

REPORT ON

PHASE III SOIL AND GROUNDWATER INVESTIGATION

OCTOBER 1993

ALCO
HAZMAT
94 JAN 14 AM 11:4

2662 Fruitvale Avenue
Oakland, California

For:

City of Oakland
Oakland, California

BASELINE Environmental Consulting
5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686

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HAZMAT
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ENVIRONMENTAL CONSULTING

TRANSMITTAL

TO: Mr. Barney Chan
Alameda County Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

DATE: January 13, 1994

PROJECT NO.: 92404-AO.03

Via: _____

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SUBJECT: Report on Phase III Soil and Groundwater Investigation

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TRANSMITTED BY:

Yare Nordhav
Yare Nordhav, Principal

BASELINE

ENVIRONMENTAL CONSULTING

25 October 1993
92404-A0.03

Mr. Joseph Cotton
Office of Public Works, Environmental Affairs Division
City of Oakland
1333 Broadway, Suite 330
Oakland, CA 94612

Subject: Report on Phase III Soil and Groundwater Investigation, 2662 Fruitvale Avenue, Oakland, California

Dear Mr. Cotton:

Enclosed please find four copies of the Phase III Soil and Groundwater Investigation report prepared for the property located at 2662 Fruitvale Avenue, Oakland, California. The report documents the field activities conducted during August 1993 and presents our recommendations for further actions at the site.

Sincerely,



Yane Nordhav
Principal
Reg. Geologist #4009



Susan L. Mearns, Ph.D.
Project Manager

YN/SM/gr
Enclosure

REPORT ON

PHASE III SOIL AND GROUNDWATER INVESTIGATION

OCTOBER 1993

2662 Fruitvale Avenue
Oakland, California

For:
City of Oakland
Oakland, California

BASELINE Environmental Consulting
5900 Hollis Street, Suite D
Emeryville, California 94608
(510) 420-8686

92404-AO.03

EXECUTIVE SUMMARY

Site Location: 2662 Fruitvale Avenue, Oakland, California (northeast corner of Fruitvale Avenue and Davis Street).

Work Performed: Subsurface investigation consisting of a geophysical (magnetometer) survey to determine the location of potential underground tanks on-site; drilling and sampling six soil borings; installing and sampling three groundwater monitoring wells; analyzing soil and groundwater samples; and supervision of sump content removal and disposal activities.

Conclusions: The highest concentrations of petroleum hydrocarbons detected in soil samples (depths 8 to 11 feet) were collected from the vicinity of a former grease facility, former gas and oil facility, and downgradient of former underground tank locations.

Oil was observed to be seeping from a cold seam in the concrete sump on-site. This suggests that oil and other compounds deposited in the sump may have seeped from this joint to surrounding soil. It is unknown if the surrounding soil has been impacted.

Groundwater samples collected from the three monitoring wells installed on-site do not indicate that groundwater quality at the perimeter of the site has been significantly impacted by the release of petroleum hydrocarbons at the site.

Surface soil is the primary medium of concern that potentially may impact human health. Limited soil removal, in addition to removal of the sump and associated soils, coupled with capping will mitigate this exposure pathway. Demolition of unused structures will mitigate potential exposures to lead based paint and asbestos containing building materials and facilitate paving.

Recommendations: The following recommendations are provided for the site:

- Remove and appropriately dispose of unused structures on-site in accordance with standard practices for demolition and disposal of lead-based paint and asbestos-containing building material debris.
- Remove and appropriately dispose of soil from areas where high concentrations of petroleum hydrocarbons have been detected.
- Remove the concrete sump and any potentially affected soil surrounding the sump and dispose of appropriately.
- Pave the site after soil and sump removal and demolition are completed.
- Drums containing non-hazardous soil cuttings, development, purge, and rinsate water should be transported to an appropriate disposal facility.

TABLE OF CONTENTS

	<u>page</u>
EXECUTIVE SUMMARY	iv
INTRODUCTION	1
BACKGROUND	1
FIELD ACTIVITIES, JULY AND AUGUST 1993	4
HYDROGEOLOGY	6
ANALYTICAL RESULTS	6
CONCLUSIONS	13
RECOMMENDATIONS	13
LIMITATIONS	15
REFERENCES	15

APPENDICES

A: Well Permit	
B: Magnetometer Survey Results	
C: Site Safety Plan	
D: Drilling Logs	
E: Well Construction Summaries, Well Development Forms and Groundwater Sampling Forms	
F: Surveyor Report	
G: Uniform Hazardous Waste Manifests	
H: Laboratory Reports, Soil	
I: Laboratory Reports, Groundwater	

FIGURES

1: Regional Location	2
2: Site Plan	3
3: Total Petroleum Hydrocarbons Concentrations in Shallow Soil - 2 to 3 Foot Depth	7
4: Total Petroleum Hydrocarbons Concentrations in Deep Soil - 8 to 11 Foot Depth	8

TABLES

1: Summary of Analytical Results, Soil	9
2: Summary of Analytical Results, Groundwater	12
3: Groundwater Elevation Data	14

PHASE III SOIL AND GROUNDWATER INVESTIGATION
2662 Fruitvale Avenue
Oakland, California

INTRODUCTION

This report presents the results of a soil and groundwater quality investigation conducted by BASELINE Environmental Consulting at 2662 Fruitvale Avenue in Oakland (Figure 1). The soil and groundwater investigation was performed to further define the extent of soil affected by petroleum hydrocarbons and volatile organic compounds (VOCs) identified during BASELINE's Phase II investigation, and to assess the potential impact to groundwater quality.

Drilling and sampling procedures were performed in accordance with a work plan dated August 1993 prepared by BASELINE (BASELINE, 1993a) and reviewed by the Alameda County Health Care Services Agency. The soil borings and monitoring wells were installed in accordance with an approved permit from the Alameda County Flood Control and Water Conservation District (Appendix A).

BACKGROUND

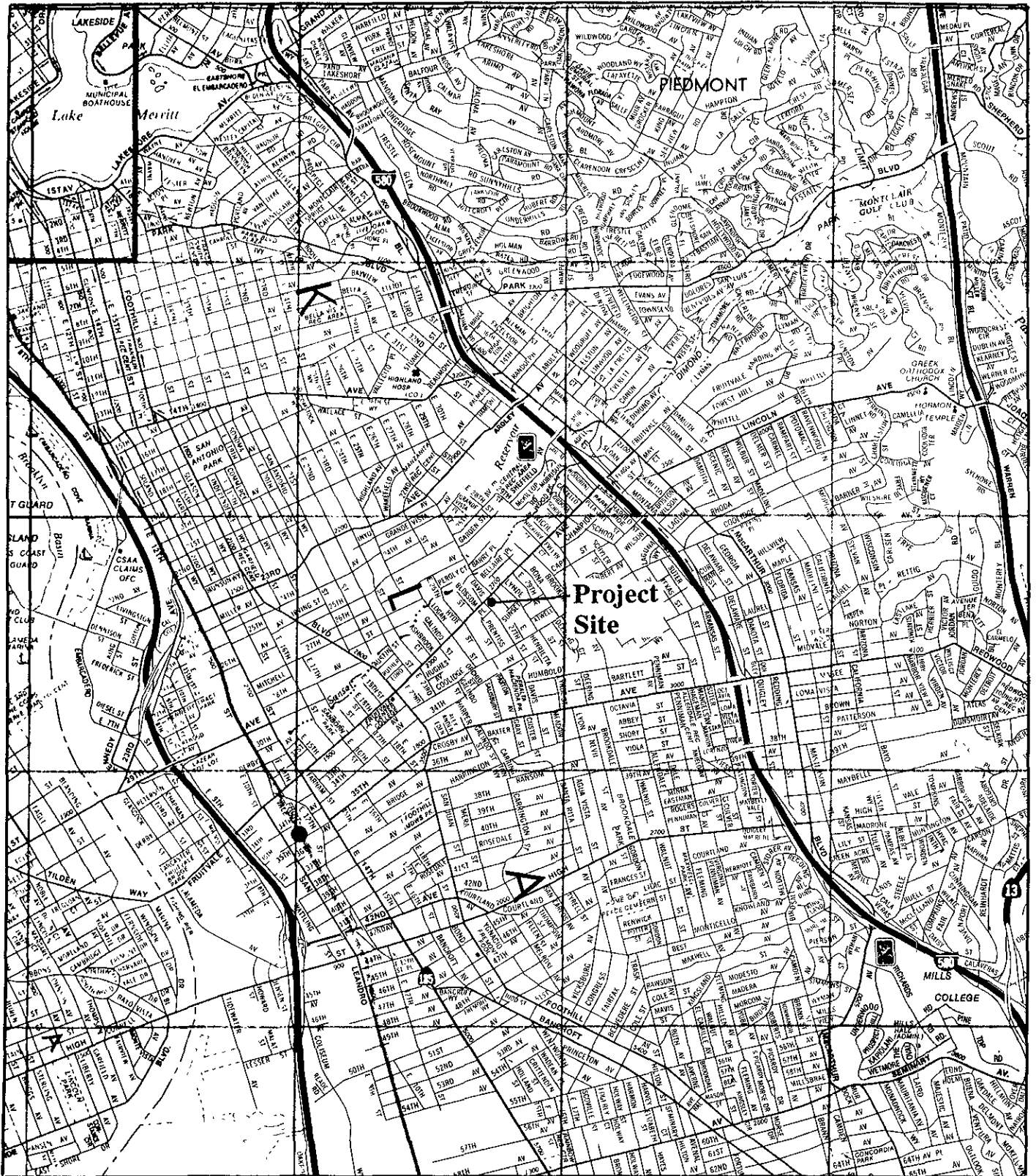
The site is located at the northeast corner of Fruitvale Avenue and Davis Street in Oakland (Figure 2). A Phase I site assessment conducted by BASELINE indicated that past land uses at the site included a residence and storage facility in the early 1900s. A service station which included an auto repair facility, as well as gasoline, oil, and grease storage, was present on the site from the 1940s to the 1980s. The City of Oakland purchased the site from Texaco in 1983 and has rented the site for use as a produce stand and Christmas tree sales lot (BASELINE, 1992).

An overhead canopy, former service station building, and shed are still present on-site (Figure 2). A former concrete oil sump is located in the building. City of Oakland Fire Department records indicate that three underground gasoline storage tanks and one additional underground tank, possibly containing waste oil, were removed from the site in 1978 (BASELINE, 1992). A geotechnical investigation was performed at the site in 1985 by TransPacific. They detected petroleum odors in two of the four soil borings drilled at the site. The two borings were located north of the presumed former underground tank locations (BASELINE, 1992).

In January 1993, BASELINE performed a Phase II site assessment to investigate the presence of potentially hazardous materials on-site. Chemical analyses of soil and soil-water samples collected from eight soil borings drilled on-site identified the presence of petroleum hydrocarbons in subsurface soils and soil-water samples. A sample of oily sludge remaining in the sump was found to contain petroleum hydrocarbons and volatile organic compounds (VOCs). Lead-based paint was identified on the walls in the building (BASELINE, 1993b).

REGIONAL LOCATION

Figure 1

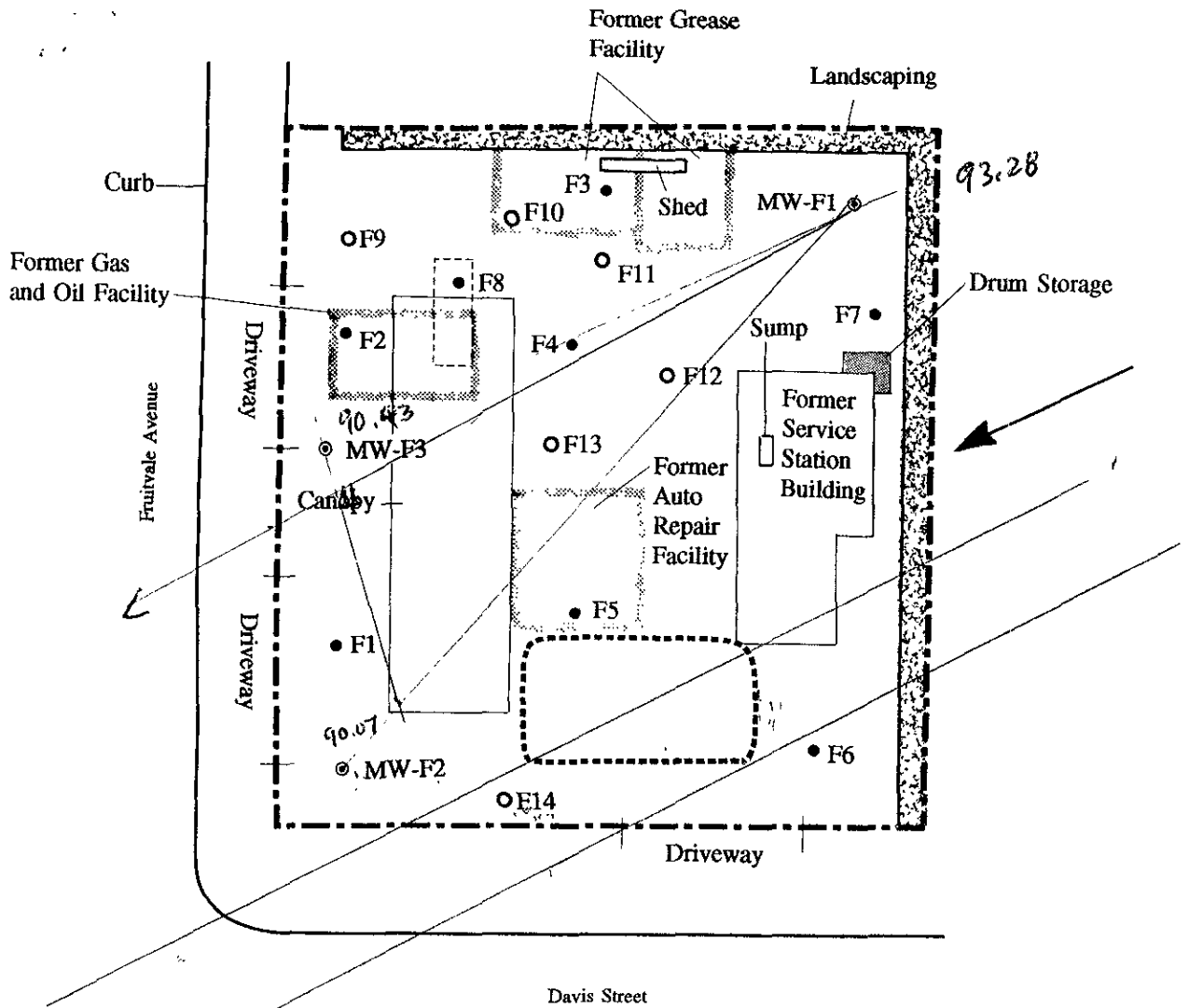


**2662 Fruitvale Avenue
Oakland, California**



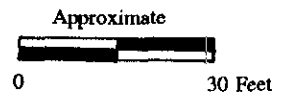
SITE PLAN

Figure 2



Legend

- Outline of Former Service Station Facilities (1946 Sanborn Map)
- Approximate Location of Tanks Removed in 1978 (Trans Pacific, 1986)
- Project Site Boundary
- F1-F8 Soil Boring Location - Phase II
- F9-F14 Soil Boring Location - Phase III
- MW-F2 Monitoring Well Location
- Approximate Geophysical Anomaly (Possible Underground Tank) (BCA Geophysics, 1993)
- Groundwater Flow Direction



**2662 Fruitvale Avenue
Oakland, California**



BASELINE

FIELD ACTIVITIES, JULY AND AUGUST 1993

Magnetometer Survey

A magnetometer survey was conducted in July 1993 by BCA Geophysics to assess the location of any underground storage tank(s) that may potentially still remain on-site. Two anomalies located in the northwest portion of the site in the vicinity of the former oil and gas facility were identified. BCA Geophysics suggests that the anomalies may be caused by a buried metal object approximately ten feet long, weighing 2,000 pounds, and buried at an average depth of ten feet. A copy of the Survey is included in Appendix B.

Boring Construction and Soil Sampling

A site safety plan was prepared by BASELINE's health and safety officer prior to field activities on the site (Appendix C). The plan was reviewed by all individuals performing soil sampling activities, and an on-site safety tail-gate meeting was conducted by the BASELINE geologist on 10 August 1993.

Six soil borings, F9 through F14, and three monitoring wells, MW-F1 through MW-F3, were installed at the site by HEW Drilling under the direction of a BASELINE geologist on 10 and 11 August 1993. The soil and well borings were advanced using hollow-stem augers. Soil borings were drilled to depths of approximately 10.5 to 12 feet below ground surface. Well borings were drilled to depths of approximately 20 to 26 feet below ground surface. Unsaturated soil samples were collected at depths of approximately 2.5 to 3.0 feet and 9.5 to 12 feet for chemical analyses. Additional soil samples were collected for lithologic description. Shallow groundwater was encountered in the soil borings at approximate depths of 10 to 11 feet, and in the well borings at depths of 12 to 14 feet. The drilling logs for the soil and well borings are included in Appendix D.

Soil samples were collected by driving a California-Modified sampler, lined with stainless steel sample tubes, through and in advance of the hollow-stem augers. The soil samples were retrieved and the ends of the sample tubes selected for analyses were covered with teflon film, capped with plastic caps, and sealed with silicon tape. The samples were labeled, placed in a zip-lock bag, and stored in a cooled container until submittal to the analytical laboratory. The soil samples were submitted under chain-of-custody procedures to a California-certified analytical laboratory on the dates of sampling. The soil samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline, TPH as motor oil, and VOCs. The soil samples collected from Borings F10 and F11 were also analyzed for oil and grease.

Monitoring Well Installation and Development

The monitoring wells were constructed with 2-inch diameter PVC casing and machine-slotted screen. The screened interval was placed between 8.5 and 25 feet below ground surface in wells, MW-F1 and MW-F3, and between 8.5 and 20 feet in well MW-F2. The screen was placed to intercept any petroleum hydrocarbons and allow for groundwater fluctuations. A water well driller's report was prepared and submitted to the California Department of Water Resources and Zone 7, Alameda County Flood Control and Water Conservation District for their files.

The monitoring wells were developed on 12 August 1993 to remove the fine sediment introduced into the well during drilling activities. The wells were developed by using a surge block to initially bring the sediment into suspension and then pumping the water with a double diaphragm pump and clean disposable PVC hose until the purged water was relatively free of sediment. Well construction summaries and well development forms are included in Appendix E.

Groundwater Sampling

Groundwater samples were collected from the three monitoring wells on 16 August 1993. The presence of floating product was checked and water levels were measured in all three wells using a dual-interface probe prior to sampling activities. Approximately four to five well volumes were slowly purged from each well using a double-diaphragm pump and new disposable polyethylene tubing. The temperature, pH, and electrical conductivity of the groundwater were monitored during purging until they appeared to have stabilized. Water levels were measured again prior to sampling to ensure the groundwater had sufficiently recharged.

A new disposable PVC bailer was used to collect the groundwater sample from each well. The portion of the samples for TPH as motor oil and oil and grease analyses were decanted from the bottom of the bailers into one-liter amber glass sample bottles. The portion of the sample for TPH as gasoline and VOC analyses were decanted into VOA bottles using a volatile organic compound attachment to minimize turbulence and volatilization. The sample bottles were labeled, placed in a cooled container, and submitted under chain-of-custody to a California-certified analytical laboratory on the date of sampling. The groundwater samples were submitted for TPH as gasoline, TPH as motor oil, and VOC analyses. The groundwater sampling forms which document sampling activities are included in Appendix E.

Decontamination

The augers and sampling equipment were steam-cleaned prior to initiating drilling at each boring. Sampling equipment was cleaned with a trisodium phosphate (TSP) solution and rinsed with deionized water between each sampling event. Soil cuttings, development, purge, and rinsate water were contained and stored on-site in sealed drums (Figure 2).

During well development and sampling activities, only clean disposable PVC bailers and hose, or polyethylene tubing were introduced into the wells. The dual interface probe, used for water level measurements was cleaned with a TSP solution and rinsed with deionized water before each use.

Survey of Well Locations

The horizontal locations of the three monitoring wells and the elevation of the top of well casings and ground surface were surveyed by Bates and Bailey, California-licensed land surveyors. The elevations are based on a City of Oakland datum. The surveyor's report is included in Appendix F.

Sump Cleaning

On 4 August 1993, the contents of the former oil sump were removed by VCI of California. The sump is located in the floor of the service station building on-site. The sump includes two compartments which served to separate floating product from water when the sump was in operation. The entire sump measures 5.0 feet in length, 3.0 feet in width, and is 4.0 feet deep. The sump was washed with a trisodium phosphate solution (TSP) and steam-cleaned twice. Approximately 150 gallons of liquid waste generated during the sump cleaning activities were transported under uniform hazardous waste manifest by Evergreen Environmental Services to the Evergreen Oil, Inc. facility in Newark, California (Appendix G). Following cleaning, oily still remained on the sides of the concrete sump and additional cleaning was performed. On 16 August 1993, VCI placed a degreaser on the walls of the sump and let it soak in prior to steam cleaning. During steam cleaning, BASELINE noted an oily substance seeping from a cold seam located on the upper walls of the sump. The sump was steam cleaned three additional times.

HYDROGEOLOGY

Regional

The site is located in the northern portion of the East Bay Plain which is situated in the San Francisco Bay depression and is bounded to the east by the Hayward Fault. The geologic units that underlie the East Bay Plain include younger alluvium, fluvial deposits, interfluvial basin deposits, Bay mud, Merritt Sand, older alluvium, and bedrock units. Groundwater occurs in all geologic units in the East Bay Plain. The older alluvium is considered the principal groundwater reservoir in the East Bay Plain (ACFC & WCD, 1988).

Site

The hydrogeology at the site was interpreted on the basis of observations documented on the drilling logs (Appendix D). The soils underlying the site comprise a heterogeneous mix of alluvial sediments including clays, silts, sands, and gravels. The site is covered with asphalt pavement and approximately 4 to 12 inches of fill material. The fill material is underlain primarily by silty or sandy clay to various depths extending to 16 feet below ground surface. Lenses of silty sand, clayey sand, sandy gravel, and gravelly sand were encountered at various depths and locations across the site. A layer of clayey or sandy gravel interbedded with silty clay and silty sand lenses was encountered beneath the predominantly clay strata. The gravel was underlain by a sandy silt or silty sand to the total depth explored, 26 feet below ground surface. The subsurface stratigraphy is further complicated by the presence of artificially filled excavations.

Groundwater was encountered at depths ranging from 14 to 16 feet below ground surface during drilling in the borings for wells MW-F1 through MW-F3 along the perimeter of the site. In Borings F9 through F13, groundwater was encountered at depths ranging from 10 to 11 feet. Groundwater was not encountered during drilling in Boring F14 which extended to 12 feet below ground surface (bgs).

ANALYTICAL RESULTS

Soil Samples

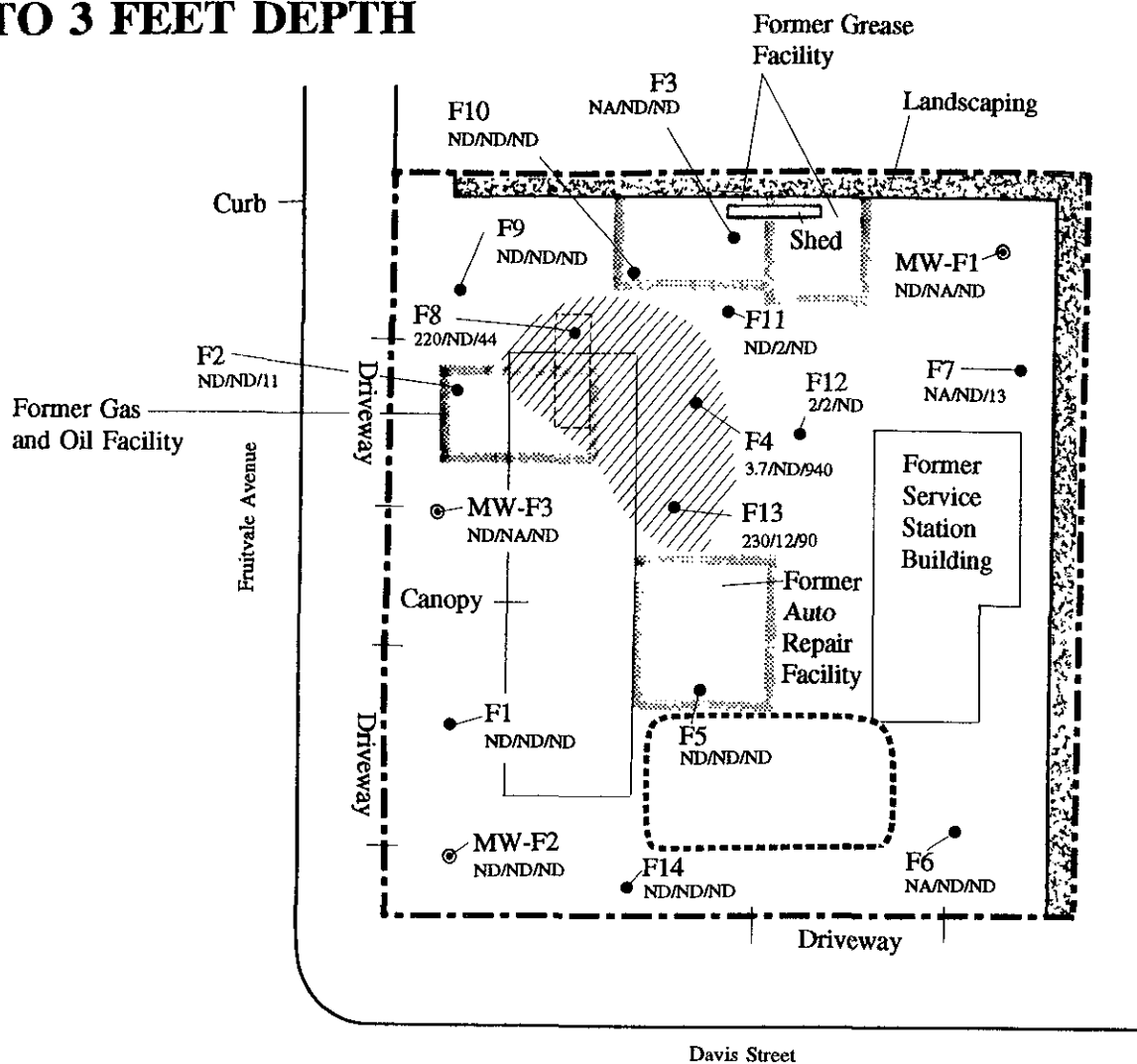
Soil samples were analyzed for volatile organic compounds (EPA Method 5030) during Phase III. The results of this analysis indicated that volatile organic compounds were not detected (<100 $\mu\text{g}/\text{kg}$) in any of the soil samples. The TPH, oil and grease, and BTEX analytical results for soil samples collected at the site during both Phase II and Phase III investigations are summarized in Table 1. Petroleum hydrocarbons were detected in shallow soil samples (2 to 3 feet bgs) primarily in the area of Borings F4, F8, and F13 (Figure 3). TPH as gasoline was detected in the deeper soil samples (8 to 11 feet bgs), collected from the west side of the site, with the highest concentrations detected in samples from Borings F8, F13, and F14 (Figure 4). TPH as kerosene was identified in deeper soil samples collected from locations F9, F10, F11, F13, and F14, with the highest concentrations, 650 mg/kg and 150 mg/kg, detected in soil samples from Borings F13 and F14, respectively. TPH as kerosene analysis was not requested by BASELINE, but was reported by the laboratory. The laboratory reports for the August 1993 soil samples are included in Appendix H.

Groundwater Samples

The analytical results for water samples collected at the site are summarized in Table 2. Groundwater samples collected from wells MW-F1 and MW-F2 did not contain any of the analyzed compounds. A low concentration of TPH as gasoline (0.1 mg/L) was detected in the groundwater sample collected from

TOTAL PETROLEUM HYDROCARBONS CONCENTRATIONS IN SHALLOW SOIL 2 TO 3 FEET DEPTH

Figure 3



Legend

TPH Concentration >100 mg/kg

F9 • Soil Boring Location

MW-F2 ⊙ Monitoring Well Location

3.7/ND/940 TPH as Gasoline/Kerosene/Motor Oil Concentrations (mg/kg)

ND Not Detected

NA Not Analyzed

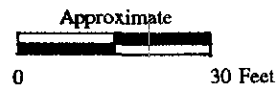
----- Approximate Geophysical Anomaly (Possible Underground Tank) (BCA Geophysics, 1993)

Outline of Former Service Station Facilities (1946 Sanborn Map)

----- Approximate Location of Tanks Removed in 1978 (Trans Pacific, 1986)

----- Project Site Boundary

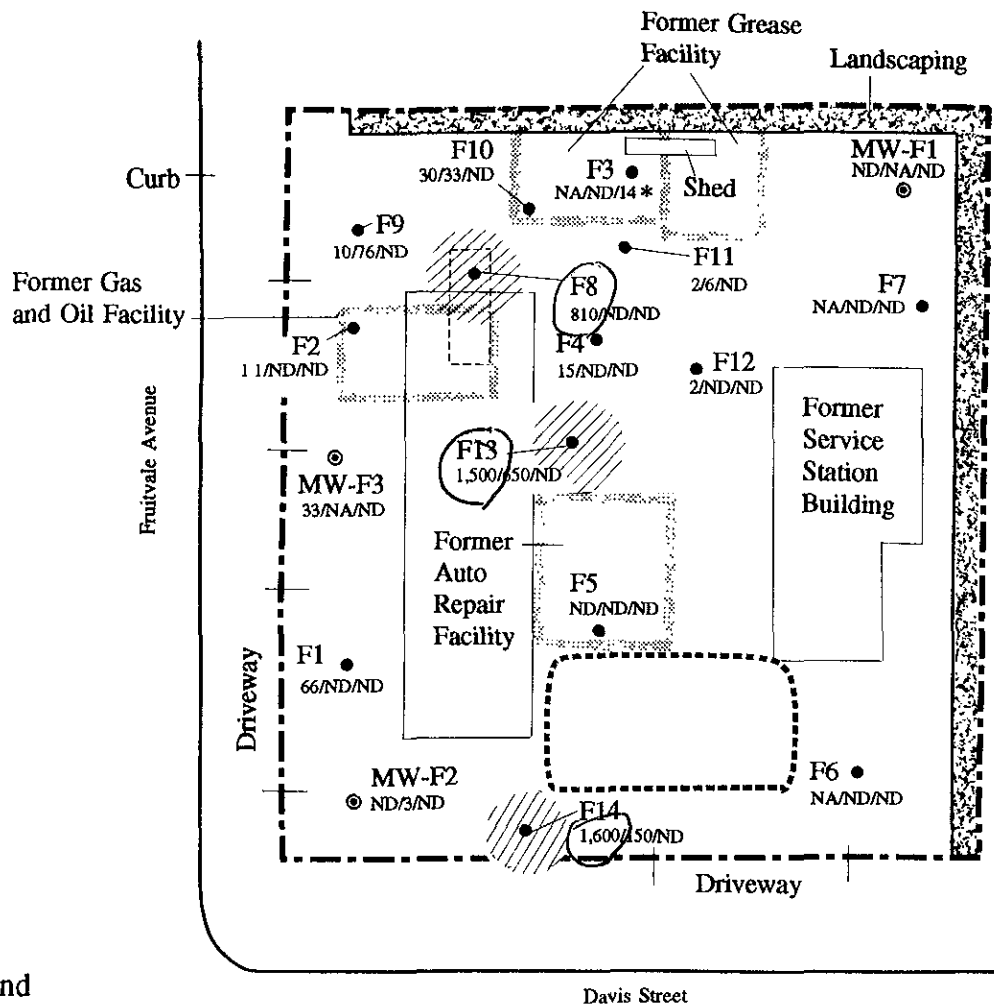
2662 Fruitvale Avenue
Oakland, California



BASELINE

TOTAL PETROLEUM HYDROCARBONS CONCENTRATIONS IN DEEP SOIL 8 TO 11 FEET DEPTH

Figure 4



Legend

- Outline of Former Service Station Facilities (1946 Sanborn Map)
- Approximate Location of Tanks Removed in 1978 (Trans Pacific, 1986)
- Project Site Boundary
- F9 • Soil Boring Location
- MW-F2 ⊙ Monitoring Well Location
- TPH Concentration >100 mg/kg
- 2/6/30 TPH as Gasoline/Kerosene/Motor Oil Concentrations (mg/kg)
- ND Not Detected
- NA Not Analyzed
- Approximate Geophysical Anomaly (Possible Underground Tank)
- * Oil and Grease Detected In Sample

2662 Fruitvale Avenue
Oakland, California



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TABLE 1
SUMMARY OF ANALYTICAL RESULTS, SOIL
2662 Fruitvale Avenue
Oakland, California
January, August 1993
(mg/kg)

Sample Location	Sample Date	Depth (feet)	TPH as Gasoline ¹	TPH as Kerosene ²	TPH as Motor Oil ²	Oil & Grease ³	Benzene ⁴	Toluene ⁴	Ethylbenzene ⁴	Xylenes ⁴
<u>Soil Borings</u>										
F1	1-20-93	2.0 ⁵	<1	<1.0	<10	--	<0.005	<0.005	<0.005	<0.005
		9.5 ⁵	6	<1.0	<10	--	<0.005	<0.005	0.014	<0.005
		11.0 ⁵	66	<1.0	<10	--	<0.005	0.072	0.260	<0.005
F2	1-21-93	2.0 ⁵	<1	<1.0	11	--	<0.005	<0.005	<0.005	<0.005
		8.0 ⁵	1.1	<1.0	<10	--	<0.005	<0.005	<0.005	<0.005
F3	1-20-93	2.0	--	<1.0	<10	<50	--	--	--	--
		8.0	--	<1.0	14	300	--	--	--	--
F4	1-20-93	2.0 ⁶	3.7	<5.0	940	--	<0.005	<0.005	0.0064	<0.005
		10.0 ⁵	15	<1.0	<10	--	<0.005	<0.005	0.320	<0.005
F5	1-20-93	2.0 ^{7,8}	<1	<1.0	<10	--	<0.005	<0.005	<0.005	<0.005
		8.0 ^{7,8}	<1	<1.0	<10	--	<0.005	<0.005	<0.005	<0.005
F6	1-21-93	2.0 ^{8,9}	--	<1.0	<10	--	<0.005	<0.005	<0.005	<0.005
		8.0 ^{6,8}	--	<1.0	<10	--	<0.005	<0.005	<0.005	<0.005
F7	1-20-93	2.0 ^{7,8}	--	<1.0	13	--	<0.005	<0.005	<0.005	<0.005
		8.5 ^{7,8}	--	<1.0	<10	--	<0.005	<0.005	<0.005	<0.005
F8	1-20-93	2.0 ⁵	220	<1.0	44	--	<0.005	<0.005	3.400	17.000
		8.5 ⁵	810	<1.0	<10	--	<0.005	<0.005	5.400	<0.005

Table 1 - Summary of Analytical Results, Soil (continued)

Sample Location	Sample Date	Depth (feet)	TPH as Gasoline ¹	TPH as Kerosene ²	TPH as Motor Oil ²	Oil & Grease ³	Benzene ⁴	Toluene ⁴	Ethylbenzene ⁴	Xylenes ⁴
F9	8-10-93	3.0 ¹⁰	<1	<1	<30	--	<0.005	<0.005	<0.005	<0.005
		9.5 ¹⁰	10	76	<30	--	<0.005	<0.005	0.052	0.042
F10	8-10-93	3.0 ¹⁰	<1	<1	<30	<50	<0.005	<0.005	<0.005	<0.005
		10.0 ¹⁰	30	33	<30	<50	<0.005	<0.005	0.073	0.250
F11	8-10-93	2.5 ¹⁰	<1	2	<30	<50	<0.005	<0.005	<0.005	<0.005
		10.0 ¹⁰	2	6	<30	<50	<0.005	0.012	<0.005	0.009
F12	8-10-93	2.5 ¹⁰	2	2	<30	--	<0.005	0.007	<0.005	<0.005
		9.5 ¹⁰	2	<1	<30	--	<0.005	<0.005	<0.005	<0.005
F13	8-10-93	3.0 ¹⁰	230	12	90	--	<0.030	0.750	0.550	1.500
		9.5 ¹⁰	1,500	650	<30	--	<0.200	3.700	8.800	8.100
F14	8-10-93	3.0 ¹⁰	<1	<1	<30	--	<0.005	<0.005	<0.005	<0.005
		10.5 ¹⁰	1,600	150	<30	--	0.300	3.100	5.700	6.000
<u>Monitoring Wells</u>										
MW-F1	8-11-93	3.0 ¹⁰	<1	--	<10	--	<0.005	<0.005	<0.005	<0.005
		10.0 ¹⁰	<1	--	<10	--	<0.005	<0.005	<0.005	<0.005
MW-F2	8-10-93	3.0 ¹⁰	<1	<1	<30	--	<0.005	<0.005	<0.005	<0.005
		12.0 ¹⁰	<1	3	<30	--	<0.005	<0.005	<0.005	<0.005
MW-F3	8-11-93	3.0 ¹⁰	<1	--	<10	--	<0.005	<0.005	<0.005	<0.005
		10.0 ¹⁰	33	--	<10	--	<0.015	<0.015	0.077	<0.005

Table 1 - Summary of Analytical Results, Soil (*continued*)

¹ Test Method = DOHS Method/LUFT, EPA 5030/8015.

² Test Method = DOHS Method/LUFT, EPA 3550/8015.

³ Test Method = SMWW 17:5520EF.

⁴ Test Method = EPA 5030/8020.

⁵ Sample also analyzed for lead; lead concentration less than TTLC and less than ten times STLC.

⁶ Sample also analyzed for lead, lead concentration (480 mg/kg) less than TTLC, and greater than ten times STLC; soluble lead concentration (1.1 mg/L) less than STLC.

⁷ Sample also analyzed for Title 26 metals; all metal concentrations less than TTLC and less than ten times STLC.

⁸ Sample also analyzed for volatile organic compounds (EPA 8240); no compounds detected above reporting limits.

⁹ Sample also analyzed for Title 26 metals; lead concentration (120 mg/kg) less than TTLC, and greater than ten times STLC; soluble lead concentration (0.6 mg/L) less than STLC.

¹⁰ Sample also analyzed for halogenated hydrocarbons (EPA 8010); no compounds detected above reporting limits.

Notes: <x.x = Compound not identified above detection limits.
x.x = Bold values indicate compound identified above detection limits.
-- = Compound not analyzed.
TPH = Total Petroleum Hydrocarbons.
Sample locations are shown on Figure 2.
Laboratory reports for August 1993 samples are included in Appendix H.
TTLC = Total threshold limit concentration.
STLC = Soluble threshold limit concentration.

TABLE 2

SUMMARY OF ANALYTICAL RESULTS, GROUNDWATER
 2662 Fruitvale Avenue
 Oakland, California
 January, August 1993
 (mg/L)

Sample Location	Sample Date	TPH as Gasoline ¹	TPH as Motor Oil ²	Benzene ³	Toluene ³	Ethylbenzene ³	Xylenes ³	Trans-1,3-dichloropropene ³
<u>Monitoring Wells</u>								
MW-F1	8-16-93	<0.05	<0.5	<0.002	<0.002	<0.002	<0.002	<0.002
MW-F2	8-16-93	<0.05	<0.5	<0.002	<0.002	<0.002	<0.002	<0.002
MW-F3	8-16-93	0.1	<0.5	<0.002	<0.002	<0.002	<0.002	<0.002
<u>Soil Borings⁴</u>								
F1 ⁵	1-20-93	13	<0.5	0.610	<0.018	0.830	0.046	<0.002
F2 ⁵	1-20-93	6.8	<0.5	0.011	<0.002	0.016	<0.002	0.007
F5	1-20-93	<0.05	--	--	--	--	--	--
F7	1-20-93	<0.05	<0.5	--	--	--	--	--

¹ Test Method = EPA 5030/8015.

² Test Method = EPA 3510/8015.

³ Test Method = EPA 624.

⁴ Water collected from open boreholes in January 1993.

⁵ Sample also analyzed for Title 26 metals; all metal concentrations less than S'ITLC.

Notes: <x.x = Compound not identified above detection limits.
 x.x = Bold values indicate compound identified above detection limits.
 -- = Compound not analyzed.
 TPH = Total Petroleum Hydrocarbons.
 Sample locations are shown on Figure 2.
 Laboratory reports for August 1993 groundwater analyses are included in Appendix I.

MW-F3; no other compounds were detected above reporting limits. The laboratory report for the August 1993 groundwater samples are included in Appendix I.

Groundwater Gradient Data

Groundwater elevation data are summarized in Table 3. The groundwater data collected on 16 August 1993 were used to calculate groundwater flow direction and gradient magnitude using a three-point method. The calculated groundwater flow direction was toward the west (S88W) with a gradient magnitude of 0.025 (Figure 2).

CONCLUSIONS

The hydrogeology of the site consists of a complex heterogeneous mix of alluvial sediments that is further complicated by the presence of fill in formerly excavated areas. Soils in the vicinity of Borings F4, F8, F13, and F14 have been impacted by petroleum hydrocarbons (Figures 3 and 4). Borings F4, F8, and F13 are located in the vicinity of the former gas and oil facility and where the geophysical survey suggested the presence of a buried tank. Boring F8, drilled on 20 January 1993 to a depth of 9.0 feet in the area of the geophysical anomaly, did not encounter a buried tank. Elevated concentrations of oil and grease were also previously identified in the deeper soil sample from Boring F3. Oil and grease were not detected in the soil samples collected downgradient of that location (Borings F10 and F11; Table 1). The source of oil and grease is likely located north or east of Boring F3.

Oily product was observed to be seeping from a cold seam in the upper walls of the concrete sump during cleaning activities. This suggests that during periods when the sump was full, product may have seeped through the joint to the surrounding soil. It is unknown whether soil surrounding the sump has been impacted by a release of petroleum hydrocarbons or VOCs, which were previously identified in the sample collected from the material removed from the sump on 4 August 1993.

need additional MW

* The analytical results of groundwater samples do not indicate that groundwater quality at the perimeter of the site has been significantly impacted by releases of petroleum hydrocarbons.

The primary medium of concern on-site that potentially may impact human health is surface soil. Limited soil removal coupled with capping will mitigate this exposure pathway. Therefore, we are recommending removal of the hot spot areas F4, F8, and F13 (Figures 3 and 4) in addition to excavation of the sump (Figure 2) and potentially impacted soils surrounding the sump. Concurrently, demolition of the unused structures on-site will facilitate capping the site and mitigate potential exposures to lead-based paint and asbestos-containing building materials.

RECOMMENDATIONS

- Soils containing petroleum hydrocarbons may act as sources of contamination to the groundwater. We recommend removing the sump and excavating any soil potentially affected by petroleum hydrocarbons in that area to the extent possible. Soils affected by petroleum hydrocarbons in the vicinity of Borings F3 (former grease facility), F4, F8, F13 (former gas and oil facility), and F14 (downgradient of known underground tank location) should also be excavated. Demolition of the structures not in use on-site is recommended. Following demolition, the areas should be paved.

TABLE 3

GROUNDWATER ELEVATION DATA AND GRADIENT CALCULATIONS
 2662 Fruitvale Avenue
 Oakland, California

Date	MW-F1 ¹		MW-F2 ²		MW-F3 ³		Groundwater Flow Direction	Groundwater Gradient Magnitude
	Depth to Groundwater	Groundwater Elevation	Depth to Groundwater	Groundwater Elevation	Depth to Groundwater	Groundwater Elevation		
8/16/93	11.13	93.28 <u>11.13</u>	12.15	90.07	11.99	90.43	S88W	0.025

104.41

¹ Top of casing elevation = 104.41 feet above mean sea level.

² Top of casing elevation = 102.22 feet above mean sea level.

³ Top of casing elevation = 102.42 feet above mean sea level.

- Drums containing non-hazardous soil cuttings, development, purge, and rinsate water, generated during field activities, should be transported to an appropriate disposal facility.

LIMITATIONS

The conclusions presented in this report are professional opinions based on the indicated data described in this report. 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. Changes in the conditions of the subject property can occur with time, because of natural processes or the works of man, on the subject sites or on adjacent properties. Changes in applicable standards can also occur as the result of legislation or from the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond our control.

REFERENCES

Alameda County Flood Control and Water Conservation District (ACFC & WCD), 1988, *Geohydrology and Groundwater-Quality Overview, East Bay Plain Area, Alameda County, California, 205(J) Report*, June.

BASELINE Environmental Consulting, 1992, *Phase I Site Assessment, 2662 Fruitvale Avenue, Oakland, California*, June.

BASELINE Environmental Consulting, 1993a, *Work Plan, Phase III Soil and Groundwater Investigation, 2662 Fruitvale Avenue, Oakland, California*, August.

BASELINE Environmental Consulting, 1993b, *Phase II Site Assessment, 2662 Fruitvale Avenue, Oakland, California*, April.

APPENDIX A
WELL PERMIT



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94566 (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

(1) LOCATION OF PROJECT 2662 Fruitvale Ave. Oakland, CA

PERMIT NUMBER 93439 LOCATION NUMBER

(2) CLIENT Name City of Oakland, Office of Public Works Address 1333 Broadway Phone (510)268-6361 City Oakland Zip 94612

PERMIT CONDITIONS

Circled Permit Requirements Apply

(3) APPLICANT Name BASELINE Environmental Consulting 5900 Hollis St. Suite D Address Phone (510)420-8686 City Emeryville Zip 94608

A. GENERAL

- 1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date. 2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects. 3. Permit is void if project not begun within 90 days of approval date.

(4) DESCRIPTION OF PROJECT Water Well Construction x Geotechnical Investigation Cathodic Protection General Well Destruction Contamination X

B. WATER WELLS, INCLUDING PIEZOMETERS

- 1. Minimum surface seal thickness is two inches of cement grout placed by tremie. 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic, irrigation, and monitoring wells unless a lesser depth is specially approved.

(5) PROPOSED WATER WELL USE Domestic Industrial Irrigation Municipal Monitoring X Other

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

(6) PROPOSED CONSTRUCTION Drilling Method: Mud Rotary Air Rotary Auger X Cable Other

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

DRILLER'S LICENSE NO. 604987

E. WELL DESTRUCTION. See attached.

WELL PROJECTS Drill Hole Diameter 8 in. Maximum Casing Diameter 2 in. Depth 18ft. Surface Seal Depth 5 ft. Number 3

GEOTECHNICAL PROJECTS Number of Borings 7 Maximum Hole Diameter 8 in. Depth 10ft.

(7) ESTIMATED STARTING DATE 10 August 1993 ESTIMATED COMPLETION DATE 11 August 1993

(8) I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

Approved Wyman Hong Date 5 Aug 93

APPLICANT'S SIGNATURE Date 2 August 1993

APPENDIX B
MAGNETOMETER SURVEY RESULTS

BCA Geophysics, Inc.
7 Palmer Avenue
Tiburon, CA 94920
Tel.: (415) 435-5858 Fax: (415) 454-8565

August 4, 1993

Baseline Environmental Consulting
5900 Hollis Street
Suite D
Emeryville, CA 94608

Attn.: Dominic Roques

SUBJECT: Results of Magnetometer Survey At Fruitvale Avenue and Davis Street, Oakland, CA

Gentlemen:

This revised letter report summarizes the results of our magnetometer survey at the Fruitvale Avenue and Davis Street site in Oakland, CA. The data presented in this report were collected by BCA Geophysics personnel, using an EG&G / Geometrics G-822 Cesium Vapor Magnetometer. This instrument is more sensitive and also more tolerant of extraneous noise when used for locating buried metallic objects, compared to the G-856 total field magnetometer, which, due to the local conditions could not be used at the site.

If you have any questions regarding the results of this survey, please contact either Malcolm Petty or myself at the address given on the letterhead.

Sincerely,



Bruce C. Auld, RGp 464 (CA)

Chief Geophysicist
BCA Geophysics

Magnetometer Survey At Fruitvale Avenue and Davis Street, Oakland, CA

Survey -- This magnetometer survey was performed by BCA Geophysics personnel at the site, located on the corner of Fruitvale Avenue and Davis Street, during the morning of Sunday, July 18, 1993. The objective of the survey was to locate large subsurface metallic objects such as abandoned fuel storage tanks.

The origin for the survey was at the NW corner of the site, ten (10) feet from the enclosing metallic fence line, all references in this report to distances on the site are made relative to this origin. A ten foot grid was measured and marked out on the ground, based on the origin.

Data was continuously acquired over a series of ten (10) parallel traverse lines, as shown in Figure 1. An average of approximately 350 measurements were made on each traverse. The measurements were directly stored onto a palmtop computer, and identified as to line number, date, time and measurement station increment.

The survey was complicated by the link fence which surrounded the site, the steel canopy covering the old gas pump islands, the islands and included steel pump protection posts, and the remaining building and metal storage shed. BCA personnel moved some small metallic debris, but the remainder of the site was quite magnetically "noisy".

Figure 1, the site plan map, shows the relative locations of the survey lines, pump islands, building, and grease facility.

Data -- The data were adjusted to fit a uniform grid and plotted. The results of the survey are presented in the attached figures;

Figure 2 shows the raw data contours, at 1000 Gamma intervals, of equal magnetic lines in the study area.

Figure 3 shows the smoothed contours of the same data.

Figure 4 is a composite of Figures 1 and 3.

Figure 5 is a projection of the data shown in Figure 2.

The prominent magnetic high areas along the western part of the site (parallel to Fruitvale Avenue) on Line 20, correspond to the positions of the steel protection pipes on the old gas pump islands. The high located on Line 10 at 80 feet, and a similar high on Line 15 at 70 feet, closely correspond with observed pipe stubs at the surface of the forecourt. The magnetic low at the northern end of Line 60 is probably due to the metal storage hut. The magnetic low on Line 70 at 45 feet probably relates to something in the adjacent building. The complex magnetic gradients close to location "X" may be related to the former Gas and Oil Facility and the pump island interaction. The location of a previously removed tank, on Lines 50-70 between 15 and 30 feet is generally magnetically uniform, although the magnetic low on Line 40 at 30 feet may be related to the Former Auto Repair Facility, or the pump island, or a combination of all three.

The two anomalies that may be of interest for site exploration are the magnetic low in the central eastern part of the Former Gas & Oil Facility, and the broad magnetic high 20 feet to the north of the low. These two anomalies, which are in the northwest quadrant of the site, may be related and infer the existence of a buried metallic object that is approximately 20 feet long and buried at an average depth of 10 feet.

Data Analysis -- Due to the complex on-site magnetic structures, it was not possible to unambiguously model these acquired data. There are rules of thumb that may be used to analyze the prominent peaks that were observed on the north side of the site. A model of a buried dipole, such as may be exhibited by a buried pipe or tank, may be used to analyze the two anomalies in the northwest quadrant.

Considering that iron and steel may have induced magnetic moments on the order of 200 to 1000 units in the English (FPS) system, 100 pounds of steel, such as found in a 4in diameter steel pipe, would have an induced magnetic field of approximately 5,000 to 25,000 gammas at a distance of 2 feet, quickly falling to approximately 200-1000 gammas at 10 feet. These estimates could easily explain the five prominent peaks on the west side of the site.

Although it is not possible to unambiguously model magnetic data given only the total field intensity, some reasonable estimates may be made regarding the two anomalies in the northwest quadrant. Referring to Figure 3, there is a 10,000 gamma magnetic low at the coordinates 30ft east & 75ft north, and there is a 4000 gamma magnetic high at coordinates 30ft east and 95 ft north. One interpretation for these anomalies is that of a 10 foot long steel object weighing 2000 pounds and buried at an average depth of 10 feet. Such a steel object, when behaving as an induced magnetic dipole with a magnetic moment of 500FPS units per pound, could produce anomalies of approximately 10,000 gammas at either end. The observed magnetic anomalies constitute a

reasonably close fit to this buried dipole model. The broadness of the high is in agreement with a dip of the induced dipole due to the inclination of the earth's magnetic field at this latitude. The asymmetry may be due to the declination of the dipole with respect to the earth's magnetic field. The surrounding metallic "noise" preclude more exact modeling of these anomalies.

In conclusion, the data were acquired in a magnetically dirty environment, by a new magnetometer which was useable where others were not. Large anomalies were measured at observed metallic objects, no significant anomaly can be seen at the location of a previously removed tank. Two anomalies in the northwest quadrant may be interpreted as a large buried metallic object such as an abandoned tank. Further magnetic surveying and/or interpretation would only be possible if some of the large known metallic structures and objects were removed.

DAVIS STREET

FRUITVALE AVENUE

Survey Line 10'

Line 15

Line 20

Line 30

Line 40

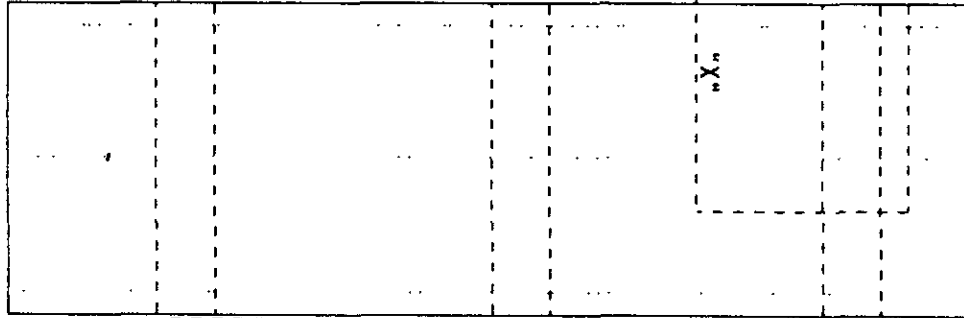
Line 50

Line 60

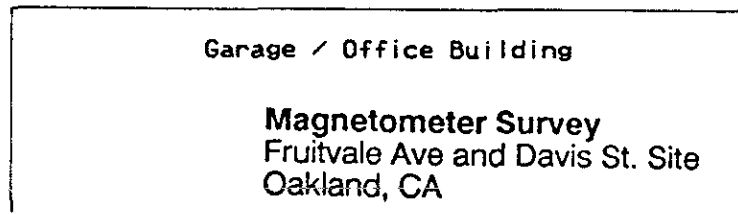
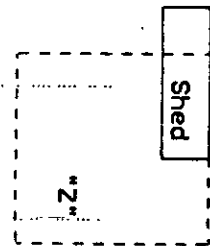
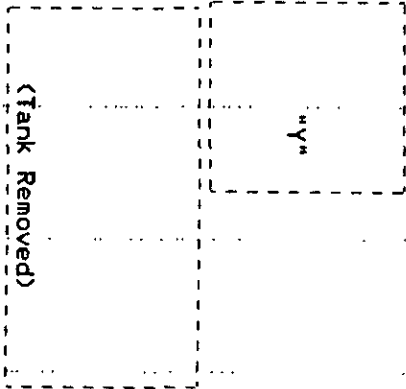
Line 70

Line 80

Line 90



Canopy / Pump Islands



Magnetometer Survey
Fruitvale Ave and Davis St. Site
Oakland, CA

Figure 1 -- Site Plan Map



Note: "X" is Former Gas & Oil Facility

"Y" is " Auto Repair "

"Z" is " Grease "

(positions approximate)

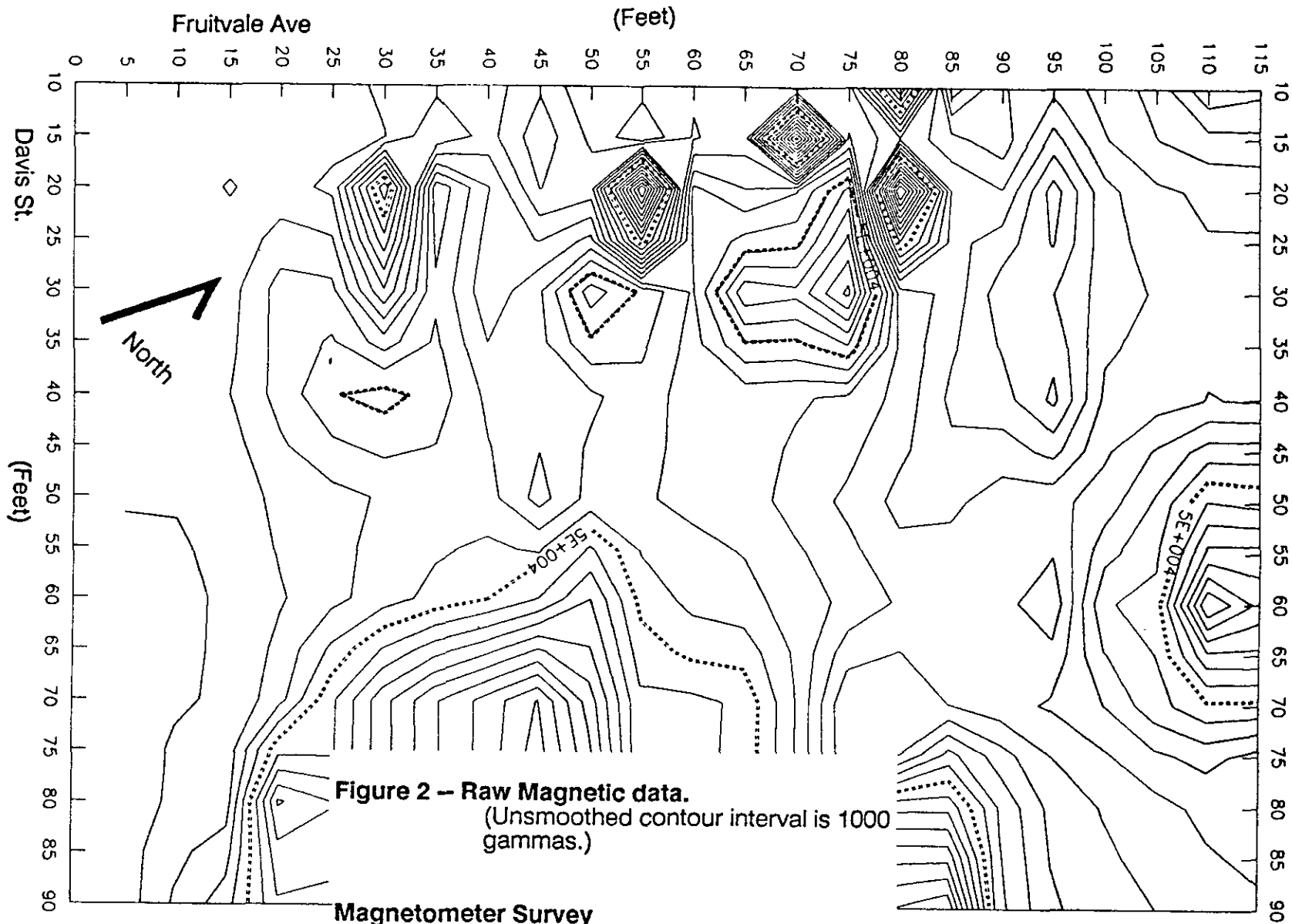
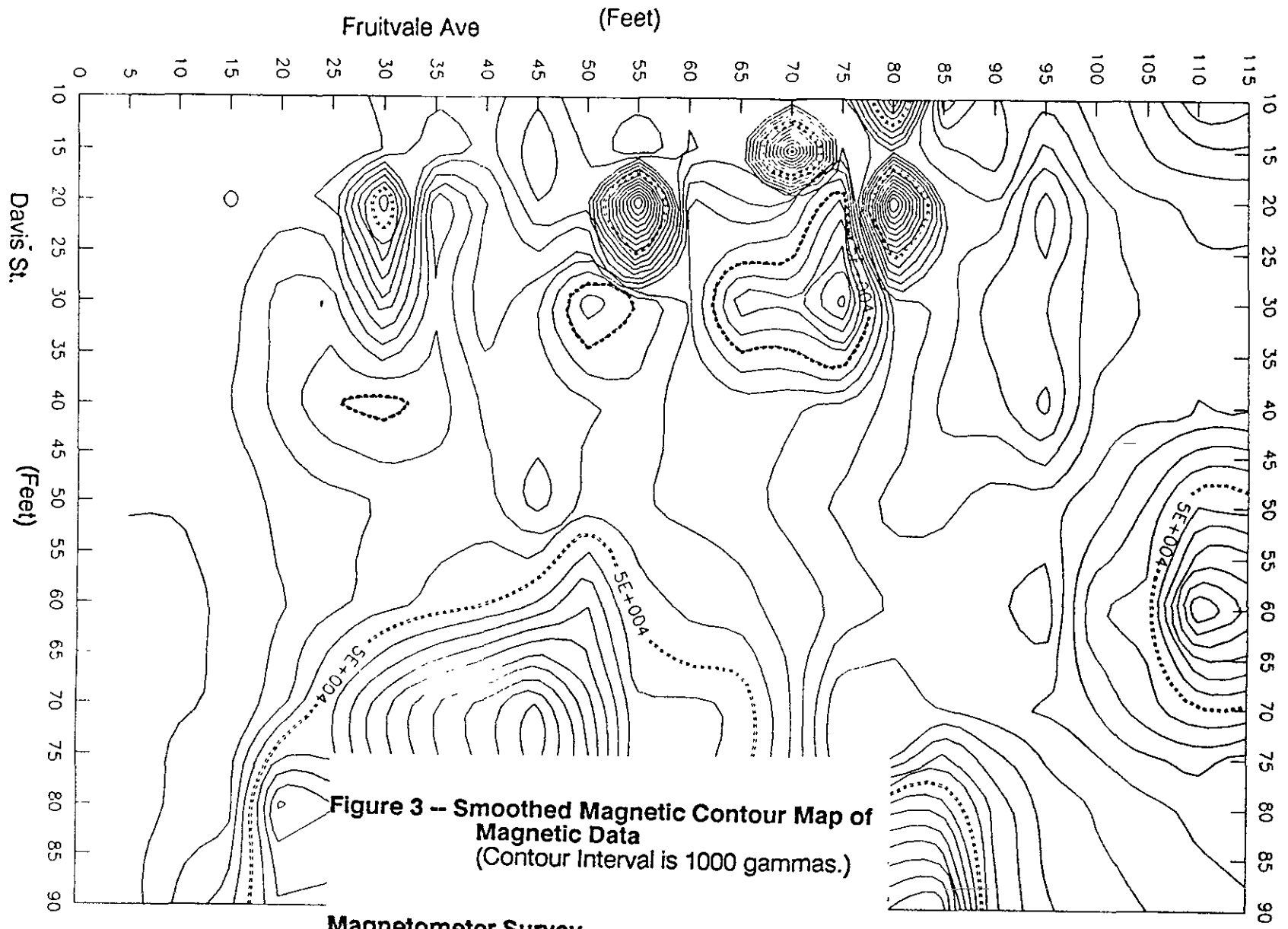


Figure 2 – Raw Magnetic data.
 (Unsmoothed contour interval is 1000
 gammas.)

Magnetometer Survey
 Fruitvale Ave and Davis St. Site
 Oakland, CA



**Figure 3 -- Smoothed Magnetic Contour Map of
Magnetic Data
(Contour Interval is 1000 gammas.)**

**Magnetometer Survey
Fruitvale Ave and Davis St. Site
Oakland, CA**

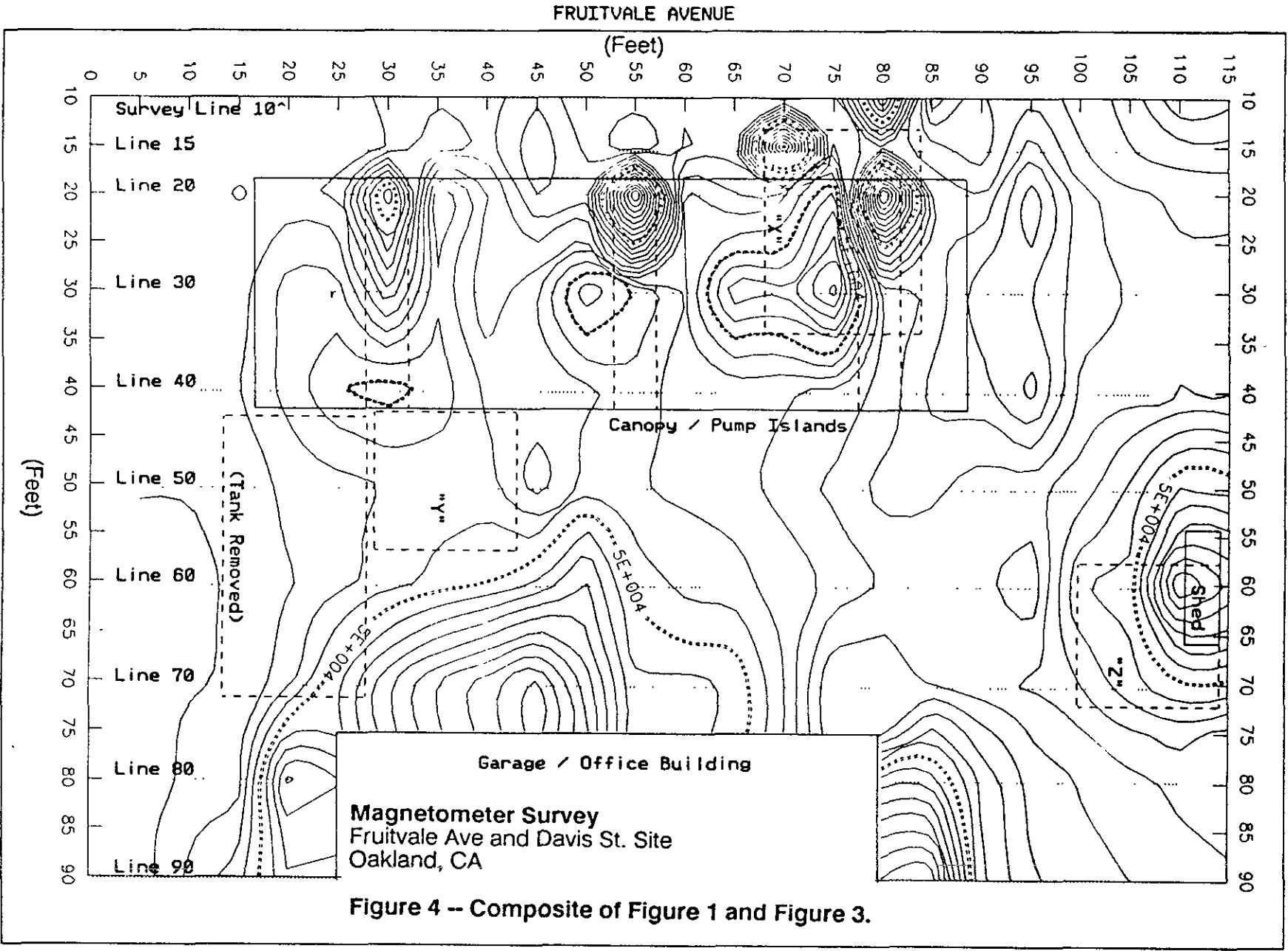
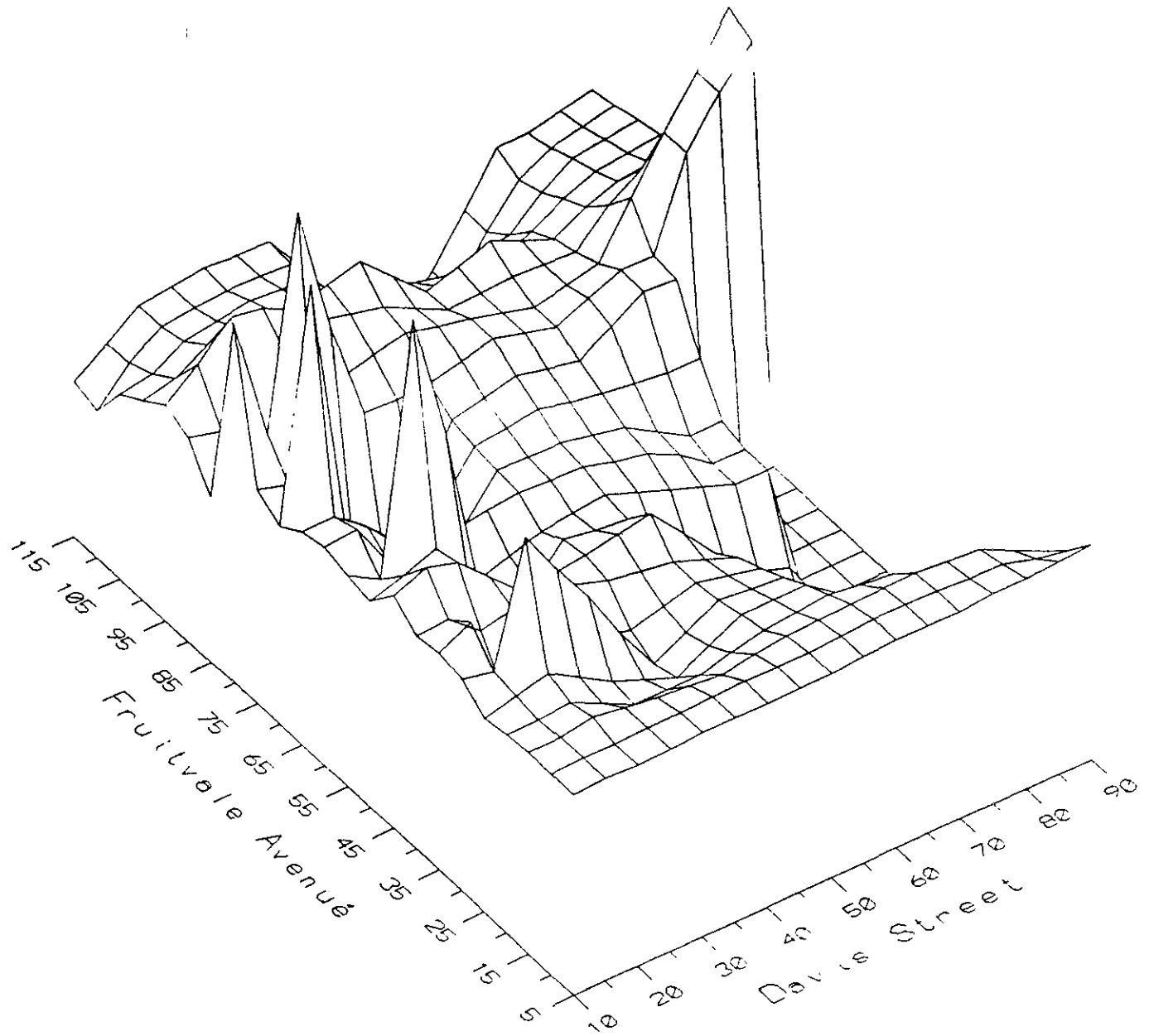


Figure 4 -- Composite of Figure 1 and Figure 3.

Note: "X" is Former Gas & Oil Facility
 "Y" is " Auto Repair "
 "Z" is " Grease "
 (positions approximate)



Magnetometer Survey
Fruitvale Ave and Davis St. Site
Oakland, CA

Figure 5 -- Projection of Smoothed Magnetic Contours shown in Figure 2.
(Contour data from Figure 2 is rotated 225 degrees CCW and tilted 40 degrees.)

APPENDIX C
SITE SAFETY PLAN

BASELINE Environmental Consulting
5900 Hollis, Suite D, Emeryville, CA 94608
Phone: (510) 420-8686
Fax: (510) 420-1707

SITE SAFETY PLAN

Project No.: 92404-AO.03

Field Activities Date: 10-11 August 1993

Client: City of Oakland Real Estate Services

Address: 1330 Broadway, Suite 1001, Oakland, CA 94612

Contact Person: ~~Ms. Julie Carver~~ *A. Clark-Clough*

Telephone No.: (510) 238-6361

Job Location: 2662 Fruitvale Avenue, Oakland

Project Description: Drilling of 10 soil borings by HEW Drilling of East Palo Alto; collection of soil samples by BASELINE. Samples will be analyzed for motor oil, oil and grease, and volatile organic compounds (VOCs)

Project Manager: Dominic Roques

Site Health & Safety Manager: Bill Scott

Site History: The project site is located at 2662 Fruitvale Avenue, at the northeast corner of Fruitvale Avenue and Davis Street, in the City of Oakland in Alameda County. The site is occupied by a vacant service station consisting of a building, islands with canopy, and a metal shed. Service station activities included fueling and auto repair. Prior to the service station operation, the site was occupied by a residence. The service station operated at the site from 1951 to 1978. Records indicate that the underground storage tanks were removed from the site in 1978. There are no available records regarding the condition of the tanks during removal or whether any release of petroleum hydrocarbons had occurred. Gasoline, VOCs, motor oil, and oil and grease were detected in soils on-site in previous subsurface investigations..

Chemical Hazards: All sampling and drilling personnel may be exposed to chemical hazards through inhalation of airborne dust/dirt, ingestion of foods where airborne dusts have settled, and, most important, skin contact. The chemicals listed in Table 1 may be present, based on previous investigations.

Physical Hazards: Fire and explosion, heavy equipment, heat stress, noise. Drill rig safety requirements are the responsibility of the operator. Drilling contractor shall be responsible for complying with all OSHA requirements and accepted industry practices for protection of employee health and safety. The drilling contractor shall ensure that all equipment is in good working order prior to starting work. The drilling contractor shall ensure that proper housekeeping is maintained around the work area at all times.

BASELINE employees shall observe the following precautions:

- 1) Watch for slippery ground;
- 2) Adequately cover all unattended boreholes;
- 3) Maximize distance from the rig and do not take readings at rig during auger clearing or drive sampling;
- 4) Wear safety hard hats and safety footwear, and
- 5) Prevent strain injuries by using small sample shipping containers and/or material handling aids. Use portable table for opening split spoon samplers.

Personal Protective Equipment Required: Hard hats, respirators equipped with high efficiency filters and/or organic vapor cartridges (use to be designated by Health and Safety Officer), nitrile gloves, safety goggles, rubber boots, water supply for washing, decontamination, and for drinking, disposable overalls (non-coated), first-aid kit, noise protection (ear plugs)

Air Monitoring Strategy (including action levels): Before field work begins, collect background readings using HNu and combustible gas indicator. Monitor soil borings using the combustible gas indicator. If >20% LEL, stop work to air out boring until <20% LEL. If necessary, eliminate ignition sources. May use HNu and/or methane detector tubes to characterize vapors.

SITE SAFETY PLAN - continued

Monitor workers' breathing zones in boring vicinity, using HNu. If HNu reads > background + 5 ppm, don respirator with organic vapor cartridge. May use Sensidyne detector tubes for characterizing emissions if HNu readings exceed background levels (e.g., for benzene).

Site Control Measures: Define and demarcate exclusion and clean zones for each boring location. No eating, drinking, or smoking permitted in exclusion zone. Avoid skin and eye contact with soil to maximum extent possible. If dusty conditions, don safety goggles and respirators equipped with filters. USA will provide utility clearance. Hand-digging may be performed where utilities are suspected (even though not identified through USA). Personal hygiene imperative to prevent prolonged skin contact with site soils and dusts. Place cuttings in drums, secure and label. Dispose of decontamination equipment and personal protective gear in BASELINE-provided containers. No contact lenses.

Decontamination Procedures (personal and equipment): Decontaminate boots and soil sampling equipment on-site. Remove and dispose of gloves and overalls in appropriate manner.

Hospital/Clinic: Highland Hospital **Phone:** (510) 534-8055

Hospital Address: 1411 E. 31st Street, Oakland (see attached Figure 1)

Paramedic: 911 **Fire/Police Dept.:** 911

Emergency Procedures: Notify Yane Nordhav at (510) 420-8686.

Prepared by: Yane Nordhav **Reviewed/Approved by:**

Date: 8/5/93 **Date:**

Read by: Geneva Randall **Date:** 8-10-93

Read by: Sandi Potter **Date:**

Read by: Bill Scott **Date:** 8-10-93

Read by: **Date:**

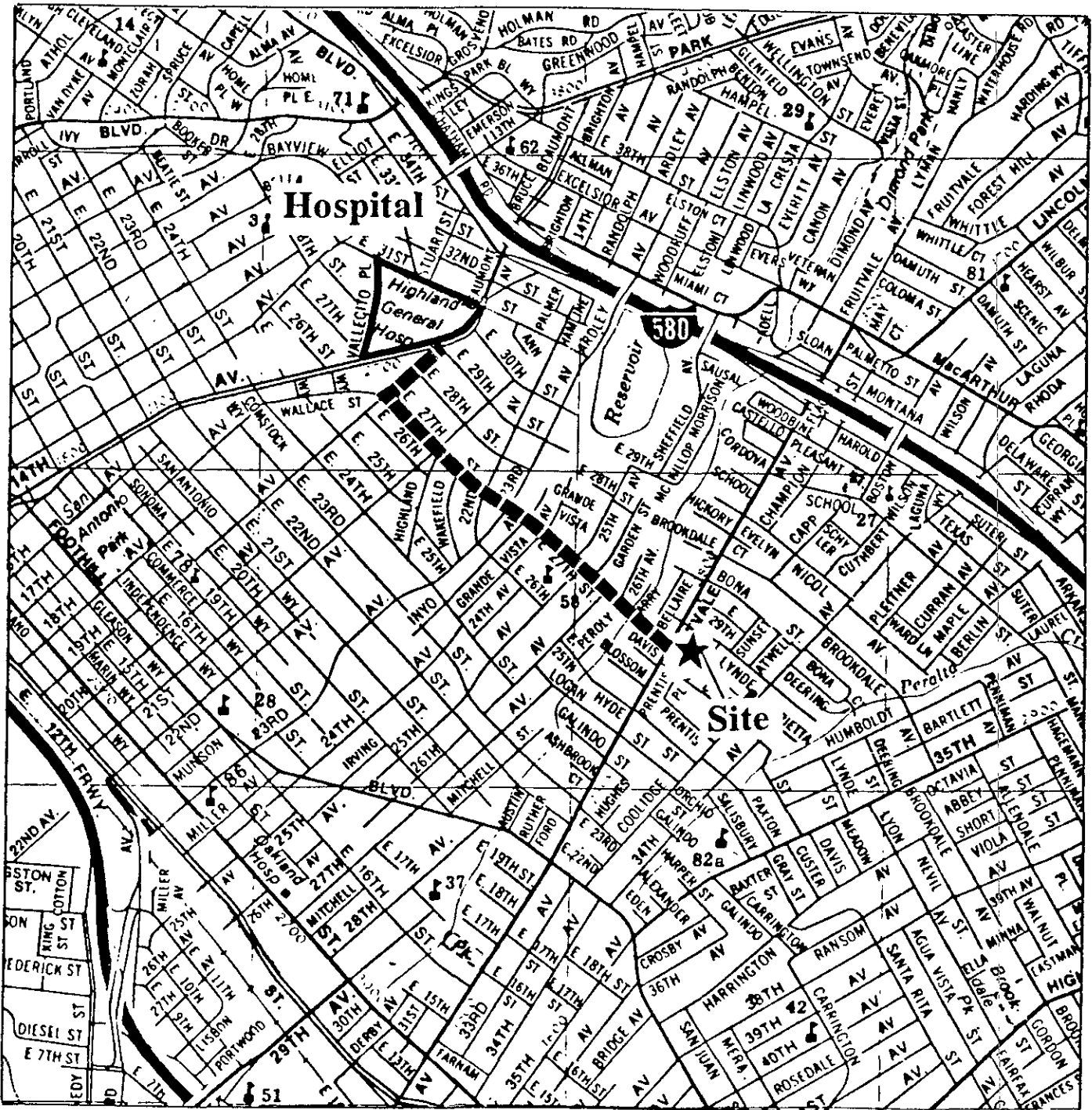
Read by: Jasper Booker Date 8/10/93
Marcelino Rodriguez 8/10/93

SITE SAFETY PLAN - continued

Table 1. CHEMICAL HAZARDS

Chemical	Source; Description	TLV	PEL	Routes of Exposure	Symptoms of Acute Exposure	Monitoring Instrument	Respirator Cartridge
Lead	Past land use; inorganic metal	50 µg/m ³	50 µg/m ³	Ingestion, inhalation	Insomnia, lassitude, palpitations, constipation, eye irritation	--	High efficiency filter (if dusty conditions)
Zinc	Past land use; zinc oxide dust, inorganic metal	10 mg/m ³	10 mg/m ³	Ingestion, inhalation	Skin and eye irritant		
Copper	Past land use; inorganic metal	1 mg/m ³	1 mg/m ³	Ingestion, inhalation	Respiratory system and eye irritant		
Cadmium	Past land use; suspected carcinogen	0.05 mg/m ³	0.2 mg/m ³	Ingestion, inhalation	Pulmonary edema, coughing, tight chest, headache, chills		
Antimony	Past land use; antimony compounds	0.5 mg/m ³	0.5 mg/m ³	Ingestion, inhalation	Inflammation of skin or mucous membranes of nose and throat, metallic taste, gastrointestinal upset, fatigue, nausea		
Mercury	Past land use; inorganic metal	0.1 mg/m ³	1 mg/10 m ³ (acceptable ceiling concentration)	Ingestion, inhalation, skin contact	Coughing, excessive salivation, pneumonia, irritability, loss of memory, insomnia		
Fluorides	Past land use; inorganic	2.5 mg/m ³	2.5 mg/m ³	Ingestion, inhalation	Irritation of eyes, skin, and mucous membranes, skin rash, irritation of respiratory system, nausea, excessive salivation		
Nickel	Past land use; metal carcinogen	1 mg/m ³	1 mg/m ³	Ingestion, inhalation	Dermatitis, ingestion of soluble salts may cause nausea, vomiting, diarrhea		
Solvents	Past land use; organics, may include carcinogens	Compound specific	Compound specific	Ingestion, inhalation, skin contact	Headache, dizziness, irritation of eyes, skin, or mucous membranes	HNu	Organic vapor
Fuel hydrocarbons	Past land use; examples: gasoline, diesel, benzene, toluene, xylenes, ethylbenzene	100 ppm. gasoline: 10 ppm. benzene	100 ppm. gasoline: 1 ppm. benzene	Inhalation, skin contact, ingestion	Headache, dizziness, skin or eye irritation	HNu and Sensidyne detector tube for benzene	Organic vapor

Figure 1



Hospital/Clinic: Highland Hospital

Telephone No.: (510) 534-8055

Hospital Address: 1411 E. 31st Street

Directions: From Site, go north on E. 27th Street, to 19th Avenue turn right, merge right with 14th Street, turn left on 31st Street. Entrance to the hospital is on the left.

APPENDIX D
DRILLING LOGS

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA	Boring no.	MW-F1
Driller	HEW	Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger	Date	8/11/93
Logger	WKS Datum 104.82 ft.	Bore size	7 3/4-inch
		Casing size	2-inch

Depth (ft.)	Graphic	Lithology	Notes
0		Asphalt top	
1	GW	Base rock	
2			
3	SW	Brown, gravelly SAND with clay, fine- to medium-grained, subangular to subrounded clasts 1/3 to 3/4-inch diameter, loose, rootlets, moist to damp.	HNu = 0 ppm in breathing zone HNu = 5 ppm in borehole HNu = 10 ppm in sample 8-5-5
4			
5	CL	Very dark gray, silty CLAY, trace sand, low plasticity, soft to firm, moist.	
6			
7			
8			
9	GW	Brown, sandy GRAVEL with clay, subangular to subrounded clasts up to 1.5 inch in diameter, sandstone, shale clasts, fine- to coarse-grained sand, loose rootlets, moist to very moist (Fill).	HNu = 0 ppm in breathing zone HNu = 17 ppm in sample 7-9-9
10			

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA	Boring no.	MW-F1
Driller	HEW	Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger	Date	8/11/93
Logger	WKS	Datum	104.82 ft.
		Bore size	7 3/4-inch
		Casing size	2-inch

Depth (ft.)	Graphic	Lithology	Notes
10		Increase in clay content	
11	GW		
12			
13			
14	CH	Mottled pale brown-gray, silty CLAY, high plasticity, soft, veinlets, wet.	HNu = 0 ppm in breathing zone HNu = 15 ppm in borehole 3-3-3 Water on tip of sampler
15			
16			
17	GW	Brown, sandy GRAVEL, 1/3- to 1.5-inch subangular, subrounded clasts, sandstone, chert, shale clasts, loose, wet.	
18			
19	SW	Brown, silty SAND, fine- to very fine-grained, very loose, wet.	HNu = 0 ppm in breathing zone 0-7-14
20	GW	Brown, sandy GRAVEL, with clay, 1/3- to 1.5-inch subangular, subrounded clasts, sandstone, chert, shale clasts, loose, wet.	

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA		Boring no.	MW-F1
Driller	HEW		Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger		Date	8/11/93
Logger	WKS	Datum 104.82 ft.	Bore size	7 3/4-inch
			Casing size	2-inch

Depth (ft.)	Graphic	Lithology	Notes
20		Same as above.	
21	GW		
22			
23		Pale brown, sandy SILT with clay, firm, wet.	
24	ML		
25			
26			
		Total Depth = 26 feet	
27			
28			
29			
30			

HNu = 0 ppm in breathing zone
6-12

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA	Boring no.	MW-F2
Driller	HEW	Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger	Date	8/10/93
Logger	WKS Datum 102.42 ft.	Bore size	7 3/4-inch
		Casing size	2-inch

Depth (ft.)	Graphic	Lithology	Notes
0		Asphalt top	
	GW	Base rock	
1	CL	Dark brown, gravelly CLAY, low plasticity, subangular to subrounded clasts, 1/3- to 1/2-inch diameter, soft damp.	HNu = 0 ppm in breathing zone HNu = 70 ppm in borehole HNu = 180 ppm in sample 3-4-6
2		Dark brown-very dark gray, silty CLAY, low plasticity, firm, veinlets, damp.	
3	CL		
4			
5			
6		Becoming brown, trace of sandstone clasts.	
7			
8			
9	CL	Dark greenish-gray sandy CLAY, trace gravel, high plasticity, fine-grained, 1/3-inch diameter subangular clasts, firm, veinlets, very moist.	HNu = 0 ppm in breathing zone HNu = 30 ppm in borehole HNu = 100 ppm in sample 4-8-9
10			

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA	Boring no.	MW-F2
Driller	HEW	Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger	Date	8/10/93
Logger	WKS	Datum	102.42 ft.
		Bore size	7 3/4-inch
		Casing size	2-inch

Depth (ft.)	Graphic	Lithology	Notes
10		Same as above.	
11	CL		
12	CL	Greenish-gray sandy CLAY, with gravel, fine- to medium-grained, subrounded to angular clasts, 1/2 to 3/4 inch in diameter, low plasticity, firm to stiff, wet.	3-5-6
13	GC	Gray, clayey GRAVEL, with sand, subangular clasts of shale, sandstone, siltstone, 1/2- to 2-inch diameter, seams of clay, wet to very moist.	
14			3-6-14
15			13-9-13
16			
17			
18	SW	Light brown, silty SAND, trace clay, very fine-grained to fine-grained, loose, medium dense, wet.	
19			HNu = 0 ppm in breathing zone 7-13-16
20		Total Depth = 20 feet	

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA	Boring no.	MW-F3
Driller	HEW	Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger	Date	8/11/93
Logger	WKS	Datum	102.92 ft.
		Bore size	7 3/4-inch
		Casing size	2-inch

Depth (ft.)	Graphic	Lithology	Notes
0		Asphalt cover	
1	GC	Brown, clayey gravel Base Rock	
2	CL	Dark brown, silty CLAY, trace gravel, low plasticity, soft-firm, red oxide stained, veinlets, damp.	
3			HNu = 0 ppm in breathing zone. IINu = 30 ppm in borehole. HNu = 40 ppm in sample. 4-6-7
4			
5			
6		Becoming brown at 6 feet.	
7			
8	CH	Mottled olive, gray-brown sandy CLAY with silt and gravel, high plasticity, fine-grained, soft-firm, veinlets, moist.	
9			
10			HNu = 0 ppm in breathing zone. IINu = 10 ppm in borehole. HNu = 50 ppm in sample. 4-6-10

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA		Boring no.	MW-F3
Driller	HEW		Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger		Date	8/11/93
Logger	WKS	Datum 102.92 ft.	Bore size	7 3/4-inch
			Casing size	2-inch

Depth (ft.)	Graphic	Lithology	Notes	
10		Decrease in sand content.	3-5-7	
11				
12				CH
13				
14				
15				
16	▼	Light brown, sandy CLAY/clayey SAND, trace gravel, red oxide stains, very fine- to fine-grained, very loose, wet.	HNu = 0 ppm in breathing zone. 4-5-6 Water-filled veinlets	
17	CL/SC			
18	SC			
19				
20	SC	Light brown, clayey SAND, very fine-grained, very loose, wet.	0-2-3	
	SC			

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA		Boring no.	MW-F3
Driller	HEW		Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger		Date	8/11/93
Logger	WKS	Datum 102.92 ft.	Bore size	7 3/4-inch
			Casing size	2-inch

Depth (ft.)	Graphic	Lithology	Notes
20	SC	Light brown, clayey SAND with gravel, very fine- to medium-grained, subangular to rounded clasts, up to 1.5-inch diameter, loose, wet.	4-6-4
21	SW	Light brown, silty SAND, trace clay, very fine- to fine-grained, loose to medium dense, wet.	7-16-22
22			
23			8-23-27
24			
25			
26			
27			
28			
29			
30			

Total Depth = 26 feet.

HNu = 0 ppm in breathing zone
7-27-42

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (510) 420-8686

Location	2662 Fruitvale, Oakland, CA	Boring No.	F1
Driller	HEW Drilling	Project No.	92404A0:02
Method	Hollow Stem	Date	1-20-93
Logger	SP/WKS Datum _____ Bore size 7 3/4"	Casing size	NA

Depth	Graphic	Lithology	Notes
0		Asphalt Baserock	
	GW		
1	CL	Dark gray, silty CLAY, with sand. Low-medium plasticity, soft-firm, moist.	HNu = 0 ppm in breathing zone 3-3-6
2			
3			
4		Dark brown CLAY, trace gravel, low plasticity, moist.	
5	CL		
6			
7			
8	CL	Brown, silty CLAY with gravel, veinlets of iron oxide, low plasticity, firm to stiff, moist.	5-7-9
9			
10		Increased silt.	3-6-6

Scale: 1 inch = 1.5 feet

92404A0:LOG(2/25/93)

Signature _____

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (510) 420-8686

Location	2662 Fruitvale, Oakland, CA		Boring No.	F1
Driller	HEW Drilling		Project No.	92404A0.02
Method	Hollow Stem		Date	1-20-93
Logger	SP/WKS	Datum _____	Bore size	7/4"
			Casing size	NA

Depth	Graphic	Lithology	Notes
10	CL	Dark greenish gray, gravelly clayey SAND, very fine grained, gravel, 1/4" to 1/2" subangular to subrounded clasts, firm, wet.	6-7-8 HNu = 1 ppm in cuttings Petroleum odor
11	SW		
12			
13	▼	T.B.D./T.D. = 13 feet	
14			
15			
16			
17			
18			
19			
20			

Scale: 1 inch = 1.5 feet

92404A0.LOG(2/25/93)

Signature _____

DRILLING LOG

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(510) 420-8686

Location	2662 Fruitvale, Oakland, CA		Boring No.	F2
Driller	HEW Drilling		Project No.	92404A0.02
Method	Hollow Stem		Date	1-21-93
Logger	SP/WKS	Datum	Bore size	7 3/4"
			Casing size	NA

Depth	Graphic	Lithology	Notes
0		Asphalt	HNu = 0 ppm in breathing zone 1 ppm in soil Hit pipe (electrical?) runs parallel to Fruitvale between light poles 5-6-7
	GW	Baserock	
1		Dark brown, silty CLAY with sand, veinlets with iron oxide, medium-low plasticity, firm, moist.	
2	CL		
3			
4		Dark gray, silty CLAY with sand, trace gravel, high-medium plasticity, soft, moist.	
5	CH		0 ppm breathing zone 0.5 ppm in soil
6			
7			
8		T.B.D. = 7.5 feet	
		Increase in gravel and sand at 8.5 feet.	3-3-4 1 ppm in soil 0 ppm in breathing zone
9		T.D. = 9 feet	
10			

Scale: 1 inch = 1.5 feet

92404A0.LOG(2/25/93)

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DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (510) 420-8686

Location	2662 Fruitvale, Oakland, CA		Boring No.	F3
Driller	HEW Drilling		Project No.	92404A0.02
Method	Solid Stem		Date	1-20-93
Logger	SP/WKS	Datum	Bore size	6"
			Casing size	NA

Depth	Graphic	Lithology	Notes
0		Asphalt	
	GW	Baserock	
1		Very dark brown, gravelly silty CLAY, medium-low plasticity, 1/4" to 1/2", subangular clasts, firm, moist.	HNu = 0 ppm in boring 7-5-8
2	CL		
		Dark brown, silty CLAY, med to low plasticity, veinlets with red iron oxide stain, moist.	
3	CL		
4			
5			
6			
7		Light brown, clayey, gravelly SAND, very fine to fine-grained, 1/4" to 1", subrounded to subangular clasts, low to moderate plasticity clay, very loose, moist.	Drilling easiest around 7 feet 3-3-2
8	SW		
9	▼	T.B.D./T.D. = 9.5 feet	
10			

Scale: 1 inch = 1.5 feet

92404A0.LOG(2/25/93)

Signature _____

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (510) 420-8686

Location	2662 Fruitvale, Oakland, CA	Boring No.	F4
Driller	HEW Drilling	Project No.	92404A0.02
Method	Hollow Stem	Date	1-20-93
Logger	SP/WKS	Datum	
		Bore size	7/4"
		Casing size	NA

Depth	Graphic	Lithology	Notes
0		Asphalt	
		Baserock	
1	GW	Reddish brown, sandy GRAVEL with clay, moist.	HNu = 3 ppm in boring 0 ppm in breathing zone
2	CL	Dark gray silty CLAY, damp, some veinlets with iron oxide, soft to firm, moist.	3-4-5
3	CL	Brown, silty CLAY, medium to high plasticity, soft to firm, moist.	
4		Becoming lighter brown in color.	
5			
6			
7		Dark gray, silty CLAY, high plasticity, increase in moisture, decrease in stiffness.	Drilling became easier at about 7.5 feet Potentiometric surface at 7 feet; groundwater at 10.5 feet HNu 15 ppm in soil cuttings Petroleum odor at 7 feet
8	CH		
9		Dark gray, silty SAND with clay, very fine grained, very loose, moist. T.B.D. = 9.5 feet	1-1-6
10	SP-SC		

Scale: 1 inch = 1.5 feet

92404A0.LOG(2/25/93)

Signature _____

DRILLING LOG

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(510) 420-8686

Location	<u>2662 Fruitvale, Oakland, CA</u>	Boring No.	<u>F4</u>
Driller	<u>HEW Drilling</u>	Project No.	<u>92404A0.02</u>
Method	<u>Hollow Stem</u>	Date	<u>1-20-93</u>
Logger	<u>SP/WKS</u> Datum _____	Bore size	<u>7 3/4"</u>
		Casing size	<u>NA</u>

Depth	Graphic	Lithology	Notes
10		Dark gray, clayey sandy GRAVEL, 1/8" to 3/4", subangular to angular clasts, loose, wet. T.D. = 11 feet	Strong petroleum odor Floating product gasoline less than 1/4 inch thick Free water at 10.5 feet
11			
12			
13			
14			
15			
16			

Scale: 1 inch = 1.5 feet

92404A0.LOG(2/25/93)

Signature _____

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (510) 420-8686

Location	2662 Fruitvale, Oakland, CA	Boring No.	F5
Driller	HEW Drilling	Project No.	92404A0.02
Method	Hollow Stem	Date	1-20-93
Logger	SP/WKS	Datum	
		Bore size	7/8"
		Casing size	NA

Depth	Graphic	Lithology	Notes
0		Asphalt	
	GW	Baserock	
1	SP	Light brown, SAND, homogeneous, very fine to fine, dry, loose. Some wood fragments.	4-6-6 HNu = 0 ppm in cuttings
2	[Graphic: Box with dots]		
3	[Graphic: Box]	Increase in moisture.	
4	[Graphic: Box]		
5	[Graphic: Box]		
6	[Graphic: Box]		
7	[Graphic: Box]		
8	[Graphic: Box with dots]	Light brown, SAND, homogeneous, very fine to fine, loose, wet. Some wood fragments.	1-0.5-0.5
9	[Graphic: Box with inverted triangle]		Groundwater at 8.75 feet
10	[Graphic: Box]	T.B.D./T.D. = 10 feet	Groundwater sampled

Scale: 1 inch = 1.5 feet

92404A0.LOG(2/25/93)

Signature _____

DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (510) 420-8686

Location	2662 Fruitvale, Oakland, CA		Boring No.	F6
Driller	HEW Drilling		Project No.	92404A0.02
Method	Solid Stem		Date	1-21-93
Logger	SP	Datum _____	Bore size	6"
			Casing size	NA

Depth	Graphic	Lithology	Notes
0		Asphalt	
	GW	Baserock	
1		Dark brown, silty CLAY trace sand and gravel, medium to low plasticity, very soft, moist.	HNu = 1 ppm in breathing zone HNu = 5 ppm in boring 1-1-2
2	CL		
3			
4	CH	Dark brown, silty CLAY, trace sand and gravel, medium to high plasticity, very soft, moist.	
5			
6			
7			
		T.B.D. = 7.5 feet	
8	GC	Brown, gravelly CLAY with sand, medium plasticity, 1/4" to 3/4" inch subrounded-rounded clasts, very soft-firm, wet.	2-4-6 Free water at 8.25 feet Potentiometric surface at 7.0 feet
9		T.D. = 9.0 feet	
10			

Scale: 1 inch = 1.5 feet

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DRILLING LOG

BASELINE
 5900 Hollis Street, Suite D
 Emeryville, CA 94608
 (510) 420-8686

Location	2662 Fruitvale, Oakland, CA	Boring No.	F7
Driller	HEW Drilling	Project No.	92404A0.02
Method	Hollow Stem	Date	1-21-93
Logger	SP/WKS	Datum	
		Bore size	7 3/4"
		Casing size	NA

Depth	Graphic	Lithology	Notes
0		Asphalt	
	GW	Baserock	
1	GW-GC	Reddish brown, sandy GRAVEL with clay, very loose, moist.	2-1-2
2	SP	Light brown, SAND, fine grained, homogenous, very loose, moist.	HNu = 0 ppm Gas-tech = 0 ppm (restarted hole 1-foot to the west)
3			
4	CH	Dark brown, silty sandy CLAY, high plasticity, fine-grained, very soft, moist. Increase in plasticity.	1-2-3
5			
6		Decrease in sand.	
7	CH	Dark brown, silty CLAY, high plasticity, soft-firm, very moist.	4-4-5
8	CL	T.B.D. = 8.0 feet Dark brown, silty gravelly CLAY, medium-low plasticity, 1/4" angular clasts, organic material, soft-firm, moist.	3-7-4
9	SW	Light brown, clayey gravelly SAND, medium to fine grained, 1/8" - 1/2" diameter subangular clasts, very loose, loose, wet. T.D. = 9.5 feet	
10			

Scale: 1 inch = 1.5 feet

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DRILLING LOG

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(510) 420-8686

Location	2662 Fruitvale, Oakland, CA		Boring No.	F8
Driller	HEW Drilling		Project No.	92404A0.02
Method	Hollow Stem		Date	1-20-93
Logger	SP	Datum _____	Bore size	7 3/4"
			Casing size	NA

Depth	Graphic	Lithology	Notes
0		Asphalt	
	GW	Baseroack	
1	CL	Dark brown, gravelly silty CLAY with sand, medium-low plasticity, 1/4" to 3/4" subangular clasts, fine-medium grained, firm-soft, moist.	
2			4-6-6 Petroleum odor
3		Dark gray, gravelly silty CLAY, light gray and rust stains, medium-low plasticity, 1/4" to 1/2", subangular clasts, moist.	HNu = 1 ppm
4	CL	Increase in plasticity.	
5			
6			
7			
		T.B.D. = 7.5 feet	
8			
	GW	Dark bluish gray, clayey sandy GRAVEL, 1/4" to 1/2" subrounded to subangular clasts, very loose, wet.	0-0-4 Strong petroleum odor
9		T.D. = 9.0 feet	
10			

Scale: 1 inch = 1.5 feet

92404A0.LOG(2/25/93)

Signature _____

Page 1 of 1

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA		Boring no.	F-9
Driller	HEW		Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger		Date	8/10/93
Logger	WKS	Datum	Bore size	7 3/4-inch
			Casing size	

Depth (ft.)	Graphic	Lithology	Notes
0		Asphalt top.	
1	GW	Base Rock	
2	CL	Reddish brown/brown silty CLAY with sand and gravel, low plasticity, soft-firm, red iron oxide stained veinlets, damp.	
3			HNu = 0 ppm in breathing zone. HNu = 40 ppm in borehole. HNu = 100 ppm in sample. 3-3-5
4		Black to very dark brown, silty CLAY, trace sand, low plasticity, soft to firm, moist.	
5	CL		
6			
7			
8	CH	Dark gray, silty CLAY, high plasticity, soft to firm, very moist.	Petroleum odor. HNu = 0 ppm in breathing zone HNu peak = 600 ppm in borehole. 2-2-1
9			
10	SW	Dark Gray, silty, clayey SAND, trace gravel, very fine-grained, subangular clasts, 1/3-inch diameter, very loose, wet.	2-2-1

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA	Boring no.	F-9
Driller	HEW	Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger	Date	8/10/93
Logger	WKS	Datum	Bore size 7 3/4-inch
			Casing size

Depth (ft.)	Graphic	Lithology	Notes
10	SW	Same as above.	
11		Total Depth = 10.5 feet.	
12			
13			
14			
15			
16			
17			
18			
19			
20			

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA		Boring no.	F-10
Driller	HEW		Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger		Date	8/10/93
Logger	WKS	Datum	Bore size	7 3/4-inch
			Casing size	

Depth (ft.)	Graphic	Lithology	Notes
0		Asphalt	
1	GW	Base Rock	
2	CL	Dark reddish-brown, silty CLAY with sand, trace gravel, soft, firm, low plasticity, damp.	
3	CL	Black, silty CLAY with sand, soft to firm, low plasticity, damp to moist.	HNu = 0 ppm in breathing zone. HNu = 700 ppm in borehole. 2-5-6
4			
5			
6			
7			
8	CH	Dark gray, silty CLAY with sand, high plasticity, soft, very moist.	
9			Petroleum odor HNu = 0 ppm in breathing zone. HNu = 100 ppm in borehole. HNu = 150 ppm in sample.
10			2-2-4

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA	Boring no.	F-10
Driller	HEW	Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger	Date	
Logger	WKS	Datum	
		Bore size	7 3/4-inch
		Casing size	

Depth (ft.)	Graphic	Lithology	Notes
10		SW Dark gray, silty SAND, with gravel and clay, fine- to very fine-grained, subangular clasts, up to 1-inch diameter, loose, wet.	2-3-4
11			
12		Total Depth = 12.0 feet.	
13			
14			
15			
16			
17			
18			
19			
20			


DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA		Boring no.	F-11
Driller	HEW		Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger		Date	8/10/93
Logger	WKS	Datum	Bore size	7 3/4-inch
			Casing size	

Depth (ft.)	Graphic	Lithology	Notes
0		Asphalt	
1	GW	Base Rock	
2	GW	Reddish-brown, clayey GRAVEL, subangular clasts, 1/2-inch diameter, loose, moist.	HNu = 0 ppm in breathing zone. HNu = 20 ppm in borehole. HNu = 70 ppm in sample Petroleum odor 4-4-5
2	SW	Yellowish-brown, silty, gravelly SAND, fine-grained, loose, moist.	
3	SC	Dark gray, clayey SAND with silt, loose, damp.	
4			
5	ML/CL	Dark gray, clayey SILT/silty CLAY, low plasticity, soft, moist.	
6			
7			
8			
9	ML	Dark gray, clayey SILT with sand, soft, low plasticity, very moist.	HNu = 0 ppm in breathing zone HNu = 190 ppm in borehole. 2-3-3
10		Increase in sand content at 10 feet.	

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA	Boring no.	F-11
Driller	HEW	Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger	Date	8/10/93
Logger	WKS	Datum	
		Bore size	7 3/4-inch
		Casing size	

Depth (ft.)	Graphic	Lithology	Notes
10	 ML	Same as above.	
11		Total Depth = 10.5 feet	
12			
13			
14			
15			
16			
17			
18			
19			
20			

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA	Boring no.	F-12
Driller	HEW	Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger	Date	8/10/93
Logger	WKS	Datum	Bore size 7 $\frac{3}{4}$
			Casing size

Depth (ft.)	Graphic	Lithology	Notes
0		Asphalt	
1	GW	Base Rock	Petroleum odor at 1.5 feet.
2	CL	Dark-brown/greenish gray gravelly CLAY, high plasticity, 1/2-inch subangular clasts, soft, moist.	3-3-5 petroleum odor
3	ML/CL	Dark gray clayey SILT/silty CLAY, low plasticity, soft, veinlets, moist.	HNu = 0 ppm in breathing zone. HNu = 60 ppm in borehole HNu = 140 ppm in sample.
4			
5	CL	Dark gray to black, silty CLAY, low plasticity, soft, moist.	
6			
7			
8			
9	SW	Dark gray to gray, clayey SAND with silt, very fine-grained, very loose, wet.	Petroleum odor HNu = 0 ppm in breathing zone. HNu = 300 ppm in borehole. HNu = 140 ppm in sample.
10			3-3-2

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA		Boring no.	F-12
Driller	HEW		Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger		Date	8/10/93
Logger	WKS	Datum	Bore size	Casing size

Depth (ft.)	Graphic	Lithology	Notes
10	SW	Same as above. Total Depth = 10.5 feet.	
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA	Boring no.	F-13
Driller	HEW	Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger	Date	8/10/93
Logger	WKS Datum _____	Bore size	7 3/4-inch
		Casing size	_____

Depth (ft.)	Graphic	Lithology	Notes
0		Asphalt top.	
1	GW	Base Rock with clay.	
2	SW	Greenish-gray, silty SAND with clay, fine- to medium-grained, loose, moist.	Strong petroleum odor HNu = 0 ppm in breathing zone. HNu = 50 ppm in borehole. HNu = 120 ppm in sample. 2-2-3
3			
4		Dark brown to black, silty CLAY, high plasticity, soft, moist.	
5	CH		
6			
7			
8			
9	SP	Dark gray SAND, fine-grained, loose, very moist.	Strong petroleum odor HNu = 3 ppm in breathing zone. HNu = 600 ppm in borehole. HNu = 150 ppm in sample. 2-2-1
10			

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA		Boring no.	F-13
Driller	HEW		Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger		Date	8/10/93
Logger	WKS	Datum	Bore size	7 3/4-inch
			Casing size	

Depth (ft.)	Graphic	Lithology	Notes
10		Dark gray, silty CLAY, high plasticity, very soft, wet. Total Depth = 10.5 feet.	
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA	Boring no.	F-14
Driller	HEW	Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger	Date	8/10/93
Logger	WKS	Datum	Bore size 7 3/4-inch
			Casing size

Depth (ft.)	Graphic	Lithology	Notes
0		Asphalt top.	
1	GW	Base Rock.	
2	CL	Dark brown, silty CLAY with trace gravel, low plasticity, soft to firm, veinlets, iron oxide stained, damp.	HNu = 0 ppm in breathing zone. HNu = 17 ppm in borehole. 4-5-6
3			
4			
5		Becoming brown	
6			
7			
8			
9	CH	Dark gray sandy CLAY with silt, high plasticity, firm, moist.	Strong petroleum odor HNu = 0 ppm in breathing zone. HNu = 20 ppm in borehole. HNu = 130 ppm in sample. 4-6-8
10			

DRILLING LOG

Location	2662 Fruitvale Avenue, Oakland, CA	Boring no.	F-14
Driller	HEW	Project no.	92404-A0.03
Method	Hollow-stem continuous-flight auger	Date	8/10/93
Logger	WKS	Datum	Bore size 7 3/4-inch
			Casing size

Depth (ft.)	Graphic	Lithology	Notes
10			
	CH	Dark bluish gray, gravelly SAND, trace clay, fine- to medium-grained, subrounded to rounded clasts, 1/3- to 1/2-inch diameter, medium dense, very moist.	8-11-14
	SW		
11			
	CH	Mottled dark gray and brown, silty CLAY, high plasticity, stiff, moist.	
12			
		Total Depth = 12 feet	
13			
14			
15			
16			
17			
18			
19			
20			

APPENDIX E

**WELL CONSTRUCTION SUMMARIES, WELL DEVELOPMENT FORMS,
AND GROUNDWATER SAMPLING FORMS**

0	GW	WELL CONSTRUCTION SUMMARY				Project no. <u>92404-A0.03</u>		Well no. <u>MW-F1</u>			
		Project name <u>Fruitvale</u>		Date <u>8/11/93</u>		Personnel <u>WKS</u>		Driller <u>HEW</u>			
5	SW	Location <u>2662 Fruitvale Avenue</u>		DRILLING SUMMARY		CONSTRUCTION TIME LOG					
		<u>Oakland, California</u>				Task	Start		Finish		
	CL	Drill rig <u>B-57</u>		Auger/bits <u>Hollow stem, continuous flight</u>		Drilling	<u>Date</u>	<u>Time</u>	<u>Date</u>	<u>Time</u>	
		Drilling fluid <u>None</u>					8/11/93	13:00	8/11/93	14:00	
		Boring diameter (inch) <u>7 3/4</u>		Boring depth (feet) <u>26</u>		Geophys log					
10	GW	Surface completion <u>Traffic rated Christie box</u>					Casing	8/11/93	14:10	8/11/93	14:12
		Ground surface elevation (feet) <u>104.82</u>		Filter placement	8/11/93	14:15		8/11/93	14:39		
		TOC elevation (feet) <u>104.41</u>			Cementing	8/11/93	15:00	8/11/93	15:30		
15	CH	WELL DESIGN				Development	8/12/93	12:15	8/12/93	15:51	
		Basis: <input checked="" type="checkbox"/> Geologic log		<input type="checkbox"/> Geophysical log							
	GW	Casing	Material	Slot	WELL DEVELOPMENT						
		Diameter	and Length	Size						Method <u>Dbi-diaphragm pump/ surge block</u> Date <u>8/12/93</u>	
20	SW	(inch)	(feet)	Interval	Time Gallons Appearance						
				(feet bgs)						12:15 2.0 Clear	
	GC	2.0	PVC sch 40	8.1	Blank	12:39 3.0 Very turbid					
		2.0	PVC sch 40	5.0	020						12:41 5.0 Slightly turbid
		2.0	PVC sch 40	10.0	020	12:46 10.0 Very slightly turbid					
25	ML	2.0	PVC sch 40	1.5	020						15:51 15.0 Very slightly turbid
						WATER LEVELS					
		Centralizer <u>None</u>									Date
		Filter material <u>Lonestar #3</u>		7.5-26						(ft bgs)	
		Bentonite <u>Pellets</u>		6.5-7.5		During drilling:		8/11/93	13:20	13.75	
30		Cement <u>Neat</u>		0-6.5		After completion:					
						Before development:		8/12/93	9:19	11.12	
35											
		COMMENTS									
40											
45											

Signature: _____

(92404log xlw-8/17/93)
[Scale: 1 inch = 5 feet]

0	CL	WELL CONSTRUCTION SUMMARY				Project no. <u>92404-A0.03</u> Well no. <u>MW-F3</u>			
		Project name <u>Fruitvale</u>		Date <u>8/11/93</u>		Personnel <u>WKS</u>			
		Location <u>2662 Fruitvale Avenue</u>		Driller <u>HEW</u>					
		DRILLING SUMMARY		CONSTRUCTION TIME LOG					
		Drill rig <u>B-57</u>		Task		Start		Finish	
		Auger/bits <u>Hollow stem, continuous flight</u>		Drilling	<u>Date</u>	<u>Time</u>	<u>Date</u>	<u>Time</u>	
		Drilling fluid <u>None</u>			8/11/93	8:30	8/11/93	10:30	
		Boring diameter (inch) <u>7 3/4</u>		Geophys log					
		Boring depth (feet) <u>26</u>		Casing	8/11/93	10:50	8/11/93	10:58	
		Surface completion <u>Christie box</u>		Filter placement	8/11/93	11:00	8/11/93	12:09	
Ground surface elevation (feet) <u>102.92</u>		Cementing	8/11/93	12:15	8/11/93	12:30			
TOC elevation (feet) <u>102.42</u>		Development	8/12/93	10:11	8/12/93	11:59			
WELL DESIGN		Other							
Basis: <input checked="" type="checkbox"/> Geologic log <input type="checkbox"/> Geophysical log		WELL DEVELOPMENT							
Casing		Material		Slot					
Diameter and Length (inch) (feet)		Size		Interval (feet bgs)					
2.0 PVC sch 40 8.1		Blank		0.4-8.5					
2.0 PVC sch 40 10.0		0.02		8.5-18.5					
2.0 PVC sch 40 5.0		0.02		18.5-23.5					
2.0 PVC sch 40 1.5		0.02		23.5-25					
Centralizer <u>None</u>		Method <u>Dbl-diaphragm pump/ surge block</u>		Date <u>8/12/93</u>					
Filter material <u>Lonestar #3</u>		Time		Gallons		Appearance			
Bentonite <u>Pellets</u>		10:11		0.0		Very turbid			
Cement <u>Neat</u>		10:15		2.5		Very slightly turbid			
7.5-25		10:25		5.0		Very turbid			
6.5-7.5		10:37		12.0		Very turbid			
0-7.5		11:39		13.0		Slightly turbid			
WATER LEVELS		Date		Time		Depth (ft bgs)			
During drilling:		8/11/93		8:10		~16.0			
After completion:									
Before development:		8/12/93		9:18		11.99			
COMMENTS									
40									
45									

(92404log.xlw-8/17/93)
[Scale 1 inch = 5 feet]

Signature: _____

0	CL	WELL CONSTRUCTION SUMMARY				Project no. <u>92404-A0.03</u> Well no. <u>MW-F2</u>					
		Project name <u>Fruitvale</u>		Date <u>8/10/93</u>		Personnel <u>WKS</u>					
		Location <u>2662 Fruitvale Avenue</u>		Driller <u>HEW</u>							
		<u>Oakland, California</u>									
		DRILLING SUMMARY				CONSTRUCTION TIME LOG					
		Drill rig <u>B-57</u>		Auger/bits <u>Hollow stem, continuous flight</u>		Task		Start		Finish	
		Drilling fluid <u>None</u>		Boring diameter (inch) <u>7 3/4</u>		Drilling	<u>Date</u>	<u>Time</u>	<u>Date</u>	<u>Time</u>	
		Boring depth (feet) <u>20</u>		Surface completion <u>Christie box</u>			<u>8/10/93</u>	<u>13:00</u>	<u>8/10/93</u>	<u>14:20</u>	
		Ground surface elevation (feet) <u>102.42</u>		TOC elevation (feet) <u>102.22</u>		Geophys log					
							Casing	<u>8/10/93</u>	<u>14:28</u>	<u>8/10/93</u>	<u>14:29</u>
WELL DESIGN				Filter placement	<u>8/10/93</u>	<u>14:35</u>		<u>8/10/93</u>	<u>14:57</u>		
Basis: <input checked="" type="checkbox"/> Geologic log		<input type="checkbox"/> Geophysical log			Cementing	<u>8/10/93</u>	<u>15:10</u>	<u>8/10/93</u>	<u>15:40</u>		
Casing Material Slot		Diameter and Length Size Interval		Development		<u>8/12/93</u>	<u>9:10</u>	<u>8/12/93</u>	<u>14:40</u>		
(inch) (feet)		(feet bgs)			Other						
2.0 PVC sch 40 3.0 Blank 0.4-3.5		2.0 PVC sch 40 5.0 Blank 3.5-8.5		WELL DEVELOPMENT							
2.0 PVC sch 40 5.0 0.02 8.5-13.5		2.0 PVC sch 40 5.0 0.02 13.5-18.5		Method <u>Dbl-diaphragm pump/ surge block</u>		Date <u>8/12/93</u>					
2.0 PVC sch 40 1.5 0.02 18.5-20				Time		Gallons		Appearance			
				9:10		0.0		Very turbid			
Centralizer <u>None</u>				9:11		1.0		Clear			
Filter material <u>Lonestar #3</u>		7.5-20		9:15		2.5		Clear			
Bentonite <u>Pellets</u>		6.5-7.5						Surged well			
Cement <u>Neat</u>		0-6.5		9:29		3.0		Very turbid			
WATER LEVELS				9:37		7.0		Very turbid			
				14:00		8.0		Very slightly turbid			
				14:40		14.0		Very slightly turbid			
During drilling:		<u>8/10/93</u>	<u>1:15</u>								
After completion:											
Before development:		<u>8/12/93</u>	<u>9:09</u>								
COMMENTS											

(92404log.xlw-8/17/93)
[Scale: 1 inch = 5 feet]

Signature: _____

WELL DEVELOPMENT

Project no.	<u>92404-A0.03</u>	Well no.	<u>MW-F1</u>	Date	<u>8/12/93</u>
Project name	<u>Fruitvale</u>	Depth of well from TOC (feet)	<u>25.11</u>		
Location	<u>2662 Fruitvale Avenue</u> <u>Oakland, California</u>	Well diameter (inch)	<u>2</u>		
Recorded by	<u>WKS</u>	Screened interval (feet)	<u>8.5-25.11</u>		
Weather	<u>Overcast</u>	TOC elevation (feet)	<u>104.41</u>		
Precip in past 5 days (inch)	<u>0</u>	Water level from TOC (feet)	<u>11.12</u>	Time	<u>9:19</u>
		Product level from TOC (feet)	<u>None</u>	Time	<u>9:19</u>
		Water level measurement	<u>Dual-interface probe</u>		

FIELD MEASUREMENTS

Time	Gallons Removed	Appearance	Recharge:	
			Time	Water Level (feet)
12:15	2.0	Clear		
		Surged well	>1 gallon per minute.	
12:39	3.0	Very turbid		
12:41	5.0	Slightly turbid		
12:46	10.0	Very slightly turbid		
15:51	15.0	Very slightly turbid		

Comments: _____

Total gallons removed	<u>15</u>	Average recharge rate (ft/min)	_____
Development method	<u>Surge block and double diaphragm pump.</u>	Purged water disposal	<u>Drum FW4</u>
		Number of drums	<u>One partial</u>
Decontamination method	<u>TSP and water, DI rinse</u>	Rinsate disposal	<u>Drum FW4</u>

(92404log.xlw-8/17/93)

WELL DEVELOPMENT

Project no.	<u>92404-A0.03</u>	Well no.	<u>MW-F2</u>	Date	<u>8/12/93</u>
Project name	<u>Fruitvale</u>	Depth of well from TOC (feet)	<u>19.88</u>		
Location	<u>2662 Fruitvale Avenue</u> <u>Oakland, California</u>	Well diameter (inch)	<u>2</u>		
Recorded by	<u>WKS</u>	Screened interval (feet)	<u>8.5-19.88</u>		
Weather	<u>Overcast</u>	TOC elevation (feet)	<u>102.22</u>		
Precip in past 5 days (inch)	<u>0</u>	Water level from TOC (feet)	<u>12.42</u>	Time	<u>9:09</u>
		Product level from TOC (feet)	<u>None</u>	Time	<u>9:09</u>
		Water level measurement	<u>Dual-interface probe</u>		

FIELD MEASUREMENTS

Time	Gallons Removed	Appearance	Recharge:	
			Time	Water Level (feet)
9:10	0.0	Very turbid	9:38:30	19.60
9:11	1.0	Clear	9:39:16	19.50
9:15	2.5	Clear	9:40:00	19.40
	Surged well		9:40:56	19.30
9:29	3.0	Very turbid	9:42:05	19.20
9:37	7.0	Very turbid	9:43:45	19.10
	Stopped pumping, allowed well to recharge		9:45:49	19.00
14:00	8.0	Very slightly turbid	9:59:16	18.50
14:40	14.0	Very slightly turbid	10:14:18	18.00
			10:33:27	17.50
			11:36:30	16.15
			12:01:30	15.72
			12:38:00	15.20
			13:18:00	14.75
			13:51:00	14.40

Comments: _____

Total gallons removed	<u>14</u>	Average recharge rate (ft/min)	<u>0.026</u>
Development method	<u>Double-diaphragm pump and surge block</u>	Purged water disposal	<u>Drum FW4</u>
		Number of drums	<u>One partial</u>
Decontamination method	<u>TSP and water, DI rinse</u>	Rinsate disposal	<u>Drum FW4</u>

(92404log.xlw-8/17/93)

WELL DEVELOPMENT

Project no.	<u>92404-A0.03</u>	Well no.	<u>MW-F3</u>	Date	<u>8/12/93</u>
Project name	<u>Fruitvale</u>	Depth of well from TOC (feet)	<u>24.60</u>		
Location	<u>2662 Fruitvale Avenue</u> <u>Oakland, California</u>	Well diameter (inch)	<u>2</u>		
Recorded by	<u>WKS</u>	Screened interval (feet)	<u>8.5-24.60</u>		
Weather	<u>Overcast</u>	TOC elevation (feet)	<u>102.42</u>		
Precip in past 5 days (inch)	<u>0</u>	Water level from TOC (feet)	<u>11.99</u>	Time	<u>9:18</u>
		Product level from TOC (feet)	<u>None</u>	Time	<u>9:18</u>
		Water level measurement	<u>Dual-interface probe</u>		

FIELD MEASUREMENTS

Time	Gallons Removed	Appearance	Recharge:	
			Time	Water Level (feet)
10:11	0.0	Very turbid	10:47:29	20.00
10:15	2.5	Very slightly turbid	10:48:11	19.50
	Surged well		10:49:33	18.50
10:25	5.0	Very turbid; fine sand grains	10:50:34	18.00
10:37	12.0	Very turbid	10:51:41	17.50
	Stopped pumping, allowed well to recharge		10:52:56	17.00
11:39	13.0	Slightly turbid	10:54:08	16.50
11:59	18.0	Very slightly turbid	10:55:28	16.00
			10:57:04	15.50
			10:59:00	15.00
			11:01:28	14.50
			11:04:32	14.00
			11:08:35	13.50
			11:14:06	13.00
			11:23:26	12.50
			11:35:21	12.20

Comments: _____

Total gallons removed	<u>18</u>	Average recharge rate (ft/min)	<u>0.134</u>
Development method	<u>Double-diaphragm pump and surge block</u>	Purged water disposal	<u>Drum FW4</u>
Decontamination method	<u>TSP and water, DI rinse</u>	Number of drums	<u>One partial</u>
		Rinsate disposal	<u>Drum FW4</u>

(92404log xlw-8/17/93)

GROUNDWATER SAMPLING

Project no.	<u>92404-A0.03</u>	Well no.	<u>MW-F1</u>	Date	<u>8/16/93</u>
Project name	<u>Fruitvale</u>	Depth of well from TOC (feet)	<u>25.11</u>		
Location	<u>2662 Fruitvale Avenue</u>	Well diameter (inch)	<u>2</u>		
	<u>Oakland, California</u>	Screened interval (feet)	<u>8.5-25.11</u>		
Recorded by	<u>WKS</u>	TOC elevation (feet)	<u>104.41</u>		
Weather	<u>Sunny</u>	Water level from TOC (feet)	<u>11.13</u>	Time	<u>8:54</u>
Precip in past		Product level from TOC (feet)	<u>None</u>	Time	<u>8:54</u>
5 days (inch)	<u>0</u>	Water level measurement	<u>Dual-interface probe</u>		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

$$[(25.11 \text{ ft}) - (11.13 \text{ ft})] \times (0.083 \text{ ft})^2 \times 3.14 \times 7.48 = \underline{2.3} \text{ gallons in one well volume}$$

Well depth Water level Well radius

$$\underline{11.5} \text{ gallons in 5 well volumes}$$

$$\underline{11.5} \text{ total gallons removed}$$

CALIBRATION:

	Time	Temp (° C)	pH	EC (µmho/cm)
Calibration Standard:	8:45	21.7	7.00/10.01	1,000
Before Purging:	8:45	21.7	7.00/10.01	1,000
After Purging:	11:10	22.0	6.70/9.95	1,000

FIELD MEASUREMENTS

Time	Temp (° C)	pH	EC (µmho/cm)	Cumulative Gallons Removed	Appearance
10:31	19.2	6.52	500	2.0	Clear
10:38	19.5	6.56	500	5.0	Clear
10:44	19.5	6.56	500	7.5	Clear
10:50	19.5	6.58	500	9.5	Clear
11:00	19.7	6.57	500	11.5	Clear

Water level after purging prior to sampling (feet)	<u>11.14</u>	Time	<u>11:20</u>
Appearance of sample	<u>Clear</u>	Time	<u>11:30</u>
Duplicate/blank number	<u>None</u>	Time	<u>--</u>
Purge method	<u>Double-diaphragm pump, disposable polyethylene tubing</u>		
Sampling equipment	<u>Disposable PVC bailer</u>	VOC attachment	<u>Used for VOC and gasoline samples</u>
Sample containers	<u>1-liter amber glass, 3 40-ml VOAs</u>		
Sample analyses	<u>TPH motor oil, TPH gasoline, VOC</u>	Laboratory	<u>Chromalab</u>
Decontamination method	<u>TSP and water, DI water rinse</u>	Rinsate disposal	<u>Drum FW5</u>

(92404GW1.xlw-8/17/93)

GROUNDWATER SAMPLING

Project no.	<u>92404-A0.03</u>	Well no.	<u>MW-F2</u>	Date	<u>8/16/93</u>
Project name	<u>Fruitvale</u>	Depth of well from TOC (feet)	<u>19.88</u>		
Location	<u>2662 Fruitvale Avenue</u>	Well diameter (inch)	<u>2</u>		
	<u>Oakland, California</u>	Screened interval (feet)	<u>8.5-19.88</u>		
Recorded by	<u>WKS</u>	TOC elevation (feet)	<u>102.22</u>		
Weather	<u>Sunny</u>	Water level from TOC (feet)	<u>12.15</u>	Time	<u>8:51</u>
Precip in past		Product level from TOC (feet)	<u>None</u>	Time	<u>8:51</u>
5 days (inch)	<u>0</u>	Water level measurement	<u>Dual-interface probe</u>		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

$$[(19.88 \text{ ft}) - (12.15 \text{ ft})] \times (0.083 \text{ ft})^2 \times 3.14 \times 7.48 = \underline{1.3} \text{ gallons in one well volume}$$

Well depth Water level Well radius

$$\underline{6.5} \text{ gallons in 5 well volumes}$$

$$\underline{5.5} \text{ total gallons removed}$$

CALIBRATION:

	Time	Temp (° C)	pH	EC (µmho/cm)
Calibration Standard:	8:45	21.7	7.00/10.01	1,000
Before Purging:	8:45	21.7	7.00/10.01	1,000
After Purging:	11:10	22.0	6.70/9.95	1,000

FIELD MEASUREMENTS

Time	Temp (° C)	pH	EC (µmho/cm)	Cumulative Gallons Removed	Appearance
9:06	20.7	6.90	1,100	1.0	Clear
9:17	20.7	6.87	900	2.0	Clear
9:26	20.7	6.93	1,000	4.0	Clear
9:33	20.7	6.93	900	5.5	Clear

Water level after purging prior to sampling (feet)	<u>14.59</u>	Time	<u>12:25</u>
Appearance of sample	<u>Clear</u>	Time	<u>12:30</u>
Duplicate/blank number	<u>None</u>	Time	<u>--</u>
Purge method	<u>Double-diaphragm pump, disposable polyethylene tubing</u>		
Sampling equipment	<u>Disposable PVC bailer</u>	VOC attachment	<u>Used for VOC and gasoline samples</u>
Sample containers	<u>1-liter amber glass, 2 40-ml VOAs</u>		
Sample analyses	<u>TPH motor oil, TPH gasoline, VOC</u>	Laboratory	<u>Chromalab</u>
Decontamination method	<u>TSP and water, DI water rinse</u>	Rinsate disposal	<u>Drum FW5</u>

(92404GW1.xlw-8/17/93)

GROUNDWATER SAMPLING

Project no.	<u>92404-A0.03</u>	Well no.	<u>MW-F3</u>	Date	<u>8/16/93</u>
Project name	<u>Fruitvale</u>	Depth of well from TOC (feet)	<u>24.60</u>		
Location	<u>2662 Fruitvale Avenue</u> <u>Oakland, California</u>	Well diameter (inch)	<u>2</u>		
		Screened interval (feet)	<u>8.5-24.60</u>		
Recorded by	<u>WKS</u>	TOC elevation (feet)	<u>102.42</u>		
Weather	<u>Sunny</u>	Water level from TOC (feet)	<u>11.99</u>	Time	<u>8:53</u>
Precip in past		Product level from TOC (feet)	<u>None</u>	Time	<u>8:53</u>
5 days (inch)	<u>0</u>	Water level measurement	<u>Dual-interface probe</u>		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

$$[(24.60 \text{ ft}) - (11.99 \text{ ft})] \times (0.083 \text{ ft})^2 \times 3.14 \times 7.48 = \underline{2.1} \text{ gallons in one well volume}$$

Well depth Water level Well radius

$$\underline{10.5} \text{ gallons in 5 well volumes}$$

$$\underline{9.5} \text{ total gallons removed}$$

CALIBRATION:

	Time	Temp (° C)	pH	EC (µmho/cm)
Calibration Standard:	8:45	21.7	7.00/10.01	1,000
Before Purging:	8:45	21.7	7.00/10.01	1,000
After Purging:	11:10	22.0	6.70/9.95	1,000

FIELD MEASUREMENTS

Time	Temp (° C)	pH	EC (µmho/cm)	Cumulative Gallons Removed	Appearance
9:43	19.4	6.62	800	1.5	Clear
9:51	19.5	6.64	800	3.5	Clear
10:00	19.5	6.62	800	5.0	Clear
10:08	19.3	6.63	800	7.0	Clear
10:20	19.3	6.60	800	9.5	Clear

Water level after purging prior to sampling (feet)	<u>12.01</u>	Time	<u>11:44</u>
Appearance of sample	<u>Clear</u>	Time	<u>11:45</u>
Duplicate/blank number	<u>None</u>	Time	<u>--</u>
Purge method	<u>Double-diaphragm pump, disposable polyethylene tubing</u>		
Sampling equipment	<u>Disposable PVC bailer</u>	VOC attachment	<u>Used for VOC and gasoline samples</u>
Sample containers	<u>1-liter amber glass, 3 40-ml VOAs</u>		
Sample analyses	<u>TPH motor oil, TPH gasoline, VOC</u>	Laboratory	<u>Chromalab</u>
Decontamination method	<u>TSP and water, DI water rinse</u>	Rinsate disposal	<u>Drum FW5</u>

(92404GW1 xlw-8/17/93)

APPENDIX F
SURVEYOR REPORT

BATES AND BAILEY

LAND SURVEYORS

15 SHATTUCK SQUARE • BERKELEY, CA 94704
TELEPHONE (510) 843-2007

P O BOX 592
BERKELEY, CA 94701-0592

August 26, 1993

RECEIVED

AUG 27 1993

BASELINE

Baseline Environmental
5900 Hollis St., Suite D
Emeryville, CA 94608

Attention: Bill Scott

Dear Bill,

Enclosed are copies of the survey indicating the location of the wells, at 2662 Fruitvale Avenue, Oakland and listed below are the revised elevations of the wells.

<u>WELL</u>	<u>T.C. ELEVATION</u>	<u>GROUND ELEVATION</u>
MW - F1	104.41	104.82
MW - F2	102.22	102.42
MW - F3	102.42	102.92

The elevations are based on City of Oakland datum
Bench Mark $\frac{19C.}{14}$

JUST a name.

Yours truly,


Robert W. Wilson

RWW/dd
Enc.

APPENDIX G
UNIFORM HAZARDOUS WASTE MANIFESTS

93294054
 IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address JCE OIL & CHEMICAL 2662 TULLY AVE CALIFORNIA, CA 94601		C A C E D D O R H 4 5 6 3 2		7 4 1 0 5 4		A. State Manifest Document Number 93294054
4. Generator's Phone 504-8-1234		6. US EPA ID Number		C. State Transporter's ID 402583		D. Transporter's Phone 800-972-5284
5. Transporter 1 Company Name ENVIRONMENTAL SERVICES		8. US EPA ID Number		E. State Transporter's ID		F. Transporter's Phone
7. Transporter 2 Company Name		10. US EPA ID Number		G. State Facility's ID C A D 9 8 0 8 8 7 4 1 8		H. Facility's Phone 510-795-4400
9. Designated Facility Name and Site Address		11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers No. Type	13. Total Quantity	14. Unit Wt/Vol
a. HAZARDOUS WASTE		b. NON-HAZARDOUS LIQUID		0 0 1 T T	1 / 50	C
J. Additional Descriptions for Materials Listed Above 1.1 -- Waste Oils 1.2 -- Waste Water		K. Handling Codes for Wastes Listed Above		I. Waste Number State: 221 EPA/Other: NONE		
15. Special Handling Instructions and Additional Information Call 510-795-4400. Emergency, contact Kirk Hayward DOT Guides #27		16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable federal, state and international laws.		I. Waste Number State: 134 EPA/Other: NONE		
Printed/Typed Name		Signature		Month Day Year		
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature		Month Day Year		
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Month Day Year		
19. Discrepancy Indication Space						
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.						
Printed/Typed Name		Signature		Month Day Year		

DO NOT WRITE BELOW THIS LINE.

APPENDIX H
LABORATORY REPORTS, SOIL



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Baseline Environmental
5900 Hollis Street
Suite D
Emeryville, CA 94608

Date: 17-AUG-93
Lab Job Number: 111865
Project ID: 92404-AO.03
Location: 2662 Fruitvale, Oakland

Reviewed by:

Teresa H. Morrison

Reviewed by:

Rachel OB

This package may be reproduced only in its entirety.

LABORATORY NUMBER: 111865-1
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND
 SAMPLE ID: F9 3.0-3.5

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/13/93
 DATE REPORTED: 08/17/93

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
1,1,2-Trichloroethane	ND	5
trans-1,3-Dichloropropene	ND	5
Dibromochloromethane	ND	5
Bromoform	ND	10
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Chlorobenzene	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

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Surrogate Recovery, %

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115

LABORATORY NUMBER: 111865-2
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND
 SAMPLE ID: F9 9.5-10

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/14/93
 DATE REPORTED: 08/17/93

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	20
Bromomethane	ND	20
Vinyl chloride	ND	20
Chloroethane	ND	20
Methylene chloride	ND	40
Trichlorofluoromethane	ND	10
1,1-Dichloroethene	ND	10
1,1-Dichloroethane	ND	10
cis-1,2-Dichloroethene	ND	10
trans-1,2-Dichloroethene	ND	10
Chloroform	ND	10
Freon 113	ND	10
1,2-Dichloroethane	ND	10
1,1,1-Trichloroethane	ND	10
Carbon tetrachloride	ND	10
Bromodichloromethane	ND	10
1,2-Dichloropropane	ND	10
cis-1,3-Dichloropropene	ND	10
Trichloroethene	ND	10
1,1,2-Trichloroethane	ND	10
trans-1,3-Dichloropropene	ND	10
Dibromochloromethane	ND	10
Bromoform	ND	20
Tetrachloroethene	ND	10
1,1,2,2-Tetrachloroethane	ND	10
Chlorobenzene	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
1,2-Dichlorobenzene	ND	10

ND = Not detected at or above reporting limit.

NOTE: Detection limit raised due to high concentration of non-target compounds.

QA/QC SUMMARY

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Surrogate Recovery, %

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113

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LABORATORY NUMBER: 111865-3
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND
 SAMPLE ID: F10 3.0-3.5

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/14/93
 DATE REPORTED: 08/17/93

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
1,1,2-Trichloroethane	ND	5
trans-1,3-Dichloropropene	ND	5
Dibromochloromethane	ND	5
Bromoform	ND	10
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Chlorobenzene	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

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Surrogate Recovery, %	120
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LABORATORY NUMBER: 111865-4
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND
 SAMPLE ID: F10 10-10.5

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/14/93
 DATE REPORTED: 08/17/93

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	50
Bromomethane	ND	50
Vinyl chloride	ND	50
Chloroethane	ND	50
Methylene chloride	ND	100
Trichlorofluoromethane	ND	30
1,1-Dichloroethene	ND	30
1,1-Dichloroethane	ND	30
cis-1,2-Dichloroethene	ND	30
trans-1,2-Dichloroethene	ND	30
Chloroform	ND	30
Freon 113	ND	30
1,2-Dichloroethane	ND	30
1,1,1-Trichloroethane	ND	30
Carbon tetrachloride	ND	30
Bromodichloromethane	ND	30
1,2-Dichloropropane	ND	30
cis-1,3-Dichloropropene	ND	30
Trichloroethene	ND	30
1,1,2-Trichloroethane	ND	30
trans-1,3-Dichloropropene	ND	30
Dibromochloromethane	ND	30
Bromoform	ND	50
Tetrachloroethene	ND	30
1,1,2,2-Tetrachloroethane	ND	30
Chlorobenzene	ND	30
1,3-Dichlorobenzene	ND	30
1,4-Dichlorobenzene	ND	30
1,2-Dichlorobenzene	ND	30

ND = Not detected at or above reporting limit.

NOTE: Detection limit raised due to high concentration of non-target compounds.

QA/QC SUMMARY

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Surrogate Recovery, %

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114

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LABORATORY NUMBER: 111865-5
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND
 SAMPLE ID: F11 2.5-3

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/14/93
 DATE REPORTED: 08/17/93

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
1,1,2-Trichloroethane	ND	5
trans-1,3-Dichloropropene	ND	5
Dibromochloromethane	ND	5
Bromoform	ND	10
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Chlorobenzene	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

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Surrogate Recovery, %

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122

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LABORATORY NUMBER: 111865-6
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND
 SAMPLE ID: F11 10-10.5

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/14/93
 DATE REPORTED: 08/17/93

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
1,1,2-Trichloroethane	ND	5
trans-1,3-Dichloropropene	ND	5
Dibromochloromethane	ND	5
Bromoform	ND	10
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Chlorobenzene	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

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Surrogate Recovery, %

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115

LABORATORY NUMBER: 111865-7
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND
 SAMPLE ID: F12 2.5-3.0

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/14/93
 DATE REPORTED: 08/17/93

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
1,1,2-Trichloroethane	ND	5
trans-1,3-Dichloropropene	ND	5
Dibromochloromethane	ND	5
Bromoform	ND	10
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Chlorobenzene	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

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Surrogate Recovery, %

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130

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LABORATORY NUMBER: 111865-8
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND
 SAMPLE ID: F12 9.5-10

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/14/93
 DATE REPORTED: 08/17/93

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
1,1,2-Trichloroethane	ND	5
trans-1,3-Dichloropropene	ND	5
Dibromochloromethane	ND	5
Bromoform	ND	10
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Chlorobenzene	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

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Surrogate Recovery, %

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112

LABORATORY NUMBER: 111865-9
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND
 SAMPLE ID: F13 3.0-3.5

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/14/93
 DATE REPORTED: 08/17/93

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	50
Bromomethane	ND	50
Vinyl chloride	ND	50
Chloroethane	ND	50
Methylene chloride	ND	100
Trichlorofluoromethane	ND	30
1,1-Dichloroethene	ND	30
1,1-Dichloroethane	ND	30
cis-1,2-Dichloroethene	ND	30
trans-1,2-Dichloroethene	ND	30
Chloroform	ND	30
Freon 113	ND	30
1,2-Dichloroethane	ND	30
1,1,1-Trichloroethane	ND	30
Carbon tetrachloride	ND	30
Bromodichloromethane	ND	30
1,2-Dichloropropane	ND	30
cis-1,3-Dichloropropene	ND	30
Trichloroethene	ND	30
1,1,2-Trichloroethane	ND	30
trans-1,3-Dichloropropene	ND	30
Dibromochloromethane	ND	30
Bromoform	ND	50
Tetrachloroethene	ND	30
1,1,2,2-Tetrachloroethane	ND	30
Chlorobenzene	ND	30
1,3-Dichlorobenzene	ND	30
1,4-Dichlorobenzene	ND	30
1,2-Dichlorobenzene	ND	30

ND = Not detected at or above reporting limit.

NOTE: Detection limit raised due to high concentration of non-target compounds.

QA/QC SUMMARY

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Surrogate Recovery, %

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111

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LABORATORY NUMBER: 111865-10
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND
 SAMPLE ID: F13 9.5-10

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/13/93
 DATE REPORTED: 08/17/93

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	50
Bromomethane	ND	50
Vinyl chloride	ND	50
Chloroethane	ND	50
Methylene chloride	ND	100
Trichlorofluoromethane	ND	30
1,1-Dichloroethene	ND	30
1,1-Dichloroethane	ND	30
cis-1,2-Dichloroethene	ND	30
trans-1,2-Dichloroethene	ND	30
Chloroform	ND	30
Freon 113	ND	30
1,2-Dichloroethane	ND	30
1,1,1-Trichloroethane	ND	30
Carbon tetrachloride	ND	30
Bromodichloromethane	ND	30
1,2-Dichloropropane	ND	30
cis-1,3-Dichloropropene	ND	30
Trichloroethene	ND	30
1,1,2-Trichloroethane	ND	30
trans-1,3-Dichloropropene	ND	30
Dibromochloromethane	ND	30
Bromoform	ND	50
Tetrachloroethene	ND	30
1,1,2,2-Tetrachloroethane	ND	30
Chlorobenzene	ND	30
1,3-Dichlorobenzene	ND	30
1,4-Dichlorobenzene	ND	30
1,2-Dichlorobenzene	ND	30

ND = Not detected at or above reporting limit.

NOTE: Detection limit raised due to high concentration of non-target compounds.

QA/QC SUMMARY

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Surrogate Recovery, %

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105

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LABORATORY NUMBER: 111865-11
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND
 SAMPLE ID: F14 3.0-3.5

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/13/93
 DATE REPORTED: 08/17/93

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
1,1,2-Trichloroethane	ND	5
trans-1,3-Dichloropropene	ND	5
Dibromochloromethane	ND	5
Bromoform	ND	10
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Chlorobenzene	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

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Surrogate Recovery, %

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112

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LABORATORY NUMBER: 111865-12
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND
 SAMPLE ID: F14 10.5-11

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/13/93
 DATE REPORTED: 08/17/93

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	50
Bromomethane	ND	50
Vinyl chloride	ND	50
Chloroethane	ND	50
Methylene chloride	ND	100
Trichlorofluoromethane	ND	30
1,1-Dichloroethene	ND	30
1,1-Dichloroethane	ND	30
cis-1,2-Dichloroethene	ND	30
trans-1,2-Dichloroethene	ND	30
Chloroform	ND	30
Freon 113	ND	30
1,2-Dichloroethane	ND	30
1,1,1-Trichloroethane	ND	30
Carbon tetrachloride	ND	30
Bromodichloromethane	ND	30
1,2-Dichloropropane	ND	30
cis-1,3-Dichloropropene	ND	30
Trichloroethene	ND	30
1,1,2-Trichloroethane	ND	30
trans-1,3-Dichloropropene	ND	30
Dibromochloromethane	ND	30
Bromoform	ND	50
Tetrachloroethene	ND	30
1,1,2,2-Tetrachloroethane	ND	30
Chlorobenzene	ND	30
1,3-Dichlorobenzene	ND	30
1,4-Dichlorobenzene	ND	30
1,2-Dichlorobenzene	ND	30

ND = Not detected at or above reporting limit.

NOTE: Detection limit raised due to high concentration of non-target compounds.

QA/QC SUMMARY

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Surrogate Recovery, %

111

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LABORATORY NUMBER: 111865-13
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND
 SAMPLE ID: MW-F2 3-3.5

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/13/93
 DATE REPORTED: 08/17/93

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
1,1,2-Trichloroethane	ND	5
trans-1,3-Dichloropropene	ND	5
Dibromochloromethane	ND	5
Bromoform	ND	10
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Chlorobenzene	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

=====

Surrogate Recovery, %

=====

111

=====

LABORATORY NUMBER: 111865-14
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND
 SAMPLE ID: MW-F2 12-12.5

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/13/93
 DATE REPORTED: 08/17/93

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
1,1,2-Trichloroethane	ND	5
trans-1,3-Dichloropropene	ND	5
Dibromochloromethane	ND	5
Bromoform	ND	10
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Chlorobenzene	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

=====

Surrogate Recovery, %

=====

105

=====

LABORATORY NUMBER: 111865-METHOD BLANK
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND

DATE ANALYZED: 08/12/93
 DATE REPORTED: 08/17/93

EPA 8010: Volatile Halocarbons in Soil & Wastes
 Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
1,1,2-Trichloroethane	ND	5
trans-1,3-Dichloropropene	ND	5
Dibromochloromethane	ND	5
Bromoform	ND	10
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Chlorobenzene	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

=====

Surrogate Recovery, %

=====

104

LABORATORY CONTROL SAMPLE SUMMARY SHEET FOR EPA 8010

Laboratory Number: 111865
 Analysis date: 08/12/93
 Sample type: Soil

LCS file: 222w053

LCS SPIKE DATA (spiked at 20 ppb)

8010 COMPOUNDS	READING	RECOVERY	STATUS	LIMITS
1,1-Dichloroethene	24.79	124 %	OK	59 - 172
Chlorobenzene	22.57	113 %	OK	60 - 133
Trichloroethene	25.81	129 %	OK	62 - 137
SURROGATES				
Bromobenzene	105.08	105 %	OK	75 - 125

Client: Baseline Environmental

Laboratory Login Number: 111865

 Project Name: 2662 Fruitvale, Oakland
 Project Number: 92404-AO.03

Report Date: 17 August 93

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) METHOD: SMWW 17:5520EF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
111865-003	F10 3.0-3.5	Soil	10-AUG-93	10-AUG-93	13-AUG-93	ND	mg/Kg	50	TR	10217
111865-004	F10 10-10.5	Soil	10-AUG-93	10-AUG-93	13-AUG-93	ND	mg/Kg	50	TR	10217
111865-005	F11 2.5-3	Soil	10-AUG-93	10-AUG-93	13-AUG-93	ND	mg/Kg	50	TR	10217
111865-006	F11 10-10.5	Soil	10-AUG-93	10-AUG-93	13-AUG-93	ND	mg/Kg	50	TR	10217

ND = Not Detected at or above Reporting Limit (RL).

Q C B a t c h R e p o r t

 Client: Baseline Environmental
 Project Name: 2662 Fruitvale, Oakland
 Project Number: 92404-AO.03

 Laboratory Login Number: 111865
 Report Date: 17 August 93

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 10217

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	50	mg/Kg	SMWW 17:5520EF	13-AUG-93

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	92%	SMWW 17:5520EF	13-AUG-93
BSD	86%	SMWW 17:5520EF	13-AUG-93

		Control Limits
Average Spike Recovery	89%	80% - 120%
Relative Percent Difference	7.4%	< 20%

LABORATORY NUMBER: 111865
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE EXTRACTED: 08/12/93
 DATE ANALYZED: 08/14/93
 DATE REPORTED: 08/17/93

Extractable Petroleum Hydrocarbons in Soils & Wastes
 California DOHS Method
 LUFT Manual October 1989

LAB ID	SAMPLE ID	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	MOTOR OIL RANGE (mg/Kg)
111865-1	F9 3.0-3.5	ND(1)	ND(1)	ND(30)
111865-2	F9 9.5-10	76	***	ND(30)
111865-3	F10 3.0-3.5	ND(1)	ND(1)	ND(30)
111865-4	F10 10-10.5	33	***	ND(30)
111865-5	F11 2.5-3	2	ND	ND(30)
111865-6	F11 10-10.5	6	***	ND(30)
111865-7	F12 2.5-3.0	2	ND(1)	ND(30)
111865-8	F12 9.5-10	ND(1)	ND(1)	ND(30)
111865-9	F13 3.0-3.5	12	***	90
111865-10	F13 9.5-10	650	***	ND(30)
111865-11	F14 3.0-3.5	ND(1)	ND(1)	ND(30)
111865-12	F14 10.5-11	150	***	ND(30)
111865-13	MW-F2 3-3.5	ND(1)	ND(1)	ND(30)
111865-14	MW-F2 12-12.5	3	ND(1)	ND(30)

ND = Not Detected at or above reporting limit. Reporting limit indicated in parentheses.

*** Diesel range not reported due to overlap of hydrocarbon ranges.

QA/QC SUMMARY

=====

LCS RECOVERY, %

=====

78

LABORATORY NUMBER: 111865
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/11,12/93
 DATE REPORTED: 08/17/93

Total Volatile Hydrocarbons with BTXE in Soils & Wastes
 TVH by California DOHS Method/LUFT Manual October 1989
 BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (mg/Kg)	BENZENE (ug/Kg)	TOLUENE (ug/Kg)	ETHYL BENZENE (ug/Kg)	TOTAL XYLENES (ug/Kg)
111865-1	F9 3.0-3.5	ND(1)	ND(5)	ND(5)	ND(5)	ND(5)
111865-2	F9 9.5-10	10	ND(5)	ND(5)	52	42
111865-3	F10 3.0-3.5	ND(1)	ND(5)	ND(5)	ND(5)	ND(5)
111865-4	F10 10-10.5	30	ND(5)	ND(5)	73	250
111865-5	F11 2.5-3	ND(1)	ND(5)	ND(5)	ND(5)	ND(5)
111865-6	F11 10-10.5	2	ND(5)	12	ND(5)	9
111865-7	F12 2.5-3.0	2	ND(5)	7	ND(5)	ND(5)
111865-8	F12 9.5-10	2	ND(5)	ND(5)	ND(5)	ND(5)
111865-11	F14 3.0-3.5	ND(1)	ND(5)	ND(5)	ND(5)	ND(5)
111865-13	MW-F2 3-3.5	ND(1)	ND(5)	ND(5)	ND(5)	ND(5)
111865-14	MW-F2 12-12.5	ND(1)	ND(5)	ND(5)	ND(5)	ND(5)

ND = Not detected at or above reporting limit; Reporting limit
 indicated in parentheses.

QA/QC SUMMARY

=====
 RPD, % <1
 RECOVERY, % 90
 =====

LABORATORY NUMBER: 111865
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AO.03
 LOCATION: 2662 FRUITVALE, OAKLAND

DATE SAMPLED: 08/10/93
 DATE RECEIVED: 08/10/93
 DATE ANALYZED: 08/14,15/93
 DATE REPORTED: 08/17/93

Total Volatile Hydrocarbons with BTXE in Soils & Wastes
 TVH by California DOHS Method/LUFT Manual October 1989
 BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (mg/Kg)	BENZENE (ug/Kg)	TOLUENE (ug/Kg)	ETHYL BENZENE (ug/Kg)	TOTAL XYLENES (ug/Kg)
111865-9	F13 3.0-3.5	230	ND(30)	750*	550	1,500
111865-10	F13 9.5-10	1,500	ND(200)	3,700*	8,800*	8100
111865-12	<u>F14 10.5-11</u>	1,600	300*	3,100	5,700	6,000*

* Presence of this compound confirmed by second column; however, the confirmation concentration differed from the reported result by more than a factor of two.

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

=====
 RPD, % <1
 RECOVERY, % 100
 =====

11865

BASELINE
101 H Street, Suite L
Petaluma, CA 94952
(707) 762-5233

CHAIN OF CUSTODY RECORD

Turn-around Time
Lab
BASELINE Contact Person

Standard
Curtis & Tompkins
Dominique Rogues
Geneva Randall

Project No.		Project Name and Location					Analysis										Remarks/ Composite	Detection Limits						
92404-A0.03		2662 Fruitvale, Oakland					TPH as gasoline	TEH as motor oil	BTX&E (P20)	Oil & Grease	Motor Oil	PNAs	Title 22 Metals	Total Lead	P010									
Samplers: (Signature)							<i>Geneva Randall / William V. De...</i>																	
Sample ID No. Station	Date	Time	Media	Depth	No. of Contain- ers																			
F14 3.0-3.5	8-10-93	11:30	SOIL	3.0-3.5	1	X	X	X									X						* SAMPLES FROM FIN MAY BE HOT	TRI- REGIONAL GUIDELINES
F14 10.5-11		11:55		10.5-11	1	X	X	X									X							
MW-F2 3-3.5		13:15		3.0-3.5	1	X	X	X									X							
MW-F2 12-12.5		13:40		12-12.5	1	X	X	X									X							

Relinquished by: (Signature) <i>Geneva Randall</i>	Date / Time 8-10-93 / 15:20	Received by: (Signature) <i>[Signature]</i>	Date / Time 8/10/93 15:26	Conditions of Samples Upon Arrival at Laboratory:
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks:
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	

11665

BASELINE
01 H Street, Suite L
Berkeley, CA 94702
(415) 762-5233

CHAIN OF CUSTODY RECORD

Turn-around Time
Lab
BASELINE Contact Person

standard
Curtis & Thompson
Dominique Roques
Geneva Randall

Project No.		Project Name and Location					Analysis										Remarks/ Composite	Detection Limits						
92404-A0.03		2662 Fruitvale, Oakland					TPH	TEH	BTX&E	Oil & Grease	Motor Oil	PNAs	Title 22 Metals	Total Lead										
Samplers: (Signature)		Geneva Randall / Curtis & Thompson																						
Sample ID No. Station	Date	Time	Media	Depth	No. of Containers	TPH	TEH	BTX&E	Oil & Grease	Motor Oil	PNAs	Title 22 Metals	Total Lead											
F9 3.0-3.5	8-10-93	9:20	SOIL	3.0-3.5	1	X	X	X					X										* ALL	TRI-REGIONAL EVIDENCE
F9 9.5-10		9:30		9.5-10	1	X	X	X					X										SAMPLES	
F10 3.0-3.5		8:30		3.0-3.5	1	X	X	X	X				X										MAY BE	
F10 10-10.5		8:50		10-10.5	1	X	X	X	X				X										HOT SAMPLES	
F11 2.5-3		9:55		2.5-3.0	1	X	X	X	X				X											
F11 10-10.5		10:05		10-10.5	1	X	X	X	X				X											
F12 2.5-3.0		10:30		2.5-3.0	1	X	X	X					X											
F12 9.5-10		10:40		9.5-10	1	X	X	X					X											
F13 3.0-3.5		11:00		3.0-3.5	1	X	X	X					X											
F13 9.5-10		11:10		9.5-10	1	X	X	X					X											

Relinquished by: (Signature) <i>Geneva Randall</i>	Date / Time 8-10-93/15:20	Received by: (Signature) <i>A. L. Ba</i>	Date / Time 8/10/93 15:20	Conditions of Samples Upon Arrival at Laboratory:
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks:
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	

APPENDIX I
LABORATORY REPORTS, GROUNDWATER

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

August 19, 1993

ChromaLab File # 9308160

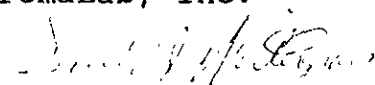
BASELINE ENVIRONMENTAL/PETULM

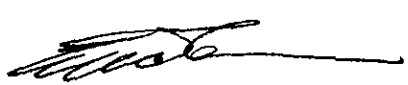
Attn: Geneva Randall

Project Name: 2662 FRUITVALE, OAK. Project No: 92404-AO.03
Date Sampled: August 11, 1993 Method of Analysis: EPA 8010
Date Submitted: August 12, 1993 Matrix: Soil
Date of Analysis: August 13, 1993 Reporting Det. Limit: 5.0 µg/Kg
Sample I.D.: MW-F3;10.0-10.5 Dilution Factor: None

COMPOUND NAME	µg/Kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	---
METHYLENE CHLORIDE	N.D.	---
TRANS-1,2-DICHLOROETHENE	N.D.	---
CIS-1,2-DICHLOROETHENE	N.D.	---
1,1-DICHLOROETHANE	N.D.	107% 110%
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
TRICHLOROETHENE	N.D.	95% 98%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLEETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	94% 95%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	122% 125%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---

ChromaLab, Inc.


David Wintergrass
Analytical Chemist


Eric Tam
Laboratory Director

cc

SUBM #: 9308160
 CLIENT: BASELN2
 DUE: 08/19/93
 REF: 12808

BASELINE
 101 H Street, Suite L
 Petaluma, CA 94952
 (707) 762-5233

Turn-around Time
 Lab
 BASELINE Contact Person

12808
 100/12617
 Standard 12623
 Curtis + Tompkins
 Dominique Leques
 Geneva Randall

Project No.		Project Name and Location				Analysis											Remarks/ Composite	Dete- tion Limits	
92404-AC.03		2662 Fruitvale, Oakland				TPH as gasoline	TEH as motor oil	BTX&E (8020)	Oil & Grease	Motor Oil	PNAs	Title 22 Metals	Total Lead	S/D/O					
Sample ID No. Station	Date	Time	Media	Depth	No. of Contain- ers														
MW-F1; 3.0-3.5	8-11-93	13:08	SOIL		1	X	X	X							X				
MW-F1; 10.0-10.5	8-11-93	13:20			1	X	X	X							X				
MW-F3; 3.0-3.5	8-11-93	8:46			1	X	X	X							X				
MW-F3; 10.0-10.5	8-11-93	9:00			1	X	X	X							X				
MW-F3; 12.0-12.5	8-11-93	9:15			1														Hold
MW-F3; 14.5-15.0	8-11-93	9:25			1														Hold
MW-F1; 13.5-14.0	8-11-93	13:33			1														Hold

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Conditions of Samples Upon Arrival at Laboratory:
				cold
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks:
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	
<i>Miller V. Scott</i>	8-12-93 7:00 AM	<i>Carol Coulter</i>	8-12-93 7:00 AM	

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

August 23, 1993

ChromaLab File No.: 9308209

BASELINE ENVIRONMENTAL/EMRYVL

Attn: Dominic Roques

RE: Three water samples for Gasoline analysis

Project Name: FRUITVALE

Project Number: 92404-A0.03

Date Sampled: August 16, 1993

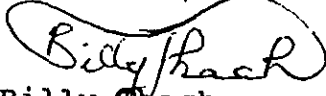
Date Submitted: August 16, 1993

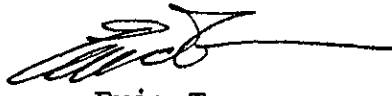
Date Analyzed: August 20, 1993

RESULTS:

<u>Sample I.D.</u>	<u>Gasoline ($\mu\text{g/L}$)</u>
MW-F1	N.D.
MW-F2	N.D.
MW-F3	100
BLANK	N.D.
SPIKE RECOVERY	113%
DETECTION LIMIT	50
METHOD OF ANALYSIS	5030/8015

ChromaLab, Inc.


Billy Thach
Analytical Chemist


Eric Tam
Laboratory Director

cc

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

August 23, 1993

ChromaLab File No.: 9308209

BASELINE ENVIRONMENTAL/EMRYVL

Attn: Dominic Roques

RE: Three water samples for Motor Oil analysis

Project Name: FRUITVALE

Project Number: 92404-A0.03

Date Sampled: August 16, 1993

Date Submitted: August 16, 1993

Date Extracted: August 19, 1993

Date Analyzed: August 20, 1993

RESULTS:

<u>Sample I.D.</u>	<u>Motor Oil (mg/L)</u>
MW-F1	N.D.
MW-F2	N.D.
MW-F3	N.D.
BLANK	N.D.
DETECTION LIMIT	0.5
METHOD OF ANALYSIS	3510/8015

ChromaLab, Inc.



Alex Tam
Analytical Chemist



Eric Tam
Laboratory Director

cc

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

August 23, 1993

ChromaLab File # 9308209
Submission #: 9308000209

BASELINE ENVIRONMENTAL/EMRYVL

Attn: Dominic Roques

Project Name: FRUITVALE
Date Sampled: August 16, 1993
Date Submitted: August 16, 1993
Date of Analysis: August 18, 1993
Sample I.D.: MW-F2

Project No: 92404-A0.03
Method of Analysis: EPA 624
Matrix: Water
Reporting Limit: 2.0 µg/L
Dilution Factor: None

COMPOUND NAME	µg/L	Spike Recovery	
CHLOROMETHANE	N.D.	---	---
VINYL CHLORIDE	N.D.	---	---
BROMOMETHANE	N.D.	---	---
CHLOROETHANE	N.D.	---	---
TRICHLOROFLUOROMETHANE	N.D.	---	---
1,1-DICHLOROETHENE	N.D.	79%	80%
METHYLENE CHLORIDE	N.D.	---	---
1,2-DICHLOROETHENE (TRANS)	N.D.	---	---
1,2-DICHLOROETHENE (CIS)	N.D.	---	---
1,1-DICHLOROETHANE	N.D.	---	---
CHLOROFORM	N.D.	---	---
1,1,1-TRICHLOROETHANE	N.D.	---	---
CARBON TETRACHLORIDE	N.D.	---	---
1,2-DICHLOROETHANE	N.D.	---	---
BENZENE	N.D.	---	---
TRICHLOROETHENE	N.D.	95%	95%
1,2-DICHLOROPROPANE	N.D.	---	---
BROMODICHLOROMETHANE	N.D.	---	---
2-CHLOROETHYL VINYLETHER	N.D.	---	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---	---
TOLUENE	N.D.	---	---
CIS-1,3-DICHLOROPROPENE	N.D.	---	---
1,1,2-TRICHLOROETHANE	N.D.	---	---
TETRACHLOROETHENE	N.D.	90%	90%
DIBROMOCHLOROMETHANE	N.D.	---	---
CHLOROBENZENE	N.D.	97%	100%
ETHYL BENZENE	N.D.	---	---
BROMOFORM	N.D.	---	---
1,1,2,2-TETRACHLOROETHANE	N.D.	---	---
1,3-DICHLOROBENZENE	N.D.	---	---
1,4-DICHLOROBENZENE	N.D.	---	---
1,2-DICHLOROBENZENE	N.D.	---	---
TOTAL XYLENES	N.D.	---	---
ACETONE	N.D.	---	---
METHYL ETHYL KETONE	N.D.	---	---
METHYL ISOBUTYL KETONE	N.D.	---	---

ChromaLab, Inc.



David Wintergrass
Analytical Chemist



Eric Tam
Laboratory Director

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

August 23, 1993

ChromaLab File # 9308209
Submission #: 9308000209

BASELINE ENVIRONMENTAL/EMRYVL


Attn: Dominic Roques

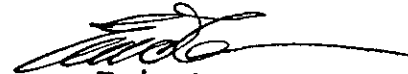
Project Name: FRUITVALE
Date Sampled: August 16, 1993
Date Submitted: August 16, 1993
Date of Analysis: August 18, 1993
Sample I.D.: MW-F3

Project No: 92404-A0.03
Method of Analysis: EPA 624
Matrix: Water
Reporting Limit: 2.0 µg/L
Dilution Factor: None

COMPOUND NAME	µg/L	Spike Recovery	
CHLOROMETHANE	N.D.	---	---
VINYL CHLORIDE	N.D.	---	---
BROMOMETHANE	N.D.	---	---
CHLOROETHANE	N.D.	---	---
TRICHLOROFLUOROMETHANE	N.D.	---	---
1,1-DICHLOROETHENE	N.D.	79%	80%
METHYLENE CHLORIDE	N.D.	---	---
1,2-DICHLOROETHENE (TRANS)	N.D.	---	---
1,2-DICHLOROETHENE (CIS)	N.D.	---	---
1,1-DICHLOROETHANE	N.D.	---	---
CHLOROFORM	N.D.	---	---
1,1,1-TRICHLOROETHANE	N.D.	---	---
CARBON TETRACHLORIDE	N.D.	---	---
1,2-DICHLOROETHANE	N.D.	---	---
BENZENE	N.D.	---	---
TRICHLOROETHENE	N.D.	95%	95%
1,2-DICHLOROPROPANE	N.D.	---	---
BROMODICHLOROMETHANE	N.D.	---	---
2-CHLOROETHYL VINYLETHER	N.D.	---	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---	---
TOLUENE	N.D.	---	---
CIS-1,3-DICHLOROPROPENE	N.D.	---	---
1,1,2-TRICHLOROETHANE	N.D.	---	---
TETRACHLOROETHENE	N.D.	90%	90%
DIBROMOCHLOROMETHANE	N.D.	---	---
CHLOROBENZENE	N.D.	97%	100%
ETHYL BENZENE	N.D.	---	---
BROMOFORM	N.D.	---	---
1,1,2,2-TETRACHLOROETHANE	N.D.	---	---
1,3-DICHLOROBENZENE	N.D.	---	---
1,4-DICHLOROBENZENE	N.D.	---	---
1,2-DICHLOROBENZENE	N.D.	---	---
TOTAL XYLENES	N.D.	---	---
ACETONE	N.D.	---	---
METHYL ETHYL KETONE	N.D.	---	---
METHYL ISOBUTYL KETONE	N.D.	---	---

ChromaLab, Inc.


David Wintergrass
Analytical Chemist


Eric Tam
Laboratory Director

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

August 19, 1993

ChromaLab File # 9308160

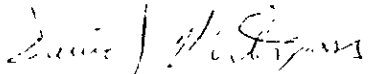
BASELINE ENVIRONMENTAL/PETULM


Attn: Geneva Randall

Project Name: 2662 FRUITVALE, OAK. Project No: 92404-AO.03
Date Sampled: August 11, 1993 Method of Analysis: EPA 8010
Date Submitted: August 12, 1993 Matrix: Soil
Date of Analysis: August 13, 1993 Reporting Det. Limit: 5.0 µg/Kg
Sample I.D.: MW-F1;10.0-10.5 Dilution Factor: None

COMPOUND NAME	µg/Kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	---
METHYLENE CHLORIDE	N.D.	---
TRANS-1,2-DICHLOROETHENE	N.D.	---
CIS-1,2-DICHLOROETHENE	N.D.	---
1,1-DICHLOROETHANE	N.D.	107% 110%
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
TRICHLOROETHENE	N.D.	95% 98%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLEETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	94% 95%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	122% 125%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---

ChromaLab, Inc.


David Wintergrass
Analytical Chemist


Eric Tam
Laboratory Director

cc

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

August 19, 1993

ChromaLab File # 9308160

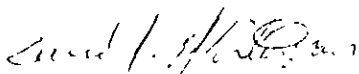
BASELINE ENVIRONMENTAL/PETULM

Attn: Geneva Randall

Project Name: 2662 FRUITVALE, OAK. Project No: 92404-AO.03
Date Sampled: August 11, 1993 Method of Analysis: EPA 8010
Date Submitted: August 12, 1993 Matrix: Soil
Date of Analysis: August 13, 1993 Reporting Det. Limit: 5.0 µg/Kg
Sample I.D.: MW-F1;3.0-3.5 Dilution Factor: None

COMPOUND NAME	µg/Kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	---
METHYLENE CHLORIDE	N.D.	---
TRANS-1,2-DICHLOROETHENE	N.D.	---
CIS-1,2-DICHLOROETHENE	N.D.	---
1,1-DICHLOROETHANE	N.D.	107% 110%
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
TRICHLOROETHENE	N.D.	95% 98%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLEETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	94% 95%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	122% 125%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---

ChromaLab, Inc.


David Wintergrass
Analytical Chemist


Eric Tam
Laboratory Director

cc

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

August 19, 1993

ChromaLab File No.: 9308160

BASELINE ENVIRONMENTAL/PETULM

Attn: Geneva Randall

RE: Four soil samples for Gasoline and BTEX analysis

Project Name: 2662 FRUITVALE, OAKLAND

Project Number: 92404-AO.03

Date Sampled: August 11, 1993

Date Submitted: August 12, 1993


Date Analyzed: August 17, 1993


RESULTS:

Sample I.D.	Gasoline (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (µg/Kg)	Total Xylenes (µg/Kg)
MW-F1;3.0-3.5	N.D.	N.D.	N.D.	N.D.	N.D.
MW-F1;10.0-10.5	N.D.	N.D.	N.D.	N.D.	N.D.
MW-F3;3.0-3.5	N.D.	N.D.	N.D.	N.D.	N.D.
MW-F3;10.0-10.5	33	N.D.*	N.D.*	77	N.D.*
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	115%	91%	97%	91%	89%
DUP SPIKE RECOVERY	----	101%	111%	98%	99%
DETECTION LIMIT	1.0	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	5030/8015	8020	8020	8020	8020

*Detection Limit = 15 Ug/Kg due to dilution needed.

ChromaLab, Inc.


Billy Phach
Analytical Chemist


Eric Tam
Laboratory Director

cc

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

August 19, 1993

ChromaLab File No.: 9308160

BASELINE ENVIRONMENTAL/PETULM

Attn: Geneva Randall

RE: Four soil samples for Motor Oil analysis

Project Name: 2662 FRUITVALE, OAKLAND

Project Number: 92404-AO.03

Date Sampled: August 11, 1993

Date Submitted: August 12, 1993

Date Extracted: August 18, 1993

Date Analyzed: August 18, 1993

RESULTS:

<u>Sample I.D.</u>	<u>Motor Oil (mg/Kg)</u>
MW-F1;3.0-3.5	N.D.
MW-F1;10.0-10.5	N.D.
MW-F3;3.0-3.5	N.D.
MW-F3;10.0-10.5	N.D.
BLANK	N.D.
SPIKE RECOVERY	80%
DUP SPIKE RECOVERY	87%
DETECTION LIMIT	10
METHOD OF ANALYSIS	3550/8015

ChromaLab, Inc.



Alex Tam
Analytical Chemist



Eric Tam
Laboratory Director

cc