

Alameda County

Pa 2508 ✓

NOV 23 2004

ERAS

Environmental Health

1533 B Street

Environmental, Inc.

Hayward, CA 94541

(510) 247-9885 Facsimile: (510) 886-5399

erasenvironmental@sbcglobal.net

WORK PLAN FOR OFF-SITE SUBSURFACE INVESTIGATION
1549 32nd Street
Oakland, California
ERAS Project Number 02-006-04

Prepared for:

Mr. Francis Rush
Rush Property Group
2200 Adeline Street, #350
Oakland, CA 94607

Prepared by:

ERAS Environmental, Inc.
November 17, 2004

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CERTIFICATION

This **Work Plan for Off-Site Subsurface Investigation** at 1549 32nd Street in Oakland, California, has been prepared by ERAS Environmental, Inc. (ERAS) under the professional supervision of the Geologist whose signature appears hereon.

This report has been prepared by ERAS according to the State and local agency suggested guidance documents for these investigations and in general accordance with the accepted standard of practice that exists in Northern California at the time the investigation was performed. The interpretations, conclusions and recommendations made herein are based upon the data and analysis for the soil and water samples collected on-site. ERAS is not responsible for errors in laboratory analysis and reporting, or for information withheld during the course of the study. No warranty or guarantee is expressed or implied therein.

This report may be used only by the client and only for the purposes stated within a reasonable time from its issuance. Land use, site conditions (both on-site and off-site) or other factors may change over time, and additional work may be required with the passage of time. Any party other than the client who wishes to use this report shall notify ERAS of such intended use. Based on the intended use of report, ERAS may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release ERAS from any liability resulting from the use of this report by any unauthorized party.

Respectfully submitted,



Gail M. Jones
California Registered Geologist 5725



November 17, 2004

1.0 INTRODUCTION

This document presents a summary of previous work at 1549 32nd Street (hereinafter the Property) and a work plan for the off-site characterization for the contaminants of concern (COC). This document was prepared in response to the letter from Alameda County Environmental Health Services Agency (ACEHS) dated 4 June 2004.

The location of the Property is shown on **Figure 1**. The Property was formerly operated as a steel foundry known as Precision Foundry. The operation performed heat-treating of metal products. The current owner of the Property is planning to develop the site for occupancy as live/work residential space to be known as Precision Lofts. The part of the building in the central portion of the Property will be renovated with a parking garage on the ground floor and residences on the upper floor(s). The northern and southern portions of the Property will be developed with live/work spaces on the ground floor. The location of the planned development, including a freight elevator, is superimposed on the existing site plan and is shown on **Figure 2**.

1.1 ADDITIONAL INFORMATION REQUESTED

In the letter of 4 June 2004, ACEHS requested five items of additional information regarding work performed by other contractors.

1. ACEHS requested a copy of the Phase I Environmental Site Assessment (ESA). A copy of the text of the Level One ESA (the only part available) prepared by Lumina Technologies and dated 4 January 2001 is included as **Appendix A**.
2. ACEHS requested copies of boring logs for borings SB-1 through SB-5 drilled on 26 April 2002 by Environmental Restoration Services (Enrest). According to Ben Halsted of Enrest (oral communication 4 October 2004) those borings were not logged.
3. ACEHS requested sampling results for the characterization of fill material placed in the excavations in 2004. Excavation, backfill and soil disposal work was contracted by the responsible party, and was not performed under the supervision of ERAS. Enrest will address the request in a separate letter.

4. ACEHS requested a tabular summary of the amount of soil excavated in 2004 and location of disposal. Again, this work was not within the scope contracted to ERAS, but was the responsibility of the excavation contractor. Enrest will address the request in a separate letter.
5. ACEHS requested boring logs from a 1988 soil investigation by Property Contamination Control and a map indicating the locations of the soil borings. ERAS did not find these items in the Oakland Fire Department during a file review on March 12, 2002. Requests were made to the Fire Department and ACEHS in October 2004. No files for the Property were found at the Oakland Fire Department. The file for the Property at the ACEHS contained only recent reports prepared by ERAS.

2.0 RESULTS OF PREVIOUS ENVIRONMENTAL WORK

2.1 PRIOR TO EXCAVATION

Soil samples collected by ERAS Environmental, Inc. (ERAS) in April 2002 (SB-1 through SB-5) were found to contain concentrations of petroleum hydrocarbons above the current regulatory levels for residential property use. Subsequent soil (SSPA, SSN, and Source Point) and groundwater samples (SP-1 to SP-3, Source) collected by Environmental Restoration Services (Enrest) indicated concentrations of total petroleum hydrocarbons as motor oil (TPH-mo) above current regulatory levels.

As a result of these findings, ERAS conducted a soil and groundwater investigation for the Property in April 2003. The results of the project were presented in the report *Soil and Groundwater Investigation* dated May 28, 2003. The investigation conducted by ERAS included collection of oily solid samples from six vaults and drilling of eleven borings to collect soil and groundwater grab-samples for laboratory analysis. Four temporary piezometers were installed and surveyed to determine the direction of groundwater flow from depth-to-water measurements.

Figure 2 shows all sample locations from April 2002 to April 2003. The groundwater elevation map of **Figure 3** shows the groundwater flow direction toward the west-northwest.

Samples of oil collected from machinery vaults were not found to contain PCBs, PAHs or VOCs. However, as shown in Table 1, samples from all six vaults were found to contain TPH quantitated as diesel, motor oil, or hydraulic oil. Only vault F, located in the north section of the building contained TPH below the RWQCB Environmental Screening Level (ESL) of 500 mg/Kg.

Table 2 presents the analytical results for TPH and VOCs in soil from March 2002 to April 2003. **Figure 4** shows the distribution TPH detected in soil during this period. Based on the investigations, the highest TPH concentrations were expected around 7 feet and extending as deep as 9 feet in the north area.

Some VOCs were detected in soil. However, only one compound, methylene chloride, was detected at a concentration (0.027 milligrams per kilogram, mg/Kg) in soil collected from 11 feet bgs in E-10 above the City of Oakland Risk Based Screening Level (ESL) for ingestion of groundwater impacted by leachate (0.0082 mg/kg).

Table 3 presents the results of analyses for TPH and VOCs in groundwater samples collected from May 2002 to April 2003. Groundwater samples were found to contain TPH as hydraulic oil (TPH-ho) at concentrations ranging from 670 µg/L to 5,300 µg/L, above the current Regional Water Quality Control Board (RWQCB) Environmental Screening Level (ESL) of 500 µg/L. The investigation indicated two areas of concern, the area in the north portion of the current building, and the other near the southeast corner of the current building. Based upon the estimated area of TPH in groundwater above the ESL shown on **Figure 5**, the hydrocarbon contaminant plume does not appear to have advanced offsite to the west, and only a short distance to the east. No VOCs were detected in groundwater grab-samples collected by ERAS in April 2003. Concentrations of benzene, 1,2-DCB and naphthalene were detected above ESLs in the groundwater sample SP-3 collected by Enrest in May 2002 near the southeast corner of the building.

No!

Due to the previous use of the Property as a metal foundry and the metals known to be used, the soil and groundwater samples were also analyzed for chromium, copper and nickel. The solid sample from vault G was also analyzed for these metals. Neither vault G sample nor any of the soil samples were found to contain concentrations of these metals above the Oakland surface soil ESL's for

residential land use. However, two of the groundwater samples (E-5 and E-7) were found to exceed the Oakland ESL's for copper, and all groundwater samples were found to exceed the Oakland ESL for nickel. However, these groundwater grab-samples were not filtered prior to placement in containers with nitric acid preservative. Since the acid could have scavenged metals from the particulates, these results may not be representative of dissolved metal concentrations in groundwater.

The investigation report recommended the removal of impacted soils from the site with the intention of meeting the clean-up levels compatible with the proposed development. Mr. Barney Chan of ACEHS approved the recommendations with additional technical requirements, in a letter dated August 6, 2003. The approved cleanup levels for soil were 1,000 mg/kg TPH-ho in the area of the New Garage, and 500 mg/Kg TPH-ho in all areas outside the New Garage. The New Garage area will occupy the central portion of the site as identified on **Figure 2**.

2.2 RESULTS OF EXCAVATION

The purpose of the excavation project was to remove soil impacted by petroleum in concentrations above the approved cleanup levels from the site where feasible. The approved cleanup levels for soil were 1,000 mg/kg TPH-ho in the area of the New Garage, and 500 mg/Kg TPH-ho in all areas outside the New Garage. ERAS was contracted to collect sidewall and bottom soil samples, and to determine when removal of soil above the approved cleanup level was achieved. Environmental Restoration (Enrest) was contracted by the property owner to perform the excavation, proper waste disposal and backfill of the excavations.

The excavations were started in locations were determined from samples collected in the previous investigations on the site and continued until sidewall soil was found to contain TPH-ho concentrations below 500 mg/kg or until excavation was limited by site structures or property boundaries.

The limits of the three soil excavations (north, middle and south) are shown on **Figure 6**. Soil samples collected from the sidewalls and bottom of the excavation were analyzed for TPH-ho with

silica gel strip by modified EPA Method 8015. Selected soil samples from the middle and south excavations were analyzed for VOCs by EPA Method 8260. The analytical results for all excavation soil samples are presented in **Table 5**. The samples on **Table 5** designated as interior samples were collected during excavation and indicated continued excavation was required, so that these samples represent soil that was removed. No interior samples were collected from the south excavation. The samples indicated as confirmatory samples on **Table 5** represents soil that remains in place either because the analytical results indicated soil above the cleanup level was removed, or the building structure precluded any additional soil removal. The locations of the final confirmatory soil samples with the TPH-ho concentrations are shown on **Figure 6**.

2.3 SUBSURFACE CONDITIONS

Subsurface sediments beneath the approximately 4 to 5 inches of concrete floor or vaults and beneath a layer of asphalt consisted of a sandy gravel fill with bricks and fragments of wood, metal and ceramic pipe. Native soils were encountered beneath the fill and vaults. Native soils were primarily brown colored silty clays with light greenish-gray colored clay at deeper areas. Local sand lenses were encountered at depths of 9 to 11 feet below ground surface (bgs). During groundwater elevation monitoring in April 2003, the static groundwater level was measured at 4.81 to 6.20 feet below ground surface (bgs).

The excavations exposed areas of discolored soil. Soil in areas of hydrocarbon impact was stained blue-green and emitted a mild to strong petroleum odor. These indicators were used to adjust the excavation limits prior to the collection of confirmation samples. Small puddles of groundwater accumulated in the excavations at approximately 10 feet bgs.

3.0 PRELIMINARY RISK EVALUATION

Analytical results for samples collected during past subsurface investigations and the excavation project and comparison of the results to applicable ESLs have identified TPH-ho, 1,4-DCB, naphthalene and methylene chloride as contaminants of concern, and copper and nickel dissolved in groundwater as potential contaminants of concern.

3.1 SOIL

Table 4 tabulates the concentrations of metals in soil prior to excavation work as well as the Oakland Tier I ESLs. None of the soil samples were found to contain metal concentrations above the applicable ESLs.

Table 5 tabulates the concentration of TPH-ho in soil that remains in place (final confirmation samples) as well as the ESLs for direct exposure and leaching to groundwater. Several samples from the areas under the south and east foundation walls of the main building were above the ESL for leaching to groundwater (1,000 mg/kg) and/or direct exposure to soil (500 mg/kg). Soil in these areas was left in place to support the structure.

Because soil containing TPH-ho above 500 mg/kg remains only along the eastern property boundary, the remaining potential risk by direct exposure to surface soil remains only to residents of the adjacent properties to the east and workers at those properties who may break ground to the depth of these TPH-ho concentrations.

This indicates that soil left in place along the eastern foundation wall of the middle excavation and for an unknown distance to the east may continue to act as a source of TPH-ho contamination to the groundwater.

Table 6 tabulates the VOC concentrations in soil samples that remain in place along the eastern and southern foundation walls of the main building, as well as the lowest Oakland or RWQCB ESL with the potential exposure route for that ESL. Only the sample SWH (4 feet bgs), located adjacent to the southern wall was found to contain VOCs 1,4-DCB and methylene chloride above the ESLs. Methylene chloride was detected above the Oakland Tier I ESL for leaching to groundwater, and

1,4-DCB was detected above the RWQCB ESL for volatilization to indoor air. In both cases the concentrations were below the applicable ESLs for all other potential exposure routes. **Table 4** tabulates the concentrations of metals in soil prior to excavation work as well as the Oakland Tier I ESLs. None of the soil samples were found to contain metal concentrations above the applicable ESLs.

3.2 GROUNDWATER

Table 3 presents the concentrations of TPH, and VOCs in groundwater before the excavation project.

The maximum concentrations of TPH-ho in groundwater (5,300 µg/L) was detected in boring E5 located in the area of the northern excavation and is above both the ceiling ESL based on the direct exposure pathway and the aquatic habitat ESL.

Because methylene chloride was detected in two soil samples (E-10,11' and SWH,4') in concentrations above the Oakland ESL for leaching to groundwater, the groundwater may be at risk for methylene chloride contamination. However, methylene chloride has not been detected in groundwater samples collected to date.

Table 4 presents the concentrations of metals detected in groundwater grab-samples. All of the groundwater grab-samples collected in April 2003 were found to contain nickel in excess of the ESL and three samples (E-5, E-7, and E-11) were found to contain copper concentrations above the ESL. However, these grab-samples were unfiltered and decanted into a sample container preserved with nitric acid. Therefore, these results are probably not representative of the true concentrations of these metals in groundwater.

Comparison of the analytical results of soil and groundwater samples collected to date with the current Tier I ESLs indicate possible risk to potential receptors as follows.

Current Receptors

Onsite construction workers may be at risk of inhalation of TPH-ho vapor volatilized to indoor air, or of ingestion or absorption of TPH-ho contamination if in direct contact with groundwater. Dissolved TPH-ho, 1,4-DCB, methylene chloride and metals in the groundwater may pose a risk to human health if directly exposed to the groundwater. This is not expected to occur onsite during current development plans. TPH-ho and nickel in groundwater may pose a risk to down-gradient aquatic habitat and private wells screened across the shallow groundwater.

Possible Future Receptors

Construction workers or others breaking ground may be at risk for exposure to TPH-ho by inhalation vapors volatilized from surface soil (less than 10 feet bgs). Future residents at the subject site may also be at risk of exposure to 1,4-DCB by inhalation of vapors volatilized from shallow soil.

3.3 IDENTIFIED ENVIRONMENTAL DATA GAPS

The preliminary risk assessment identified the following areas of investigation to address gaps in data necessary to address potential risks to human and environmental health.

- **Indoor Air**: Soil-gas samples are needed to determine if further assessment of possible risk to indoor air from TPH-ho at the adjacent property to the east, and from 1,4-DCB in the area of the freight elevator is warranted. Soil-gas samples should be collected from the shallow soil in the vicinity of the maximum concentrations in soil of TPH-ho and 1,4-DCB.
- **Shallow Soil**: Based on the concentrations of TPH-ho in the eastern sidewall of the middle excavation, TPH-ho concentrations above the direct exposure ESL may be present in the shallow soil of the adjacent residential properties. At least one shallow soil sample should be collected from the property adjacent to the location of the maximum TPH-ho concentration in soil to determine if further assessment of off-site shallow soil contamination to the east of the subject site is warranted. Except for a relatively small volume of soil left in place to protect the structural integrity of the building, all of the soil containing TPH-ho above 500 mg/kg, and containing contaminant concentrations that may continue to act as a

source of contamination to the groundwater has been removed from the site. Soil in the areas excavated inside the building in this area of excavation were removed to concentrations below 500 mg/Kg, well below the required target concentration of 1,000 mg/kg.

- **Groundwater:** Concentrations of TPH-ho, copper and nickel above the applicable ESLs were detected in groundwater samples collected onsite. Off-site groundwater grab-samples are needed to delineate the dissolved TPH-ho plume and potential dissolved copper/nickel plume in the down-gradient, up-gradient, and cross-gradient directions. Because the onsite soil that may act as a source of contamination to the groundwater has been removed, COCs in the groundwater are expected to decline more rapidly than has been the case in the past. However, if TPH-ho or other COCs are found to have advanced significantly offsite, on-site and off-site monitoring wells may be needed to assess the down-gradient attenuation of dissolved TPH-ho, and whether the dissolved contaminant plume is advancing, shrinking, or stable.

4.0 WORK PLAN

ERAS proposes the collection of soil and groundwater grab-samples from a minimum of 13 borings to a maximum of 17 soil borings. Additionally, ERAS proposes the collection of soil-gas samples from the two onsite boring locations. The locations of proposed borings B-1 through B-17 are shown on **Figure 9**.

4.1 RATIONALE FOR SAMPLE LOCATIONS

Vicinity of Northern Excavation

Boring B-1 is located adjacent to the area of maximum TPH-ho (boring E-5) in the area of the northern excavation. Boring B-2 is located down-gradient of boring E-5. Borings B-3 and B-4 are intended to provide delineation of the cross-gradient and upgradient extent of contamination in the soil and groundwater to the north and east of the northern excavation, respectively. Boring B-1 is also a proposed soil-gas sample location as it is adjacent to the excavation and therefore groundwater in this location is likely to have the highest VOC concentration in the gas phase compared to the other proposed borings in the area.

Vicinity of Southern Excavation

Boring B-5 is located adjacent to the middle and southern excavations as well as the soil sample with the elevated 1,4 DCB concentrations. Borings B-6 and B-7 are located down gradient of the area of southern excavation. The location of boring B-8 will provide data^a for soil and groundwater in a cross-gradient direction southwest of the excavation.

Seven boring locations are proposed in the residential properties located east of the subject site. Borings B-9 through B-11 are located along the back property boundaries adjacent to the site building. Boring B-9 is located adjacent to the sidewall sample with the highest detected TPH-ho concentration (sample SWJ-7' at 3,400mg/kg). Boring B-10 is located near pre-excavation soil sample Point Source 7' that was found to contain 20,800 mg/kg TPH-residual, and near pre-excavation groundwater sample SP-3 found to contain 5,780,000µg/L TPH-mo. Boring B-11 is located near the estimated southern extent of TPH-residual above 640µg/L (see **Figure 5**). Borings B-12 and B-13, located about 15 to 20 feet east of the line defined by B-9 to B-11, are designed to

provide data to delineate the eastern (up-gradient) extent of contamination in the soil and groundwater.

Hannah Street

Borings B-2 and B-6 through B-8, located along the east side of Hannah Street are expected to delineate the down-gradient extent of contaminants of concern (COC) above the ESLs in soil and groundwater. However, if any of the COC are detected in soil and/or groundwater in any of these four borings, then ERAS will collect soil and groundwater samples from one or more of the borings B-14 through B-17 located on the west side of Hannah Street.

4.2 PRE-DRILLING ACTIVITIES

Proposed borings B-9 through B-13 are located on private residential properties. ERAS has mailed out certified letters to the property owners requesting access for soil and groundwater sample collection. A copy of the access request letter is included in **Appendix B**. ERAS will procure drilling permits from the Alameda County Public Works Department for all of the borings, and an encroachment permit for the borings on Hannah Street.

The vicinity of drilling will be marked for Underground Service Alert (USA), which will notify utilities in the area to mark their underground lines on public property. Prior to drilling a private underground utility locator will be used to clear the specific drilling locations. The boring locations in Hannah Street will be hand dug to 4 feet bgs to prevent damage to any undetected underground lines.

4.3 SOIL-GAS SAMPLING

The collection of soil-gas samples is proposed for borings B-1 and B-5 using a direct-push sample rig. The soil gas samples will be collected into 6-liter summa canisters using a 30-minute flow regulator. The soil-gas samples will be collected using procedures to conform to the guidelines in the RWQCB Advisory –Active Soil Gas Investigations (28 January 2003).

The rods will be pushed to 4 feet bgs and withdrawn 6-inches to create a sample space. A sample probe and tubing will be feed through the rods into the sample space. Bentonite will be placed

where the rods leave the ground and allowed to hydrate for 30 minutes. During that time the summa canister will be leak tested. After the hydration period, the sample space and tubing will be purged of ambient air. Then the gas sample will be drawn through the flow-regulator into the summa canister. The sample canisters will be shipped under chain-of-custody to Air Toxics Laboratory of Folsom California for chemical analyses. The SOP for soil-gas sampling using the direct-push rig is included in **Appendix C**.

4.4 SOIL AND GROUNDWATER SAMPLING

The borings will be advanced to a total depth of about 25 feet bgs using a direct-push sampling rig that creates a 2.5 inch diameter boring. Borings B-1 through B-13 will be completed initially. One or more of borings B-14 through B-17, located on the west side of Hannah Street, may be selected for completion based on the analytical results of soil and groundwater samples collected from borings B-2, and B-6 through B-8, located on the east side of Hannah Street.

Borings will be cored initially to 12 or 16 feet bgs. Soil cores will be logged for lithologic description. Two soil samples collected will be collected from the vadose zone for chemical analyses, one from approximately 4 feet bgs and one close to the top of groundwater at about 9 feet bgs. A temporary 0.75-inch PVC screen casing will be placed in each borehole. A groundwater grab sample will be collected using a disposable bailer or new polyethylene tubing with a foot-valve at the base directly into the appropriate containers. The casing will be removed and coring will resume to 20 feet bgs, then a Hydropunch sampler will be driven to 25 feet bgs. The Hydropunch sheath will be withdrawn four feet and a groundwater sample will be withdrawn from the interval 21 to 25 feet bgs. When water sampling is complete, the borings will be filled to the surface with neat cement. The cement will be pumped through a pipe to the base of the boring to insure complete displacement of water and an adequate seal. The SOP for direct push borings and groundwater grab-sampling is included in **Appendix C**.

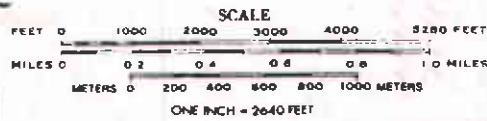
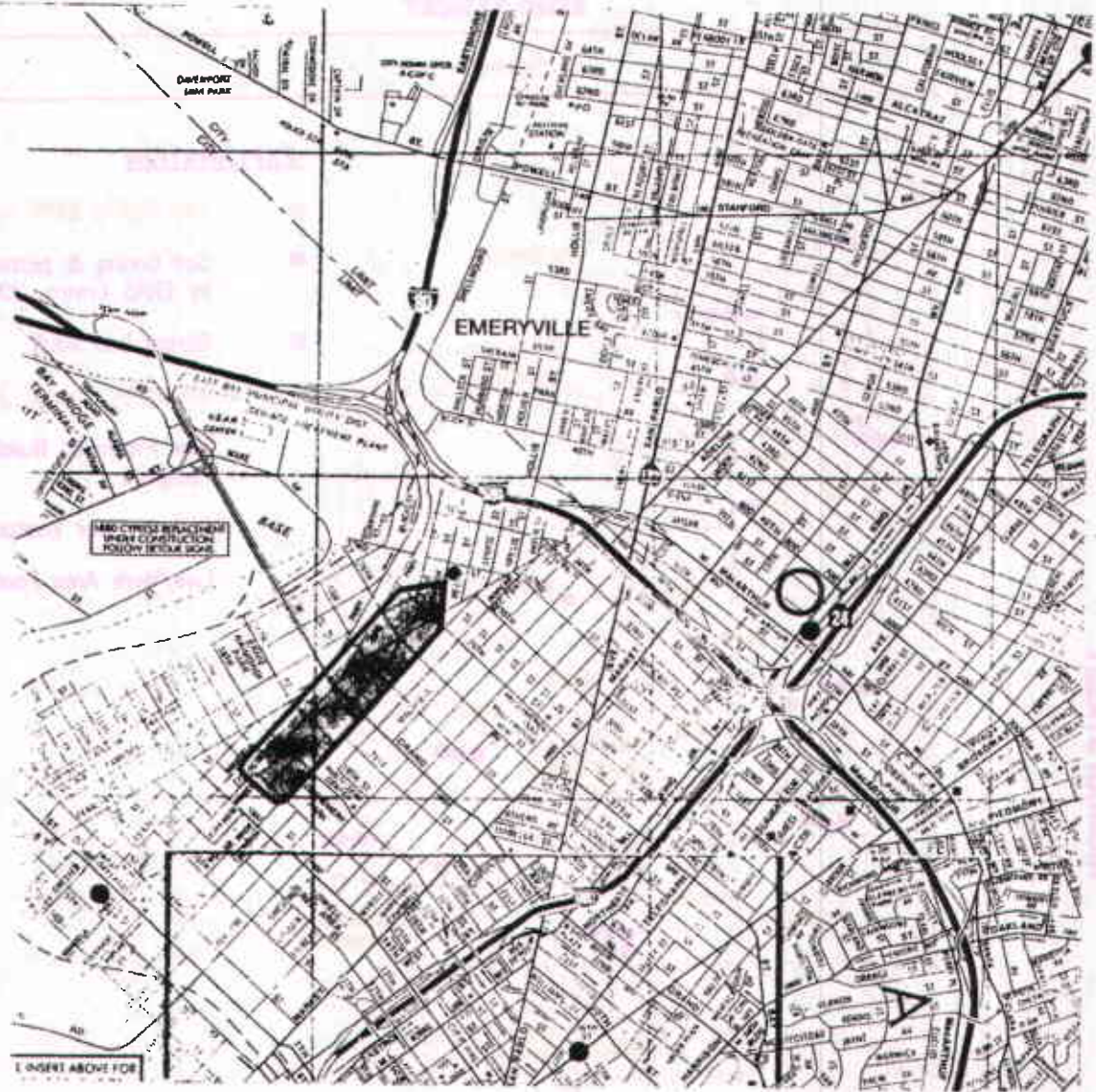
4.5 SAMPLE ANALYSIS

All soil and groundwater samples will be analyzed for TPH-g and TEPH with silica gel strip (EPA Method 8015), VOCs (EPA Method 8260) and metals chromium, copper and nickel (ICAP 7000 series). The soil-gas samples will be analyzed for VOCs by TO-15 and for oxygen, methane and carbon dioxide by ASTM-D 1946.

(11/11/01)
Sole
145M

4.6 REPORT

ERAS will prepare a comprehensive report that will include details of the field procedures, boring logs, tabulated analytical results, laboratory reports, and risk evaluations for all contaminants of concern.



Base Map: AAA Street Map Oakland, CA

SITE LOCATION MAP

FORMER PRECISION CAST
 1549 32nd Street
 Oakland, California

JOB NUMBER
 02-006-01
 FIGURE
 1

DATE
 10/02
 REVIEWED BY
 DS

ERAS Environmental Inc.

32ND STREET

Sidewalk

Existing Offices

Existing Fenced Yard
New Garden

Residential

EXPLANATION

- Soil Boring ERAS Enviro, 2002
- ⊕ Soil boring & peizometer by ERAS Enviro, 2003
- ⊙ Boring into vault
- Boring by Enrest, 2003
- New Proposed Building Footprint
- - - Ground Floor Footprint
- - - Live/Work Area Footprint

Sidewalk

PZ-1

SB-1

E-5

E-6

Stairs

New Court Yard

H

I

Existing Building

SB-1

SB-3

PZ-2

SB-4

E-7

SB-3

SB-2

SP-1

New Garage
(Living Spaces Above)

E-9

E-8

SB-4

SP-2

E-10

SS-N

Pit D

SOURCE POINT

SB-2

E-11

SP-3

New Court Yard

Stairs

New Freight Elevator

Residential

Existing Building

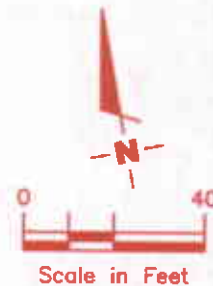
Outside Yard

Shed

PZ-3 (E-12)

E-13

Property Line



Base Map: TDA site plan dated 06-28-02

SITE MAP w/PRE-EXCAVATION SAMPLE LOCATIONS

DATE
11/04

REVIEWED BY
GMJ

FORMER PRECISION CASTING
1549 32nd Street
Oakland, California

JOB NUMBER
02-006-04

FIGURE
2

ERAS Environmental Inc.

32ND STREET

Sidewalk

Fenced Yard

Offices

-1.89

⊕ PZ-1

Residential

EXPLANATION

⊕ Peizometer by ERAS

0.53 Groundwater elevation in feet referenced to Mean Sea Level (MSL)

--(-1.00)-- Groundwater elevation contour

Sidewalk

Building

--(-1.00)--



Approximate groundwater flow direction at a gradient of 0.03 Ft./Ft.

⊕ PZ-2
0.53

0.0

-(-1.5)

-(-1.0)

-(-0.5)

HANNAH STREET

Building

Outside Yard

Residential

Shed

⊕ PZ-3 (E-12)
-1.40

Property Line



Scale in Feet

Base Map: TDA site plan dated 06-28-02

GROUNDWATER ELEVATION MAP-APRIL 9, 2003

DATE
04/03
REVIEWED BY
GMJ

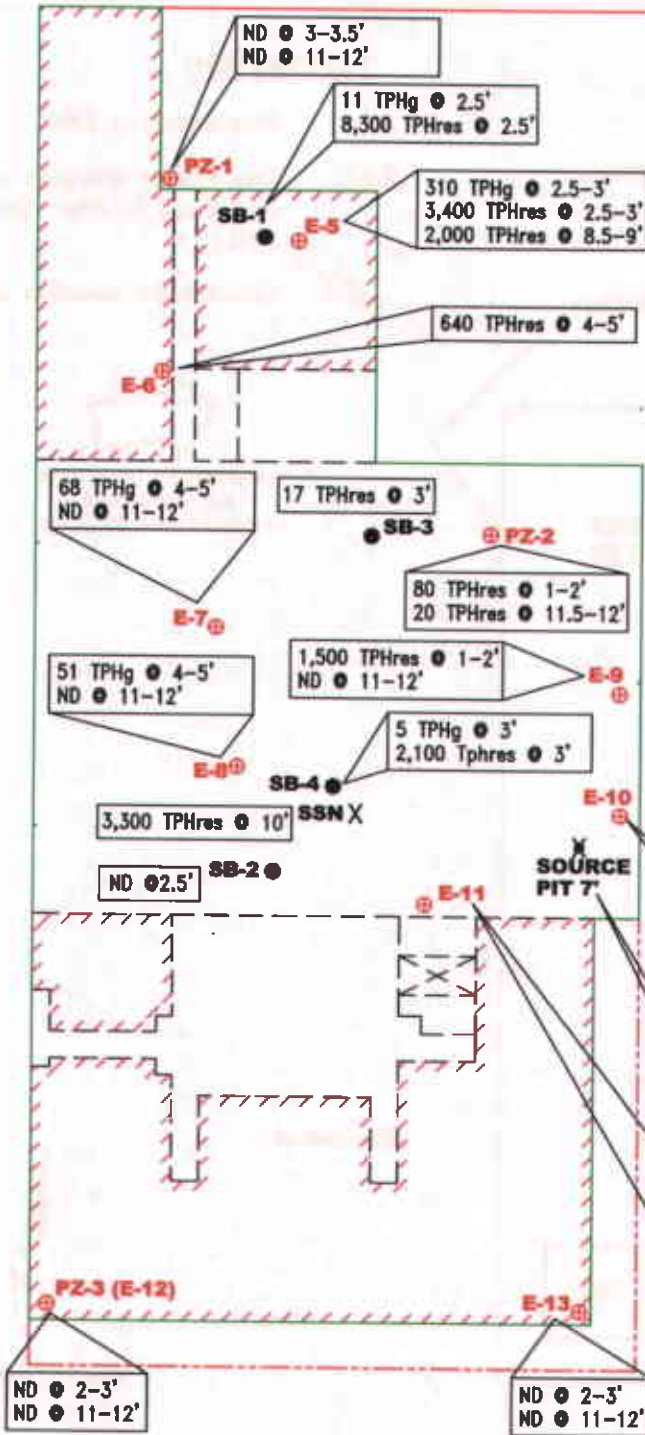
FORMER PRECISION CASTING
1549 32nd Street
Oakland, California

JOB NUMBER
02-006-02
FIGURE
3

ERAS Environmental Inc.

32ND STREET

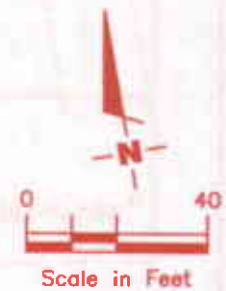
HANNAH STREET



EXPLANATION

- Soil Boring ERAS Enviro 2002
- ⊕ Soil Boring & Peizometer by ERAS Enviro 2003
- X Soil Sample by ENREST 2002
- ┌ New Proposed Building Footprint
- └ Ground Floor Footprint
- ┌ Live/Work Area Footprint
- └
- TPHg Total Petroleum Hydrocarbons gasoline range
- TPHres Total Petroleum Hydrocarbons residual range (Hydraulic and Motor Oil)
- ND Not Detected

NOTE: All Unlisted Compounds not Detected Except Source Pit and SSN where only Motor Oil Analyzed



Base Map: TDA site plan dated 08-28-02

TPHg & TPHresidual in SOIL PRIOR to EXCAVATION (3/02 TO 4/03)

DATE
10/04
REVIEWED BY
GMJ

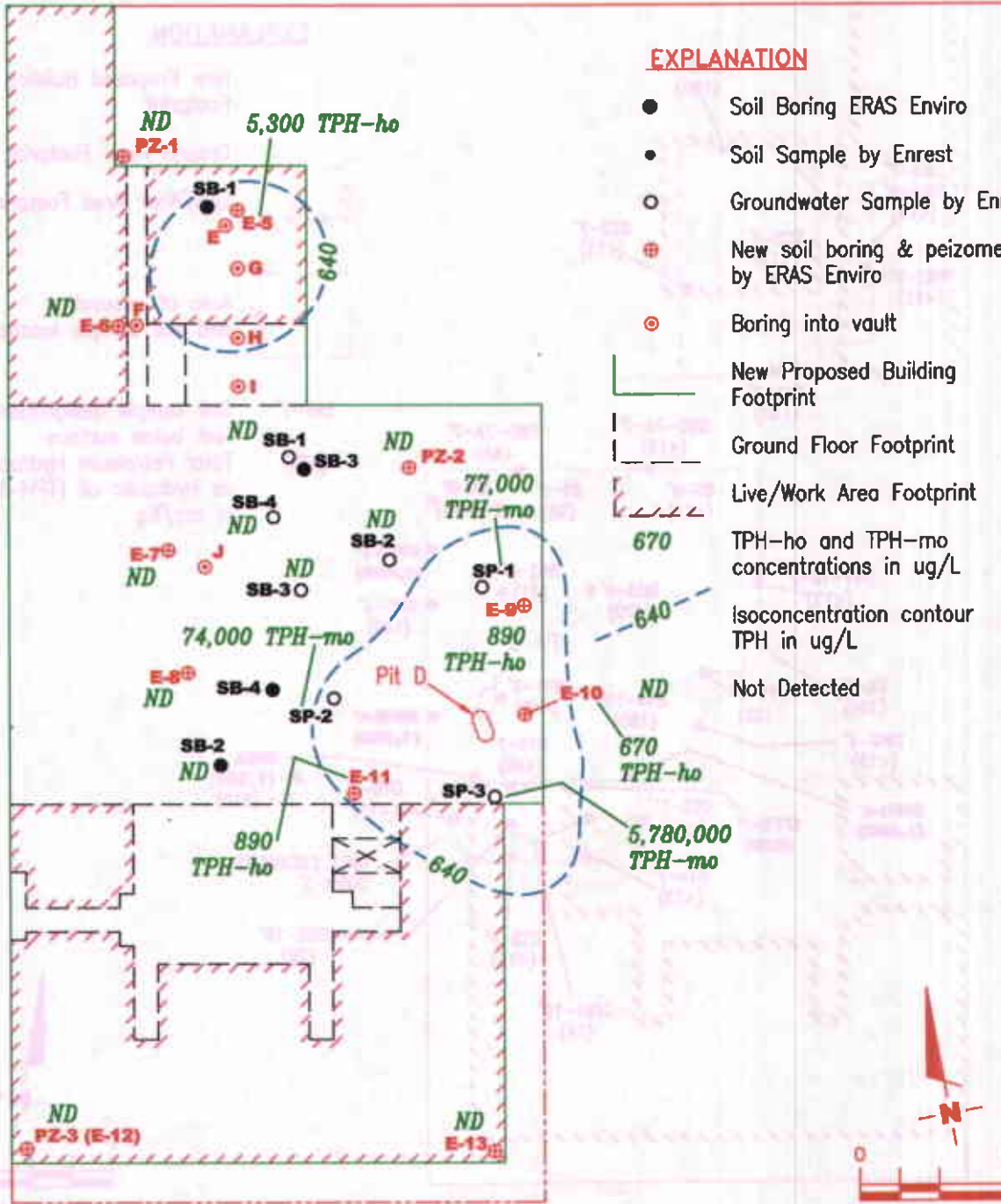
FORMER PRECISION CASTING
1549 32nd Street
Oakland, California

JOB NUMBER
02-006-04
FIGURE
4

ERAS Environmental Inc.

32ND STREET

HANNAH STREET



EXPLANATION

- Soil Boring ERAS Enviro
- Soil Sample by Enrest
- Groundwater Sample by Enrest
- ⊕ New soil boring & peizometer by ERAS Enviro
- ⊙ Boring into vault
- New Proposed Building Footprint
- - - Ground Floor Footprint
- · - · - Live/Work Area Footprint
- 670 TPH-ho and TPH-mo concentrations in ug/L
- 640 Isoconcentration contour TPH in ug/L
- ND Not Detected

Base Map: TDA site plan dated 06-28-02

ESTIMATED EXTENT OF TPH IN GROUNDWATER

DATE
05/03

REVIEWED BY
GMJ

FORMER PRECISION CASTING
1549 32nd Street
Oakland, California

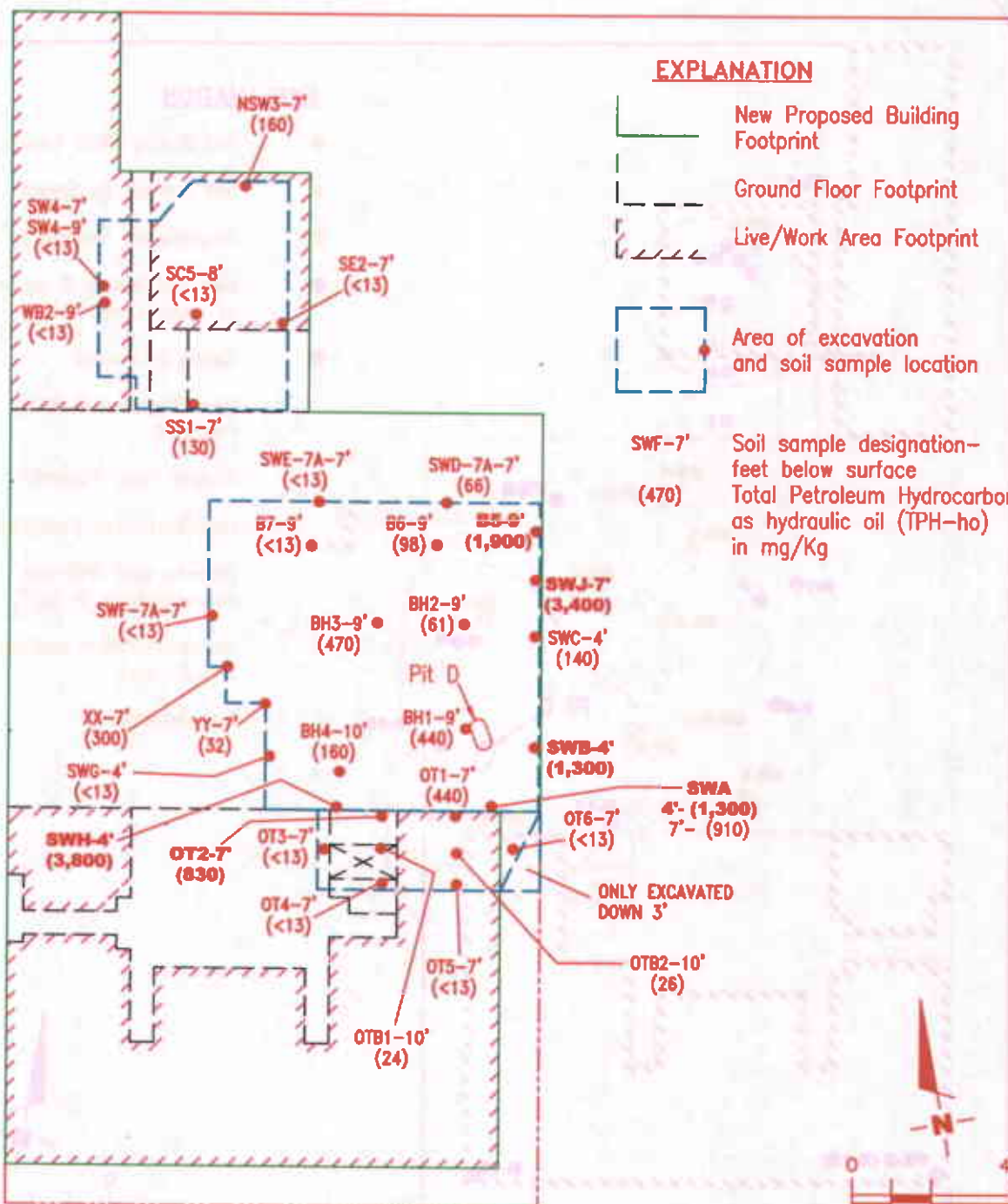
JOB NUMBER
02-006-04

FIGURE
5

ERAS Environmental Inc.

32ND STREET

HANNAH STREET



Base Map: TDA site plan dated 06-28-02

TPH-ho in CONFIRMATION SOIL SAMPLES (10-03 to 01-04)

DATE
10/04

REVIEWED BY
GMJ

FORMER PRECISION CASTING
1549 32nd Street
Oakland, California

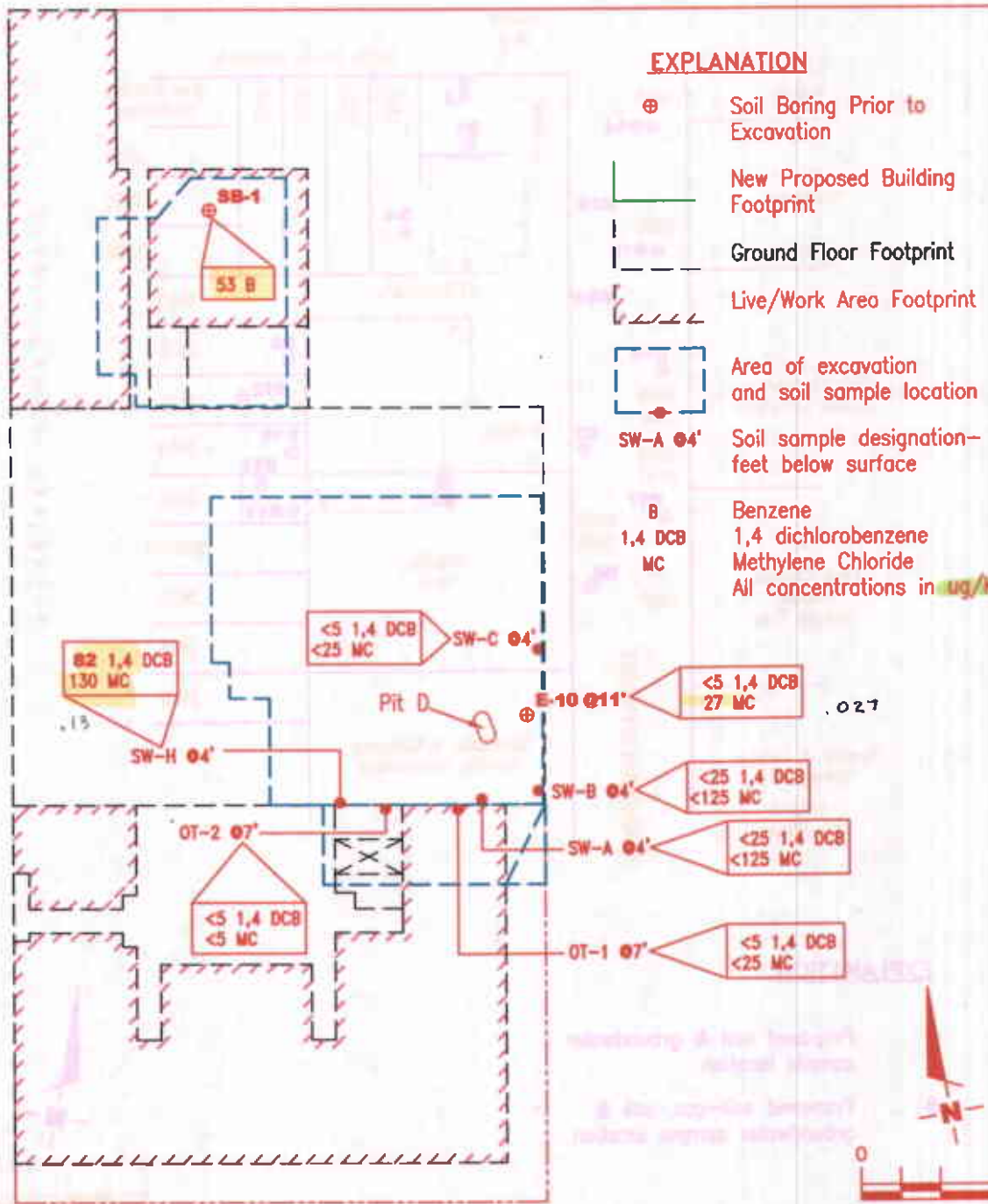
JOB NUMBER
02-006-04

FIGURE
6

ERAS Environmental Inc.

32ND STREET

HANNAH STREET



Base Map: TDA site plan dated 06-28-02

VOCs of CONCERN In SOIL SAMPLES

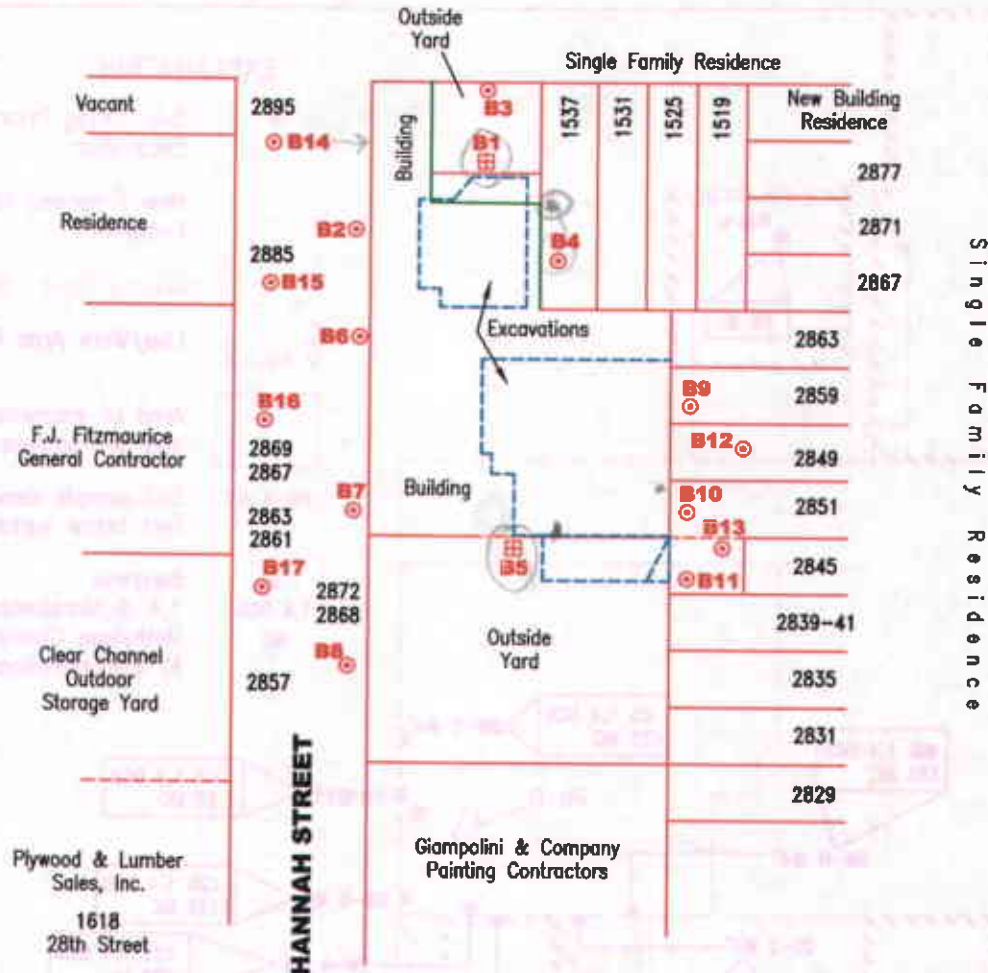
DATE 10/04
 REVIEWED BY GMJ

FORMER PRECISION CASTING
 1549 32nd Street
 Oakland, California

JOB NUMBER 02-006-04
 FIGURE 7

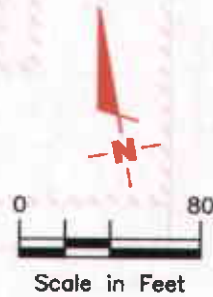
ERAS Environmental Inc.

32ND STREET



EXPLANATION

- ⊙ Proposed soil & groundwater sample location
- ⊠ Proposed soil-gas, soil & groundwater sample location



Base Map: Alameda County Assessor's Map 7

PROPOSED BORING LOCATION MAP

DATE
10/04
REVIEWED BY
DS

FORMER PRECISION CASTING
1549 32nd Street
Oakland, California

JOB NUMBER
02-006-04
FIGURE
8

ERAS Environmental Inc.

TABLE 1. TPH IN VAULT SAMPLES

1549 32nd Street, Oakland CA

SAMPL E ID	DATE SAMPLED	Total Petroleum Hydrocarbons		
		Motor Oil	Diesel	Hydraulic Oil
		Units mg/Kg	mg/Kg	mg/Kg
		Laboratory Method 8015 MOD	8015 MOD	8015 MOD
Vault E	04/01/03	<6,500	<500	18,000
Vault F	04/01/03	93	<5	<65
Vault H	04/01/03	<13,000	<1,000	29,000
Vault I	04/01/03	<13,000	1,100	43,000
Vault G	04/01/03	<13	<1	18
Vault J	04/01/03	<65	<5	110
ESL		500	500	500

ESL = Environmental Screening Level (RWQCB, July 2003)
for shallow soil, residential, non-drinking water.

TABLE 2. TPH AND VOCs IN SOIL SAMPLES PRIOR TO EXCAVATION

1549 32nd Street, Oakland CA

SHALLOW SOIL SAMPLES (< 10 FEET)

Sample ID	Sample Depth (ft)	Date	Total Petroleum Hydrocarbons				Volatile Organic Compounds										
			Gasoline	Diesel	Hydraulic Oil	Motor Oil	Benzene	Toluene	Ethyl-Benzene	Xylenes	1,2,4-TMB	1,3,5-TMB	1,2-DCB	1,4-DCB	Chloro-benzene	Naphthalene	
PZ-1	3.0-3.5	04/01/03	ND	8.1	ND	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PZ-2	1.0-2.0	04/03/03	ND	ND	80	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
E-5	2.5-3.5	04/02/03	310	<100	3,400	---	ND	ND	ND	0.023	0.02	0.013	ND	ND	ND	ND	0.15
E-5	8.5-9.0	04/01/03	ND	ND	2,000	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
E-6	4.0-5.0	04/01/03	ND	ND	640	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
E-7	4.0-5.0	04/01/03	68	4.8	ND	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
E-8	4.0-5.0	04/01/03	51	ND	ND	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
E-9	1.0-2.0	04/02/03	<50	ND	1,500	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.023
E-10	3.0-4.0	04/01/03	280	ND	3,700	---	ND	0.015	ND	0.013	0.015	0.017	ND	ND	ND	ND	0.084
E-11	4.0-4.5	04/02/03	120	ND	220	---	ND	ND	ND	ND	ND	ND	0.053	0.006	0.0057	0.0059	ND
E-12	2.0-3.0	04/02/03	ND	ND	ND	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
E-13	2.0-3.0	04/02/03	ND	2.6	ND	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SB-1	2.5	03/27/02	11	---	---	8300	0.053	0.065	0.046	---	---	---	---	---	---	---	---
SB-2	2.5	03/27/02	ND	---	---	ND	ND	ND	ND	0.17	---	---	---	---	---	---	---
SB-3	3	03/27/02	17	---	---	ND	ND	ND	ND	ND	---	---	---	---	---	---	---
SB-4	3	03/27/02	5	---	---	2100	ND	0.0071	ND	0.02	---	---	---	---	---	---	---
SS-PA	8	04/26/02	---	---	---	---	ND	ND	ND	ND	ND	ND	0.014	ND	ND	ND	ND
Source Pt	7	05/21/02	---	---	---	20,800	ND	ND	ND	ND	---	---	---	---	---	---	---
ESL - City of Oakland ESL - RWQCB			100	500	500	500	0.0021*	0.88*	8.0*	0.013*			1.6	0.047	0.066*	2/1.2*	

NOTES:

All concentrations in mg/Kg.

ND = Not Detected

--- = Not Analyzed

ESL = Environmental Screening Level RWQCB shallow soil, residential, not drinking water

RWQCB = Regional Water Quality Control Board, San Francisco Bay Region

TMB = Trimethylbenzene

DCB = Dichlorobenzene

* Ingestion of groundwater impacted by leachate

TABLE 2. TPH AND VOCS IN SOIL SAMPLES PRIOR TO EXCAVATION
1549 32nd Street, Oakland CA

DEEP SOIL SAMPLES (>10 FEET)

Sample ID	Sample Depth (ft)	Date	Total Petroleum Hydrocarbons				VOCs		
			Gasoline	Diesel	Hydraulic Oil	Motor Oil	Methylene Chloride	1,2-DCB	Naphthalene
PZ-1	11.0-12.0	04/01/03	ND	12	ND	---	ND	ND	ND
PZ-2	11.5-12.0	04/03/03	ND	ND	20	---	ND	ND	ND
E-5	11.0-12.0	04/02/03	ND	3.8	ND	---	ND	ND	ND
E-7	11.0-12.0	04/01/03	ND	ND	ND	---	ND	ND	ND
E-8	11.0-12.0	04/01/03	ND	9.6	ND	---	ND	ND	ND
E-9	11.0-12.0	04/02/03	ND	ND	ND	---	ND	ND	ND
E-10	11.0-12.0	04/01/03	ND	ND	26	---	0.027	ND	ND
E-11	10.0-11.0	04/02/03	ND	9.0	ND	---	ND	ND	ND
E-12	11.0-12.0	04/02/03	ND	ND	ND	---	ND	ND	ND
E-13	11.0-12.0	04/02/03	ND	ND	ND	---	ND	ND	ND
SSN	10	04/26/02	---	---	---	3,300	ND	0.013	0.025
ESL - City of Oakland							8.2*		1.2*
ESL - RWQCB			400	500	1,000	1,000		1.6	

NOTES:

All concentrations in mg/Kg

ND = Not Detected

--- = Not Analyzed

DCB = Dichlorobenzene

ESL = Environmental Screening Level for Residential Land Use

RWQCB = Regional Water Quality Control Board, San Francisco Bay Region

* Ingestion of groundwater impacted by leachate

TABLE 3. TPH AND VOCs IN GROUNDWATER PRIOR TO EXCAVATION

1549 32nd Street, Oakland CA

SAMPLE ID	DATE SAMPLED	Total Petroleum Hydrocarbons			VOCs							
		Diesel	Hydraulic Oil	Motor Oil	Benzene	Toluene	Ethyl-Benzene	Xylenes	1,2-DCB	Naphthalene	Acetone	Chloroform
PZ-1	04/01/03	<50	<250	---	---	---	---	---	---	---	---	---
PZ-2	04/03/03	<50	<556	---	---	---	---	---	---	---	---	---
E-5	04/02/03	<5,680	<28,410	---	---	---	---	---	---	---	---	---
E-6	04/01/03	130	<338	---	---	---	---	---	---	---	---	---
E-7	04/01/03	<50	<250	---	---	---	---	---	---	---	---	---
E-8	04/01/03	<77	<385	---	---	---	---	---	---	---	---	---
E-9	04/02/03	<58	890	---	---	---	---	---	---	---	---	---
E-10	04/01/03	<63	670	---	---	---	---	---	---	---	---	---
E-11	04/02/03	<236	<1,176	---	---	---	---	---	---	---	---	---
E-12	04/02/03	<50	<250	---	---	---	---	---	---	---	---	---
E-13	04/02/03	<67	<333	---	---	---	---	---	---	---	---	---
SB-1	04/26/02	---	---	<500	---	---	---	---	---	---	---	---
SB-2	04/26/02	---	---	<500	---	---	---	---	---	---	---	---
SB-3	04/26/02	---	---	<500	---	---	---	---	---	---	---	---
SB-4	04/26/02	---	---	<500	<1	<1	<1	<2	ND	ND	ND	ND
SB-5	04/26/02	---	---	NA	<1	<1	<1	2	ND	ND	ND	15
SP-1	05/21/02	---	---	77,000	<1	<1	<1	<1	ND	ND	ND	3
SP-2	05/21/02	---	---	74,000	<1	<1	2	3	14	ND	375	ND
SP-3	05/21/02	---	---	5,780,000	87	94	9	82	17	139	ND	ND
Source	05/21/02	---	---	NA	<1	<1	1	2	2	2	ND	ND
ESL - RWQCB ESL Oakland*		500	500	500	1	150	700	1,800	14	20	1,600	100

NOTES:

All concentrations in micrograms per liter

DCB = dichlorobenzene

ESL = Environmental Screening Level for Residential Land Use

RWQCB = Regional Water Quality Control Board, San Francisco Bay Region

* ESL based on ingestion of groundwater.

TABLE 4. METALS IN SOIL AND GROUNDWATER SAMPLES PRIOR TO EXCAVATION

1549 32nd Street, Oakland CA

SAMPLE ID	SAMPLE DEPTH (ft)	DATE SAMPLED hlts	SOIL			GROUNDWATER		
			Chromium	Copper	Nickel	Chromium	Copper	Nickel
			mg/Kg			µ/L		
PZ-1	3.0-3.5	04/01/03	27	9.1	24			
	11.0-12.0	04/01/03	25	20	58	790	570	1,400
PZ-2	1.0-2.0	04/03/03	31	16	27			
	11.5-12.0	04/03/03	34	15	72	1,400	1,000	2,600
E-5	2.5-3.5	04/02/03	35	14	26			
	11.0-12.0	04/02/03	28	19	54	2,900	3,600	6,600
E-6	4.0-5.0	04/01/03	33	15	25			
	8.5-9.0	04/01/03	30	13	21	400	320	460
E-7	4.0-5.0	04/01/03	37	16	34			
	11.0-12.0	04/01/03	38	19	75	3,000	2,900	7,200
E-8	4.0-5.0	04/01/03	27	9.4	22			
	11.0-12.0	04/01/03	37	16	41	1,100	790	2,300
E-9	1.0-2.0	04/02/03	35	20	32			
	11.0-12.0	04/02/03	40	17	63	1,300	1,000	2,500
E-10	3.0-4.0	04/01/03	28	10	17			
	11.0-12.0	04/01/03	41	24	54	830	610	1,600
E-11	4.0-4.5	04/02/03	30	30	26			
	10.0-11.0	04/02/03	46	29	130	2,200	2,000	570
E-12	2.0-3.0	04/02/03	43	19	33			
	11.0-12.0	04/02/03	42	21	56	2,000	1,200	2,800
E-13	2.0-3.0	04/02/03	38	19	32			
	11.0-12.0	04/02/03	45	18	120	1,500	1,200	3,500
Vault G	3.0-4.0	04/01/03	33	11	32	---	---	---
ESL - Tier I City of Oakland			74,000	2,800	1,500	16,000	1,300	100

NOTES:

ESL Environmental Screening Level Tier 1 for City of Oakland, Residential Land Use.

Soil ESLs for ingestion, dermal/inhalation exposure routes.

Groundwater ESLs for ingestion of groundwater.

Chromium ESL for Cr(III).

Table 5. TPH in Excavation Soil Samples

1549 32nd St., Oakland, CA

Sample ID	Sample Depth (feet)	Sample Date	TPH-Hydraulic Oil (mg/Kg)
MIDDLE EXCAVATION			
Interior Samples			
<i>Sidewall</i>			
SWD-1	4	6-Oct-03	1000
SWE 1	4	6-Oct-03	2800
SWF-1	4	6-Oct-03	1400
SWH-1	4	6-Oct-03	3800
SW-D	7	23-Oct-03	2600
SW-E	7	23-Oct-03	3800
SW-F	7	23-Oct-03	5900
SWI	7	15-Dec-03	670
<i>Bottom Samples</i>			
BH-1	9	6-Oct-03	600
BH-2	6	6-Oct-03	4200
Final Confirmation Samples			
<i>Sidewall</i>			
SW-A	4	6-Oct-03	2200
SW-A	7	23-Oct-03	910
SWB-1	4	6-Oct-03	1100
SWC-1	4	6-Oct-03	140
SWG-1	4	6-Oct-03	<13
SWJ-7	7	15-Dec-03	3400
SWB-7'	7	23-Oct-03	1300
SW-D-7A	7	8-Dec-03	66
SW-E-7A	7	8-Dec-03	<13
SW-F-7A	7	8-Dec-03	<13
SWJ-7'	7	15-Dec-03	3400
XX-7'	7	21-Jan-04	300
YY-7'	7	21-Jan-04	32
<i>Bottom</i>			
B5	9 -9.5	15-Dec-03	1900
B6	9 -9.5	15-Dec-03	98
B7	9 -9.5	15-Dec-03	<13
BH1-9'	9.25	23-Oct-03	440
BH2-9'	9	23-Oct-03	61
BH3-9'	9	6-Oct-03	470
BH4-10'	10	6-Oct-03	160
SOUTHERN EXCAVATION			
<i>Sidewall Samples</i>			
OT1-7'	7	21-Jan-04	440
OT2-7'	7	21-Jan-04	830
OT3-7'	7	21-Jan-04	<13
OT4-7'	7	21-Jan-04	15
OT5-7'	7	21-Jan-04	<13
OT6-7'	7	21-Jan-04	<13
<i>Bottom Samples</i>			
OTB1-10'	10	21-Jan-04	24
OTB2-10'	10	21-Jan-04	26
ESL (residential)			500

Table 5. TPH in Excavation Soil Samples

1549 32nd St., Oakland, CA

Sample ID	Sample Depth (feet)	Sample Date	TPH-Hydraulic Oil (mg/Kg)
NORTHERN EXCAVATION			
Interior Samples			
SN3-3	3	30-Dec-03	<13
SN3-7	7	30-Dec-03	1700
Final Confirmation Samples			
<i>Sidewall Samples</i>			
NSW3-7'	7	21-Jan-04	160
SE-2-7'	7	30-Dec-03	<13
SS-1-7'	7	30-Dec-03	130
SW4-7'	7	30-Dec-03	<13
SW4-9'	9	30-Dec-03	<13
<i>Bottom Samples</i>			
SC-5-8'	8	30-Dec-03	<13
WB2-9'	9	21-Jan-04	<13
ESL (residential)			500

Table 6. VOCs in Excavation Soil Samples
1549 32nd St., Oakland, CA

Sample	Depth (feet)	Date	1,2 DCB	1,4 DCB	Naphthalene	Methylene Chloride	1,2,4-TMB	1,3,5-TMB	Chloro- Benzene
SWA-1	4	6-Oct-04	0.022	<0.005	0.099	<0.025	0.0058	0.008	<0.005
SWB-1	4	6-Oct-04	0.032	<0.025	0.093	<0.125	<0.025	<0.025	<0.025
SWC-1	4	6-Oct-04	<0.005	<0.005	<0.005	<0.025	<0.005	<0.005	<0.005
SWH-1	4	6-Oct-04	0.67	0.082	<0.025	0.13	<0.025	<0.025	0.035
OT1	7	21-Jan-04	<0.005	<0.005	<0.005	<0.025	<0.005	<0.005	<0.005
OT2	7	21-Jan-04	<0.005	<0.005	<0.005	<0.025	<0.005	<0.005	<0.005
ESL	Oakland				1.2(GW)	0.0031(GW)	---	---	0.066(GW)
	ESL RWQCB		1.6(GW)	0.047 (A)			---	---	

NOTES

All concentrations in mg/kg = milligram/kilogram

DCB = Dichlorobenzene

ESL = Environmental Screening Level for Residential Land Use

<5 = Analyte not detected above the laboratory method reporting limit indicated.

SAT = ESL exceeds saturated soil concentration of chemical

Oakland = Lowest Oakland Tier I ESL (January 2000)

RWQCB=final Regional Water Quality Control Board ESL

(GW) = ESL for ingestion of groundwater impacted by leachate

(IA) = ESL for volatilization to indoor air

TMB = Trimethylbenzene

APPENDIX A
LEVEL ONE REPORT

LEVEL ONE
ENVIRONMENTAL SITE ASSESSMENT
OF PROPERTY LOCATED AT
Account #8290
Thirty-second Street Foundry
32nd Street at Hannah
Oakland, CA

January 4, 2001

Prepared by:

LUMINA TECHNOLOGIES
P.O. BOX 201
BURLINGAME, CALIFORNIA 94011
(650) 634-9876

#21216

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3. EXISTING SITE CONDITIONS AND SITE HISTORY
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5. REPORTED VICINITY CONTAMINATION INCIDENTS
6. PRIOR PESTICIDE AND HERBICIDE USE
7. LIMITATIONS/EXCLUSIONS
8. REFERENCES

LIST OF FIGURES

FIGURE 1. SITE LOCATION MAP

1. EXECUTIVE SUMMARY

The following is a summary of principal findings, conclusions and recommendations of the Level One Site Assessment for the subject site known as the Thirty-second Street Foundry in the City of Oakland, Alameda County, California.

PRINCIPAL FINDINGS

The subject site consists of land improved with an industrial structure for foundry use. A parking area is part of this property. This Level One Site Assessment was based on physical inspection of the site; a review of available archival information consisting of certain agency lists, files, public agency files, and aerial photographs herein specified, and consultation with parties herein specified in governmental agencies.

There is visible evidence of records found of one abandoned existing underground fuel storage tank on the site. There was no visible evidence or records of on-site groundwater wells. During the December 23, 2000 site inspection, there were superficial indications of discharges, discolored soils, odors, and other evidence to suggest that the subject site had been a generator or recipient of possible chemical contaminants (principally from foundry waste). No transformers that may contain polychlorinated biphenyls (PCBs) were found on the subject site.

There are a number of recorded hazardous material release incidents within a one half mile radius of the subject site, involving subsurface contamination with petroleum fuel hydrocarbons and non fuel chemicals. Some incidents have occurred in upgradient or crossgradient directions from the site; potential environmental impairment risk to the subject property is analyzed in the body of this report.

CONCLUSION/RECOMMENDATION

There is evidence of potential environmental impairment of the site from prior site operations. There is no evidence of environmental impairment or risk thereof that could restrict the site from its present use. The research presented herein constitutes a sufficient basis for the above conclusion. Further research is recommended, based upon the data and analysis herein in the form of boring 3 sample holes on site to test for heavy metals and total petroleum hydrocarbons.

The term "factual evidence" means visible or other objective evidence from site inspection, information in agency files such as archival test results of on site soil or groundwater sampling, or other information in agency files which is relevant and objective.

Information regarding the site is representative of the site at the time of the site inspection and cannot reflect future activity or changes that may have occurred since the date of the site inspection.

2. INTRODUCTION

Herein is the Level One Environmental Site Assessment for the property known as the Thirty-second Street Foundry in the City of Oakland, Alameda County, California (see Figure 1).

The scope of this Level One Environmental Site Assessment consists of an inspection and review of specified records to evaluate the potential for environmental impairment on the site or of risk to the site. Potential soil and groundwater contamination in the neighborhood has been researched using appropriate agency lists and records. A history of site usage based upon archived aerial photographic review and consultation with specified parties is provided herein. Chemical testing of soil or groundwater is not within the scope of this assessment.

Section 3 presents the findings specific to the site from the site inspection, consultations, and archival aerial photographic research. Section 4 summarizes the neighborhood survey consultations. Section 5 addresses the issue of potential off-site contamination and movement of contamination.

The reader should be aware that strict interpretation of the Federal Comprehensive Emergency Response and Compensation Liability Act (CERCLA) and derivative California and federal legislation and case law may hold a landowner responsible for any toxic liability including future cleanup costs and, potentially, historical assessments and remediation work on the subject property. Such a statement is not motivated by any condition of the subject property but is a general observation of the advisability that property owners and purchasers exercise all appropriate diligence and alertness to hazardous material risks.

This report is not intended to provide the necessary level of detail to be utilized for structural demolition/remodelling or soil or groundwater disturbance. For such activities, appropriate regulations should be followed to ensure adequate coverage of material handling, worker and employee safety, airborne contamination during construction, and the precise extent of any contamination for contractor directions.

This report was prepared to review the subject property for financial transaction purposes only without change of use.

This report is prepared for the sole use and benefit of Intessa. Neither this report, nor any of the information contained herein, shall be used or relied upon for any purpose by any other person or entity. This report may be used in consideration of ownership transfer, partnership buyout, or property financing.

MARPLOT



12/27/2002 16:08 51852228W2

PHOENIX QUM REAL EST

PAGE 05

3. EXISTING SITE CONDITIONS AND SITE HISTORY

The location of the subject site is in the western part of the City of Oakland and situated in an industrial mixed use district. The subject site is improved with an industrial structure.

Inspection consisted of walkthrough and surveillance of the property to determine the potential presence of contamination (i.e., released hazardous materials or wastes).

SITE INSPECTION

Present configuration of the building interior comprises a Foundry with a small office area; all portions of the facility were occupied at the time of inspection. The subject site was walked and inspected for signs of potential environmental impairment. Poor maintenance and housekeeping appeared in most areas. Hazardous materials are stored on the subject site in the form of isopropyl alcohol and foundry waste debris of unknown content. No transformers that may contain polychlorinated biphenyls (PCBs) were observed. The inspector saw discolored surfaces, indicating presence of gross spillage of foundry waste (dark powder). There was no visible evidence that the subject site could have been used as landfill. The elevation of the subject site appeared to conform with adjacent properties. There was no remarkable aspect of the on-site parking areas. The exterior is known to have an underground tank on the west side of the property under the sidewalk. It has been abandoned for at least 20 years and is believed to be 500 gallons in size.

SITE HISTORY

Until the year 1981, the site was utilized as Lindbergh Heating. The present structure was constructed on the subject site in the 1946.

Historically, there has been continuing use at the subject site which presents risk of chemical spill or upset.

TOPOGRAPHY AND GROUNDWATER

The subject site is located on generally level ground (U.S. Geological Survey, Alameda County, California, 7.5 Minute Quadrangle). Groundwater is encountered at approximately eight to fifteen feet below grade surface (California Regional Water Quality Control Board [RWQCB], 1997). There is no watercourse on the subject site.

AGENCY CONSULTATION

During the course of this assessment, several public agencies were consulted for review of records and documents. Several government agency files have been also reviewed which are available on the internet (e.g. RECRIS, CERCLIS, FINDS).

The California Regional Water Quality Control Board and Alameda County Department of Environmental Health maintain records of hazardous materials uses for businesses in the City of Oakland. These agencies were contacted regarding any records of hazardous materials currently or previously known to be released on or near the subject site. According to these files, no leaks or spills have occurred on the subject site. See Section 5 for discussion of vicinity spills.

The State of California Department of Health Services (DHS), Toxic Control Division, was contacted concerning hazardous material usage or storage at the subject site. No records were present that indicated any usage or storage of hazardous materials on the subject site.

4. EXISTING NEIGHBORHOOD LAND USE

A visual survey of the neighborhood was performed to verify land uses in the vicinity of the subject site. All of the local properties appear to be well maintained uses. Proximate properties within one half mile are exhibited as release sites with the county or state agencies in Section 5.

There is no evidence of risk oriented land use in the immediate vicinity of the subject site, nor observed usage or storage of hazardous materials. See Section 5 for historic discussion of certain sites. To the south is Cabolinni Construction. To the west is a construction company. To the north is 32nd Street. To the east is residential usage.

Agency consultation with the County of Alameda Environmental Health Department, State of California Water Resources Control Board, the California Department of Health Services (DHS), Toxic Control Division, concerning spills of hazardous materials at the subject and neighboring sites revealed no evidence or records that the subject site was ever involved with such a spill.

5. REPORTED VICINITY CONTAMINATION INCIDENTS

COUNTY AND REGIONAL FILES

Alameda County and the California Regional Water Quality Board (RWQCB) maintain records of reported fuel and non fuel spills and leaks within Alameda County. These records were reviewed to determine whether any soil or groundwater contamination incidents have been reported within a one half mile radius of the subject property.

Leaks or spills found in the records of these agencies within a one half mile radius are presented herein. Spills are classified as either (i) fuels, such as gasoline, diesel, and motor oil, or (ii) non fuels. Non fuels refer to a wide range of chemicals and solvents used in various industries and include organic compounds such as trichlorethylene and polychlorinated biphenyls.

According to the County and the RWQCB, there are several recorded hazardous material release incidents within a one half mile radius of the subject site, involving groundwater contamination with petroleum fuel hydrocarbons. No regulatory agency records indicate migration of the contaminants to groundwater flowing under the subject site. The incidents have occurred either crossgradient, downgradient or at such distance from the subject site that they would not be considered an environmental impairment risk to the subject site.

STATE AND FEDERAL CONTAMINATED SITES LISTS

A number of contaminated sites lists published by California agencies and by the U.S. Environmental Protection Agency (EPA) were reviewed for information about hazardous materials releases. The following lists were consulted in the course of this assessment:

- (i) Bond Expenditure Plan for Hazardous Substance Cleanup (BEP), California Department of Health Services DHS (provides data on remediation projects of all verified sites that are or will be targeted for abatement by DHS);
- (ii) Hazardous Wastes Substance Sites List (CORTESE), California (comprehensive list of potential contamination sites in California as compiled from several state agencies);
- (iii) National Priority List (NPL), U.S. EPA (lists actual and candidate national SUPERFUND sites);
- (iv) Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS), U.S. EPA (lists actual and candidate national SUPERFUND sites);

In every case, the most recent available listing was consulted. The subject site was not listed on any of these documents. Sites within a one half mile radius of the subject site were listed with the County, RQWCB and CORTESSE. Each of the off site sources were investigated with the following results:

The following sites are within a one half mile radius of the subject site and have active files with The California Regional Water Quality Control Board.

2668 Hannah Street, Oakland, CA

This site, also known as Alameda Chemical and Scientific, has a Cal Site designation. In the year 1985, some excavated soil was removed. The Regional Board considers this site not fully characterized. There is a requirement for ongoing groundwater monitoring. This site, at an upgradient distance of 200 feet from the subject site, is not considered a potential threat to the subject site.

5500 Shellmound Street, Emeryville, CA

This site, also known as South Bayfront Project, has an existing Cal Site designation. In the year 2000, remedial work was conducted. Groundwater at this location has tested as affected. This site, at a crossgradient distance of 500 feet from the subject site, is considered a potential threat to the subject site.

1225 Mandela Parkway, Oakland, CA

This site, also known as Mandela Trucking, has a diesel fuel release. This site, at a downgradient distance of 500 feet from the subject site, is not considered a potential threat to the subject site; it has been closed.

2856 Helen Street, Oakland, CA

This site, also known as a residential use, has a gasoline fuel release. In the year 1996, the leak was confirmed. The Regional Board considers this site not fully characterized. There is a requirement for ongoing groundwater monitoring. Groundwater at this location has tested as affected by TPHg. This site, at a crossgradient distance of 500 feet from the subject site, is not considered a potential threat to the subject site.

3211 Wood Street, Oakland, CA

This site, also known as General Transportation, had a diesel fuel release. The Regional Board considers this site not fully characterized. There is a requirement for ongoing groundwater monitoring. This site, at a crossgradient distance of 550 feet from the subject site, is not considered a potential threat to the subject site.

2057B Hannah Street, Oakland, CA

This site, also known as Fitzmaurice, Inc., has a gasoline diesel fuel release. The Regional Board considers this site fully characterized. There is no requirement for ongoing groundwater monitoring. Groundwater at this location had tested as affected by TPHg. This site, at an upgradient distance of 600 feet from the subject site, is not considered a potential threat to the subject site; it has been closed.

6. PRIOR PESTICIDE AND HERBICIDE USE

Based on review of Alameda County records, there is no indication of current or prior pesticides or herbicides use on the site. There is no evidence to suggest that pesticide, herbicide, or fertilizer residues are present on the subject site. Therefore pesticide, herbicide, or fertilizer residues from previous use and risk to the present or future occupants of the subject site is considered to be insignificant.

One should note that pesticides are commonly used in agricultural uses and may have been used on the subject or adjacent site prior to time of the construction. There is no direct evidence of file knowledge to this effect, however.

Testing soils for pesticide residues is an available method for providing further insight in this matter, although such testing is not overtly recommended in this case.

7. LIMITATIONS/EXCLUSIONS

None of the following is included in this report.

- (a) Any changed conditions of the site after the date of the site inspection.
- (b) Intrusive testing of site soils or groundwater.
- (c) Investigations related to any foundation or structural engineering issues.
- (d) Subsurface or any chemical or asbestos testing.
- (e) Investigations regarding any flora and fauna including potentially toxic vegetation.
- (f) Investigations regarding naturally occurring toxic conditions such as presence of naturally occurring heavy metals in soils.
- (g) Investigations which are used by anyone other than the client.
- (h) Investigations used for any demolition purposes (the proposed study is intended for financial purposes only).

- (i) Investigations of any wetlands, archaeology or floodplains.
- (j) Defects or omissions of public records or availability of public records. This item also includes historical changes of street names, which action can corrupt normal records searches.
- (k) Asbestos inspection of any kind.
- (m) Provision for errors or misfiling of information by public agencies reporting toxic incidents.

B. REFERENCES

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U.S. Department of the Interior, Geological Survey, Aerial Stereographic Photographs.

U.S. Environmental Protection Agency, Comprehensive Environmental Responses Compensation and Liability Information System (CERCLIS) (2000).

U.S. Environmental Protection Agency, Files Research.

U.S. Environmental Protection Agency, National Priority List (SUPERFUND) (2000).

U.S. Geological Survey, Menlo Park, California.

APPENDIX B
RIGHT OF ENTRY ACCESS REQUEST LETTER



Environmental, Inc.

1533 B Street

Oakland, CA 94541

(510) 247-9885 Facsimile: (510) 886-5399

erasenvironmental@sbcglobal.net

November 8, 2004

Mr. Lionel N. Allen, Trustee
2859 Helen Street
Oakland, CA 95150

**Subject: Request for Right of Entry Permission for Work at
2859 Helen Street, Oakland, California**

Dear Mr. Allen:

This letter is to request your permission for access to your Property at 2859 Helen Street, Oakland to drill a single soil boring (location map enclosed) in order to collect soil and groundwater samples. This work is being performed by ERAS on behalf of the owner of the property at 1549 32nd Street under the direction of Mr. Barney Chan of the Alameda County Health Care Services Agency.

The County Health Department is requiring these samples be collected to determine if the excavation cleanup is complete.

ERAS will subcontract a State-licensed and insured contractor to perform the drilling and sampling and subsequent sealing of the boring. The work will be performed under the supervision of an ERAS geologist. The borehole will be approximately 2 inches in diameter and will be drilled with significant care to avoid damage to the surrounding area.

Kindly sign and date the two copies of the enclosed agreement and return one promptly to ERAS. We have planned to perform the sampling work in November.

Thank you kindly for your assistance. Please call if you have any questions or if you require further information.

Respectfully,
ERAS Environmental, Inc.

David Siegel, R.E.A. II, President

Attachments: Proposed Boring Location Map
License Agreement

cc: Mr. Francis Rush

LICENSE AGREEMENT

I, Francis Rush, owner of the property known as 1549 32nd Street, have been requested by the Alameda (ACHCSA) to conduct a subsurface investigation that will include work on your property.

This investigation will include soil boring and groundwater sampling. The final scope of work will be based on those tasks required and approved by the ACHCSA.

ERAS maintains general and professional liability insurance in the amount of \$1,000,000 per occurrence, \$2,000,000 aggregate and requires its subcontractors to maintain current insurance applicable to their work. The property will be restored to as close to its original condition as feasible, based on current technology and investigation methods.

I, Lionel Allen ("Owner") grants to Francis Rush a license over, under and across the real property located in Oakland, County of Alameda, State of California, commonly known 2859 Helen Street.

The license granted herein shall terminate when the sampling is completed.

In consideration of the license granted herein, Francis Rush shall conduct the environmental investigation and/or remediation, as required by law, at its sole cost and expense. Materials and/or equipment placed upon the property as part of the investigation will be removed by Francis Rush.

In witness whereof, Owner has caused this agreement to be executed on _____, 2004.

Francis Rush

By: _____

Lionel Allen

By: _____

APPENDIX C
STANDARD OPERATING PROCEDURES

STANDARD OPERATING PROCEDURE – DIRECT PUSH BORINGS

SOIL CORING AND SAMPLING PROCEDURES

Prior to drilling, all boreholes will be hand dug to a depth of 4 feet below ground surface (bgs) to check for underground utility lines.

Soil and groundwater samples are collected for lithologic and chemical analyses using a direct driven soil coring system. A hydraulic hammer drives sampling rods into the ground to collect continuous soil cores. As the rods are advanced, soil is driven into an approximately 1.5-inch-diameter sample barrel that is attached to the end of the rods. Soil samples are collected in sleeves inside the sample barrel as the rods are advanced. After being driven 3 to 4 feet into the ground, the rods are removed from the borehole. The sleeve containing the soil core is removed from the sample barrel, and can then be preserved for chemical analyses, or used for lithologic description. This process is repeated until the desired depth is reached.

A soil core interval selected for analyses is cut from the sleeve using a hacksaw. The ends of the tube are covered with aluminum foil or Teflon liner and sealed with plastic caps. The soil-filled liner is labeled with the bore number, sample depth, site location, date, and time. The samples are placed in bags and stored in a cooler containing ice. Soil from the core adjacent to the interval selected for analyses is placed in a plastic zip-top bag. The soil is allowed to volatilize for a period of time, depending on the ambient temperature. The soil is scanned with a flame-ionization detector (FID) or photo-ionization detector (PID).

All sample barrels, rods, and tools are cleaned with Alconox or equivalent detergent and de-ionized water. All rinsate from the cleaning is contained in 55-gallon drums at the project site.

GROUNDWATER SAMPLING FROM DIRECT PUSH BORINGS

After the targeted water-bearing zone has been penetrated, the soil-sample barrel is removed from the borehole. Small-diameter well casing with 0.010-inch slotted well screen may be installed in the borehole to facilitate the collection of groundwater samples. Threaded sections of PVC are lowered into the borehole. Groundwater samples may then be collected with a bailer, peristaltic pump, or WaTerra pump until adequate sample volume is obtained.

Groundwater samples are preserved, stored in an ice-filled cooler, and are delivered, under chain-of-custody, to a laboratory certified by the California Department of Health Services (DHS) for hazardous materials analysis.

STANDARD OPERATING PROCEDURE - GEOPORBE SOIL-GAS SAMPLING

A soil-gas sample will not be collected within seven days following a measurable precipitation event.

Sample rods are driven to the desired depth. A soil-gas sampling tubing system is inserted into the rods and connected to an expendable point holder. The rods are retracted a desired 6-inch interval and the expendable drive point on the bottom of the rods is released. Hydrated bentonite is placed around where the drill rod exits the ground to prevent surface air migrating down the outer portion of the rods. The bentonite will be allowed to hydrate and expand prior to purging the sample line.

The soil sample is then collected into a Summa canister. A summa canister is a stainless steel vessel which has had the internal surfaces specially passivated using a "Summa" process. The Summa canister arrives pre-cleaned from the laboratory and with an internal vacuum between 25" Hg and 20" Hg. Prior to use, the pressure in the summa canister is checked with a pressure gauge to ensure a vacuum of at least 25" Hg for quality control purposes.

As a check for air leaks a paper towel or rag wetted with isopropyl alcohol will be placed on all sample line fittings and the top of the inside of the drill rod. Analysis of the sample for isopropyl alcohol will indicate if ambient air entered the sample.

A vacuum is applied to the tubing to purge the ambient air from the sample tubing. Once the tubing has been purged of ambient air, it is connected to a summa canister. A particulate filter is used in-line to filter out particles and liquids.

In areas of fine-grained soils, a flow controller is placed in line between the filter and the canister to maintain a low purge rate.

The valve on the summa canister is opened, and the soil-gas sample is drawn into the canister. The sample tubing will be checked for condensation. If observed, the sample will be discarded. The flow controller will stop drawing in air after a pre-set time interval. The remaining canister vacuum should be about 5-inches Hg. The vacuum left inside the canister is recorded on the chain-of-custody. The soil-gas samples will be transferred under chain-of-custody procedures to a state certified laboratory for analyses. Upon receipt, the laboratory will check the pressure in the canister and compare it to the pressure recorded on the chain-of-custody for quality control purposes.