

**Alameda County Environmental Health Services
1131 Harbor Bay parkway, Suite 250
Alameda, CA 94502-6577**

PERJURY STATEMENT

Name of Document or Report: 1549 32nd Street Case Closure Summary

RO#: 2508

I declare, under penalty and perjury, that the information and/or recommendations contained in the above stated document or report is true and correct to the best of my knowledge.



Company Officer or Legal Representative

Managing Member, Precision Lofts, LLC
Title

Sept 1, 2006
Date

CC: ACC Environmental Consultants



August 7, 2006

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

RE: Request for Regulatory Closure Summary
1549 32nd Street, Oakland, California
ACC Project No. 6543-001.03

Dear Mr. Rush:

Enclosed please find one copy of the *Request for Regulatory Closure Summary* prepared by ACC Environmental Consultants, Inc., (ACC). The purpose of this Summary is to characterize subsurface site conditions, summarize previous site investigation data, assess the effectiveness of previously performed soil remediation, and present appropriate conclusions to support regulatory closure.

This Summary recommends that the Alameda County Health Care Services Agency (ACHCSA) close the case as the lead regulatory agency with no further action.

If you have any questions regarding this Summary, please call me at (510) 638-8400, extension 109 or email me at ddement@accenv.com.

Sincerely,

A handwritten signature in black ink that reads 'David R. DeMent'. The signature is written in a cursive, slightly stylized font.

David R. DeMent, PG, REA II
Environmental Division Manager

/trb:drd

Enclosures

cc: Mr. Barney Chan, ACHCSA

REQUEST FOR REGULATORY CLOSURE SUMMARY


1549 32nd Street
Oakland, California

ACC Project No. 6543-001.03

Prepared for:

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

August 7, 2006



Prepared by:

Trevor Bausman
Environmental Coordinator



Reviewed by:

David DeMent, PG, REA II
Environmental Division Manager

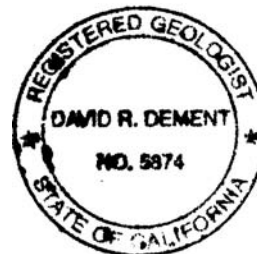


TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
2.0 BACKGROUND	1
2.1 Previous Site Investigation	1
2.2 Verification Site Investigation	5
2.3 Subsurface Conditions.....	10
3.0 SIT REMEDIATION	10
3.1 Remedial Soil Removal	10
3.2 Confirmation Sampling	11
4.0 RISK EVALUATION	13
5.0 CONCLUSIONS	14
6.0 RECOMMENDATION FOR CLOSURE	15
7.0 REFERENCES	16
8.0 LIMITATIONS	17

TABLES

1 ERAS 2002 Soil Analytical Results	2
2 Enrest 2002 Soil Analytical Results	2
3 Enrest 2002 Water Analytical Results	3
4 ERAS 2003 Soil Analytical Results	4
5 ERAS 2003 Water Analytical Results	5
6 Enrest 2005 Soil Analytical Results – Petroleum Hydrocarbons	6
7 Enrest 2005 Soil Analytical Results – VHCs.....	7
8 Enrest 2005 Soil Analytical Results – Metals	7
9 Enrest 2005 Grab Groundwater Analytical Results – Petroleum Hydrocarbons	8
10 Enrest 2005 Grab Groundwater Analytical Results – Metals	9
11 ERAS Confirmation Soil Analytical Results.....	12
12 Residual Concentration Comparison	14

APPENDICES

- 1 – ERAS and Enrest Figures
- 2 – Enrest Soil Boring Logs

REQUEST FOR REGULATORY CLOSURE SUMMARY

1549 32nd Street
Oakland, California

1.0 INTRODUCTION

This *Request for Regulatory Closure Summary* (Summary) has been prepared by ACC Environmental Consultants, Inc., (ACC) for Rush Property Group, LLC (Client), to characterize current subsurface conditions and document remedial source removal activities performed at 1549 32nd Street, Oakland, California (Site). The Site formerly operated as a steel foundry that heat-treated metal products, and the Client is pursuing full site closure from the Alameda County Health Care Services Agency (ACHCSA) as the lead regulatory agency.

This Summary is based upon the findings of previously performed site investigation and remediation conducted at the Site on behalf of Rush Property Group, LLC. ACC has been authorized by the Client to rely upon the information contained in these referenced reports of findings. ACC understands that the property is proposed for redevelopment as live/work residential housing units known as Precision Lofts.

2.0 BACKGROUND

The approximate 135 feet wide by 300 feet long rectangular property is located at 1549 32nd Street at the southeast corner of the intersection of Hannah and 32nd Streets (Figure 1, Appendix 1). 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. Oakland Fire Department records indicate the facility operated as Precision Cast, a steel foundry and heat-treating operation, since 1983.

2.1 Previous Site 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 depths 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 at approximately 3.0 feet below ground surface (bgs) in three of the four soil 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 resembled mineral oil, foundry quenching oil, or similar material. ERAS soil sample analytical results are summarized in Tables 1.

TABLE 1 – ERAS 2002 SOIL ANALYTICAL RESULTS

Sample ID	TPH-mo (mg/kg)	TPH-g (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	VOCs (mg/kg)
SB-1-2.5	8,300	11	0.053	0.065	0.046	0.17	NA
SB-2-2.5	< 50	< 1	< 0.005	< 0.005	< 0.005	< 0.005	NA
SB-3-3	< 50	17	< 0.005	< 0.005	< 0.005	< 0.005	NA
SB-4-3	2,100	5.3	< 0.005	0.0071	< 0.005	0.020	NA

Note: mg/kg = milligrams per kilogram
NA = Not Analyzed

In April 2002, Environmental Restoration Services (Enrest) advanced seven Geoprobe soil borings and reported observing free-floating oil in one soil 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, the casing was perforated from 5.5 to 7 feet, and drain rock surrounded the well from approximately 5 to 10 feet bgs. On April 26, 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 southeast corner suspect percolation well. Enrest also advanced three soil borings to collect grab groundwater samples north, west, and south of soil boring SB-6, designated as borings 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. Soil and grab groundwater sample analytical results are summarized in Tables 2 and 3.

TABLE 2 – Enrest 2002 SOIL ANALYTICAL RESULTS

Sample ID	TPH-mo (mg/kg)	TPH-g (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	VOCs (mg/kg)
SS-N	3,300	NA	< 0.005	0.065	< 0.005	< 0.015	(1)
SS-P/A	NA	NA	< 0.005	< 0.005	< 0.005	< 0.015	(2)
Source Pt	20,800	NA	< 0.005	0.0071	< 0.005	< 0.015	(3)

Note: NA = Not Analyzed
(1) 0.13 mg/kg 1,2-dichlorobenzene, 0.025 mg/kg naphthalene
(2) 0.14 mg/kg 1,2-dichlorobenzene
(3) Sample contained gasoline constituents

TABLE 3 – Enrest 2002 WATER ANALYTICAL RESULTS

Sample ID	TPH-mo (µg/L)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	VOCs (µg/L)
SB-1	< 500	NA	NA	NA	NA	NA	NA
SB-2	< 500	NA	NA	NA	NA	NA	NA
SB-3	< 500	NA	NA	NA	NA	NA	NA
SB-4	< 500	NA	< 1	< 1	< 1	< 2	ND
SB-5	NA	NA	< 1	< 1	< 1	2	(1)
SP-1	77,000	NA	< 1	< 1	< 1	< 1	(2)
SP-2	74,000	NA	< 1	< 1	2	3	(3)
SP-3	FP	NA	87	94	9	82	(4)
Source	NA	NA	< 1	< 1	1	2	(5)

Note: NA = Not Analyzed

- (1) 15 µg/l Chloroform
- (2) 3 µg/l Chloroform
- (3) 375 µg/l Acetone, 6 µg/l 1,2-dichlorobenzene
- (4) 17 µg/l 1,2-dichlorobenzene, 139 µg/l Napthalene
- (5) 2 µg/l 1,2-dichlorobenzene, 2 µg/l Napthalene

In May 2003, ERAS advanced eleven continuously-cored, Geoprobe 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. Soil samples were analyzed for volatile organic compounds (VOCs), total petroleum hydrocarbons as gasoline (TPH-g), total extractable petroleum hydrocarbons (TEPH or TPH), and chromium, copper, and nickel metals. Grab groundwater samples were analyzed for VOCs, TPHg, TPH, and chromium, copper, and nickel metals. The piezometers were surveyed and the calculated groundwater flow direction and gradient were west to northwest at 0.03 foot per foot. Soil sample analysis generally reported minor to elevated TPH concentrations, varying minor VOC concentrations, and varying concentrations of chromium, copper, and nickel metals typical of background, naturally-occurring concentrations. Grab groundwater sample analysis reported relatively low TPH concentrations in soil borings E-6, E-9, and E-10, no VOCs above laboratory reporting limits, and minor to low concentrations of dissolved metals. ERAS soil and grab groundwater sample analytical results are summarized in Tables 4 and 5.

Concurrently, ERAS sampled the contents of six subsurface concrete vaults. Vault contents were described as poorly-graded sand. These soil samples were analyzed for VOCs, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and TPH. Laboratory analysis reported that the sandy contents of the concrete vaults contained TPH concentrations only.

TABLE 4 – ERAS 2003 SOIL ANALYTICAL RESULTS

Sample ID	Depth (Feet)	TPH-g (mg/kg)	TPH-d (mg/kg)	TPH-ho (mg/kg)	Napthalene (mg/kg)	Toluene (mg/kg)	Xylenes (mg/kg)
PZ-1	3.0-3.5	<0.5	8.1	<13	<0.005	<0.005	<0.005
	11.0-12.0	<0.5	12	<13	<0.005	<0.005	<0.005
PZ-2	1.0-2.0	<0.5	<1	80	<0.005	<0.005	<0.005
	11.5-12.0	<0.5	<1	20	<0.005	<0.005	<0.005
E-5	2.5-3.5	0.310	<100	3,400	0.150	<0.0125	0.023
	11.0-12.0	<0.5	3.8	<13	<0.005	<0.005	<0.005
E-6	4.0-5.0	<0.5	<20	640	<0.005	<0.005	<0.005
	8.5-9.0	<0.5	<20	2,000	<0.005	<0.005	<0.005
E-7	4.0-5.0	0.068	4.8	<13	<0.005	<0.005	<0.005
	11.0-12.0	<0.5	<1	<13	<0.005	<0.005	<0.005
E-8	4.0-5.0	0.05	<25	<312.5	<0.005	<0.005	<0.005
	11.0-12.0	<0.5	9.6	<13	<0.005	<0.005	<0.005
E-9	1.0-2.0	<0.5	<50	1,500	0.023	<0.005	<0.005
	11.0-12.0	<0.5	<1	<13	<0.005	<0.005	<0.005
E-10	3.0-4.0	0.280	<100	3,700	0.084	0.015	0.013
	11.0-12.0	<0.5	<1	26	<0.005	<0.005	<0.005
E-11	4.0-4.5	0.120	<10	220	0.0059	<0.005	<0.005
	10.0-11.0	<0.5	9.0	<13	<0.005	<0.005	<0.005
E-12	2.0-3.0	<0.5	<1	<13	<0.005	<0.005	<0.005
	11.0-12.0	<0.5	<1	<13	<0.005	<0.005	<0.005
E-13	2.0-3.0	<0.5	2.6	<13	<0.005	<0.005	<0.005
	11.0-12.0	<0.5	<1	<13	<0.005	<0.005	<0.005

Notes: mg/kg = milligrams per kilogram

* TEPH as kerosene (k), diesel (d), motor oil (mo, and hydraulic oil (ho))

< = less than the laboratory reporting limit indicated

TABLE 5 – ERAS 2003 WATER ANALYTICAL RESULTS

Sample ID	Date	TPH-d (µg/L)	TPH-ho (µg/L)
PZ-1	04/01/03	< 50	< 250
PZ-2	04/03/03	< 50	< 556
E-5	04/02/03	< 570	5,300
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	< 118	890
E-12	04/02/03	< 50	< 250
E-13	04/02/03	< 67	< 333

Notes: (µg/L) = micrograms per Liter

2.2 Verification Site Investigation

In April 2005, Enrest conducted verification site investigation and advanced 15 exploratory soil borings primarily around the perimeter of the building. Soil boring locations are shown on Enrest Figure 2 (Appendix 1). The purpose was to collect representative verification soil and groundwater samples at the perimeter of the property to evaluate the effectiveness of remedial soil excavation performed in 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 (with the exception of 25 feet in soil borings B-2 and B-12). In addition, Enrest collected representative soil samples from imported material to be used to backfill the remedial soil excavations and analyzed the samples for constituents of concern. Imported soil samples are designated with “IMP” in the sample identification.

The Enrest April 2005 verification soil sample analytical results are summarized in Tables 6 through 8 and verification grab groundwater sample analytical results are summarized in Tables 9 and 10.

TABLE 6 – Enrest 2005 SOIL ANALYTICAL RESULTS – Petroleum Hydrocarbons

Sample ID	Depth (Feet)	TPH-g (mg/kg)	TPH-d (mg/kg)	TPH-k (mg/kg)	TPH-mo (mg/kg)	TPH-ho (mg/kg)	TEPH (mg/kg)
B-1	4	<0.5	---	---	---	---	< 50
B-1	9	<0.5	---	---	---	---	120
B-2	4	<0.5	---	---	---	---	---
B-2	9	<0.5	---	---	---	---	---
B-4	4	---	---	---	---	---	< 50
B-4	9	<0.5	---	---	---	---	< 50
B-5	4	<0.5	---	---	---	---	< 50
B-5	9	<0.5	---	---	---	---	< 50
B-7	4	<0.5	---	---	---	---	< 50
B-7	9	3.44	---	---	---	---	70
B-8	4	<0.5	---	---	---	---	< 50
B-8	9	<0.5	---	---	---	---	< 50
B-10	4	---	---	---	---	---	< 50
B-10	9	---	---	---	---	---	60
B-11	4	1.01	---	---	---	---	---
B-11	9	<0.5	---	---	---	---	---
B-14	4	<0.5	---	---	---	---	< 50
B-14	9	<0.5	---	---	---	---	< 50
B-18	4	<0.5	---	---	---	---	< 50
B-18	9	<0.5	---	---	---	---	< 50
Imported Soil Analysis							
IMP-1	8	<0.5	<1	<1	<10	19	---
IMP-2	4	<0.5	<1	<1	25	<10	---
IMP-2	8	<0.5	<1	<1	<10	13	---
IMP-3	4	<0.5	<1	<1	25	<10	---
IMP-3	8	<0.5	<1	<1	24	24	---

Sample ID	Depth (Feet)	TPH-g (mg/kg)	TPH-d (mg/kg)	TPH-k (mg/kg)	TPH-mo (mg/kg)	TPH-ho (mg/kg)	TEPH (mg/kg)
IMP-4	3	<0.5	11	<1	14	29	---
IMP-4	6	<0.5	<1	<1	20	<10	---
IMP-5	4	0.682	<1	<1	65	<10	---

Notes: mg/kg = milligrams per kilogram

* TEPH as kerosene (k), diesel (d), motor oil (mo), and hydraulic oil (ho)

< = less than the laboratory reporting limit indicated

TABLE 7 – Enrest 2005 SOIL ANALYTICAL RESULTS – Volatile Halocarbons

Sample ID	Depth (Feet)	VHCs (mg/kg)
B-1	4	ND
B-1	9	0.005 1,3,5-Trimethylbenzene 0.014 Napthalene
B-2	4	ND
B-4	9	ND
B-5	4	ND
B-5	9	ND
B-10	4	ND
B-10	9	ND
Imported Soil Analysis		
IMP-2	8	ND
IMP-4	3	ND

Notes: ND = no constituents detected above laboratory reporting limits

VHC = volatile halocarbons (VOCs)

TABLE 8 – IMPORTED SOIL ANALYTICAL RESULTS – Metals

Sample ID	Depth (Feet)	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
IMP-2	4	2.4	39.4	50.6	20.4	36.9
IMP-2	8	ND	44.8	12.8	30.2	40.0
IMP-3	8	1.2	39.0	27.0	23.4	39.1
IMP-4	3	ND	38.6	51.2	33.7	76.6
IMP-4	6	0.8	31.9	18.6	24.0	36.9
IMP-5	4	4.4	35.2	84.8	20.5	52.0

Notes: ND = no constituents detected above laboratory reporting limits

TABLE 9 – GRAB WATER ANALYTICAL RESULTS – Petroleum Hydrocarbons

Sample ID	Depth	TPHg (µg/L)	TEPH (µg/L)
B-1	15	< 50	< 10,000
B-1	25	< 50	< 10,000
B-2	16	---	< 10,000
B-2	25	< 50	< 10,000
B-3	25	< 50	< 10,000
B-4	16	< 50	< 10,000
B-4	25	853*	< 10,000
B-5	25	< 50	< 10,000
B-6	16	< 50	< 10,000
B-6	25	< 50	< 10,000
B-7	16	< 50	< 20,000
B-7	25	< 50	< 19,000
B-8	16	< 50	< 10,000
B-8	25	62	< 17,000
B-9	16	< 50	< 10,000
B-9	25	< 50	< 10,000

Sample ID	Depth	TPHg (µg/L)	TEPH (µg/L)
B-10	16	< 50	< 10,000
B-10	25	< 50	< 10,000
B-11	16	< 50	< 10,000
B-11	25	< 50	< 10,000
B-12	16	< 50	---
B-13	16	< 50	< 10,000
B-13	25	< 50	< 10,000
B-14	16	< 50	---
B-14	25	< 50	< 10,000
B-18	16	1,640**	< 10,000
B-18	25	285**	< 10,000

Notes: * = Chromatogram does not match pattern
** = Result due to single peak

TABLE 10 – GRAB WATER ANALYTICAL RESULTS – Metals

Sample ID	Copper (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)
B-1	1.4	---	2.0	---	1.5	---
B-4	6.53	---	0.89	---	8.65	---
B-5	3.00	---	1.69	---	33.9	---
B-14	112	---	51.3	---	212	---

Enrest also collected two representative soil gas samples for chemical analysis. Sample B-1SV was collected at the north end of the Site adjacent to the “north” excavation and sample B-5SV was collected at the south end of the Site adjacent to the “south” excavation. Soil gas sample locations are shown on Enrest Figure 2 (Appendix 1). Soil gas sample analytical results generally reported various minor VOC constituent concentrations just above their respective laboratory reporting limits.

None of the reported VOC concentrations reported in the two soil gas samples indicate that a significant source of residual VOCs or TPH with VOC components exist in the subsurface.

2.3 Subsurface Conditions

According to ERAS, soils at the Site consisted primarily of silt (ML) to 15 to 19 feet bgs. At 15 to 19 feet, sand and gravel stringers were encountered in a number of soil borings. According to Enrest, soils at the Site primarily consisted of medium plasticity silty clays (CL) and low plasticity sandy silts (ML) to 16 feet bgs. Enrest soil boring logs from its April 2005 investigation are included in Appendix 2.

During remedial soil excavation activities, native soils encountered beneath the vaults consisted of brown silty clays to approximately 10 feet bgs. Sand lenses were noted from 9 to 11 feet bgs and groundwater was generally encountered at 10 feet bgs. Some soils exhibited a characteristic blue-green color and mild to strong petroleum hydrocarbon odor. These field indications of TPH impact were used to help determine the limits of remedial soil excavation.

Groundwater was generally observed at approximately 10 to 15 feet bgs and at 20 to 25 feet bgs.

3.0 SITE REMEDIATION

3.1 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.

In September 2003 to January 2004, ERAS oversaw remedial soil excavation designed to remove soil containing TPH-ho above 500 mg/kg. The limits of soil excavation are shown on ERAS Figure 2 (Appendix 1). Soil was removed in three locations: 1) inside the northeast corner of the building (designated “north”); 2) inside the southeast portion of the building to the building perimeter (designated “middle”); and 3) outside the building on the south side (designated “south”). Approximately 845 cubic yards of soil were removed from the “north” excavation, approximately 1,950 cubic yards of soil were removed from the “middle” excavation, and approximately 407 cubic yards of soil were removed from the “south” excavation, for a total of approximately 3,202 cubic yards (4,800 tons). Following remedial soil excavation, confirmation sidewall and excavation bottom soil samples were collected and analyzed for TPH-ho and select confirmation soil samples were collected and analyzed for VOCs. Confirmation sidewall and excavation bottom soil sample analytical results are summarized in Table 11.

Excavated soil was properly profiled and disposed at Forward Landfill, Manteca, California, under profile No. 3786.

3.2 Confirmation Sampling

North Excavation

Detectable TPH-ho concentrations were reported in two of four sidewall samples ranging from 130 to 160 mg/kg, and no detectable TPH-ho was reported in the two excavation bottom samples. Napthalene was reported in two of two analyzed soil samples at 0.093 and 0.099 mg/kg and 1,2-Dichlorobenzene was reported in two of two analyzed soil samples at 0.022 and 0.032 mg/kg.

Middle Excavation

Detectable TPH-ho concentrations were reported in five of seven sidewall samples ranging from 32 to 3,400 mg/kg, and detectable TPH-ho was reported in six of seven excavation bottom samples ranging from 61 to 1,900 mg/kg. Methylene Chloride was reported in one of two analyzed soil samples at 0.130 mg/kg, 0.670 mg/kg 1,2-Dichlorobenzene was reported in one of two analyzed soil samples, and 0.082 mg/kg 1,4-Dichlorobenzene was reported in one of two analyzed soil samples. The middle excavation was physically limited by the east building perimeter wall, and additional soil excavation was not possible. Enrest soil borings B-9 and B-10 were advanced approximately 10 feet east of ERAS soil samples SWJ-7' and SWB-7', respectively. Enrest did not analyze soil samples from soil boring B-9 but did not report any odor or soil discoloration in its B-9 soil boring log. Enrest soil boring B-10 reported nondetect TPH at 4 feet bgs and 60 mg/kg TPH at 9 feet bgs.

South Excavation

Detectable TPH-ho concentrations were reported in three of six sidewall samples ranging from 15 to 830 mg/kg, and detectable TPH-ho was reported in two of two excavation bottom samples at 24 and 26 mg/kg. No VOCs were reported in the two analyzed soil samples.

Final sidewall and excavation bottom confirmation soil sample TPH-ho analytical results are summarized in Table 11.

TABLE 11- ERAS CONFIRMATION SOIL ANALYTICAL RESULTS

Excavation	Sample ID	Depth (Feet)	Sidewall / Bottom Sample	TPH-ho (mg/kg)
North	NSW3-7'	7	Sidewall	160
	SE-2-7'	7	Sidewall	< 13
	SS-1-7'	7	Sidewall	130
	SW4-7'	7	Sidewall	< 13
	WB2-9'	9	Bottom	< 13
	SC-5-8'	8	Bottom	< 13
Middle	SW-E-7A	7	Sidewall	< 13
	SW-D-7A	7	Sidewall	66
	SWJ-7'	7	Sidewall	3,400
	SWB-7'	7	Sidewall	1,300
	YY-7'	7	Sidewall	32
	XX-7'	7	Sidewall	300
	SW-F-7A	7	Sidewall	< 13
	B7	9.5	Bottom	< 13
	B6	9.5	Bottom	98
	B5	9	Bottom	1,900
	BH2-9'	9	Bottom	61
	BH3-9'	9	Bottom	470
	BH4-10'	10	Bottom	160
	BH1-9'	9	Bottom	440
South	OT2-7'	7	Sidewall	830
	OT1-7'	7	Sidewall	440
	OT6-7'	7	Sidewall	< 13
	OT5-7'	7	Sidewall	< 13
	OT4-7'	7	Sidewall	15
	OT3-7'	7	Sidewall	< 13

Excavation	Sample ID	Depth (Feet)	Sidewall / Bottom Sample	TPH-ho (mg/kg)
	OTB1-10'	10	Bottom	24
	OTB2-10'	10	Bottom	26

Notes: mg/kg = milligrams per kilogram

4.0 RISK EVALUATION

In its April 6, 2004 *Soil Remediation Report*, ERAS presented in Section 5 a Preliminary Risk Evaluation. The risk evaluation used environmental screening levels promulgated by the San Francisco Bay Regional Water Quality Control Board and evaluated potential complete exposure pathways between contaminant source and receptor.

Risk to human health is possible when a pathway between source and receptor is complete and the receptor is exposed to the constituent of concern by inhalation, ingestion, or dermal contact. Ingestion in groundwater is not considered a complete potential pathway.

Remedial soil excavation removed the majority of soil containing the highest concentrations of residual petroleum hydrocarbons and the majority of shallow soil containing residual petroleum hydrocarbons, thus minimizing potential inhalation, ingestion, and contact with residual TPH-ho,mo in soil. By removing over 3,200 cubic yards of soil in and around the identified source areas, potential ingestion and dermal contact with residual TPH concentrations in soil has been minimized.

Before and after TPH concentrations reinforce this opinion. ERAS soil sample E-5 reported 3,400 mg/kg TPH at 2.5 to 3.5 feet bgs. Confirmation sidewall soil sample NSW3-7', collected 8 feet to the north, reported 160 mg/kg TPH at 7 feet bgs. ERAS soil sample E-6 reported 2,000 mg/kg TPH at 8.5 to 9.0 feet bgs. Confirmation sidewall soil sample WB2-9', collected 8.5 feet to the northwest, reported nondetect (less than 13 mg/kg) TPH at 9 feet bgs. ERAS soil sample E-10 reported 3,700 mg/kg TPH at 3.0 to 4.0 feet bgs. Confirmation sidewall soil sample BH1-9', collected 15 feet to the west, reported 440 mg/kg TPH at 9 feet bgs and sidewall soil sample SWB-7', collected 6.5 feet southeast, reported 1,300 mg/kg TPH at 7 feet bgs.

General before and after concentrations for hydraulic oil to motor oil range TPH, TPH as gasoline, and naphthalene are summarized in Table 12. TPH-ho,mo exceeded its applicable residential ESL of 500 mg/kg in only 4 of 40 confirmation and verification soil samples collected for the specific purpose of evaluating residual TPH-ho,mo concentrations in soil. TPH-g and naphthalene were not considered constituents of concern prior to excavation but were evaluated due to the volume of analytical data available. TPH-g and naphthalene did not exceed their respective ESLs in any confirmation and verification samples.

**TABLE 12 – RESIDUAL CONCENTRATION COMPARISON
(Constituents of Concern in Soil)**

Constituent	Low Conc.	High Conc.	Avg. Conc.	Residential ESL	# Samples Above ESL	# Samples Below ESL
Initial Soil Concentrations						
TPH-ho,mo	220	8,300	1,157	500	8	1
TPH-g	<0.5	0.310	0.23	100	0	22
Naphthalene	<0.005	0.150	0.014	0.46	0	23
Soil Concentrations Following Remedial Activities						
TPH-ho,mo ERAS	<13	3,400	354	500	4	24
TPH-ho,mo Enrest	<50	120	36	500	0	16
TPH-g	<0.5	3.44	0.48	100	0	17
Naphthalene	<0.010	0.014	0.006	0.46	0	8

Notes: All results are in milligrams per kilogram, mg/kg

5.0 CONCLUSIONS

Based on previous subsurface investigation findings, representative soil and grab groundwater sample analytical results, field observations, and remedial source removal activities performed, ACC presents or concurs with the following conclusions regarding subsurface conditions at the site:

- Approximately 3,202 cubic yards of soil (178 truckloads) were transported to and disposed at Forward Landfill under acceptance number 3786 and soil containing TPH-ho,mo above 500 mg/kg has been effectively removed in areas proposed for residential development;
- The primary suspect source of petroleum hydrocarbons in the subsurface were the identified waste percolation wells installed to approximately 7 feet bgs, so confirmation sidewall soil samples collected at 7 to 9 feet bgs and excavation bottom soil samples collected at 8 to 10 feet bgs are highly representative of soil conditions following remedial activities;
- General quality of the imported soil material was good because the petroleum hydrocarbons reported in the imported backfill soil were generally low (less than 30 mg/kg) and metal concentrations were indicative of background, naturally-occurring concentrations for this geographic region;

- Confirmation soil sampling performed by ERAS in the three remedial soil excavations generally indicated that remedial soil removal was highly effective at removing residual petroleum hydrocarbon –impacted soil and eliminating potential sources of impact to shallow groundwater;
- Verification soil sampling performed by Enrest in April 2005 indicated that residual petroleum hydrocarbons (primarily hydraulic oil-range TPH) in soil are generally low to nondetect and well below the cleanup goal concentration of 500 mg/kg, and indicate that no significant residual source of TPH or VOCs are present in the subsurface with two noted exceptions;
- Verification grab groundwater sampling performed by Enrest in April 2005 indicated residual TPH concentrations in groundwater are generally below laboratory reporting limits with the exception of groundwater near soil borings B-4 and B-18, and further indicate that no significant residual source of TPH is present in the subsurface;
- Verification soil gas sampling performed by Enrest in April 2005 indicated that residual VOC concentrations in soil gas are generally low and well below applicable ESLs, and further indicate that no significant residual source of VOCs is present in the subsurface;
- Tier 1 risk evaluation is acceptable and no further subsurface investigation is warranted; and
- Remedial soil excavation performed at the Site has removed the majority of soil containing TPH- ho above 500 mg/kg in proposed residential areas. Residual TPH concentrations in soil and groundwater should naturally degrade in a reasonable timeframe due to natural attenuation processes present in the subsurface.

6.0 RECOMMENDATION FOR CLOSURE

ACC s that remediation has been performed to the extent feasible. Approximately 3,202 cubic yards (4,800 tons) of impacted soil from three excavations were removed and disposed offsite at an accepting permitted landfill facility. Residual petroleum hydrocarbons in soil, groundwater, and soil gas are generally low and below the residential ESL of 500 mg/kg. Based on representative soil and groundwater sampling conducted in 2002, 2003, and 2005, residual TPH and VOC concentrations are degrading due to natural attenuation processes active in shallow soil and groundwater.

Proposed Site development will effectively cap the area and further minimize the potential of disturbing or contacting soil containing residual TPH. With the exception two sidewall soil samples collected at 7 feet bgs along the eastern border of the central portion of the property, soil has been effectively remediated. Verification grab groundwater sampling and soil gas sampling further reinforce the conclusions that the Site has been effectively remediated and no significant sources of residual TPH exists in the subsurface.

On behalf of Rush Property Group, LLC, ACC recommends that the Site be evaluated for full regulatory closure with no further action.

7.0 REFERENCES

ERAS Environmental, Inc. May 27, 2003. SOIL AND GROUNDWATER INVESTIGATION REPORT, Former Precision Cast, 1549 32nd Street, *Oakland, California*. Prepared for Mr. Francis Rush, Rush Property Group.

ERAS Environmental, Inc. April 6, 2004. SOIL REMEDIATION REPORT, 1549 32nd Street, *Oakland, California*. Prepared for Mr. Francis Rush, Rush Property Group.

Environmental Restoration Services. December 14, 2005. Investigative Report, 1549 32nd Street, *Oakland, California*. Prepared for Mr. Francis Rush, Rush Property Group and the Alameda County Health Care Services Agency.

California Regional Water Quality Control Board, San Francisco Bay Region. Interim Final, February 2005. *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater, Volumes 1 and 2, Tables B, E-1a, and E-2*.

California Regional Water Quality Control Board, San Francisco Bay Region. January 5, 1996. *Memorandum to: San Francisco Bay Area Agencies Overseeing UST Cleanup and Other Interested Parties*. Prepared by Mr. Kevin Graves, P.E.

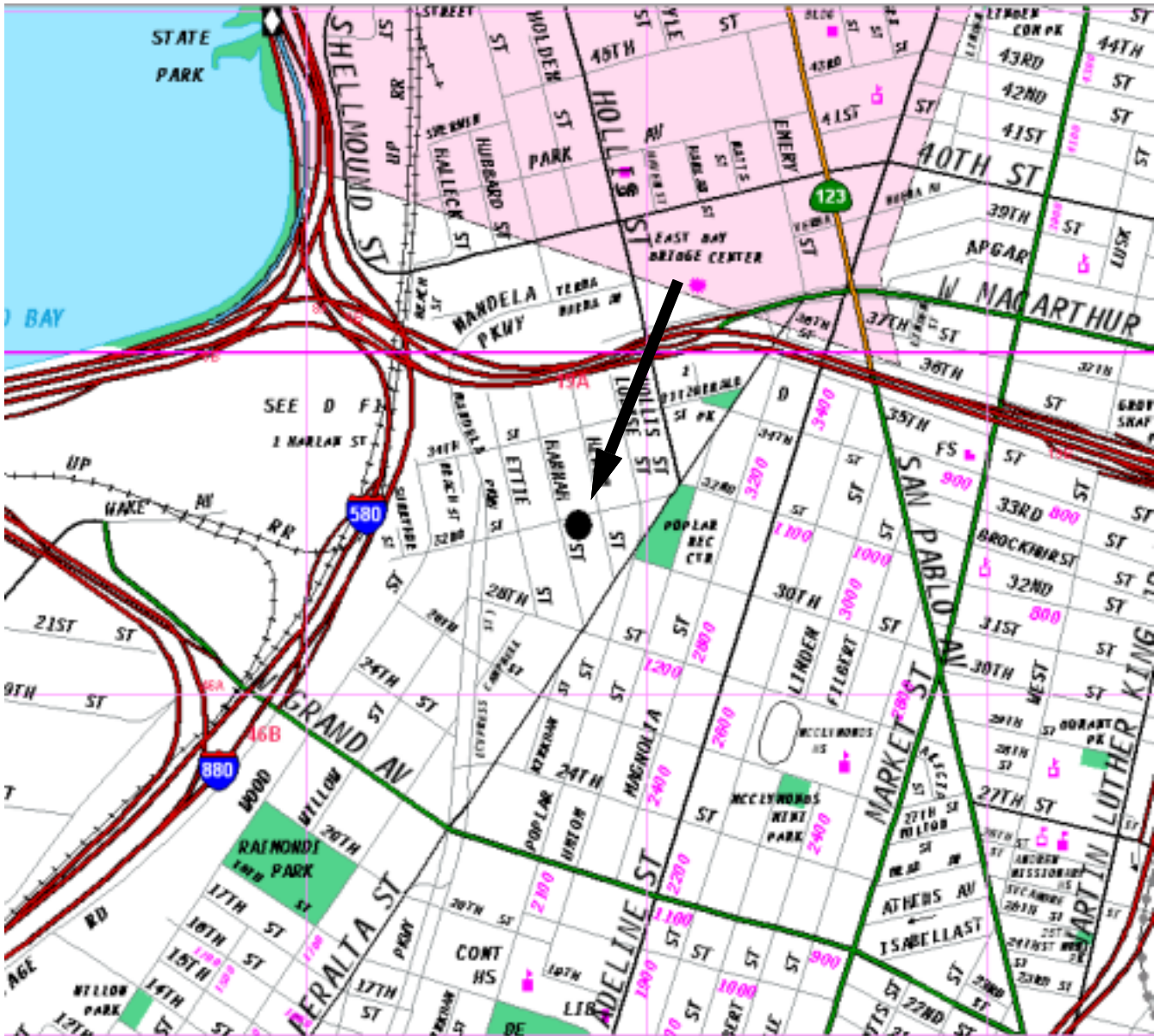
8.0 LIMITATIONS

The service performed by ACC has been conducted in a manner consistent with the levels of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area. No other warranty, expressed or implied, is made.


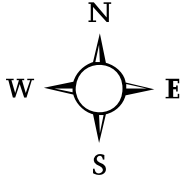
The conclusions presented in this report are professional opinions based on the referenced data described in this report and applicable regulations and guidelines currently in place. They are intended only for the purpose, site, and project indicated. Opinions and recommendations presented herein apply to site conditions existing at the time of our study, and under the assumption that the data contained in the reviewed reports are true and correct.

ACC has referenced analytical results from state-certified laboratories, which performs analyses according to procedures suggested by the U.S. Environmental Protection Agency and the State of California. ACC is not responsible for laboratory errors in procedure or result reporting.

APPENDIX 1



Source: The Thomas Guide, Bay Area Metr

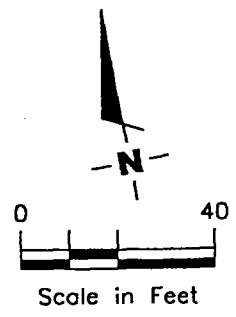
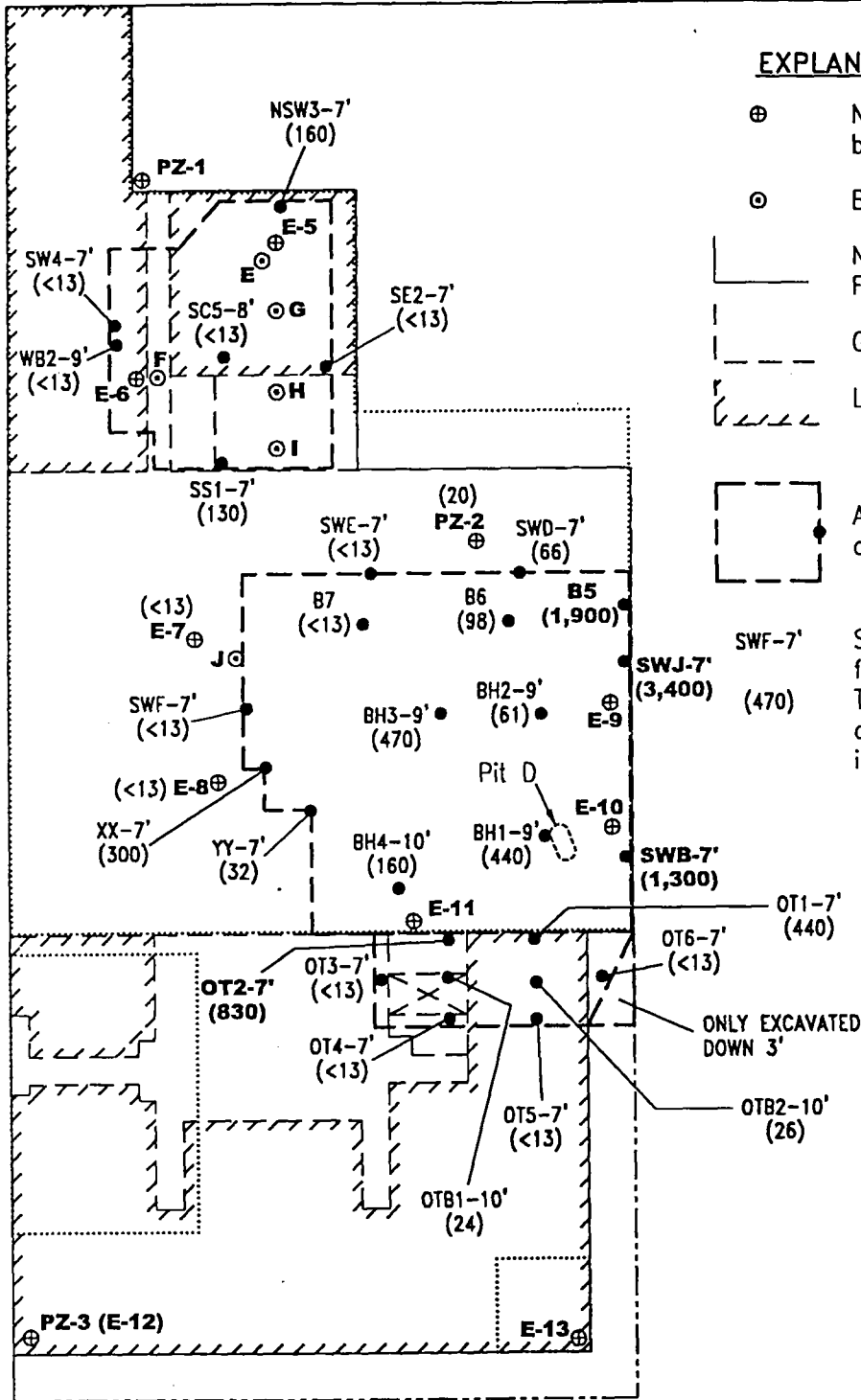
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Figure Number: 1	Scale: None
Project Number: 6875-001.00	Drawn By: TRB
 7977 Capwell Drive, Suite 100 Oakland, California 94621 (510) 638-8400 Fax: (510) 638-8404	Date: 8/4/06
	

32ND STREET

HANNAH STREET

EXPLANATION

- ⊕ New soil boring & peizometer by ERAS Enviro
- ⊙ Boring into vault
- New Proposed Building Footprint
- - - Ground Floor Footprint
- ▨ Live/Work Area Footprint
- Area of excavation and soil sample location
- SWF-7' Soil sample designation—feet below surface
- (470) Total Petroleum Hydrocarbons as hydraulic oil (TPH-ho) in mg/Kg



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

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

DATE
03/04
REVIEWED BY
GMJ

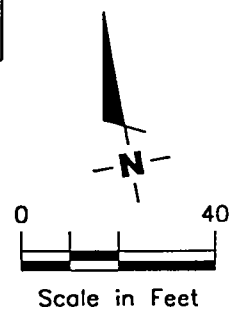
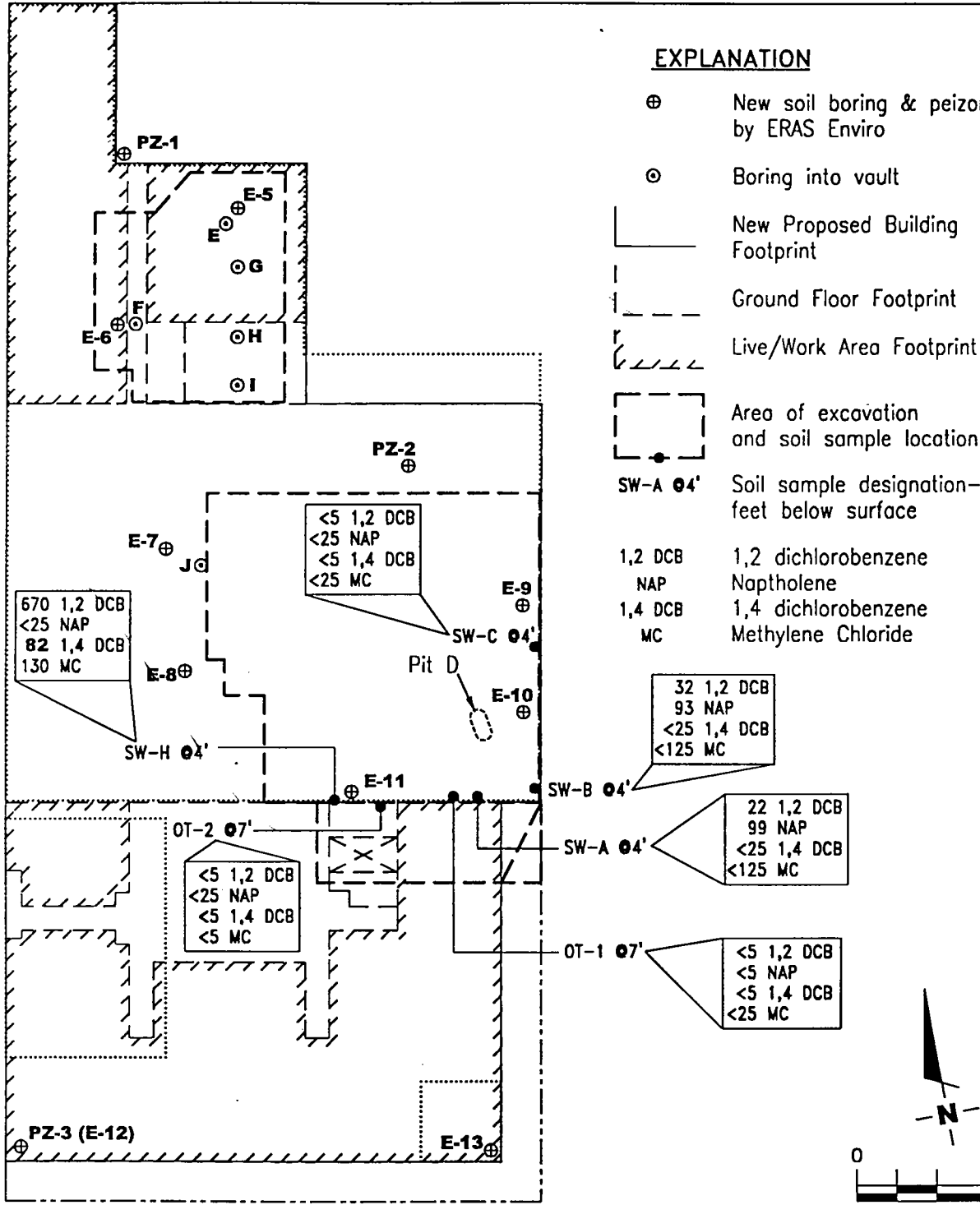
FORMER PRECISION CASTING
1549 32nd Street
Oakland, California

JOB NUMBER
02-006-03
FIGURE
2

ERAS Environmental Inc.

32ND STREET

HANNAH STREET



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

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

DATE
03/04
REVIEWED BY
GMJ

FORMER PRECISION CASTING
1549 32nd Street
Oakland, California

JOB NUMBER
02-006-03
FIGURE
3

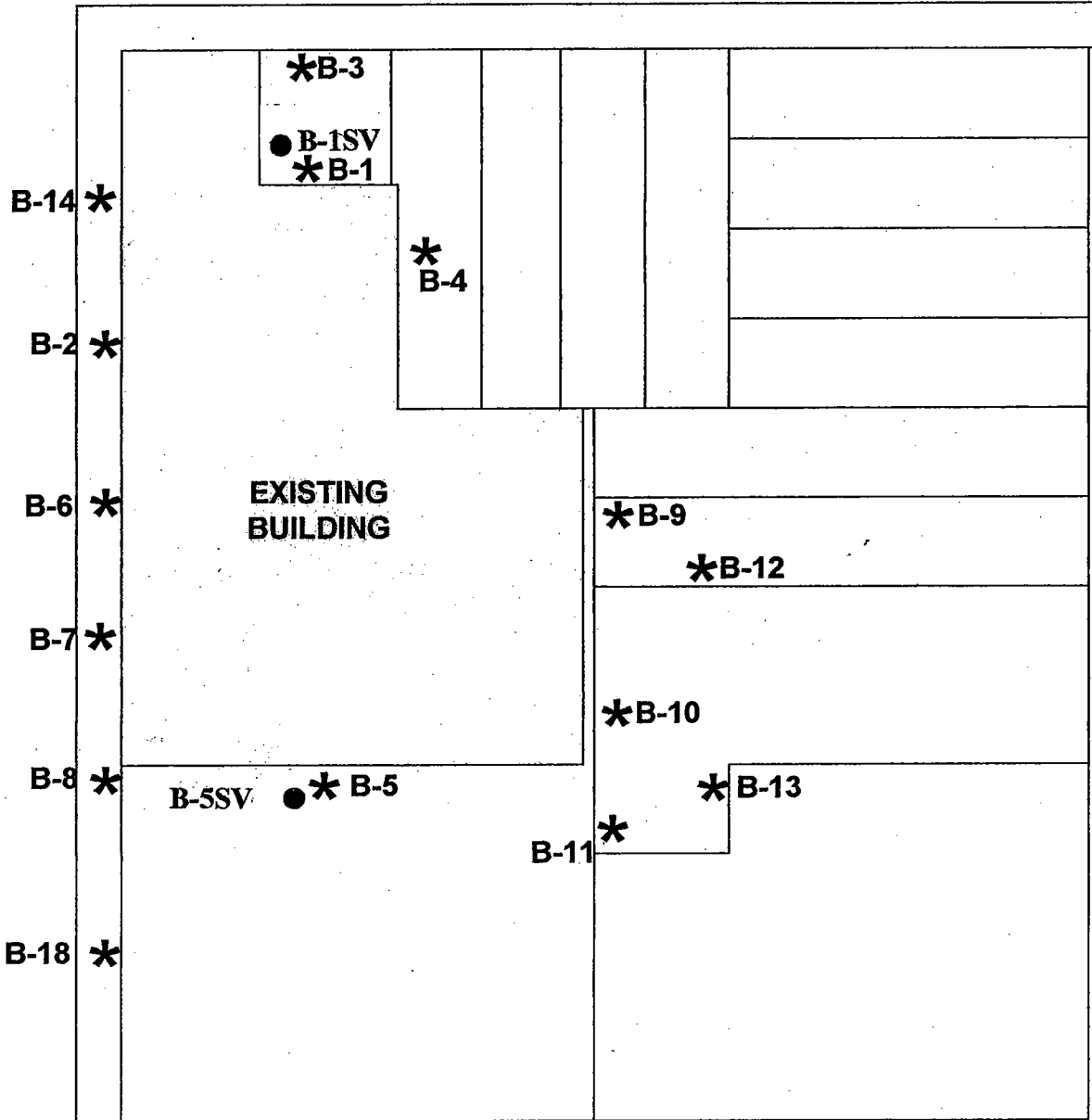
32ND STREET

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<h1>SITE PLAN</h1> <p>1549 32nd Street, Oakland, CA</p>		
DATE 5/20/05	SCALE: 1"= 50'	BY:
<i>Environmental Restoration Services</i>		FIGURE 2
500 Santa Cruz Ave., Menlo Park, CA 94025		

APPENDIX 2

Environmental Restoration Services

Boring Log

Location: 1549 32nd St., Oakland Date: 4/21/05 Boring No.: B-1

Drill Method: 2" Geo-Probe Logged By: BTH Page 1 of 1

Sample No.	Blow Count	Sample Type	Location	Depth	USGS	Lithology Description	Well/Boring Completion Detail
						Asphalt/ baserock	
					CH	High plasticity CLAY. 20% silt /fine sand. Stiff, moist. V. dark brown (10YR 2/2). No odor.	
B1@4'	N/A	Soil		5'	CL	Medium plasticity silty CLAY. 30% silt/fine sand. Med. stiff, moist. dark yellowish brown (10YR3/4). No odor.	
B1@9'	N/A	Soil		10'	CL	Low plasticity silty CLAY. 40% silt/fine sand. soft, v. moist. Yellowish brown (10YR5/4). No odor.	
					ML	Low plasticity sandy SILT. 40% fine sand, 10% clay soft, v. moist. Light yellowish brown (10YR6/4). No odor.	
B1-GW		Ground water		15'	CL	Low plasticity silty CLAY. 40% silt/fine sand. soft, v. moist. Yellowish brown (10YR5/4). No odor.	
B1@16'	N/A	Soil				BOH	
				20'			
				25'			
B1-GW @ 25'		Ground water					
				30'			

Portland Cement Sanitary Seal

Environmental Restoration Services

Boring Log

Location: 1549 32nd St., Oakland Date: 4/22/05

Boring No.: B-3

Drill Method: 2" Geo-Probe Logged By: BTH Page 1 of 1

Sample No.	Blow Count	Sample Type	Location	Depth	USGS	Lithology Description	Well/Boring Completion Detail
						Asphalt/ baserock	
					CH	High plasticity CLAY. 20% silt /fine sand. Stiff, moist. V. dark brown (10YR 2/2). No odor.	
B3@4'	N/A	Soil		5'	CL	Medium plasticity silty CLAY. 30% silt/fine sand. Med. stiff, moist. dark yellowish brown (10YR3/4). No odor.	
B3@9'	N/A	Soil		10'	CL	Low plasticity silty CLAY. 40% silt/fine sand. soft, v. moist. Yellowish brown (10YR5/4). No odor.	Portland Cement Sanitary Seal
					ML	Low plasticity sandy SILT. 40% fine sand, 10% clay soft, v. moist. Light yellowish brown (10YR6/4). No odor.	
B3-GW		Ground water		15'	CL	Low plasticity silty CLAY. 40% silt/fine sand. soft, v. moist. Yellowish brown (10YR5/4). No odor.	
B3@16'	N/A	Soil				BOH	
				20'			
				25'			
B3-GW @ 25'		Ground water					
				30'			

Environmental Restoration Services

Boring Log

Location: 1549 32nd St., Oakland Date: 4/21/05 Boring No.: B-4

Drill Method: 2" Geo-Probe Logged By: BTH Page 1 of 1

Sample No.	Blow Count	Sample Type	Location Depth USGS	Lithology Description	Well/Boring Completion Detail
				CH High plasticity CLAY. 20% silt /fine sand. Stiff, moist. V. dark brown (10YR 2/2). No odor.	
B4@4'	N/A	Soil	5'	CL Medium plasticity silty CLAY. 30% silt/fine sand. Med. stiff, moist. dark yellowish brown (10YR3/4). No odor.	
B4@9'	N/A	Soil	10'	CL Low plasticity silty CLAY. 40% silt/fine sand. soft, v. moist. Yellowish brown (10YR5/4). No odor.	
				ML Low plasticity sandy SILT. 40% fine sand, 10% clay soft, v. moist. Light yellowish brown (10YR6/4). No odor.	
B4-GW		Ground water	15'	CL Low plasticity silty CLAY. 40% silt/fine sand. soft, v. moist. Yellowish brown (10YR5/4). No odor.	Portland Cement Sanitary Seal
B4@16'	N/A	Soil		BOH	
			20'		
B4-GW @ 25'		Ground water	25'		
			30'		

Environmental Restoration Services

Boring Log

Location: 1549 32nd St., Oakland Date: 4/21/05 Boring No.: B-5

Drill Method: 2" Geo-Probe Logged By: BTH Page 1 of 1

Sample No.	Blow Count	Sample Type	Location	Depth	USGS	Lithology Description	Well/Boring Completion Detail
					CH	High plasticity CLAY. 20% silt /fine sand. Stiff, moist. V. dark brown (10YR 2/2). No odor.	
B5@4'	N/A	Soil		5'	CL	Medium plasticity silty CLAY. 30% silt & fine sand. stiff, moist. dark yellowish brown (10YR3/4). No odor.	
B5@9'	N/A	Soil		10'	ML	Low plasticity clayey SILT. 30% clay 10% fine sand. soft, v. moist. Yellowish brown (10YR6/4). No odor.	
					SM	Silty SAND. Fine. 30% silt, 10% clay, med. dense, v. moist. Light yellowish brown (10YR6/4). No odor.	
B5-GW		Ground water		15'	CL	Low plasticity silty CLAY. 40% silt/fine sand. soft, v. moist. Yellowish brown (10YR5/4). No odor.	
B5@16'	N/A	Soil			BOH		Portland Cement Sanitary Seal
				20'			
				25'			
B5-GW @ 25'		Ground water					
				30'			

Environmental Restoration Services

Boring Log

Location: 1549 32nd St., Oakland Date: 4/21/05 Boring No.: B-11

Drill Method: 2" Geo-Probe Logged By: BTH Page 1 of 1

Sample No.	Blow Count	Sample Type	Location Depth USGS	Lithology Description	Well/Boring Completion Detail
			CH	High plasticity CLAY. 20% silt /fine sand. Stiff, moist. V. dark brown (10YR 2/2). No odor.	
B11@4'	N/A	Soil	5' CL	Medium plasticity silty CLAY. 30% silt/fine sand. stiff, moist. brown (10YR5/3). No odor.	
B11@9'	N/A	Soil	10' ML	Low plasticity clayey SILT. 30% clay 10% fine sand. soft, v. moist. Yellowish brown (10YR5/4). No odor.	
			ML	Low plasticity clayey SILT. 30% clay 15% fine sand. soft, v. moist. brownish yellow(10YR6/6). No odor.	
B11-GW		Ground water	15' SC	Clayey SAND, fine, loose, 20% clay, 10% siltv. moist. light yellowish brown (10YR6/4). No odor.	
B11@16'	N/A	Soil		BOH	Portland Cement Sanitary Seal
			20'		
			25'		
B11-GW @ 25'		Ground water			
			30'		

Environmental Restoration Services

Boring Log

Location: 1549 32nd St., Oakland Date: 4/21/05 Boring No.: B-12

Drill Method: 2" Geo-Probe Logged By: BTH Page 1 of 1

Sample No.	Blow Count	Sample Type	Location	Depth	USGS	Lithology Description	Well/Boring Completion Detail
					CH	High plasticity CLAY. 20% silt /fine sand. Stiff, moist. V. dark brown (10YR 2/2). No odor.	
B12@4'	N/A	Soil		5'	CL	Medium plasticity silty CLAY. 30% silt & fine sand. stiff, moist. dark yellowish brown (10YR3/4). No odor.	
B12@9'	N/A	Soil		10'	CL	Low plasticity silty CLAY. 40% silt/fine sand. soft, v. moist. Yellowish brown (10YR5/4). No odor.	Portland Cement Sanitary Seal
					CL	Low plasticity sandy CLAY. 30% fine sand, 10% silt soft, v. moist. Yellowish brown (10YR5/4). No odor.	
B12-GW		Ground water		15'	CL	Low plasticity silty CLAY. 40% silt/fine sand. soft, v. moist. Yellowish brown (10YR5/4). No odor.	
B12@16'	N/A	Soil			BOH		
				20'			
				25'			
				30'			

