 1* SOIL CUMULATIVE SUMMARY OF CHEMICAL ANALYSES FOR THE 5 LEAKING UNDERGROUND STORAGE TANK (LUFT) METALS



## 1.0 INTRODUCTION

This Interim Remedial Action Workplan (workplan) is prepared for the former gasoline service station located at 2145 35<sup>th</sup> Avenue, Oakland, California (Figure 1). The workplan is prepared at the request of Alameda County Environmental Health (ACEH), in a letter dated February 20, 2014.

The workplan includes the soil excavation and disposal of areas onsite, where lead (Pb) exceeded 80 mg/kg in the shallow soil, 0 to 1 foot below surface grade (bsg). The 80 mg/kg is the environmental screening level for residential use scenario of the site.

## 2.0 BACKGROUND AND PURPOSE

The onsite soil and groundwater investigation performed through 2012 was documented in a report titled “Phase II Environmental Investigation Report and Supplemental Investigation Workplan” dated August 2012. The 2012 report documented the following:

- Removal of the car maintenance pit;
- Removal of the hydraulic lift;
- Removal of the dispenser island and associated piping;
- Drilling of fifteen soil borings onsite with soil and groundwater sampling and analysis;
- Installation and closing of 4 temporary piezometers; and
- Drilling and sampling of four monitoring wells

The offsite soil and groundwater investigation performed in 2013 was documented in a report titled “Soil and Groundwater Investigation Report”, dated November 12, 2013. The 2013 report documented the drilling and sampling of additional 10 offsite borings. This report indicated that lead concentrations up to 310 mg/kg were detected in shallow soil. Table 1 summarizes the five LUFT metal concentrations, including lead. Figure 2 depicts the lead concentrations and the areas where lead exceeded 80 mg/kg, the residential ESL limit for shallow soil.

Below, we present the workplan for the interim remedial action in excavating the areas of lead impacted soil, where lead exceeded 80 mg/kg.

## **3.0 INTERIM REMEDIAL ACTION WORKPLAN**

### **3.1 Job Preparation**

A Health and Safety Plan will be prepared for the job. USA will be called to mark the utilities. Alameda County Environmental Health (ACEH) will be informed of the field activities at least 48 hours in advance.

### **3.2 Soil Excavation and Stockpiling**

There are 6 locations onsite where lead concentration exceeded 80 mg/kg (Figure 2). These locations are at borings P3; P4; BH5; BH6; BH7; and BH12. At each of these locations, we plan to excavate the area around the boring to a depth of approximately 1.5 to 2.0 ft bsg. That is, the boring will occupy the center of the excavation. Each of the excavation will be 10 feet wide, by 10 feet of width (Figure 3). A backhoe or excavator will be used to excavate the soil. The generated soil will be stockpiled onsite pending profiling and disposal. The soil will be placed on and covered with plastic liner.

### **3.3 Dust Suppression and Air Monitoring**

Before and in the process of soil excavation, EEC will spray water in the excavation area and truck route onsite to suppress dust.

In addition, air sampling will be performed on the workers onsite and site perimeter. The recommended NIOSH testing method 7082 will be followed. Two pieces of equipment are needed for the air sampling, a personal air sampling pump and a Cassette with 37 mm lead (Pb) filter. The sampling train, pump & cassette, will be calibrated prior to and after the sampling period of time, using a rotameter (secondary calibration instrument). The data will be recorded on a Chain-of Custody air sampling form. The air pump, cassette filter package will be attached to the employee for personal monitoring. Additional pump/cassette package will be placed on site perimeter, downgradient and upgradient from wind, and used for area monitoring and neighborhood protection. The cassettes will be delivered to a State certified laboratory for lead analysis by NIOSH method 7082. No employee or receptor will be exposed to a lead at concentration greater than 50  $\mu\text{g}/\text{m}^3$  (fifty micrograms per cubic meter action level) of air averaged over an eight-hour period.

After a full day of soil excavation (worst case scenario), should air sampling prove that employees and nearby receptors are not exposed to a lead concentration of more than 50

$\mu\text{g}/\text{m}^3$  of air averaged over an eight-hour period, no further air sampling will be needed or performed.

### **3.4 Confirmation Sampling and Additional Soil Excavation (If needed)**

After completing the soil excavation from each location as described above, confirmation soil sampling will be performed at all four sides of each excavation, in the middle, and at the bottom. The side wall samples will be collected between 0 and one foot from each side. The collected soil samples will be analyzed for total lead by EPA method 6010. Should any of the samples detect lead higher than 80 mg/kg again, additional excavation in the direction of the wall, where the exceedance occur, will be performed until we achieve lower than 80 mg/kg level of lead.

### **3.5 Soil Profiling for Disposal**

Per the request of the landfill, composite soil samples will be collected from the soil stockpile for profiling soil for disposal. Should lead exceed 50 mg/kg, additional analysis for soluble threshold limit concentration (STLC) and Total Concentration Leaching Procedure (TCLP) may be necessary. We estimate approximately 60 to 80 tons soil to be excavated and disposed of.

## **4.0 DATA INTERPRETATION/ REPORT PREPARATION**

Following completion of the soil excavation and disposal, and receiving the analytical data, all field and analytical data will be reviewed and a technical report summarizing the activities, findings, and conclusions of the investigation will be prepared. The report will be submitted electronically to ACEH Department. An update of the conceptual site model will be completed.

## **5.0 BACKFILLING AND COMPACTION**

Following completion of the soil excavation and disposal, and receiving the analytical data, the excavations will be backfilled with clean virgin class II base and compacted to no less than 90 % compaction.

## **6.0 GEOTRACKER AB2886 ELECTRONIC SUBMITTAL**

Following receipt of all electronic laboratory analytical reports, EEC will upload the sample results (EDF) and report to the State GeoTracker Database System, in general accordance with State Assembly Bill 2886.



## 7.0 SCHEDULE AND APPROVAL

We anticipate beginning the pre-field activities within 30 days from receiving written approval to proceed from ACEH and client. Excavation and sampling will occur within 30 to 60 days from the Fund approval. The report of findings will be available within 60 days of all analytical results and waste disposal.

Thank you for your cooperation. If you have any questions, please call at (925) 858-9608 or email Sami Malaeb at [s.malaeb@comcast.net](mailto:s.malaeb@comcast.net).

All engineering information, conclusions, and recommendations contained in this report and workplan have been prepared by a California Professional Engineer.

Plan  
Prepared by:



EEC  
Sami Malaeb, PE, QSP/QSD  
Civil Engineer C60888

Lead Related Topics  
Prepared By:

A handwritten signature in cursive script, appearing to read "Ralph P. Guzman".

Ralph P. Guzman  
IH, BS, CAC #93-0965, CDPH #232  
Project Manager

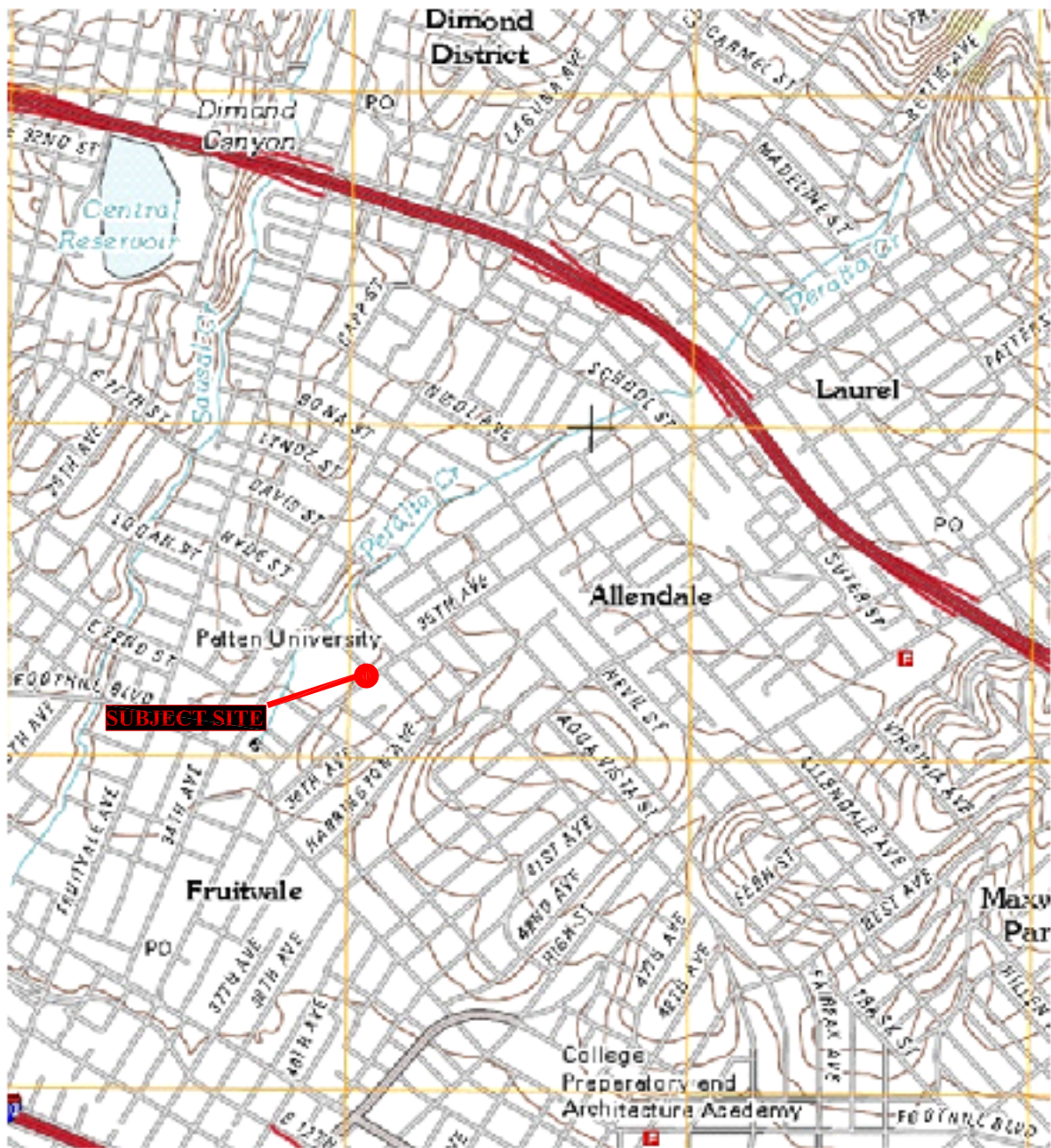
I declare under penalty of perjury, that the information and/or recommendations contained in this report and workplan are true and correct to the best of my knowledge.

A handwritten signature in cursive script, appearing to read "Peter Robertson".

Salisbury Avenue Associates LLC  
Peter Robertson  
Property Owner

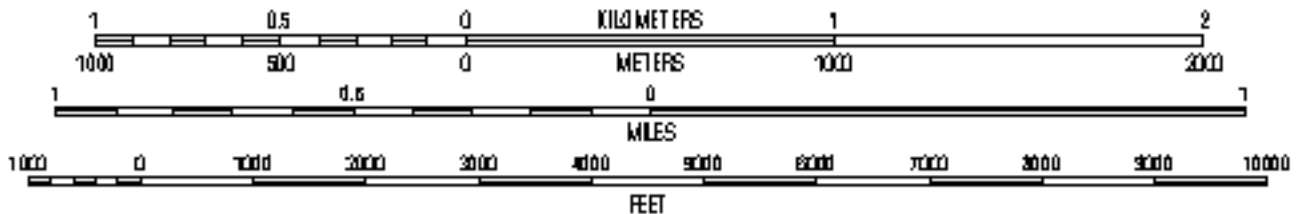
# FIGURES

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**SUBJECT SITE**

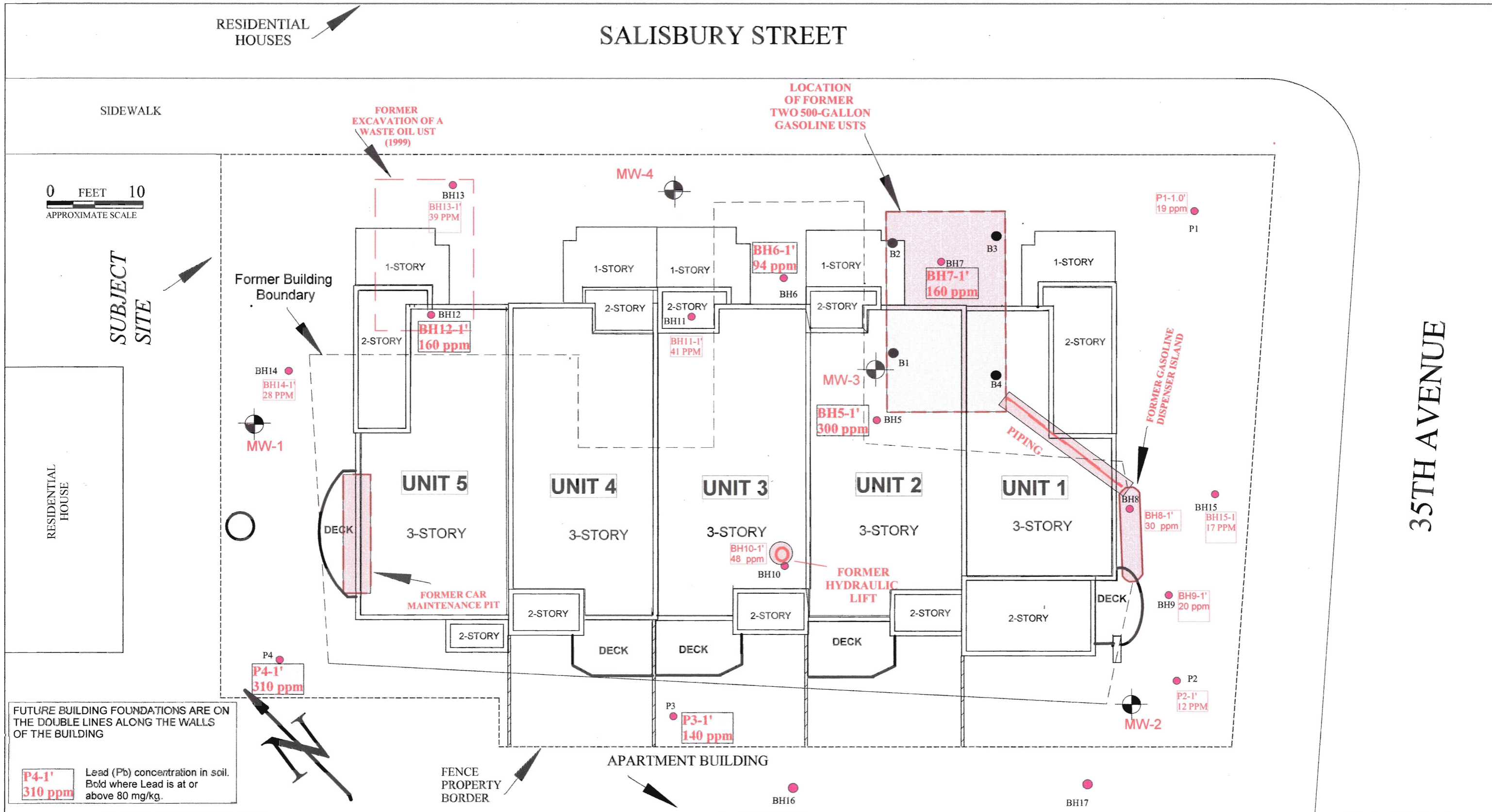
SCALE 1:24 000



1485 BAYSHORE BOULEVARD, SUITE 374  
SAN FRANCISCO, CA 94124

SITE LOCATION  
2145 35TH AVENUE  
OAKLAND, CA 94601

FIGURE 1  
OCTOBER  
2013



1485 BAYSHORE BOULEVARD, SUITE 374  
SAN FRANCISCO, CA 94124

FUTURE SITE PLAN  
DEPICTION OF LEAD (PB) IN SHALLOW SOIL  
2145 35TH AVENUE, OAKLAND, CALIFORNIA

FIGURE 2

FEBRUARY 2014

RESIDENTIAL  
HOUSES

SALISBURY STREET

SIDEWALK

0 FEET 10  
APPROXIMATE SCALE

SUBJECT  
SITE

FORMER  
EXCAVATION OF A  
WASTE OIL UST  
(1999)

LOCATION  
OF FORMER  
TWO 500-GALLON  
GASOLINE USTS

MW-4

Former Building  
Boundary

BH13  
BH13-1'  
39 PPM

P1-1.0'  
19 ppm  
P1

BH6

BH7

BH11  
BH11-1'  
41 PPM

MW-3

BH4  
BH4-1'  
28 PPM  
MW-1

B1

BH5

PIPING

FORMER GASOLINE  
DISPENSER ISLAND

RESIDENTIAL  
HOUSE

FORMER CAR  
MAINTENANCE PIT

BH10-1'  
48 ppm  
BH10

FORMER  
HYDRAULIC  
LIFT

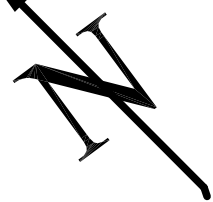
BH8-1'  
30 ppm  
BH8

BH15-1  
17 PPM  
BH15

BH9-1'  
20 ppm  
BH9

FUTURE BUILDING FOUNDATIONS ARE ON  
THE DOUBLE LINES ALONG THE WALLS  
OF THE BUILDING

Excavation Areas Where Lead (Pb)  
Concentration in Soil is at or  
above 80 mg/kg.



FENCE  
PROPERTY  
BORDER

APARTMENT BUILDING

P3

MW-2

P2  
P2-1'  
12 PPM  
P2

BH16

BH17

35TH AVENUE



1485 BAYSHORE BOULEVARD, SUITE 374  
SAN FRANCISCO, CA 94124

PLANNED SOIL EXCAVATION AREAS  
2145 35TH AVENUE, OAKLAND, CALIFORNIA

FIGURE 3  
FEBRUARY 2014

# TABLE

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TABLE 1  
SOIL CUMULATIVE SUMMARY OF CHEMICAL ANALYSES FOR THE 5 LEAKING UNDERGROUND STORAGE TANK  
(LUFT) METALS  
2145 35<sup>th</sup> Avenue, Oakland, California

Sample ID	Description	Date Sampled	Cadmium (Cd) (mg/kg) <sup>(1)</sup>	Chromium (Cr) (mg/kg)	Lead (Pb) (mg/kg)	Nickel (Ni) (mg/kg)	Zinc (Zn) (mg/kg)
<b>Soil Confirmation Samples Collected in 2007 from Under the Former Gasoline UST</b>							
B1@9'	Boring 1 at 9 feet bgs	02/23/07	<0.25	140	9.1	250	37
B2@8'	Boring 2 at 8 feet bgs	02/23/07	<0.25	140	4.2	240	41
B3@8.5'	Boring 3 at 8.5 feet bgs	02/23/07	<0.25	120	4.1	260	38
B4@7.5'	Boring 4 at 7.5 feet bgs	02/23/07	<0.25	120	5.9	250	130
B1@9'	Boring 1 at 9 feet bgs	02/23/07	<0.25	140	9.1	250	37
<b>Soil Confirmation Samples Collected in 2012 from Under the Former Hydraulic Lift, Car Maintenance Pit, Dispenser Island, and Piping</b>							
S-1-5.5	Soil sample collected at 5.5 feet bgs <sup>(2)</sup> from the hydraulic lift excavation	01/11/12	0.45	32	51	53	84
S-2-7.0	Soil sample collected at 7.0 feet bgs from under the former maintenance pit (east side)	01/13/12	<0.24	130	3.5	260	44
S-3-7.0	Soil sample collected at 7.0 feet bgs from under the former maintenance pit (west side)	01/13/12	<0.24	120	2.9	270	43
S-4-3.0	Soil sample collected at 3.0 feet bgs from under the former dispenser island and piping	01/13/12	<0.25	110	5.7	360	39
S-5-5.0	Soil sample collected at 5.0 feet bgs from under the former dispenser island and piping	01/13/12	<0.25	95	3.3	130	36
S-6-5.0	Soil sample collected at 5.0 feet bgs from under the former dispenser island and piping	01/13/12	<0.27	160	4.0	260	40
<b>Soil Samples Collected in 2012 from Borings P1 Through P4 and Borings BH5 through BH15</b>							
P1-1	Soil sample collected at less than 1' below surface from boring P1	01/25/2012	NA	NA	19	NA	NA
P1-5	Soil sample collected at 5' from boring P1	01/25/2012	0.25	94	3.0	190	35
P1-14	Soil sample collected at 14' from boring P1	01/25/2012	0.27	99	2.9	170	37
P2-1	Soil sample collected at less than 1' below surface from boring P2	01/25/2012	NA	NA	12	NA	NA
P2-8	Soil sample collected at 8' from boring P2	01/25/2012	0.25	91	4.3	130	32
P2-12	Soil sample collected at 12' from boring P2	01/25/2012	<0.24	100	7.9	170	35
P2-16	Soil sample collected at 16' from boring P2	01/25/2012	<0.24	34	4.4	63	38
P2-20	Soil sample collected at 20' from boring P2	01/25/2012	0.40	33	6.5	59	50
P3-1	Soil sample collected at less than 1' below surface from boring P3	01/25/2012	NA	NA	<b>140</b>	NA	NA

Sample ID	Description	Date Sampled	Cadmium (Cd) (mg/kg) <sup>(1)</sup>	Chromium (Cr) (mg/kg)	Lead (Pb) (mg/kg)	Nickel (Ni) (mg/kg)	Zinc (Zn) (mg/kg)
P3-8	Soil sample collected at 8' from boring P3	01/25/2012	<0.26	87	3.7	160	37
P3-12	Soil sample collected at 12' from boring P3	01/25/2012	<0.25	120	3.6	210	40
P4-1	Soil sample collected at less than 1' below surface from boring P4	01/25/2012	NA	NA	<b>310</b>	NA	NA
P4-8	Soil sample collected at 8' from boring P4	01/25/2012	0.34	140	3.8	310	49
P4-12	Soil sample collected at 12' from boring P4	01/25/2012	0.27	100	3.6	240	49
BH5-1	Soil sample collected at less than 1' below surface from boring BH5	02/06/2012	NA	NA	<b>300</b>	NA	NA
BH5-5	Soil sample collected at 5' from boring BH5	02/06/2012	<0.24	110	4.3	200	34
BH5-8	Soil sample collected at 8' from boring BH5	02/06/2012	<0.24	110	5.3	170	35
BH5-12	Soil sample collected at 12' from boring BH5	02/06/2012	<0.23	110	5.9	240	34
BH5-30	Soil sample collected at 30' from boring BH5	02/06/2012	0.40	44	6.9	55	62
BH6-1	Soil sample collected at less than 1' below surface from boring BH6	01/25/2012	NA	NA	94	NA	NA
BH6-8	Soil sample collected at 8' from boring BH6	01/25/2012	0.28	100	3.6	190	51
BH6-12	Soil sample collected at 12' from boring BH6	01/25/2012	0.42	180	6.2	260	45
BH6-16	Soil sample collected at 16' from boring BH6	01/25/2012	<0.23	26	5.8	43	38
BH7-1	Soil sample collected at less than 1' below surface from boring BH7	01/25/2012	NA	NA	<b>160</b>	NA	NA
BH7-8	Soil sample collected at 8' from boring BH7	01/25/2012	<0.23	110	2.3	220	38
BH7-12	Soil sample collected at 12' from boring BH7	01/25/2012	<0.24	140	2.9	240	35
BH8-1	Soil sample collected at less than 1' below surface from boring BH8	01/25/2012	NA	NA	30	NA	NA
BH8-8	Soil sample collected at 8' from boring BH8	01/25/2012	<0.25	100	2.8	190	33
BH8-12	Soil sample collected at 12' from boring BH8	01/25/2012	<0.24	110	4.9	170	35
BH8-16	Soil sample collected at 16' from boring BH8	01/25/2012	<0.23	180	3.5	200	40
BH9-1	Soil sample collected at less than 1' below surface from boring BH9	02/06/2012	NA	NA	20	NA	NA
BH9-8	Soil sample collected at 8' from boring BH9	02/06/2012	0.28	110	9.4	180	39
BH9-16	Soil sample collected at 16' from boring BH9	02/06/2012	<0.26	73	4.7	140	46
BH9-30	Soil sample collected at 30' from boring BH9	02/06/2012	0.34	58	8.5	72	65
BH10-1	Soil sample collected at less than 1' below surface from boring BH10	02/06/2012	NA	NA	48	NA	NA
BH10-9	Soil sample collected at 9' from boring BH10	02/06/2012	0.30	120	5.3	360	46
BH10-12	Soil sample collected at 12' from boring BH10	02/06/2012	<0.25	110	3.6	220	43
BH11-1	Soil sample collected at less than 1' below surface from boring BH11	02/08/2012	NA	NA	41	NA	NA
BH11-8	Soil sample collected at 8' from boring BH11	02/08/2012	<0.25	130	3.6	210	44
BH11-12	Soil sample collected at 12' from boring BH11	02/08/2012	<0.25	140	3.5	210	40
BH12-1	Soil sample collected at less than 1' below surface from boring BH12	02/06/2012	NA	NA	<b>160</b>	NA	NA
BH12-5	Soil sample collected at 5' from boring BH12	02/06/2012	<0.27	120	4.9	210	37
BH12-12	Soil sample collected at 12' from boring BH12	02/06/2012	0.67	810	3.7	1,000	36
BH12-30	Soil sample collected at 30' from boring BH12	02/06/2012	<0.25	29	4.4	40	40



Sample ID	Description	Date Sampled	Cadmium (Cd) (mg/kg) <sup>(1)</sup>	Chromium (Cr) (mg/kg)	Lead (Pb) (mg/kg)	Nickel (Ni) (mg/kg)	Zinc (Zn) (mg/kg)
BH13-1	Soil sample collected at less than 1' below surface from boring BH13	02/08/2012	NA	NA	39	NA	NA
BH13-5	Soil sample collected at 5' from boring BH13	02/08/2012	<0.23	110	2.3	300	37
BH13-8	Soil sample collected at 8' from boring BH13	02/08/2012	<0.24	130	2.5	240	54
BH14-1	Soil sample collected at less than 1' below surface from boring BH14	02/08/2012	NA	NA	28	NA	NA
BH14-8	Soil sample collected at 8' from boring BH14	02/08/2012	<0.25	130	6.1	300	42
BH15-1	Soil sample collected at less than 1' below surface from boring BH15	02/08/2012	NA	NA	17	NA	NA
BH15-4	Soil sample collected at 4' from boring BH15	02/08/2012	<0.25	160	2.9	350	43
BH15-8	Soil sample collected at 8' from boring BH15	02/08/2012	<0.23	110	2.7	150	35
BH15-12	Soil sample collected at 12' from boring BH15	02/08/2012	<0.24	120	5.1	240	40
BH15-16	Soil sample collected at 16' from boring BH15	02/08/2012	<0.24	120	2.3	190	40
Soil Samples Collected in 2012 from The Well Borings							
MW1-5.5	Soil at 5.5' from well boring MW-1	07/03/2012	0.54	170	2.2	410	38
MW1-15.0	Soil at 15' from well boring MW-1	07/03/2012	0.43	43	3.5	53	38
MW2-6.0	Soil at 6' from well boring MW-2	07/03/2012	0.54	81	22	110	82
MW2-11.0	Soil at 11' from well boring MW-2	07/03/2012	0.47	160	5.6	180	35
MW2-16.0	Soil at 16' from well boring MW-2	07/03/2012	0.49	99	3.3	170	42
MW3-6.5	Soil at 6.5' from well boring MW-3	07/03/2012	<0.47	190	6.6	210	110
MW3-11.0	Soil at 11' from well boring MW-3	07/03/2012	<0.042	110	2.9	220	41
MW4-5.5	Soil at 5.5' from well boring MW-4	07/03/2012	0.53	240	2.7	310	40
MW4-10.0	Soil at 10' from well boring MW-4	07/03/2012	0.42	100	3.1	300	46
Direct Exposure Soil Screening Levels, Residential Exposure Scenario <sup>(2)</sup>			78	No Value	80	1,500	23,000

mg/kg <sup>(1)</sup> = milligrams per kilogram

<sup>(2)</sup> = Tier 1 Environmental Screening Levels (ESLs), Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Prepared by: California Regional Water Quality Control Board, San Francisco Bay Region, 1515 Clay Street, Suite 1400, Oakland, California 94612, (Table K-1), Interim Final (Revised May 2013).

**Bold** = Concentration presented in bold where such a value is at or exceeds indicated environmental screening levels (ESLs). None of the total metal concentrations exceeded the hazardous waste level.

**Note:** Five metal analysis was discontinued in offsite borings BH16 through BH25 with the concurrence of Alameda County Environmental Health (ACEH). Discontinuation of metal analysis was due to non-significant detection of these metals, except Nickel and Lead. However, Nickel and Lead noticeable concentrations were not related to the release onsite and were in the native soil in clean areas. None of the total metal concentrations was at or exceeds the hazardous waste level.