March 13, 2009

Mr. Francis Rush
Rush Property Group, LLC
2200 Adeline Street, Suite 350
Oakland, California 94607

RE: Work Plan for Additional Subsurface Investigation
1549 32nd Street, California
Fuel Leak Case No. RO2508
ERS Project No. 1005-01.01

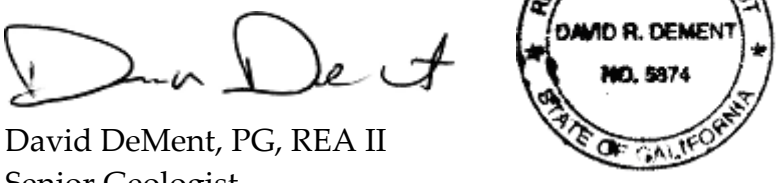
Dear Mr. Rush:

Environmental Risk Specialties Corporation (ERS) has prepared this Work Plan to conduct additional subsurface site characterization at the subject property. To assist in the preparation of this Work Plan, ERS reviewed its October 16, 2008 Phase II *Subsurface Investigation Report* as well as available documents on Alameda County's FTP database.

The ultimate goal of full site characterization is to obtain a finding of No Further Action from the Alameda County Health Care Services Agency (ACHCSA) in regards to the former identified release(s) of quenching oil. This Work Plan outlines tasks to address current regulatory concerns regarding residual petroleum hydrocarbons and recently identified Tetrachloroethene (PCE) at one location, and obtain additional necessary subsurface characterization data in a cost-effective manner.

If you have any questions about this Work Plan, please contact me at (925) 938-1600, extension 109 or email me at ddement@erscorp.us.

Sincerely,



David DeMent, PG, REA II
Senior Geologist

WORK PLAN
ADDITIONAL SUBSURFACE INVESTIGATION

1.0 INTRODUCTION

Environmental Risk Specialties Corporation (ERS) presents this Work Plan to perform additional subsurface characterization at 1549 32nd Street, Oakland, California (Site). The general goals are: 1) prepare a Work Plan and submit it to the Alameda County Health Care Services Agency (ACHCSA) for review and approval; 2) advance exploratory soil borings and collect representative soil, soil gas, and grab groundwater samples at select locations according to the approved Work Plan; 3) analyze samples for constituents of concern as motor oil range petroleum hydrocarbons (TEPH) and halogenated volatile organic compounds (HVOCs); 4) perform other associated tasks as necessary; and 5) prepare a report of findings for submission to the ACHCSA.

Additional subsurface investigation will: 1) further characterize suspect HVOC impacts in soil, soil gas, and groundwater reported in soil boring EB6 in the October 16, 2008 ERS *Subsurface Investigation Report*; 2) further assess the human health risk associated with residual petroleum hydrocarbon and HVOC impacts in the subsurface; 3) evaluate the necessity for further subsurface investigation and/or mitigation measures appropriate during site redevelopment; and 4) discuss and address the concerns of the ACHCSA related to residual impacts in the subsurface, redevelopment, and future site use.

2.0 BACKGROUND

The Site is located on the southeast corner of 32nd Street and Hannah Street at 1549 32nd Street, Oakland, California (Figure 1). The Site formerly heat-treated metal products from the 1940's to 1983 and operated as a steel foundry from 1983 to 2002. According to a January 4, 2001 *Phase I Environmental Site Assessment* Report prepared by Lumina Technologies, the property was developed with the current building in 1946 and operated as a metal heat treating facility. City of Oakland Fire Department records indicate the facility operated under the name of Precision Cast, a steel foundry, from 1983 to 2002. A small business designated a "putty & paint" factory on Sanborn Fire

Insurance maps also operated at 2885 Hannah Street until circa 1985, but the exact years of operation are unknown.

ACC Environmental Consultants, Inc (ACC) previously submitted a *Request for Regulatory Closure Summary*, dated August 7, 2006, that summarized previous subsurface investigation and remediation work at the Site, and prepared an *Addendum to Request for Regulatory Closure Summary*, dated December 14, 2006 that further elaborated on the issue of volatile organic compounds and perceived data gaps. The ACHCSA subsequently requested additional investigation in a letter dated March 27, 2007. ACC prepared a *Revised Work Plan - Subsurface Investigation*, dated April 4, 2008, which ERS subsequently implemented in September 2008.

2.1 Previous Investigation

In 1988, Property Contamination Control, Inc (PCC) conducted a soil investigation consisting of four exploratory soil borings. PCC reported relatively minor concentrations of ethanol, methanol, 1,1-dichloroethene (1,1-DCE), and metals in soil. Soil sample locations and depth are unknown.

In March 2002, ERAS Environmental, Inc. (ERAS) advanced four soil borings with a hand auger and reported "elevated" concentrations of total recoverable petroleum hydrocarbons (TRPH) and relatively minor concentrations of benzene, toluene, ethylbenzene and total xylenes (BTEX) in soil as approximately 3.0 feet below ground surface (bgs) in three of the four borings. In November 2002, ERAS analyzed a sample of oil from an excavation pit located near the southeast corner of the building and reported the oil resembling mineral oil, foundry quenching oil, or similar material.

In April 2002, Environmental Restoration Services (Enrest) advanced seven soil borings and reported observing free-phase floating oil in boring SB-6. In addition, Enrest determined that a pipe identified by ERAS was actually a waste percolation well. The percolation well was 7 feet deep, perforated from 5.5 feet to 7.0 feet bgs, and surrounded by drain rock from approximately 5 to 10 feet bgs. On April 26, 2002, Enrest demolished the concrete lining of Pit B and excavated soil to 12 feet bgs. Enrest also excavated casting sand backfill from Pit A and Pit C, and identified another suspect percolation well near the southeast corner of the building.

In May 2002, Enrest excavated soil in the vicinity of soil boring SB-6 and in the vicinity of the suspect percolation well in the southeast corner of the Site. Enrest also advanced three soil borings to collect grab groundwater samples north, west, and south of soil

boring SB-6, designated SP-1, SP-2, and SP-3. Grab groundwater sample analytical results reported elevated concentrations of motor-oil range petroleum hydrocarbons, relatively minor concentrations of BTEX, 1,2-dichlorobenzene, and naphthalene.
In May 2003, ERAS advanced eleven soil borings to depths of approximately 16 to 20 feet bgs, collected soil and grab groundwater samples, and converted three of the soil borings to temporary piezometers. The piezometers were surveyed and the calculated groundwater flow direction and gradient were west to northwest at 0.03 foot per foot. This groundwater flow direction is consistent with investigation performed at 2862 Helen Street by Cambria Environmental. Soil sample analytical results reported minor to elevated concentrations of total extractable petroleum hydrocarbons (TEPH) and varying minor volatile organic compound (VOC) concentrations. Grab groundwater sample analytical results reported relatively low TPH concentrations in soil borings E-6, E-9, and E-10 and minor concentrations of dissolved metals. VOC analytical results were reported below laboratory reporting limits in these borings.

Concurrently, ERAS sampled the contents of six subsurface concrete vaults. Vault contents were described as poorly graded sand. All available analytical results of previous investigations are summarized in ACC's August 7, 2006 *Request for Regulatory Closure Summary* and April 4, 2008 *Revised Work Plan - Subsurface Investigation*.

2.2 Remedial Soil Removal

In April 2002, Enrest demolished the concrete lining of Pit B and excavated soil to 12 feet bgs. An oil sheen was noted on groundwater that entered the excavation pit. Enrest also excavated sand backfill from Pit A and Pit C. The volume of removed soil is unknown. In or before May 2002, Enrest excavated soil in the vicinity of soil boring SB-6 and around the second 4-inch diameter pipe identified as a waste percolation well.

Between September 2003 to January 2004, ERAS oversaw remedial soil excavation designed to remove soil containing TEPH as hydraulic oil above 500 milligrams per kilogram (mg/kg). The limits of soil excavation are shown on ERS Figure 2. Soil was removed in three locations: 1) inside the northeast corner of the building (designated "North Excavation"); 2) inside the southeast portion of the building to the building perimeter (designated "Middle Excavation"); and 3) outside the building on the south side (designated "South Excavation"). Approximately 845 cubic yards of soil was removed from the "North Excavation", approximately 1,950 cubic yards of soil was removed from the "Middle Excavation", and approximately 407 cubic yards of soil was removed from the "South Excavation", for a total of approximately 3,202 cubic yards. Excavated soil was properly profiled and disposed at Forward landfill, Manteca,

California under profile No. 3786. Following remedial soil excavation, confirmatory sidewall and excavation bottom soil samples were collected and analyzed for constituents of concern.

2.3 Verification Site Investigation

In April 2005, Enrest conducted verification site investigation and advanced fifteen soil borings primary around the perimeter of the Site. The purpose was to collect representative soil and groundwater samples at the perimeter of the property to evaluate the effectiveness of remedial soil excavation performed from September 2003 to January 2004. Soil samples were generally collected at 4 and 9 feet bgs and grab groundwater samples were collected in each soil boring at approximately 15 and 25 feet bgs. In addition, Enrest collected representative soil samples from imported material used to backfill the remedial soil excavations and analyzed the samples for constituents of concern. Enrest also collected two representative soil gas samples for chemical analysis. None of the reported VOC concentrations reported in the two soil gas samples indicated that a significant source of residual VOCs exist in the subsurface.

All analytical results of previous investigations are summarized in ACC's *Revised Work Plan - Subsurface Investigation* dated April 4, 2008.

In September 2008, ERS advanced nine exploratory soil borings EB1 through EB9 at selected locations across the Site and at one neighboring residential property located at 2859 Helen Street. These additional soil borings were specifically advanced at selected locations to further characterize the vertical and lateral extent of constituents of concern in soil and groundwater. Soil borings EB1 and EB2 were advanced within two restored excavations and sampled to confirm the general soil quality of backfill. The analytical results were consistent with the soil sample analytical results obtained when ACC profiled the soil at the time it was generated in Berkeley by Affordable Housing Associates. Soil borings EB5 and EB9 were advanced at an approximate angle of 20 degrees from vertical to further assess soil and groundwater at adjacent neighboring properties 2851 Helen Street and 2863 Helen Street. With the exception of soil borings EB3 and EB4, the continuously cored borings were advanced using a four-foot long, hydraulically driven, truck-mounted Geoprobe® sampling tool equipped with 2-inch inside-diameter clear acetate liners. Soil borings EB3 and EB4 were continuously cored using limited access Geoprobe® equipment. Sample locations are shown on Figure 2. Grab groundwater samples were collected in soil borings EB3 through EB9.

Select soil samples were analyzed for TEPH as diesel-range and motor oil-range petroleum hydrocarbons and halogenated VOCs (HVOCs). TEPH soil sample

analytical results are summarized in Table 1 and HVOC results are summarized in Table 2.

Figure 3 shows an aerial view of the Site and the surrounding residential properties. The estimated groundwater flow direction east of the Site is west and the calculated groundwater flow direction beneath the Site is west-northwest.

TABLE 1 – SOIL SAMPLE TEPH ANALYTICAL RESULTS

Sample ID	Depth (ft bgs)	TEPH as Diesel (mg/kg)	TEPH Motor Oil (mg/kg)
EB1-4.0	4.0	52	370
EB1-8.0	8.0	**250**	230
EB1-12.0	12.0	<0.99	<5.0
EB2-4.0	4.0	22	130
EB2-8.0	8.0	33	140
EB2-12.0	12.0	<0.99	<5.0
EB3-9.0	9.0	12	7.3
EB3-15.5	15.5	2.7	<5.0
EB4-9.0	9.0	2.3	<5.0
EB4-16.5	16.5	4.3	<5.0
EB5-7.4	7.4	**5,500**	2,500
EB5-16.0	16.0	11	<5.0
EB6-7.5	7.5	<1.0	<5.0
EB6-16.0	16.0	<1.0	<5.0
EB7-7.5	7.5	2.2	<5.0
EB7-15.0	15.0	2.4	<5.0
EB8-7.5	7.5	3.3	8.8
EB8-16.0	16.0	1.7	<5.0
EB9-7.4	7.4	**1,700**	670
EB9-15.5	15.5	**290**	130
Commercial/Industrial ESL		**180**	**2,500**

Note: *milligrams per kilogram (mg/kg) approximately equal to parts per million (ppm)*
ESL = Environmental Screening Level (RWQCB, Table B and D)
***Bolded** values exceed Commercial/Industrial ESL*

TABLE 2 – SOIL SAMPLE HVOC ANALYTICAL RESULTS

Sample ID	Depth (ft bgs)	Tetrachloroethene (mg/kg)	Other HVOCs (mg/kg)
EB1-4.0	4.0	<0.0048	<RL
EB1-8.0	8.0	<0.005	<RL
EB2-4.0	4.0	<0.0049	<RL
EB2-8.0	8.0	<0.0047	<RL
EB3-9.0	9.0	<0.0049	<RL
EB4-9.0	9.0	<0.005	<RL
EB5-7.4	7.4	<0.0049	<RL
EB6-7.5	7.5	0.048	<RL
EB7-7.5	7.5	<0.0046	<RL
EB8-7.5	7.5	<0.0048	<RL
EB9-7.4	7.4	<0.0049	<RL
Commercial/Residential ESL		**0.95**	**NA**

Note: *milligrams per kilogram (mg/kg) approximately equal to parts per million (ppm)*
ESL = Environmental Screening Level (RWQCB, Table B and D)
<RL = Reported below respective laboratory detection limit (similar to the PCE RL)

Select soil samples were analyzed for the 5 LUFT metals as lead, cadmium, chromium, nickel, and zinc. LUFT metal soil sample analytical results are summarized in Table 3.

TABLE 3 – SOIL SAMPLE METAL ANALYTICAL RESULTS

Sample ID	Depth (ft bgs)	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
EB1-4.0	4.0	2.0	37	38	20	34
EB1-8.0	8.0	1.8	28	34	20	36
EB2-4.0	4.0	0.76	42	20	33	43
EB2-8.0	8.0	0.72	29	13	39	43
Residential/ Commercial ESL		**1.7/7.4**	**750/750**	**200/750**	**150/150**	**600/600**

Note: *milligrams per kilogram (mg/kg) approximately equal to parts per million (ppm)*
ESL = Environmental Screening Level (RWQCB, Table B)

Each grab groundwater sample was analyzed for TEPH and HVOCs. Grab groundwater results for TEPH are summarized in Table 4 and HVOC and TPHg analytical results are summarized in Table 5.

TABLE 4 – GROUNDWATER SAMPLE TEPH ANALYTICAL RESULTS

Sample ID	Depth (ft bgs)	TEPH as Diesel (µg/L)	TEPH Motor Oil (µg/L)
EB3-W-18.5	18.5	**730**	**610**
EB4-W-21.0	21.0	69	<300
EB5-W-21.0	21.0	150	<300
EB6-W-21.0	21.0	73	<300
EB7-W-15.5	15.5	**1,400**	**1,600**
EB8-W-8.5	8.5	**3,100**	**650**
EB9-W-15.5	15.5	51	<300
Commercial/Industrial ESL		**210**	**210**

Note: *micrograms per liter (µg/L) approximately equal to parts per billion (ppb)*
ESL = Environmental Screening Level (RWQCB, Table B and D)
***Bolded** values exceed Commercial/Industrial ESL*

TABLE 5 – GROUNDWATER SAMPLE TPHg/VOCs ANALYTICAL RESULTS

Constituent	EB3-W-18.5	EB4-W-21.0	EB5-W-21.0	EB6-W-21.0	EB7-W-15.5	EB8-W-8.5	EB9-W-15.5	**ESL**
TPHg	N/A	N/A	N/A	**15,000***	<50	**460**	N/A	**210**
Trichloroethene	<RL	<RL	<RL	<RL	4.3	<RL	<RL	**360**
Tetrachloroethene	<0.5	<0.5	1.6	**11,000**	7.1	<0.5	2.1	**120**
Ethylbenzene	<RL	<RL	<RL	<RL	<RL	5.0	<RL	**43**
M,p-Xylenes	<RL	<RL	<RL	<RL	<RL	1.3	<RL	**100**
Isopropylbenzene	<RL	<RL	<RL	<RL	<RL	2.0	<RL	**---**
Propylbenzene	<RL	<RL	<RL	<RL	<RL	3.2	<RL	**---**
1,3,5-Trimethylbenzene	<RL	<RL	<RL	<RL	<RL	1.8	<RL	**---**
1,2,4-Trimethylbenzene	<RL	<RL	<RL	<RL	<RL	5.5	<RL	**---**
Sec-Butylbenzene	<RL	<RL	<RL	<RL	<RL	5.0	<RL	**---**
n-Butylbenzene	<RL	<RL	<RL	<RL	<RL	3.7	<RL	**---**
Naphthalene	<RL	<RL	<RL	<RL	<RL	**94**	<RL	**24**

Note: Analytical Results reported in micrograms per liter (µg/L) approximately equal to parts per billion (ppb)
ESL = Commercial/Industrial Environmental Screening Level (RWQCB, Table B and D)
***Bolded** values exceed Commercial/Industrial ESL*
<RL = Reported below laboratory detection limit (similar to reported RL values)
** = Result flagged by the laboratory as primarily due to single spike and not resembling TPHg (see reports)*

2.4 Subsurface Conditions

The surface of the Site is unpaved. With the exception of soil borings EB1 and EB2, soils encountered consisted primarily of moderately dense, black to dark brown gravel-sand-silt mixtures to depths ranging from 2 to 7 feet bgs. These surface soils were underlain by moderately plastic, medium stiff, uniform silty clays to depths ranging from 20 to 24 feet bgs. Saturated silty sands were observed in soil boring EB3 between 18 to 20 feet bgs, EB4 between 20 to 22 feet bgs, and EB9 between 15 to 20 feet bgs. A slight unknown odor was noted in soil borings EB5 and EB9 from approximately 6.5 to 7.4 feet bgs. Gravel stringers were also noted in soil borings EB6 between 19.5 to 20.0 feet bgs and EB7 between 15.0 to 15.5 feet bgs.

Groundwater was encountered between 9 and 21 feet bgs. ERS was not able to determine the degree of groundwater confinement, but noted groundwater rose approximately 3 feet in the soil borings after encountering saturated soils. Generally, soils to an approximate depth of 24 feet bgs exhibited very low to moderate estimated permeability and soils were predominantly silty clays with varying amounts of disseminated or interbedded gravels and sands to approximately 24 feet bgs.

In its soil boring log for monitoring well MW-1, located immediately across the street at 2857 Hannah Street in the J H Fitzmaurice Yard, Riedel Environmental logged OH silty clay from 2.5 to 17 feet bgs, SM silty sand from 17 to 19 feet bgs, and SW sand from 19 to 26 feet bgs. Monitoring well MW-2, located approximately 40 feet southwest of well MW-1, reported OH silty clay from 2.5 to 7 feet bgs, SM silty sand from 7 to 25 feet bgs, and OH silty clay from 25 to 26 feet bgs.

2.5 Conceptual Site Model

The Conceptual Site Model (CSM) is a representation of site conditions developed using available data that demonstrates the relationship between contaminants of concern, transport media and mechanisms, and potential receptors. The CSM is typically documented by written description, maps, geologic cross-sections, soil boring logs, tables, and diagrams. The CSM identifies data "gaps", guides appropriate site characterization, and is updated as new information is made available.

Based on Site history and initial and secondary subsurface investigation findings, the initial CSM is relatively straightforward. The complete release scenario is unknown but two 4-inch-diameter pipes that extended to approximately 7 feet bgs were apparently used as "dry wells" to dispose of used quenching oil. The two "dry wells" appear to be

the primary source of petroleum hydrocarbon impact to subsurface soil and groundwater. One disposal pipe was located 5 feet south of Pit B (Figure 2) and one disposal pipe was located within Pit D (Figure 2). The disposal pipe adjacent to Pit B was excavated and removed and drain rock was observed to an approximate depth of 10 feet bgs, and groundwater was observed to approximately 11 feet bgs. Therefore, quenching oil was able to readily migrate 1 to 3 feet vertically and then spread laterally on groundwater in higher permeability soils adjacent to the first-encountered water-bearing zone. Fluctuating groundwater levels further "smeared" residual quenching oil in the subsurface and impacted a greater volume of soil.

2.3.1 Sources and Distribution of Petroleum Hydrocarbons

As a former metal heat-treating facility, quenching oil was the primary constituent of concern. Minor concentrations of metals and volatile organic compound (most likely contained within proprietary quenching oil mixtures) were identified in given soil and groundwater samples but mineral oil-range petroleum hydrocarbons (TEPH) were the primary contaminant. Due to relatively fine grains soils at the Site, vertical and lateral TPH migration was limited. Remedial excavation of approximately 3,202 cubic yards of soil removed the majority of TPH-impacted soil; however, impacted soil remained along the extent of excavation along the eastern boundary of the Site and some impacted soil was recently identified immediately north of the northeast corner of the "Middle Excavation."

2.3.2 Sensitive Receptor Survey

To date, a sensitive receptor survey has not been conducted. Site reconnaissance reveals that the Site is surrounded by residential properties to the north and east and commercial properties to the south and west. Subsurface investigation performed to date strongly suggests that lateral migration in groundwater and soil gas is largely confined onsite and any significant offsite migration is unlikely.

2.3.3 Utility Survey

To date, a utility survey has not been conducted. Due to the minimum saturated soil depth of 11 feet bgs, relatively low TPH and VOC concentrations in groundwater, and the general lack of onsite utility trenches in the vicinity of the two "dry wells", potential interception and migration in groundwater along existing utilities is unlikely and not indicated by previously performed soil sampling.

2.3.4 Geologic Cross-Section, Boring Logs, and Maps

Estimated groundwater flow direction is northwest to southwest towards San Francisco Bay and groundwater gradient is estimated at 0.001 to 0.008 foot per foot.

Logged soil borings advanced at the Site did not depict any significantly thick zones of higher permeability to a minimum depth of approximately 16.5 feet bgs. Saturated silty sand was observed at 18 to 20 feet bgs in the southern portion of the Site and at 14.8 feet bgs in soil boring EB9 (Figure 2).

Based on subsurface data obtained to date, cross-sections would not significantly aid our understanding of subsurface conditions and the lack of cross-sections does not constitute a data gap.

2.3.5 Exposure Evaluation

Human health risk associated with residual TPH and VOCs in soil, groundwater, and soil gas was evaluated through comparison to the RWQCB residential and commercial environmental screening levels (ESLs). Due to the known apparent localized TPH impacts in subsurface media and continued commercial site use, estimated human health risk was not evaluated more extensively using previously obtained data. Since the bulk of the TPH-impacted soil has been removed, known residual TEPH is located below 6 feet at the rear of the properties at 2851 to 2863 Helen Street, further degradation and natural attenuation of residual TEPH in soil and groundwater are expected to continue with time.

Additional groundwater and soil gas characterization will provide useful data to further assess the potential human health risk associated with the recently identified PCE in groundwater in soil boring EB6.

2.3.6 Summary Data Tables

ERS sample analytical results are summarized in Tables 1 through 5. Other available sample analytical results are summarized in Tables 1 through 11 in the ACC August 7, 2006 *Request for Regulatory Closure Summary*. Following additional subsurface characterization work, ERS will update the respective tables. In addition, PCE concentrations in groundwater and soil gas may be contoured to help estimate its distribution in the subsurface and aid in evaluating the potential for human exposure in ambient indoor air following future site development.

2.3.7 Remedial Action

Between September 2003 to January 2004, ERAS oversaw remedial soil excavation. Soil was removed in three locations: 1) inside the northeast corner of the building (designated "North Excavation"); 2) inside the southeast portion of the building to the building perimeter (designated "Middle Excavation"); and 3) outside the building on the south side (designated "South Excavation"). Approximately 845 cubic yards of soil was removed from the "North Excavation", approximately 1,950 cubic yards of soil was removed from the "Middle Excavation", and approximately 407 cubic yards of soil was removed from the "South Excavation", for a total of approximately 3,202 cubic yards.

Soil remediation was performed to the satisfaction of Barney Chan, caseworker with the ACHCSA, and verification soil and grab groundwater testing was requested following remedial soil removal. Of the four ERAS TEPH soil analyses that exceeded the ESL, three soil samples were collected along the eastern extent of remedial excavation at the property boundary.

2.3.8 Risk Evaluation

Based on proposed Site use, complete exposure pathways are indoor inhalation by occupants and worker inhalation and dermal exposure during subsurface soil excavation/utility work (if performed). The majority of the area of the Site will be capped with concrete building foundation for the foreseeable future with limited potential for excavation. Any subsurface excavation or utility work should be conducted under a Health & Safety Plan to minimize any potential exposure.

PCE impacts in groundwater were identified during recent subsurface investigation in the vicinity of soil boring EB6 and additional grab groundwater and soil gas sampling is necessary to determine if unacceptable human health risk exists in this area of the Site.

3.0 SCOPE OF WORK

ERS believes that additional subsurface investigation work should be performed in a logical, progressive fashion based on previously obtained data or experience working at sites with similar geologic conditions. Results of the September 2008 subsurface investigation confirmed that: 1) impacted soil primarily exists along the eastern perimeter of the middle remedial excavation; 2) these petroluem hydrocarabon impacts in soil and groundwater attenuate rapidly with lateral and vertical distance; 3) elevated PCE was reported in groundwater in the vicinity of soil boring EB6; and 4) relatively

minor concentrations of various constituents were reported in the grab groundwater sample collected adjacent to the former "dist" or "distillation" tank.

This proposed work is specifically designed to address specific concerns of the ACHCSA, further characterize subsurface conditons in the vicinty of soil boring EB6, located at the property boundary on Hannah and near the the footprint of the former "Putty & Paint" Factory, and in the vicinity of the former "Dist" tank, and reinforce the rationale for regulatory closure, as previously discussed with Barney Chan of the ACHCSA.

3.1 ACHCSA's January 16, 2009 Comment Letter

Technical Comment 1 – Middle Excavation East Boundary

"Additionally, elevated concentrations of hydrocarbons were detected in soil boring EB9, also drilled at an angle, which terminated at an off-site residence located at 2863 Helen Street, as well as in soil borings EB3 and EB4 drilled at the residential property located at 2859 Helen Street."

This statement as written implies that elevated concentrations of hydrocarbons were detected in soil borings EB3 and EB4. In fact, elevated petroleum hydrocarbons were not reported in these two soil borings. TPH-d was reported in EB3 at 9 feet bgs at 12 mg/kg and TPH-mo was 7.3 mg/kg, and TPH-d at 15.5 feet bgs was 2.7 mg/kg. TPH-d was reported in EB4 at 9 feet bgs at 2.3 mg/kg and TPH-mo was less than 5 mg/kg, and TPH-d at 16.5 feet bgs was 4.3 mg/kg. These concentrations are more indicative of background, naturally occurring levels in fine grain soils. Sample analytical results in soil borings EB3 and EB4 demonstrate that significant decreasing attenuation is apparent with distance from the reported 3,400 mg/kg TPH-mo reported in soil sample SWJ-7' collected at 7 feet bgs at the extent of remedial soil excavation. This finding and the general lack of residual TEPH reported in soil and groundwater in soil boring EB4 (advanced 15 to 20 feet east of the property boundary) was ignored throughout Technical Comment 1.

In order to confirm expected subsurface conditions, proposed soil borings EB19 and EB20 will be advanced with hand-held equipment approximately 10 feet and 20 feet from the Site property boundary. Access to the properties at 2851 and 2863 Helen Street were previously denied; therefore, a more strongly worded request for access will be submitted to the property owners of record that states that petroleum hydrocarbon contamination has been confirmed on the property and continuing to deny access may result in the owner being named a co-responsible party.

"Additional Site characterization is required since the off-site impacted properties are residences, elevated concentrations of TPH-d and TPH-mo were detected in soil samples collected from borings EB5 and EB9, the vertical and lateral extent of soil contamination appears undefined"

As expected, elevated residual petroleum hydrocarbon concentrations were reported in soil samples collected at the extent of remedial soil excavation at the property boundary. Soil sample analytical results obtained from soil borings EB5 and EB9 are consistent with reported hydrocarbons in soil samples B5, SWJ-7', and SWB-7' and fine grained soils logged in the borings. Significant vertical attenuation of hydrocarbons was noted in fine-grain silty clay soils observed in soil borings EB5 from approximately 7 to 22.2 feet bgs (TPH-d decreased from 5,500 mg/kg at 7.4 feet bgs to 11 mg/kg at 16 feet bgs), and similar decreases were noted in silty clay soils in boring EB9 (TPH-d decreased from 1,700 mg/kg at 7.4 feet to 290 mg/kg at 15.5 feet bgs). TPH-mo decreased in soil boring EB5 from 2,500 mg/kg at 7.4 feet bgs to less than 5 mg/kg at 16 feet bgs, and TPH-mo decreased in soil boring EB9 from 670 mg/kg at 7.4 feet bgs to 130 mg/kg at 15.5 feet bgs. TEPH attenuation in the vertical direction is reinforced by the generally low concenrations of TEPH reported in grab groundwater samples collected in soil borings EB5 and EB9. The grab groundwater sample collected in soil boring EB5 reported 150 µg/L TPH-d and less than 300 µg/L TPH-mo, and the grab groundwater sample from soil boring EB9 reported 51 µg/L TPH-d and less than 300 µg/L TPH-mo. In the horizontal direction, significant petroleum hydrocarbon attenuation was reported in the grab groundwater samples collected in soil borings EB3 and EB4. Grab groundwater sample EB3-W reported 730 µg/L TPH-d and 610 µg/L TPH-mo and grab groundwater sample EB4-W reported 69 µg/L TPH-d and less than 300 µg/L TPH-mo.

Soils logged in soil borings EB3, EB4, EB5, and EB9 were highly consistent and subsurface conditions observed in the four soil borings advanced along the eastern property boundary do not vary to any significant degree. The vertical and horizontal TEPH attenuation in the subsurface is fairly typical and there is no reason that the information obtained in soil borings EB3 and EB4 (advanced at 2859 Helen Street that previously provided physical access) should not be applicable on the neighboring properties on either side at 2851 and 2863 Helen Street. Conclusions of the data obtained from soil borings EB3, EB4, EB5, and EB9 are that geological conditions are similar from EB5 to EB9, elevated petroleum hydrocarbon concentrations exist in soil at the eastern border of the property from approximately 7 to 16 feet bgs that could not be removed during remedial soil excavation, and these residual hydrocarbons rapidly attenuate with both vertical and horizontal distance. Analytical results further indicate that significant weathering of the original quenching oil contamination has occurred.

Quenching oil is primarily mineral oil-range hydrocarbons that should be reported as TPH-mo or TEPH. In most of the soil and grab groundwater samples, hydrocarbons were largely reported as diesel-range petroleum hydrocarbons. These diesel-range hydrocarbons likely represent weathered motor oil-range TEPH (quenching oil).

Site investigation performed to date has included a minimum of 63 TPHg tests, 22 BTEX tests, 47 VOC tests, 22 naphthalene tests, 10 LUFT metal tests, and 152 TEPH tests. While some of these tests were confirmation analyses performed in phases, most were performed to successfully confirm the degree and extent of suspect TEPH impact. As summarized in Table 12 of ACC's August 2006 *Request for Regulatory Closure Summary*, following remedial soil excavation: 1) 8 of 8 naphthalene analyses were below the ESL; 2) 17 of 17 TPH-g analyses were below the ESL; 3) 16 of 16 Enrest TEPH analyses were below the ESL; and 4) 20 of 24 ERAS TEPH analyses were below the ESL. Of the four ERAS TEPH analyses that exceeded the ESL, three of these soil samples were collected along the eastern extent of remedial excavation at the property boundary (Figure 2).

In order to confirm expected subsurface conditions, proposed soil borings EB19 through EB23 will be advanced at approximately 10 feet and 20 feet from the Site property boundaries. Access to the properties at 2851 and 2863 Helen Street were previously denied; therefore, a more strongly worded request for access will be submitted to the property owners of record that states that petroleum hydrocarbon contamination has been confirmed on the property and continuing to deny access may result in the owner being named a co-responsible party. Proposed analyses and estimated sample depths in proposed soil borings EB10 through EB23 are summarized in Table 6.

"…and there appears to be a potentially completed contaminant volatilization to indoor air exposure pathway as well as dermal contact exposure pathway."

The general decreases in residual petroleum hydrocarbon concentrations reported in soil and groundwater in soil borings EB3 and EB4, consistent geological conditions north and south of soil boring EB3 and EB4, the documented westerly groundwater flow direction, and the general lack of any constituents that could be considered "volatile" contradict this comment. If EB4 is used as the eastern most extent of petroleum hydrocarbon impact in soil and groundwater, the occupied residence at 2859 Helen Street is an additional 28 feet east; the occupied residence at 2863 Helen Street is an additional 58 feet east; and the occupied residence at 2851 Helen Street is an additional 38 feet east. ERAS reported a west groundwater flow direction at the Site, Cambria reported a west-northwest groundwater flow direction in its report of findings for the W.T. Partch property at 2862 Helen Street in May 1999, and Reidel

Environmental documented a south-southeast to south groundwater flow direction from monitoring well data in 1993 and 1994 at 2857 Hannah Street. Finally, the petroleum hydrocarbons in quenching oil are similar chemically to mineral oil, exhibit almost no volatility, and pose little or no human health risk from potential indoor inhalation or dermal contact. Residual petroleum hydrocarbons are primarily found at depth in silty clay soils from 6 to 9 feet bgs and approximately 30 to 55 feet downgradient from occupied residences. Proposed soil borings EB19 through EB23 will further characterize subsurface conditions adjacent to the extent of remedial soil removal on the Site.

Improved Site Maps

Figure 2 has been revised to illustrate additional historical data and the locations of the original "dry wells" or pipes that were used to improperly dispose of used quenching oil. Figure 3 has been prepared that utilizes an aerial photograph to better depict known property boundaries.

Fact Sheet

Please provide the statutory language or County guidelines that permits your agency to request a Fact Sheet for Spill, Leaks, Investigations, and Cleanups (SLIC) cases and when this requirement began being enforced. The January 16, 2008 Comment Letter did not discuss the feedback/results of ACHCSA's letters to the property owners at 2851 and 2863 Helen Street or what it intends to do about the parties that ignored its directives to cooperate with the previous subsurface investigation. ACHCSA's request for a Fact Sheet is being taken under legal advisement.

A copy of ERS's October 16, 2008 report will be submitted with each certified access request to inform each respective property owner what information is known at this time, and reinforce our goal to perform additional subsurface characterization.

<u>Technical Comment 2 – Putty and Paint Factory</u>

At this time, the source as well as the vertical and lateral extent of PCE is unknown and the concentration detected appears to pose a significant risk to human health and the environment.

Soil borings EB10 through EB18 proposed in this Work Plan are designed to specifically address the unknown vertical and lateral extent of PCE impact in soil, groundwater,

and soil gas. One of the goals of additional PCE characterization will be to determine if the Site is the source of PCE impact in the subsurface. Historical data available for the Putty and Paint Factory indicate a small business handling chemicals occupied this portion of the property from before 1983 until circa 1985. Since 1985, no chemicals were handled or stored in the former "Putty and Paint Factory" and the building was used to store raw materials, patterns, and a dust collector (Donald Torkington email to Barney Chan dated October 15, 2006 and personal interview between ACC and Donald Torkington).

The lack of reportable trichloroethene (TCE) and cis- or trans-dichloroethene (DCE) is inconsistent with a PCE release prior to 1985 and suggests a more recent release is responsible for the PCE reported in grab groundwater sample EB6-W. In addition, the lack of elevated photoionization detector (PID) readings in soil borings EB6 and EB7, the lack of any significant PCE in water samples EB7-W and EB8-W, and the general lack of VOCs in soil gas sample B-5SV (collected approximately 45 feet north of EB6) suggest that historical Site practices are not the source of the PCE reported in groundwater in soil boring EB6. Additional characterization will be performed to confirm these opinions.

Technical Comment 3 – Geotracker Requirements and Compliance

All available documents have been uploaded to Geotracker.

3.2 Rationale for Sampling Strategy

The proposed scope of work will utilize "direct push" sampling technology to obtain discrete representative soil, grab groundwater, and soil gas samples in the majority of the soil borings. Two soil borings, EB19 and EB20, will be advanced with hand-held auger equipment. A soil boring permit will be obtained from the Alameda County Public Works Department prior to field work. Additional subsurface characterization is necessary to further determine the degree and extent of PCE impacts in soil, groundwater, and soil gas in the area of soil boring EB6 located near or under the corner of the former "Paint & Putty" factory, further evaluate potential human health risk associated with residual VOCs in the subsurface, and further assess conditions in the vicinity of soil boring EB8.

ERS proposes to advance a minimum of 12 Geoprobe® soil borings to depths ranging from 5 to 24 feet bgs, and two hand-augured soil borings to 8 feet bgs. All soil borings will be continuously cored to better characterize soil and inspect soil for field

indications of suspect VOC and/or petroleum hydrocarbon impact. Soil will be continuously screened for field indications of impact such as characteristic solvent odor and elevated photoionization detector (PID) readings. ERS will utilize a calibrated PID instrument to screen soil for volatile constituents and optimize choosing soil samples for analysis. One representative soil sample per boring will be prepared for analysis and additional soil samples will be analyzed if elevated PID readings or field indications of impact are observed. Soil and groundwater sample analysis will be for HVOCs on the 8021 list by EPA Method 8260B, VOCs by EPA Method 8260, TEPH by EPA Method 8015, TPHg and BTEX by EPA Method 8260, and soil gas samples will be analyzed by Method TO15. Proposed samples and estimated depths are summarized in Table 6.

Soil borings EB10 through EB13 are being advanced to evaluate soil and groundwater in the vicinity of soil borings EB6 and EB7. No preferential pathways are suspected in this area of the Site. Soil borings EB16 through EB18 are being advanced to further evaluate the vertical and lateral extent of subsurface impact in the vicinity of soil boring EB8 and the former "dist" tank and the general area of the former parking lot. Soil borings EB14, EB15, and EB16 are being advanced specifically to collect soil gas samples from 4.5 to 5.0 feet bgs at each respective area of the Site using currently required protocols. Due to access limitations, soil borings EB19 and EB20 will be advanced with hand-held auger equipment to 8.0 feet bgs adjacent to ERS soil boring EB9. Soil borings EB21 through EB23 will be advanced to collect soil and grab groundwater samples adjacent to ERAS soil sample SWB-7' and ERS soil boring EB5. Proposed soil boring locations are shown on Figure 2.

Please note that the proposed scope of work may change slightly based on field observations and additional soil borings will most likely be advanced to further evaluate field indications of impact noted in the proposed soil borings. Field indications of HVOC impact include characteristic odor and elevated PID reading. While ERS is mobilized onsite, we will maximize obtaining as much data as possible in one business day while analyzing samples in a logical progressive fashion to minimize analytical costs while maximizing the quantity of data obtained. Additional soil borings will be advanced in the event significant field indications of impact are noted in any of the proposed soil borings, time permitting, to further characterize site conditions while mobilized onsite.

TABLE 6 – PROPOSED SAMPLE ANALYSES

Soil Boring	Depth	Matrix	Constituent Analysis *
EB10	3.5-4.0	Soil*	HVOCs
	7.5-8.0	Soil*	HVOCs
	11.5-12.0	Soil*	HVOCs
	15-19	Groundwater	HVOCs
EB11	3.5-4.0	Soil*	HVOCs
	7.5-8.0	Soil*	HVOCs
	11.5-12.0	Soil*	HVOCs
	15-19	Groundwater	HVOCs
EB12	3.5-4.0	Soil*	HVOCs
	7.5-8.0	Soil*	HVOCs
	11.5-12.0	Soil*	HVOCs
	15-19	Groundwater	HVOCs
EB13	3.5-4.0	Soil*	HVOCs
	7.5-8.0	Soil*	HVOCs
	11.5-12.0	Soil*	HVOCs
	15-19	Groundwater	HVOCs
EB14	4.5-5.0	Soil Gas	HVOCs
EB15	4.5-5.0	Soil Gas	HVOCs
EB16	4.5-5.0	Soil Gas	HVOCs
EB17	3.5-4.0	Soil*	HVOCs
	7.5-8.0	Soil*	HVOCs
	15-19	Groundwater	HVOCs
EB18	3.5-4.0	Soil*	HVOCs, TPHg, BTEX
	7.5-8.0	Soil*	HVOCs, TEPH
	15-19	Groundwater	VOCs
EB19	3.5-4.0	Soil	TEPH
	7.5-8.0	Soil	TEPH
EB20	3.5-4.0	Soil	TEPH
	7.5-8.0	Soil	TEPH
EB21	3.5-4.0	Soil	TEPH
	7.5-8.0	Soil	TEPH
EB22	3.5-4.0	Soil	TEPH
	7.5-8.0	Soil	TEPH
	15-19	Groundwater	TEPH
EB23	3.5-4.0	Soil	TEPH
	7.5-8.0	Soil	TEPH

Note: * Analysis dependent on field indications of impact and PID reading

3.3 Sampling Methods

Soil Sampling

Soil samples obtained with the truck-mounted Geoprobe® equipment will be collected in pre-cleaned Geoprobe® stainless steel macro cores equipped with Geoprobe®-supplied, 2 inch by 48 inch disposable clear acetate liners. Select depth intervals will be cut from the 4-foot-long acetate liners and logged, screened with the PID, and/or prepared for analysis. Soil intervals saved for analysis will be immediately covered with polyethylene sheeting and tight-fitting plastic caps, labeled, placed in resealable plastic bags, and stored in a pre-chilled insulated container. Soil samples collected for analysis will be sealed and cooled as soon as feasible to minimize potential volatilization. Processed samples will be kept in a locked vehicle or in direct observation at all times.

Soil intervals approximately every 2 feet will be screened for volatile constituents and selected representative soil samples will be prepared for analysis. Soil screening will be done with a calibrated PID. Soil screening with the PID will be performed by placing approximately 1.0 inch of sample core in a resealable bag, sealing it, crushing the soil sample to the extent feasible, and placing the PID inlet hose in the headspace of the bag after approximately 5 minutes have elapsed. Soil screening for volatiles will be performed as consistently as possible to minimize the variation due to methodology. Soil samples will be collected for analysis when characteristic odor and elevated PID readings are observed, or at select representative depths in each soil boring approximately every 4.0 to 8.0 feet.

Advancing soil borings EB10 through EB23 constitute one full day of truck-mounted Geoprobe® work and one full day of track-mounted Geoprobe® work. Soil borings EB10 through EB13, EB17 and EB18, and EB21 through EB23 will be continuously cored to a minimum depth of 24 feet bgs to visually log and screen encountered soil. Proposed soil, grab groundwater, and soil gas sample analyses are summarized in Table 6. Actual soil sample depths may vary slightly based on field indications of impact or elevated PID reading. Proposed soil boring locations are illustrated on ERS Figure 2. Minor deviations to these proposed sampling locations may be required based on conditions encountered in the field.

Groundwater Sampling

Grab groundwater samples collected with the truck-mounted Geoprobe® equipment will be collected from new, clean 1-inch-diameter PVC casing (5 feet of slotted casing

and 5 to 10 feet of solid casing) placed in the continuously cored boring annulus. Water samples are then collected from the interior of the PVC casing and brought to the surface using disposable tubing and a peristaltic pump. Groundwater is then slowly decanted into appropriate laboratory-supplied sample containers to minimize potential volatilization, checked for headspace, and capped. The water elevation will be measured in the PVC casing with an electronic meter to determine the approximate rise in the boring annulus to ensure that groundwater does not contact potentially impacted soil.

Grab groundwater sample containers saved for analysis will be immediately labeled, placed in resealable plastic bags, and stored in a pre-chilled insulated container. Grab groundwater samples collected for analysis will be sealed and cooled as soon as feasible to minimize potential volatilization. Processed samples will be kept in a locked vehicle or in direct observation at all times.

Soil Gas Sampling

Soil gas samples will be collected in borings EB14 through EB16 using protocols summarized in DTSC's January 28, 2003 *Advisory – Active Soil Gas Investigations* and specifically in Section 2.2.5, *Soil Gas Probe Emplacement Methods, Semi-Permanent Soil Gas Probe Methods*. ERS will advance the pre-cleaned core barrel to 5.0 feet bgs utilizing a standard Geoprobe® sampling tool. Clean tubing equipped with an aquarium filter will be placed in the annulus at 4.5 feet bgs, clean aquarium sand will be placed in the annular space from 4.0 to 5.0 feet bgs, bentonite chips will be placed from 3.0 to 4.0 feet bgs, and hydrated bentonite will be placed from 3.0 feet bgs to the surface. After a minimum of 30 minutes have elapsed, each soil gas sample will be collected at 4.0 to 5.0 feet bgs.

Purging and sampling soil gas is accomplished with two Summa canisters connected to a laboratory-supplied airtight "tee-valve" assembly. One 6-liter Summa canister is dedicated for purging sample lines only. The tee-valve assembly is connected to the purge Summa and a 1-liter sample Summa and the sample inlet is sealed. The purge Summa is then opened and monitored for a minimum of 10 minutes to confirm no loss of vacuum. The time and starting and ending vacuum will be recorded for the purge Summa. Assuming no loss of vacuum in the tee-valve assembly and 30 minutes have elapsed since the bentonite seals have been in place, the sample line is then connected to the sample inlet of the tee-valve assembly. The valve to the purge Summa is then opened and the sample tubing and the borehole will be purged according to DTSC guidelines. The time and starting vacuum will be recorded for the purge Summa. When the proper volume of air has been purged, the purge Summa valve will be closed and the sample Summa valve will

be opened. The time and starting vacuum will be recorded for the sample Summa. When approximately 1 liter of sample has been obtained, the sample valve will be closed and the time and final vacuum will be recorded for the sample Summa. The sample line will then be disconnected from the sample Summa and the brass plug reinstalled over the sample inlet on the sample Summa canister.

Prior to and during soil gas sample collection, various steps will be taken to ensure the integrity of the soil gas sample and document that the soil gas sample was not diluted by ambient air. The purge and sample Summa canisters come laboratory-equipped with 100 to 200 milliliters per minute flow regulators. Therefore, a liter of purged air or liter of sample should take 5 to 10 minutes to collect, and should use approximately 5 inches of vacuum, assuming the Summa canister arrived with a full vacuum of 29 to 30 inches of mercury. The second step to ensure sample integrity is to place a tracer compound; such as isopropyl alcohol on clean cotton gauze placed around the external surfaces or periodically spraying difluoroethane gas, on the tee-valve assembly connections and any openings to the sampling probe assembly. Specifically, gauze will be place at the top of the sample probe where the sample line enters to stainless steel sampling probe and around any sample rod connections. The cotton gauze will be remoistened with isopropyl alcohol approximately every 5 minutes during sample collection. Alternatively, the "tee-valve" assembly can be tented with plastic and air within the tent replaced with difluoroethane gas.

Calculated purge volumes will be documented by vacuum gauge reading, not elapsed time. In general, all task times will be recorded with their respective gauge vacuum readings to document that theoretical purge or sample times were not exceeded. After the sample Summa has been properly labeled and stored, the tubing will be unthreaded, removed and discarded, and the sampling probe will be retracted from the ground.

Sample Containers and Preservation

Soil samples collected with the Geoprobe® rig will be collected in new Geoprobe®-supplied, 2.0 inch by 48.0 inch disposable clear acetate liners. Samples will be labeled with pre-printed laboratory-supplied labels, placed in new resealable plastic bags, and immediately placed in a pre-chilled, insulated container maintained at four degrees Celsius pending transport to the analytical laboratory. Each sample cooler will be chilled with ice and no blue ice containers will be used. Soil gas samples for VOC analysis will be collected with new disposable polyethylene tubing and laboratory-supplied, stainless steel summa canisters.

Filled Summa canisters will be labeled and placed in their original shipping box and safely stored out of direct sunlight until the shipping box is picked up by the analytical laboratory or courier service.

Sample Packaging and Shipment

All samples will be handled according to ERS sampling protocols. Bagged processed samples will be placed in a pre-chilled, insulated container pending transport to ERS's Walnut Creek office. ERS will properly refrigerate the samples until the samples are picked up by the analytical laboratory courier. Standard chain of custody documentation will be maintained at all times. Soil gas samples will be couriered to a state-certified laboratory for analysis.

Sample Documentation

ERS will utilize a unique sample numbering system to identify sample locations and depths. Each sample will be designated with the following: 1) Unique boring number – "B6"; 2) matrix type – "S" for soil and "W" for water – "B6-S"; and 3) maximum depth – "B6-S-9.0". A sample designated B6-S-9.0 is therefore a soil sample collected in soil boring B6 at 8.5-9.0 feet bgs. Each respective sample designation will be placed at the top of the sample label and on its own line of the chain of custody form.

Soil samples will be logged and fully described on pre-printed ERS log forms. These log forms are designed to facilitate preparing boring logs for the final report of findings and prompt the ERS field geologist to obtain and document specific types of information.

ERS proposes that no duplicate or trip blank quality assurance/quality control (QA/QC) samples be analyzed.

Analytical Methods and Detection Limits

With the exception of soil gas samples, all samples will be analyzed by Accutest. Accutest is state certified, and is certified with the Army Corps of Engineers, the United States Navy, and the United States Air Force in various states. Torrent Labs or an alternate state-certified laboratory will analyze soil gas samples.

Soil and grab groundwater samples will be analyzed for HVOCs (8010 list) by EPA Method 8260 and one grab groundwater sample will be analyzed for the full VOC list. Soil gas samples will be analyzed for VOCs by EPA Method TO-15.

Laboratory reporting limits are set by the laboratory. Reporting limits may be increased due to interference effects and required laboratory dilution. The reporting limit for isopropyl alcohol in soil gas is 24 µg/m^3.

VOCs in soil	200 µg/kg or 0.20 mg/kg, some analytes higher
VOCs in groundwater	0.5 µg/Liter (µg/L), some analytes higher
TEPH in soil	50 mg/kg
TEPH in groundwater	50 µg/L
TPHg in groundwater	1.0 µg/L, some analytes higher
BTEX in groundwater	0.5 µg/L, some analytes higher
VOCs in soil gas	TO-15 reporting limits

Decontamination

All sampling equipment will be either new disposable equipment or pre-cleaned, stainless steel sampling equipment. Decontamination of the Geoprobe® sampling probes will be performed between sample locations by washing the equipment with a tap water and Alconox cleaning solution, rinsing the equipment with clean tap water, and a second final rinse with tap water. New clean nitrile surgical gloves will be worn at each new sample location. Gloves will be replaced before the collection and/or handling of every grab groundwater sample.

Waste Management

As necessary, soil removed from the soil borings will be containerized in a 55-gallon steel drum, labeled, sampled, and profiled for appropriate disposal at an accepting, permitted landfill.

Backfilling Soil Borings

The soil borings will be backfilled with cement slurry consisting of approximately six gallons of water mixed with 94 pounds of Portland cement. The cement slurry will be prepared with an electric mixing rod to minimize cement lumps in the slurry mix. The surface of the soil boring will be covered with approximately 4 inches of concrete to match the existing surface.

3.4 Data Evaluation

Analytical results will be initially compared to applicable RWQCB ESLs to estimate human health risk and used in the revised CSM. In addition, analytical results will be compared to applicable results obtained during previous subsurface investigation.

3.5 Quality Assurance and Quality Control Measures

Samples will be collected in an accurate and consistent manner to eliminate variability associated with sample collection. Samples will be immediately sealed and placed in resealable plastic bags to eliminate potential contamination during transportation. Due to extensive previous site investigation and soil sampling, ERS proposes no QA/QC duplicate soil samples.

Accutest employs extensive internal QA/QC procedures consistent with the respective laboratory method. To minimize laboratory variability, ERS will specifically request that any samples submitted for analysis be analyzed within a respective calibrated sample run. Based on sample handling procedures and adequate decontamination procedures, no travel blanks or equipment blanks will be analyzed.

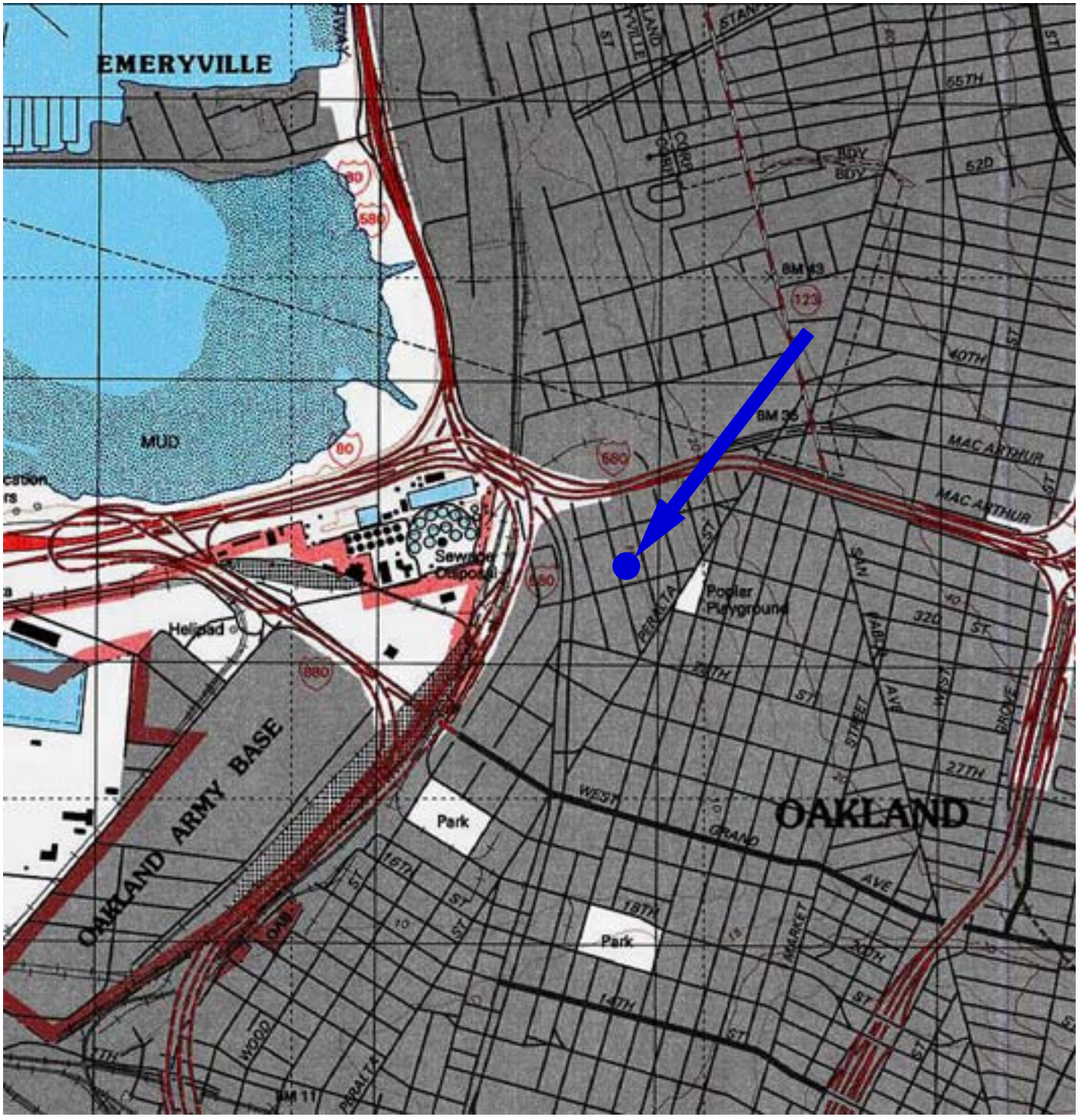
4.0 HEALTH & SAFETY PLAN

The current site-specific Site Safety Plan (SSP) encompasses the proposed work at the Site and complies with the requirements of 29 CFR Part 1910.120 will be prepared and present during field activities. All personnel involved with sample collection will be 40 hour trained according to requirements of 29 CFR Part 1910.120, will review and sign the SSP, and are presently in medical surveillance programs administered by their employer. All supervisory personnel involved with sample collection will be 8 hour supervisory trained according to requirements of 29 CFR Part 1910.120, and all field personnel have 24 hours of supervised field training.

5.0 TECHNICAL REPORT OF FINDINGS

A technical report discussing field work, observations and findings, analytical results, conclusions, and recommendations will be prepared for submission to the ACHCSA. The technical report will present a revised Conceptual Site Model and specifically discuss the findings and conclusions of this additional subsurface investigation as it relates to the

human health risk associated with residual petroleum hydrocarbons and VOCs in subsurface media.



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Location Map

1549 32nd Street, Oakland, California

Source: National Geographic TOPO!

Figure 1

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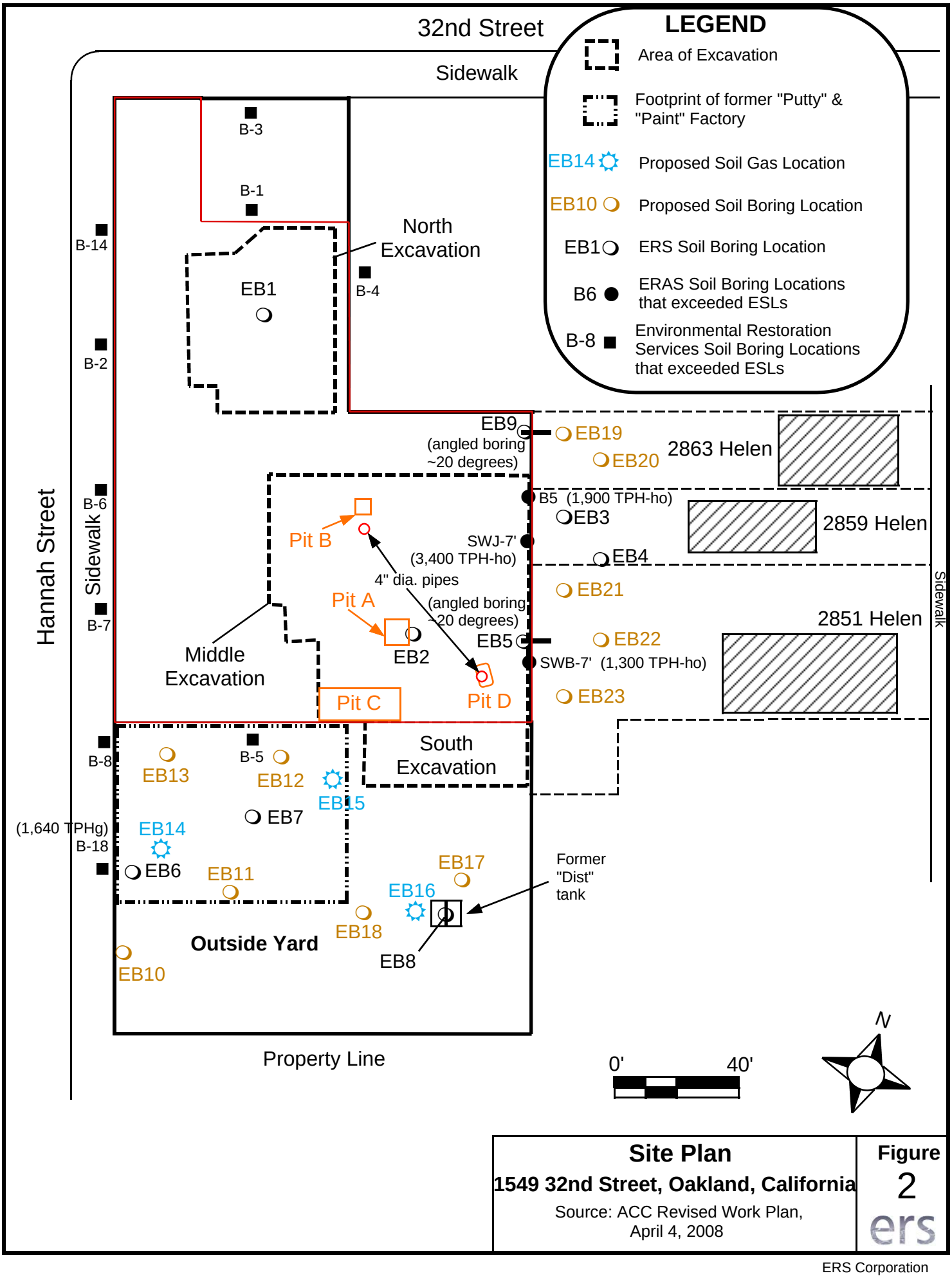

Site Plan

1549 32nd Street, Oakland, California

Source: ACC Revised Work Plan, April 4, 2008

Figure 2

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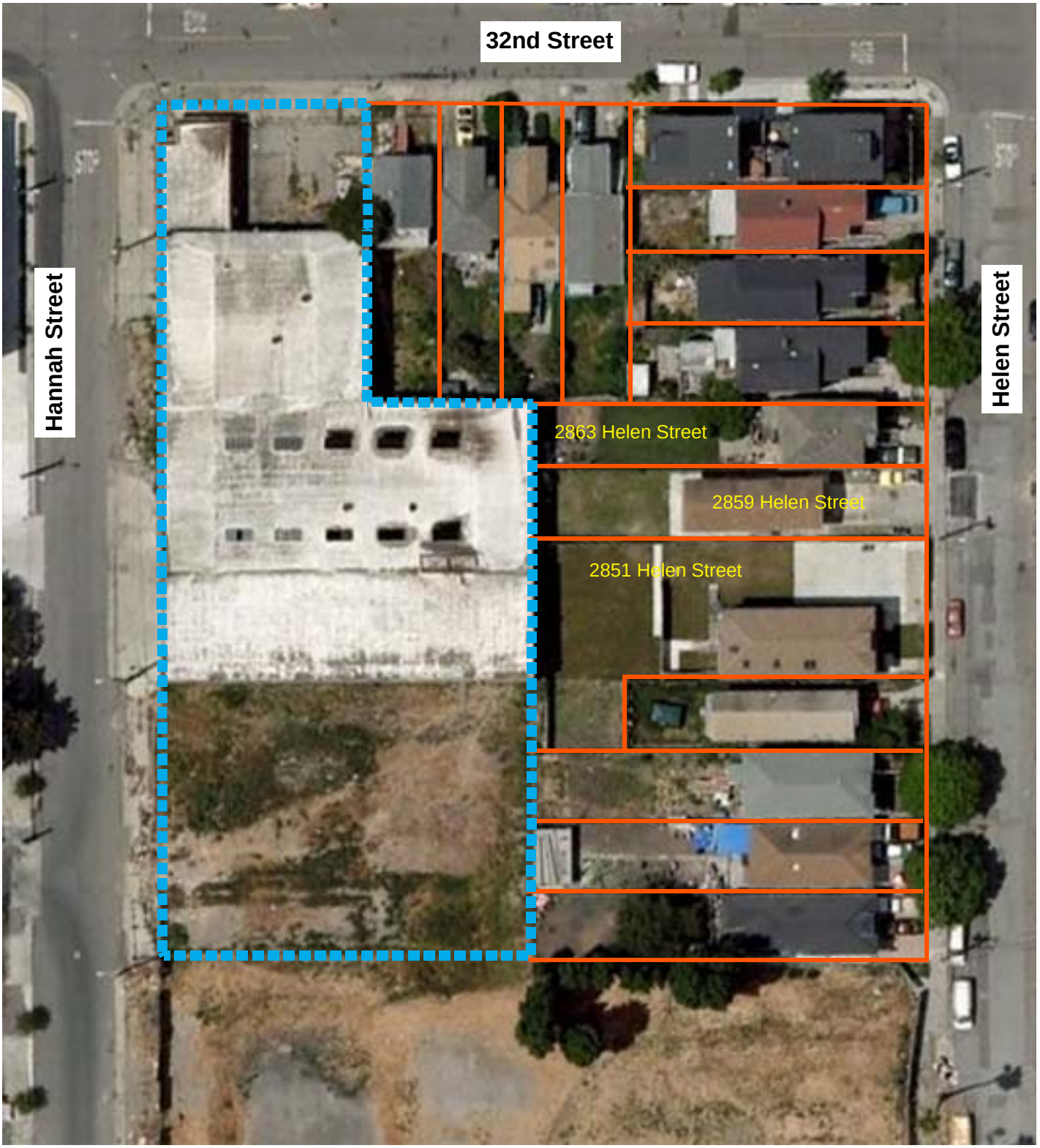

LEGEND

Site Boundary

Residential Property Boundary

0' 50'

N

Aerial Map

1549 32nd Street, Oakland, California

Source: Google Earth, 2009

Figure 3

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