Environmental Restoration Services

Site Investigations * Fuel Tank Closures and Installations * Site Remediation * Regulatory Reporting

Mr. Don Torkington
Precision Cast Products Inc.
217 Westcott Dr.
Friday Harbor, WA 98250

June 10, 2002

Re: SUBSURFACE INVESTIGATIVE REPORT
1549 32nd St., Oakland, CA 94608

1.0 INTRODUCTION

This Investigative Report has been prepared by Environmental Restoration Services (ERS) for the facility located at 1549 32nd St., in a residential/industrial district of Oakland, California (**Figure 1**).

2.0 SITE HISTORY AND ENVIRONMENTAL BRIEF

Phase One Inc. of Aliso Viejo, CA performed a Phase I Environmental Site Assessment (ESA) in April of 2000 on the subject Property.. The ESA recommended that a Phase II subsurface investigation be performed at the subject site.

Eras Environmental of Castro Valley, CA performed a Phase II investigation in March of 2002.. The investigation identified a 4" diameter fill pipe inside the building that extended down approximately seven feet below the interior concrete slab and was filled with an oily sand from seven to three feet below the interior concrete slab. The preliminary assumption was that the fill pipe was connected to a small diameter (550-1000 gallon) waste oil tank that had been historically closed in-place by filling with sand.

On April 15, 2002, ERS, under permit with the City of Oakland Office of Emergency Services (Oak-OES) to remove a tank, excavated in the vicinity of the 4" diameter fill pipe and discovered that the pipe was not was connected to a tank, but was a fill pipe to a historic liquid waste percolation well. The 4" diameter pipe was approximately 7 feet in length, with the bottom 18 inches perforated with ¾" holes. The exterior bottom 2' of the pipe was encased in drain rock. This drain rock continued down to a depth of approximately 10' below ground surface (bgs.)

Inspector Leroy Griffith with Oak-OOE inspected the excavation and requested that further soil be removed in the vicinity of the percolation well and that soil, at the

groundwater interface, be sampled at the limits of excavation. Inspector Griffith further requested that the groundwater around the percolation well be sampled to determine the extent of possible contaminate migration. In addition, used casting sand, used to backfill three concrete pits, was excavated and sampled. Two additional borings, one located near a backfilled concrete pit and one near a capped, underground (UG) vault, were also requested.

On April 26, 2002, seven soil borings were advanced at the subject site by ERS. Groundwater samples were recovered from five of the borings. One soil boring, SB-6, (Figure 2) contained product motor oil on the groundwater. ERS recommended that an investigation, into the source of this floating product found at sample point SB-6 and the extent of groundwater contamination, be performed.

3.0 INVESTIGATION SCOPE OF WORK

3.1 **Investigative Excavations**

On May 20, 2002, the area around boring SB-6 was excavated to the dimensions of 3 feet wide by 8 feet long by eight feet deep. Stained soil was noted starting at a depth of 5 feet and continuing into the aquifer, noted at approximately 7 feet below the concrete surface. Seepage of product oil was noted entering the excavation at the soil/groundwater interface, the heaviest of which was noted at the southern end. Further investigation of the concrete surfaced floor, south of the SB-6 excavation, noted the top of a 4" diameter pipe, capped with concrete, approximately 15' from the excavation. Suspecting that this maybe another historic liquid waste percolation well, ERS excavated this area the same day.

The suspect pipe was another historic liquid waste percolation well, similar in construction to the first well. The area was excavated to the dimensions of 4 feet wide by 6 feet long by eight feet deep. Stained soil was noted starting at a depth of 5 feet and continuing into the aquifer, noted at approximately 7 feet below the concrete surface (bgs.). Some liquid product oil was noted to be excavated with the soil. On May 21, 2002, one soil sample, "SOURCE PT@7' ", was recovered from the excavation sidewall, at the soil/groundwater interface, at approximately 7 feet bgs.. Groundwater at the bottom of the excavation did appear to contain an oil sheen.

3.2 **Groundwater Investigation**

On May 20, 2002, three soil borings were advanced at the subject site by ERS. Groundwater samples were recovered from all of the borings the next day, due to very slow groundwater recharge.

Boring SP-1 was installed approximately 35' to the north of the second percolation well, boring SP-2 was installed approximately 50' to the west of the second percolation well (at the April 26, 2002 boring location "P/A") and boring SP-3 was installed approximately 20' to the south of the second percolation well.

All soil boring locations are shown in Figure 2.

3.3 **Soil Boring Procedure**

All borings were advanced using a three inch diameter hand auger, to a depth of eleven feet beneath the surface flooring.

3.4 **Groundwater Grab Sampling Procedures**

After completion the borings were allowed to recharge with groundwater. Then, a new, disposable bailer was inserted into each boring for recovery of a groundwater grab sample. Groundwater was emptied into sample containers obtained directly from the analytical laboratory. An effort was made to minimize exposure of the sample to air.

Within the excavation of the second liquid waste percolation well, the free phase oil product was extracted from the surface of the groundwater utilizing a wet vacuum pump, until the approximate 3/8 inch layer of free phase oil product was completely removed. Approximately two gallons of oil was recovered from the groundwater. The oil is contained on-site in a labeled five gallon bucket.

A groundwater grab sample was then recovered from the excavation using a new, disposable bailer. Groundwater was emptied into sample containers obtained directly from the analytical laboratory. An effort was made to minimize exposure of the sample to air.

Subsequent to collection, all of the samples were immediately stored on ice in an appropriate ice chest. Samples were transported under Chain-of-Custody procedures to North State Environmental Labs (NSEL) of South San Francisco, CA.

3.5 **Laboratory Analyses**

The following analyses were performed by NSEL on the groundwater samples obtained from the borings:

Total Petroleum Hydrocarbons as (TPH/) Motor Oil	EPA Method CATFA
Volatile Organic Compounds (VOCs)	EPA Method 8260

The following analyses were performed by NSEL on the groundwater sample obtained from the excavation:

Volatile Organic Compounds (VOCs)	EPA Method 8260

The following analyses were performed by NSEL on the soil sample obtained from the excavation sidewall.

Volatile Organic Compounds (VOCs)	EPA Method 8260
TPH/Motor Oil	EPA Method CATFA
CAM 17 Metals	EPA Methods 6010B, 7420, 7471A

3.5 **Analytical Results**

The analytical results of excavation sidewall soil sample "SOURCE PT@7'" contained [redacted] 8 parts per billion (ppb) of 1,2 Dichlorobenzene, 14 ppb of 1,3,5 Trimethylbenzene, 7 ppb of 1,2,4 Trimethylbenzene, 35 ppb of n-Butyl benzene .

CAM-17 analysis for excavation sidewall soil sample "Source Pt@7'" indicated concentrations of metals that were below Bay Area Regional Water Quality Control Board's (BA-RWQCB) Risk-Based Screening Levels (RBSL) for Table B (subsurface soil shallower than 9 feet and groundwater is not a potential drinking water source), with the exception of total chromium at 25 ppm (RBSL Table B level is 12 ppm) and arsenic at 5 ppm (RBSL Table B level is 2.7 ppm).

The analytical results of groundwater samples SP-1 and SP-2 indicated low levels of TPH/Motor Oil (77 ppm and 74 ppm respectively) and trace levels of VOCs.

The analytical results of groundwater samples SP-3 indicated a moderate level of [redacted] and low levels of BTEX (87 ppb, 94ppb,9 ppb and 82 ppb respectively). VOC concentrations in groundwater sample SP-3 included 2.58 ppm of n-Propylbenzene, 77 ppb of 1,3,5 Trimethylbenzene, 20 ppb of 1,3,4 Trimethylbenzene, 17 ppb of 1,2 Dichlorobenzene, 164 ppb of n-Butyl benzene, 139 ppb of Naphthalene and 375 ppb of Acetone.

The excavation groundwater grab sample, once the oil was completely removed from the groundwater, contained only trace levels of VOCs.

4.0 CONCLUSION and RECOMMENDATION

Up to 20,800 ppm of motor oil, up to 35 ppm of total chromium and up to 5 ppm of arsenic remains in the soil at the source point of the second liquid waste percolation well, however VOC concentrations in the soil are all below BA-RWQCB RBSLs Table B and EPA Region 9 PRG levels.

Once the free phase oil product was extracted from the surface of the groundwater within the excavation of the historic liquid waste percolation well, only trace levels of VOCs remained.

It appears that the oil contaminates discharged to the groundwater through the second liquid waste percolation well, have migrated approximately 35 feet to the north and approximately 50 feet to the west of the source point.

Groundwater sample SP-3 had the highest level TPH/motor oil at 5780 ppm, due in part to the free phase product oil in the sample. Groundwater sample SP-3 also had the highest levels of VOCs. This may be due to the amount of oil in the sample and not necessarily dissolved VOCs in the groundwater. Again, once oil was removed from the groundwater at the excavation, very little dissolved VOCs were detected in the groundwater sample.

ERS recommends that the City of Oakland Office of Emergency Services review the findings of this second Report and also compare the results with City's TIER 2 Risk-Based Corrective Action Levels for this portion of Oakland, prior to recommending additional investigation or corrective action.

5.0 LIMITATIONS

The observations and conclusions presented in this report are professional opinions based on the scope of work outlined herein. This report was prepared in accordance with generally accepted standards of environmental geological practice in California at the time this investigation was performed. The opinions presented apply to site conditions existing at the time of our study and cannot apply to site conditions or changes of which we are not aware or have not had the opportunity to evaluate. This investigation was conducted solely to evaluate environmental conditions of the soil and with respect to volatile organic compounds, hydrocarbons and limited metals. Evaluation of the geologic conditions at the site for the purpose of this investigation is made from a limited number of observation points. Subsurface conditions may vary away from the data points available. Additional work, including subsurface investigation, can reduce the inherent uncertainties associated with this type of investigation. It must be recognized that any conclusions drawn from these data rely on the integrity of the information available at the time of investigation and that a full and complete determination of environmental contamination and risks cannot be made.

Respectfully submitted this 10th day of June 2022.

Bennett T Halsted
Project Manager

Samuel H Halsted P.E.
CE 14096

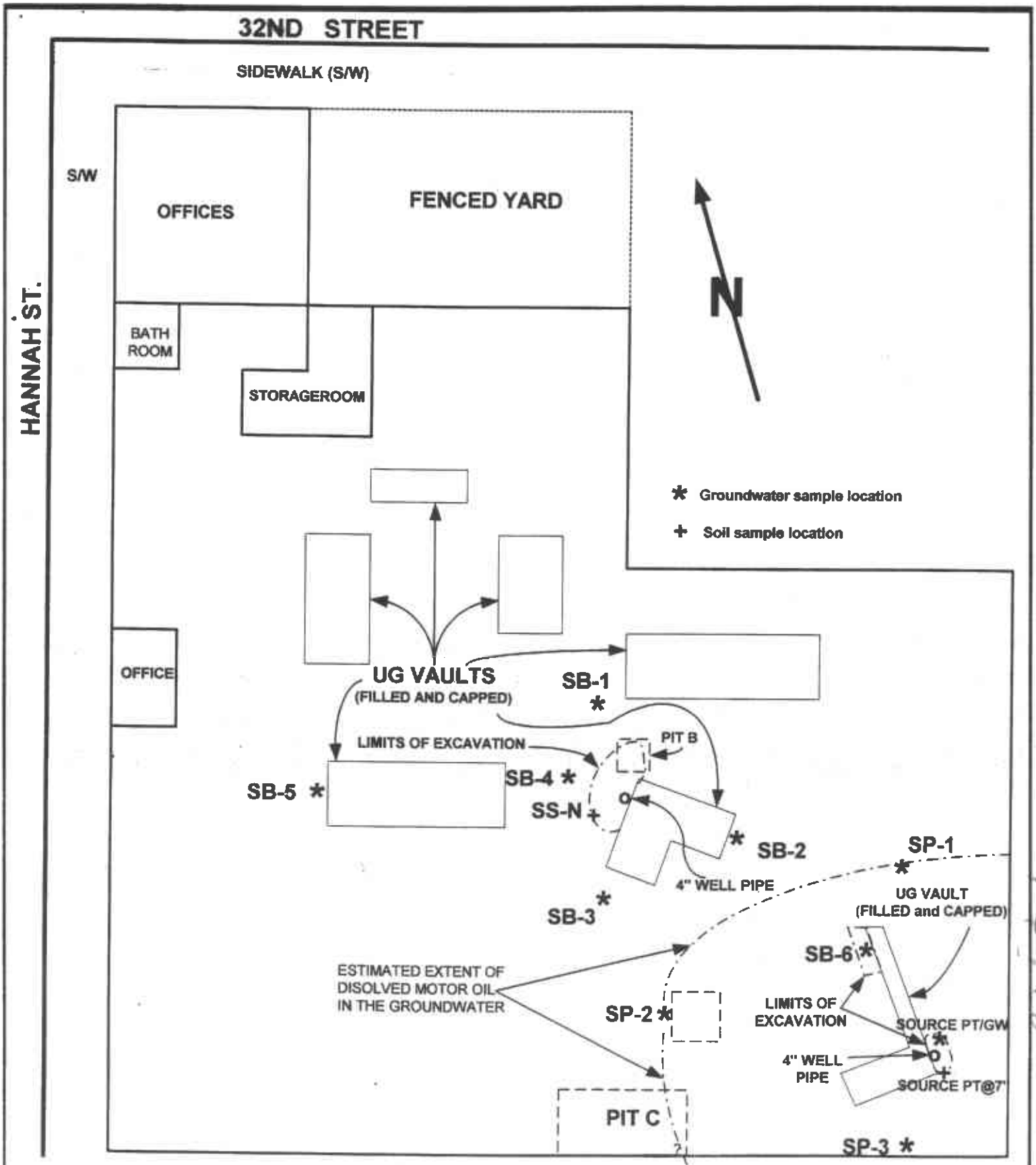
REGISTERED PROFESSIONAL ENGINEER
SAMUEL H. HALSTED
CIVIL
STATE OF CALIFORNIA

FIGURES

VICINITY MAP

1549 32nd St., Oakland, CA

DATE 4/30/02	SCALE	BY:
Environmental Restoration Services		FIGURE 1
500 Santa Cruz Ave., Menlo Park, CA 94025		



SITE PLAN

1549 32nd St., Oakland, CA

DATE 5/22/02 | SCALE 1"=25' | FIGURE 2

Environmental Restoration Services

500 Santa Cruz Ave., Menlo Park, CA 94025

CHAIN-OF-CUSTODY
ANALYTICAL RESULTS

02-0703

North State Labs

90 South Spruce Avenue, Suite W, South San Francisco, CA 94080
Phone: (650) 266-4563 Fax: (650) 266-4560

Chain of Custody / Request for Analysis
Lab Job No.:_____ Page 1 of 1

Client: ERS	Report to: ERS	Phone: 650-325-3246	Turnaround Time: 5 day
Mailing Address: 500 Santa Cruz Ave Menlo Park, Ca 94025	Billing to: ERS	Fax: 650-327-2984	
		email:	Date: 5/21/07
		PO#	Sampler: B. Hulsted

Project / Site Address / Global ID: 2868 Hannah, Oakland

EDF ☐

Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	Analysis Requested: 8260	TPH motor oil	cam 17	Field Point ID
SP1/GW	water	(2) amber 40ml VOA	ice	5/21/07 10:20	X	X		
SP2/GW	"	"		10:50	X	X		
SP3/GW	"	"		11:16	X	X		
Source Pt./GW	↓	(2) Hydrochloric Acid		11:48	X			
Source Pt @ 7'	soil	2x6 Brass		12:15	X	X	X	

Relinquished by:	Date: 5/22/07	Time: 3:50	Received by:	Lab Comments/ Hazards
Relinquished by:	Date:	Time:	Received by:	
Relinquished by:	Date:	Time:	Received by:	

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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 02-0703
Client: Env. Restoration Services
Project: 2868 HANNAH OAKLAND

Date Reported: 06/03/2003

Motor Oil Range Organics by Method CATFH

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 02-0703-01 Client ID: SP1/GW				05/21/2002	W
Motor Oils	CATFH	77	MG/L		05/30/2002
Sample: 02-0703-02 Client ID: SP2/GW				05/21/2002	W
Motor Oils	CATFH	74	MG/L		05/30/2002
Sample: 02-0703-03 Client ID: SP3/GW				05/21/2002	W
Motor Oils	CATFH	5780	MG/L		05/30/2002
Sample: 02-0703-05 Client ID: SOURCE PT@7'				05/21/2002	SO
Motor Oils	CATFH	20800	MG/KG		05/30/2002

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C E R T I F I C A T E O F A N A L Y S I S

Quality Control/Quality Assurance

Lab Number: 02-0703
Client: Env. Restoration Services
Project: 2868 HANNAH OAKLAND

Date Reported: 06/03/2003

Motor Oil Range Organics by Method CATFH

Analyte	Method	Reporting Limit	Unit	Blank	Avg MS/MSD Recovery	RPD
Diesel Fuel #2	CATFH	1	MG/KG	ND	76/66	14
Diesel Fuel #2	CATFH	0.05	MG/L	ND	86/94	9

ELAP Certificate NO:1753
Reviewed and Approved

John A. Murphy, Laboratory Director

North State Environmental Laboratory
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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 02-0703
Client : Env. Restoration Services
Project : 2868 HANNAH OAKLAND

Date Sampled : 05/21/2002
Date Analyzed: 05/30/2002
Date Reported: 06/03/2003

Volatile Organics by GC/MS Method 8260

Laboratory Number	02-0703-01	02-0703-02	02-0703-03	02-0703-04
Client ID	SP1/GW	SP2/GW	SP3/GW	SOURCE
Matrix	W	W	W	W
Analyte	UG/L	UG/L	UG/L	UG/L
Bromochloromethane	ND<5	ND<5	ND<25	ND<5
Dichlorodifluoromethane	ND<5	ND<5	ND<25	ND<5
Chloromethane	ND<10	ND<10	ND<10	ND<5
Vinyl chloride	ND<5	ND<5	ND<25	ND<5
Bromomethane	ND<5	ND<5	ND<25	ND<5
Chloroethane	ND<5	ND<5	ND<25	ND<5
Trichlorofluoromethane	ND<5	ND<5	ND<25	ND<5
1,1-Dichloroethene	ND<1	ND<1	ND<5	ND<1
Acetone	ND<50	ND<50	375	ND<50
Methylene chloride	ND<100	ND<100	ND<500	ND<100
trans-1,2-Dichloroethene	ND<1	ND<1	ND<5	ND<1
Methyl tert-butyl ether	ND<1	ND<1	ND<5	ND<1
1,1-Dichloroethane	ND<1	ND<1	ND<5	ND<1
2,2-Dichloropropane	ND<1	ND<1	ND<5	ND<1
cis-1,2-Dichloroethene	ND<1	ND<1	ND<5	ND<1
2-Butanone	ND<10	ND<10	ND<50	ND<10
Chloroform	3	ND<1	ND<5	ND<1
Carbon tetrachloride	ND<1	ND<1	ND<5	ND<1
1,1-Dichloropropene	ND<1	ND<1	ND<5	ND<1
Benzene	ND<1	ND<1	87	ND<1
1,2-Dichloroethane	ND<1	ND<1	ND<5	ND<1
Trichloroethene	ND<2	ND<2	ND<10	ND<2
1,2-Dichloropropane	ND<1	ND<1	ND<5	ND<1
Dibromomethane	ND<1	ND<1	ND<5	ND<1
Bromodichloromethane	ND<1	ND<1	ND<5	ND<1
trans-1,3-Dichloropropene	ND<1	ND<1	ND<5	ND<1
4-Methyl-2-pentanone	ND<10	ND<10	ND<50	ND<10
Toluene	ND<1	ND<1	94	ND<1
cis-1,3-Dichloropropene	ND<1	ND<1	ND<5	ND<1
1,1,2-Trichloroethane	ND<1	ND<1	ND<5	ND<1
Tetrachloroethene	ND<1	ND<1	ND<5	ND<1
1,3-Dichloropropane	ND<1	ND<1	ND<5	ND<1
2-Hexanone	ND<10	ND<10	ND<50	ND<10
Dibromochloromethane	ND<1	ND<1	ND<5	ND<1
1,2-Dibromoethane	ND<1	ND<1	ND<5	ND<1

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 02-0703
Client : Env. Restoration Services
Project : 2868 HANNAH OAKLAND

Date Sampled : 05/21/2002
Date Analyzed: 05/30/2002
Date Reported: 06/03/2003

Volatile Organics by GC/MS Method 8260

Laboratory Number	02-0703-01	02-0703-02	02-0703-03	02-0703-04
Client ID	SP1/GW	SP2/GW	SP3/GW	SOURCE
Matrix	W	W	W	W
Analyte	UG/L	UG/L	UG/L	UG/L
Chlorobenzene	ND<2	ND<2	ND<10	ND<2
1,1,1,2-Tetrachloroethane	ND<1	ND<1	ND<5	ND<1
Ethylbenzene	ND<1	2	9	1
Xylene, Isomers m & p	ND<2	ND<2	61	ND<2
o-Xylene	ND<1	3	21	2
Styrene	ND<1	ND<1	ND<5	ND<1
Bromoform	ND<1	ND<1	ND<5	ND<1
Isopropylbenzene	ND<1	ND<1	ND<5	ND<1
Bromobenzene	ND<1	ND<1	ND<5	ND<1
1,1,2,2-Tetrachloroethane	ND<1	ND<1	ND<5	ND<1
n-Propylbenzene	ND<1	ND<1	ND<5	ND<1
2 Chlorotoluene	ND<1	ND<1	ND<5	ND<1
4-Chlorotoluene	ND<1	ND<1	ND<5	ND<1
1,3,5-Trimethylbenzene	ND<1	ND<1	77	1
tert-Butylbenzene	ND<1	ND<1	ND<5	ND<1
1,2,4 Trimethylbenzene	ND<1	ND<1	20	ND<1
1,3 Dichlorobenzene	ND<1	ND<1	ND<5	ND<1
1,4 Dichlorobenzene	ND<1	ND<1	ND<5	ND<1
sec-Butylbenzene	ND<1	ND<1	ND<5	ND<1
1,2-Dichlorobenzene	ND<1	6	17	2
n-Butylbenzene	ND<1	ND<1	164	1
Naphthalene	ND<2	ND<2	139	2
1,2,4 Trichlorobenzene	ND<1	ND<1	ND<5	ND<1
Hexachlorobutadiene	ND<1	ND<1	ND<5	ND<1
1,2,3-Trichlorobenzene	ND<1	ND<1	ND<5	ND<1
1,2,3-Trichloropropane	ND<1	ND<1	ND<5	ND<1
Acetonitrile	ND<50	ND<50	ND<250	ND<50
Acrylonitrile	ND<50	ND<50	ND<250	ND<50
Isobutanol	ND<50	ND<50	ND<250	ND<50
1,1,1-Trichloroethane	ND<0.5	ND<0.5	ND<2.5	ND<0.5
SUR-Dibromofluoromethane	104	102	103	105
SUR-Toluene-d8	110	105	110	110
SUR-4 Bromofluorobenzene	116	119	120	119

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 02-0703
Client : Env. Restoration Services
Project : 2868 HANNAH OAKLAND

Date Sampled : 05/21/2002
Date Analyzed: 05/30/2002
Date Reported: 06/03/2003

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	02-0703	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	W	W			
Analyte	Results UG/L	%Recoveries			
Bromochloromethane	ND<5				
Dichlorodifluoromethane	ND<5				
Chloromethane	ND<10				
Vinyl chloride	ND<1				
Bromomethane	ND<5				
Chloroethane	ND<5				
Trichlorofluoromethane	ND<5				
1,1-Dichloroethene	ND<1	66/66	0	61-121	25
Acetone	ND<50				
Methylene chloride	ND<50				
trans-1,2-Dichloroethene	ND<1				
Methyl tert-butyl ether	ND<1				
1,1-Dichloroethane	ND<1				
2,2-Dichloropropane	ND<1				
cis-1,2-Dichloroethene	ND<1				
2-Butanone	ND<10				
Chloroform	ND<1				
Carbon tetrachloride	ND<1				
1,1-Dichloropropene	ND<1				
Benzene	ND<1	114/106	7	74-135	21
1,2-Dichloroethane	ND<1				
Trichloroethene	ND<2	102/94	8	69-129	20
1,2-Dichloropropane	ND<1				
Dibromomethane	ND<1				
Bromodichloromethane	ND<1				
trans-1,3-Dichloropropene	ND<1				
4-Methyl-2-pentanone	ND<10				
Toluene	ND<1	128/120	6	61-141	19
cis-1,3-Dichloropropene	ND<1				
1,1,2-Trichloroethane	ND<1				
Tetrachloroethene	ND<1				
1,3-Dichloropropane	ND<1				
2-Hexanone	ND<10				
Dibromochloromethane	ND<1				
1,2-Dibromoethane	ND<1				
Chlorobenzene	ND<2	112/112	0	70-139	19
1,1,1,2-Tetrachloroethane	ND<1				
Ethylbenzene	ND<1				
Xylene, Isomers m & p	ND<2				
o-Xylene	ND<1				
Styrene	ND<1				

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 02-0703
Client : Env. Restoration Services
Project : 2868 HANNAH OAKLAND

Date Sampled : 05/21/2002
Date Analyzed: 05/30/2002
Date Reported: 06/03/2003

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	02-0703	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	W	W			
Analyte	Results UG/L	%Recoveries			
Bromoform	ND<1				
Isopropylbenzene	ND<1				
Bromobenzene	ND<1				
1,1,2,2-Tetrachloroethane	ND<1				
n-Propylbenzene	ND<1				
2-Chlorotoluene	ND<1				
4-Chlorotoluene	ND<1				
1,3,5 Trimethylbenzene	ND<1				
tert-Butylbenzene	ND<1				
1,2,4-Trimethylbenzene	ND<1				
1,3-Dichlorobenzene	ND<1				
1,4-Dichlorobenzene	ND<1				
sec-Butylbenzene	ND<1				
1,2-Dichlorobenzene	ND<1				
n-Butylbenzene	ND<1				
Naphthalene	ND<2				
1,2,4-Trichlorobenzene	ND<1				
Hexachlorobutadiene	ND<1				
1,2,3-Trichlorobenzene	ND<1				
1,2,3-Trichloropropane	ND<1				
Acetonitrile	ND<50				
Acrylonitrile	ND<50				
Isobutanol	ND<50				
1,1,1-Trichloroethane	ND<0.5				
SUR-Dibromofluoromethane	100	101/103	2	67-129	21
SUR-Toluene-d8	106	109/107	2	72-119	16
SUR-4-Bromofluorobenzene	114	119/117	2	78-121	19

Reviewed and Approved

John A. Murphy
Laboratory Director

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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 02-0703
Client: Env. Restoration Services
Project: 2868 HANNAH OAKLAND

Date Reported: 06/04/2003

Metals by EPA Method 6010B ICAP and 7471 AA Spectroscopy

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 02-0703-05 Client ID: SOURCE PT@7'				05/21/2002	SO
Antimony	SW6010B	ND<5	MG/KG		06/04/2002
Arsenic	SW6010B	5	MG/KG		06/04/2002
Barium	SW6010B	119	MG/KG		06/04/2002
Beryllium	SW6010B	ND<1	MG/KG		06/04/2002
Cadmium	SW6010B	ND<2	MG/KG		06/04/2002
Chromium	SW6010B	25	MG/KG		06/04/2002
Cobalt	SW6010B	7	MG/KG		06/04/2002
Copper	SW6010B	17	MG/KG		06/04/2002
Lead	SW6010B	4	MG/KG		06/04/2002
Molybdenum	SW6010B	ND<1	MG/KG		06/04/2002
Nickel	SW6010B	26	MG/KG		06/04/2002
Selenium	SW6010B	10	MG/KG		06/04/2002
Silver	SW6010B	ND<1	MG/KG		06/04/2002
Thallium	SW6010B	9	MG/KG		06/04/2002
Vanadium	SW6010B	21	MG/KG		06/04/2002
Zinc	SW6010B	31	MG/KG		06/04/2002
Mercury	SW7471A	ND<0.05	MG/KG		06/03/2002

North State Environmental Laboratory
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CERTIFICATE OF ANALYSIS

Quality Control/Quality Assurance

Lab Number: 02-0703
Client: Env. Restoration Services
Project: 2868 HANNAH OAKLAND

Date Reported:06/04/200

Analyte	Method	Reporting Limit	Unit	Blank	MS/MSD Recovery	RPD
Antimony	SW6010B	5	MG/KG	ND<5	92/90	2
Arsenic	SW6010B	1	MG/KG	ND<1	92/92	0
Barium	SW6010B	1	MG/KG	ND<1	96/96	0
Beryllium	SW6010B	1	MG/KG	ND<1	92/88	4
Cadmium	SW6010B	2	MG/KG	ND<2	100/98	2
Chromium	SW6010B	1	MG/KG	ND<1	96/92	4
Cobalt	SW6010B	1	MG/KG	ND<1	94/92	2
Copper	SW6010B	1	MG/KG	ND<1	92/94	2
Lead	SW6010B	1	MG/KG	ND<1	90/86	5
Mercury	SW7471A	0.05	MG/KG	ND<0.05	103/96	7
Molybdenum	SW6010B	1	MG/KG	ND<1	96/94	2
Nickel	SW6010B	1	MG/KG	ND<1	94/90	4
Selenium	SW6010B	5	MG/KG	ND<5	90/90	0
Silver	SW6010B	1	MG/KG	ND<1	96/92	4
Thallium	SW6010B	5	MG/KG	ND<5	86/84	2
Vanadium	SW6010B	1	MG/KG	ND<1	96/94	2
Zinc	SW6010B	1	MG/KG	ND<1	98/96	2

ELAP Certificate NO:1753
Reviewed and Approved

John A.Murphy,Laboratory Director

North State Environmental Laboratory
CA ELAP # 1753
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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 02-0703
Client : Env. Restoration Services
Project : 2868 HANNAH OAKLAND

Date Sampled : 05/21/2002
Date Analyzed: 05/30/2002
Date Reported: 06/03/2003

Volatile Organics by GC/MS Method 8260

Laboratory Number	02-0703-05
Client ID	SOURCE PT@7'
Matrix	SO
Analyte	UG/KG
Bromochloromethane	ND<25
Dichlorodifluoromethane	ND<25
Chloromethane	ND<50
Vinyl chloride	ND<25
Bromomethane	ND<25
Chloroethane	ND<25
Trichlorofluoromethane	ND<25
1,1-Dichloroethene	ND<5
Acetone	ND<250
Methylene chloride	ND<500
trans-1,2-Dichloroethene	ND<5
Methyl-tert-butyl ether	ND<5
1,1-Dichloroethane	ND<5
2,2-Dichloropropane	ND<5
cis-1,2-Dichloroethene	ND<5
2-Butanone	ND<50
Chloroform	ND<5
Carbon tetrachloride	ND<5
1,1-Dichloropropene	ND<5
Benzene	ND<5
1,2-Dichloroethane	ND<5
Trichloroethene	ND<5
1,2-Dichloropropane	ND<5
Dibromomethane	ND<5
Bromodichloromethane	ND<5
trans-1,3-Dichloropropene	ND<5
4-Methyl-2-pentanone	ND<50
Toluene	ND<5
cis-1,3-Dichloropropene	ND<5
1,1,2-Trichloroethane	ND<5
Tetrachloroethene	ND<5
1,3-Dichloropropane	ND<5
2-Hexanone	ND<50
Dibromochloromethane	ND<5
1,2-Dibromoethane	ND<5

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Job Number: 02-0703
Client : Env. Restoration Services
Project : 2868 HANNAH OAKLAND

Date Sampled : 05/21/2002
Date Analyzed: 05/30/2002
Date Reported: 06/03/2003

Volatile Organics by GC/MS Method 8260

Laboratory Number	02-0703-05
Client ID	SOURCE PT@7'
Matrix	SO
Analyte	UG/KG
Chlorobenzene	ND<10
1,1,1,2-Tetrachloroethane	ND<5
Ethylbenzene	ND<5
Xylene, Isomers m & p	ND<10
o-Xylene	ND<5
Styrene	ND<5
Bromoform	ND<5
Isopropylbenzene	ND<5
Bromobenzene	ND<5
1,1,2,2-Tetrachloroethane	ND<5
n-Propylbenzene	ND<5
2-Chlorotoluene	ND<5
4-Chlorotoluene	ND<5
1,3,5-Trimethylbenzene	14
tert-Butylbenzene	ND<5
1,2,4-Trimethylbenzene	7
1,3-Dichlorobenzene	ND<5
1,4-Dichlorobenzene	ND<5
sec-Butylbenzene	ND<5
1,2-Dichlorobenzene	8
n Butylbenzene	35
Naphthalene	ND<10
1,2,4-Trichlorobenzene	ND<5
Hexachlorobutadiene	ND<5
1,2,3-Trichlorobenzene	ND<5
1,2,3-Trichloropropane	ND<5
Acetonitrile	ND<250
Acrylonitrile	ND<250
Isobutanol	ND<250
1,1,1-Trichloroethane	ND<5
SUR-Dibromofluoromethane	127
SUR-Toluene-d8	110
SUR-4-Bromofluorobenzene	84

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 02-0703
Client : Env. Restoration Services
Project : 2868 HANNAH OAKLAND

Date Sampled : 05/21/2002
Date Analyzed: 05/30/2002
Date Reported: 06/03/2003

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	02-0703	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	SO	SO			
Analyte	Results UG/KG	%Recoveries			
Bromochloromethane	ND<25				
Dichlorodifluoromethane	ND<25				
Chloromethane	ND<50				
Vinyl chloride	ND<5				
Bromomethane	ND<25				
Chloroethane	ND<25				
Trichlorofluoromethane	ND<25				
1,1-Dichloroethene	ND<5	92/91	1	54-155	27
Acetone	ND<250				
Methylene chloride	ND<250				
trans-1,2-Dichloroethene	ND<5				
Methyl-tert butyl ether	ND<5				
1,1 Dichloroethane	ND<5				
2,2-Dichloropropane	ND<5				
cis-1,2-Dichloroethene	ND<5				
2-Butanone	ND<50				
Chloroform	ND<5				
Carbon tetrachloride	ND<5				
1,1-Dichloropropene	ND<5				
Benzene	ND<5	117/111	5	72-122	22
1,2-Dichloroethane	ND<5				
Trichloroethene	ND<5	88/83	6	68-122	20
1,2-Dichloropropane	ND<5				
Dibromomethane	ND<5				
Bromodichloromethane	ND<5				
trans-1,3-Dichloropropene	ND<5				
4-Methyl-2 pentanone	ND<50				
Toluene	ND<5	124/121	2	73-125	21
cis-1,3-Dichloropropene	ND<5				
1,1,2-Trichloroethane	ND<5				
Tetrachloroethene	ND<5				
1,3-Dichloropropane	ND<5				
2-Hexanone	ND<50				
Dibromochloromethane	ND<5				
1,2-Dibromoethane	ND<5				
Chlorobenzene	ND<10	100/100	0	68-122	21
1,1,1,2-Tetrachloroethane	ND<5				
Ethylbenzene	ND<5				
Xylene, Isomers m & p	ND<10				
o-Xylene	ND<5				
Styrene	ND<5				

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 02-0703
Client : Env. Restoration Services
Project : 2868 HANNAH OAKLAND

Date Sampled : 05/21/2002
Date Analyzed: 05/30/2002
Date Reported: 06/03/2003

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	02-0703	MS/MSD	RPD	Recovery	RPD
Client ID	Blank	Recovery		Limit	Limit
Matrix	SO	SO			
Analyte	Results UG/KG	%Recoveries			
Bromoform	ND<5				
Isopropylbenzene	ND<5				
Bromobenzene	ND<5				
1,1,2,2-Tetrachloroethane	ND<5				
n-Propylbenzene	ND<5				
2-Chlorotoluene	ND<5				
4 Chlorotoluene	ND<5				
1,3,5-Trimethylbenzene	ND<5				
tert-Butylbenzene	ND<5				
1,2,4-Trimethylbenzene	ND<5				
1,3 Dichlorobenzene	ND<5				
1,4 Dichlorobenzene	ND<5				
sec-Butylbenzene	ND<5				
1,2-Dichlorobenzene	ND<5				
n-Butylbenzene	ND<5				
Naphthalene	ND<10				
1,2,4-Trichlorobenzene	ND<5				
Hexachlorobutadiene	ND<5				
1,2,3-Trichlorobenzene	ND<5				
1,2,3 Trichloropropane	ND<5				
Acetonitrile	ND<250				
Acrylonitrile	ND<250				
Isobutanol	ND<250				
1,1,1-Trichloroethane	ND<5				
SUR-Dibromofluoromethane	115	124/134	8	54-145	23
SUR-Toluene-d8	108	109/111	2	81-108	14
SUR 4 Bromofluorobenzene	90	88/91	3	82-118	18

Reviewed and Approved

John A. Murphy
Laboratory Director

BORING LOGS

ENVIRONMENTAL RESTORATION SERVICES
EXPLORATORY BORING LOG

Project No. ____ Client: Turkington Boring # SP-1 Date 5/20/02
Location: 1549 32nd St., Oakland Logged By: BH
Drilling Method: 3" Hand Auger Permit: N/A Page 1 of 1

Sample No.	Blow Count	PID Reading	Location Depth USCS	Lithology Description	Boring Closure
				concrete floor / ~6" baserock	
			CH	High Plast. CLAY, dark olive grey 20% silt, moist, stiff.	
			5' CL	Silty CLAY, low. Plast., light olive grey damp	1 Portland Cement
			SM	Silty SAND, v. fine, 35% silt, damp.	
			10'		
			SM	BOH	
			15'	* Very slow groundwater recharge (12+ hours)	
			20'		
			25'		
			30'		
			35'		
			40'		

ENVIRONMENTAL RESTORATION SERVICES
EXPLORATORY BORING LOG

Project No. ____ Client: Turkington Boring # SP-7 Date 5/20/02
Location: 1549 32nd St., Oakland Logged By: BH
Drilling Method: 3" Hand Auger Permit: N/A Page 1 of 1

Sample No.	Blow Count	PID Reading	Location Depth USCS	Lithology Description	Boring Closure
				Concrete floor / ~6" baserock	
			CH	High Plast. CLAY, dark olive grey 20% silt, moist, stiff.	
			5' CL	Silty CLAY, low. Plast., light olive grey damp	
			SM	Silty SAND, v. fine, 35% silt, damp.	
			10' SM	Bott	
			15'	* Very slow groundwater recharge (12+ hours)	
			20'		
			25'		
			30'		
			35'		
			40'		

1 Parking Lot Curb

ENVIRONMENTAL RESTORATION SERVICES

EXPLORATORY BORING LOG

Project No. ____ Client: Torkington Boring # SP-3 Date 5/2/02

Location: 1549 32nd Ave St. Oakland Logged By: BH

Drilling Method: 3" Hand Auger Permit: ____ Page 1 of 1

Sample No.	Blow Count	PID Reading	Location Depth	USCS	Lithology Description	Boring Closure
					Concrete / Base material	
				CH	High Plasticity CLAY, Dark grey, 15% silt moist	
			5'			
				CL	Silty CLAY low Plast. light olive grey damp, slight HC odor, 35% silt.	
				SM	Silty SAND, V. Fine, 35% silt stained greenish grey, moist/damp, HC odor (slight) (heavy)	
			10'			
				SM	same Both	
			15'		* very slow groundwater recharge (12+ hours)	
			20'			
			25'			
			30'			
			35'			
			40'			

Portland Cement