

BASELINE

ENVIRONMENTAL CONSULTING

10 August 1994
92404-DO

Mr. Andrew Clark-Clough
City of Oakland
Environmental Affairs Division
1333 Broadway, Suite 330
Oakland, CA 94612

Subject: Report on Quarterly Groundwater Monitoring at 2662 Fruitvale Avenue, Oakland, California

Dear Andrew:

This report documents the June 1994 groundwater sampling event performed at the City of Oakland's property located at 2662 Fruitvale Avenue in Oakland, California (Figure 1). The purpose of the groundwater monitoring is to identify any changes in shallow groundwater quality at the site.

Background

A Phase I site assessment conducted at the site indicated that a service station, which included an auto repair facility, was present on the site from the 1940s to the 1980s. In 1983, the City of Oakland purchased the site from Texaco. The site was subsequently rented for use as a produce stand and Christmas tree sales lot.

In January and August 1993, BASELINE performed soil and groundwater investigations at the site. The results of these investigations identified the presence of petroleum hydrocarbons at varying concentrations in the soil throughout the site. The groundwater investigation indicated that groundwater quality beneath the site was not significantly impacted.

Following the completion of these investigations, the City of Oakland demolished the structures on-site. An oil sump was part of the concrete floor of the station building; the sump was removed with the station building. The contents of the sump had been previously removed, and the sump had undergone multiple cleanings in August 1993. However, no soil samples were collected below the invert of the sump at the time of removal to assess whether any releases had occurred. During demolition activities, the top of monitoring well MW-F3 was also damaged and buried.

A work plan was prepared by BASELINE and submitted to the Alameda County Environmental Health Department (ACEHD) in May 1994. The plan recommended sampling of soil at the former location of the sump and installation of a new monitoring well (MW-F4) at a location south of the southern property boundary of the site. The well location was chosen to provide groundwater quality data at a position between the project site and a monitoring well (MW-13) that had been installed and monitored as part of an investigation of petroleum hydrocarbon releases at the former Chevron service station located at 2681 Fruitvale Avenue; total petroleum hydrocarbons, as gasoline, and aromatic hydrocarbons had been detected at relatively high concentrations at that site.

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Mr. Andrew Clark-Clough
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In response to comments on the work plan by Mr. Barney Chan of the ACEHD, the plan was modified to include the installation of temporary well points south of the project site in Davis Street (Figure 2). The purpose of the well points would be to develop additional information on groundwater quality downgradient of the site; this activity is pending.

Groundwater Sampling Activities, June 1994

Groundwater samples were collected from monitoring wells MW-F1, MW-F2, and MW-F3 on 29 June 1994 (Figure 2). The presence of floating product was checked and water levels were measured in each of the wells using a dual-interface probe prior to sampling activities. The probe was decontaminated by washing in a trisodium phosphate solution and rinsing in deionized water. 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 following purging to ensure that groundwater had sufficiently recharged. All decontamination rinsate and purged groundwater were stored on-site in sealed drums pending laboratory analysis.

The protective traffic box for monitoring well MW-3 had been damaged during demolition and grading activities conducted at the project site. During a site inspection subsequent to demolition activities, it was noted that the traffic box was removed and the well casing cap was missing. The well casing was not visibly cracked or broken. The well was probed and found to contain approximately one foot of sediment in the bottom. Prior to purging, the intake hose for the pump was placed at the bottom of the well and the well was surged and pumped to remove the sediment. Approximately half of the sediment (silt, sand, and gravel) was removed from the well. The sediment remaining in the well was apparently too large to be pumped. The well was purged until clear water was produced and the temperature, pH, and electrical conductivity of the water were stabilized.

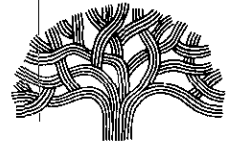
A new disposable PVC bailer was used to collect a groundwater sample from each well. The samples were decanted from the bailer into 40-ml glass VOA sample bottles provided by the laboratory. The sample bottles were labeled, placed in a cooler containing ice, and transported using chain-of-custody procedures to Curtis & Tompkins, Ltd., a California certified laboratory. The groundwater samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline and benzene, toluene, xylenes, and ethylbenzene (BTXE). A field blank was prepared for quality control purposes. The MW-3 sample was also evaluated for turbidity. Groundwater sampling forms that document the May 1994 sampling activities are included as Attachment A.

Analytical Results

TPH as gasoline was not identified in any of the groundwater samples collected from the monitoring wells at the project site (MW-F1, MW-F2, and MW-F3) above the reporting limit. Toluene was detected at low concentrations in the samples from MW-F2 (0.0011 mg/L) and MW-F3 (0.0029 mg/L). The turbidity of the sample from MW-3 was measured as 18 NTU. The analytical results are summarized in Table 1; the laboratory report for the June 1994 sampling event is included in Attachment B.



CITY OF OAKLAND



CITY HALL • 1333 BROADWAY • OAKLAND, CALIFORNIA 94612

Office of Public Works

(510) 238-3961
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August 19, 1994

Mr. Barney Chan
Alameda County Department of Environmental Health
Division of Hazardous Materials
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502

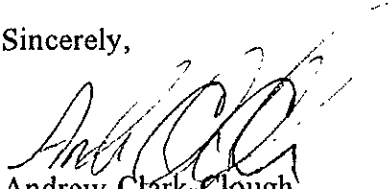
Rec'd *8/23/94* *BC*

Subject: Report on Quarterly Groundwater Monitoring at 2662 Fruitvale Avenue, Oakland, California

Dear Mr. Chan:

Please find enclosed a copy of the groundwater monitoring report for 2662 Fruitvale prepared by Baseline Environmental Consultants. I concur with the conclusions and recommendations. If you have any questions or require additional information, please call me at 238-6361.

Sincerely,


Andrew Clark-Clough
Environmental Program Supervisor

BASELINE

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Groundwater Flow Direction and Gradient

Groundwater elevations in the three monitoring wells ranged from 90.48 to 93.53 feet above mean sea level on 29 June 1994. The direction of groundwater at the site was calculated to be toward the west (N87W), with a gradient magnitude of 0.026. Groundwater elevation data and calculated flow directions are summarized in Table 2 and shown on Figure 2. These data support previous determinations of a westward gradient at the site and adjacent areas.

Conclusions


- The groundwater quality has been apparently impacted by the release of toluene. The concentrations of toluene detected are low (two to six times the laboratory reporting limit).
- The groundwater gradient at the site is consistently directed toward the west at the project site and adjacent areas.

Recommendations

- Quarterly groundwater sampling should be performed at the project site in September 1994 to confirm the June 1994 groundwater quality results. The three existing monitoring wells should be sampled in conjunction with the sampling of the proposed off-site well (MW-F4) and proposed three temporary well points installed south of the project site along Davis Street.
- what about the proposed excavation of soils?
- The quarterly sampling for the project site should be coordinated with quarterly sampling conducted for the investigation of the Chevron site (2681 Fruitvale Avenue). The coordinated sampling will provide a more comprehensive database for the interpretation of the distribution of contaminants associated with the operation of gasoline tank management at each sites. The groundwater sampling will be conducted in accordance with the sampling practices described in this report. The collected groundwater samples will be analyzed for TPH as gasoline and BTXE.

Copies of this report should be submitted to Mr. Barney Chan of the Alameda County Department of Environmental Health and Mr. Richard Hiatt of the San Francisco Bay Regional Water Quality Control Board. Please contact us at your convenience if you have any questions regarding this report.


Sincerely,


Yane Nordhav
Principal
Reg. Geologist No. 4009

YN:KOD:cr
Attachment

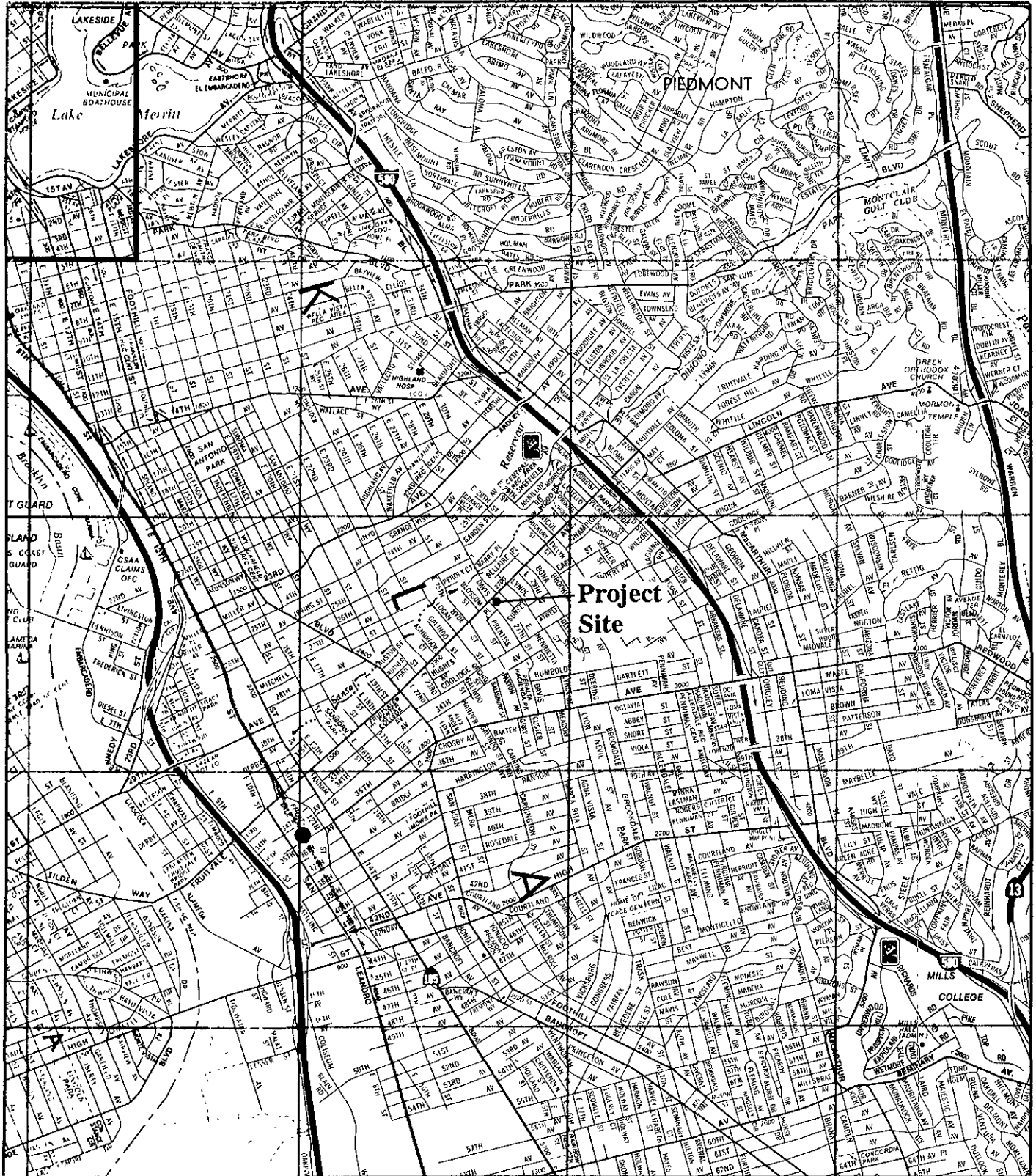
92404DQR.810

pls cc m muller of Chevron


Kevin O'Dea
Senior Geologist

REGIONAL LOCATION

Figure 1



2662 Fruitvale Avenue
Oakland, California

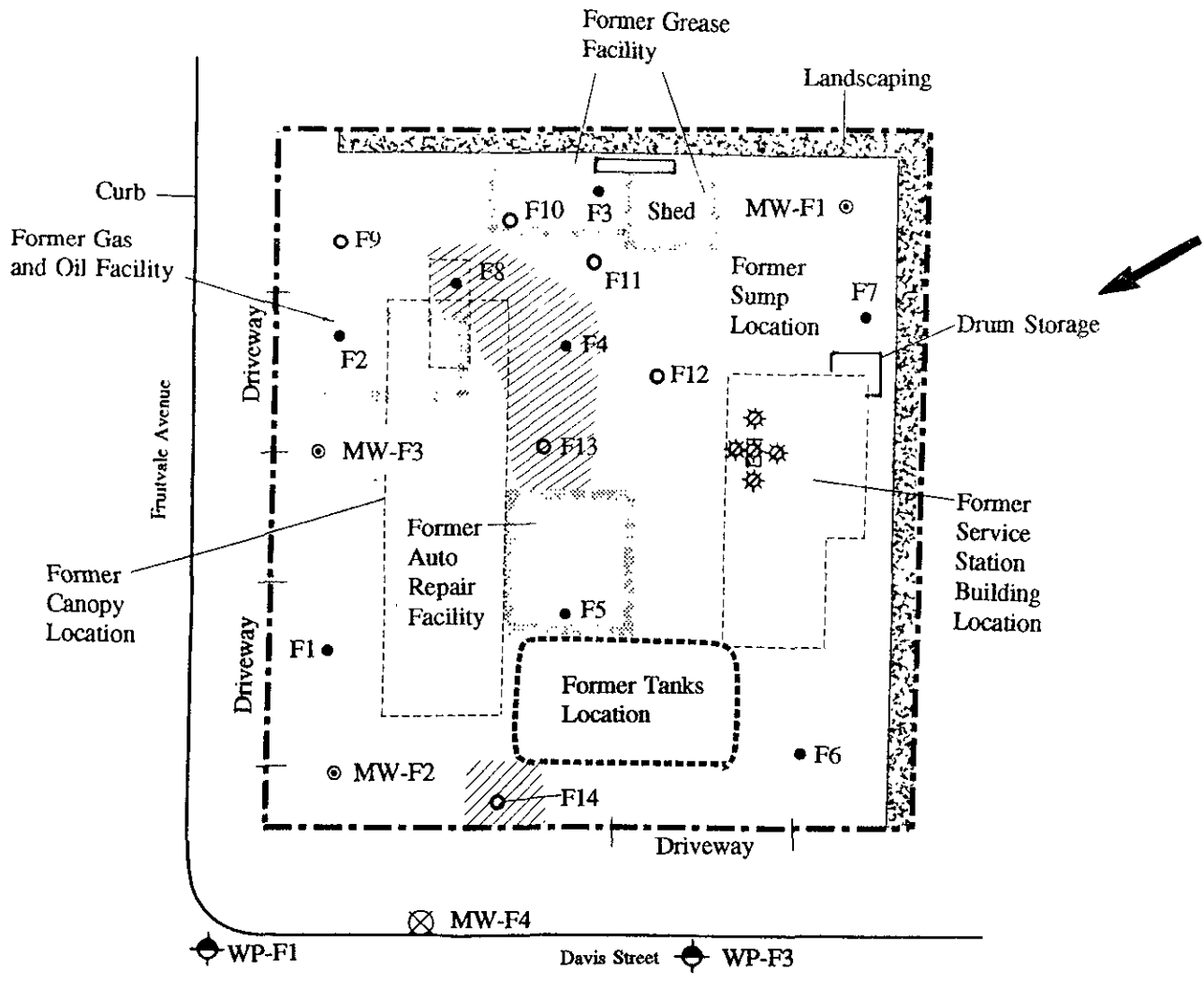


3000 Feet

BASELINE

SITE PLAN

Figure 2



Bill Scott

⊙ MW-13
(Chevron)

Legend



Areas with Elevated
TPH Concentrations

F1-F8 • Soil Boring Location - Phase II

F9-F14 ⊙ Soil Boring Location - Phase III

MW-F2 ⊙ Monitoring Well Location

MW-F4 ⊗ Proposed Monitoring Well Location

WP-F1 ⬤ Proposed Well Point

⊛ Proposed Soil Boring Location

← Groundwater Gradient
Direction (6/29/94)

--- Project Site Boundary



0 30 Feet

2662 Fruitvale Avenue
Oakland, California

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TABLE 1

SUMMARY OF ANALYTICAL RESULTS, GROUNDWATER
2662 Fruitvale Avenue, Oakland
August 1993, June 1994

(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
MW-F1	8/16/93	<0.05	<0.5	<0.002	<0.002	<0.002	<0.002	<0.002
	6/29/94	<0.05	--	<0.0005	<0.0005	<0.0005	<0.0005	--
MW-F2	8/16/93	<0.05	<0.5	<0.002	<0.002	<0.002	<0.002	<0.002
	6/29/94	<0.05	--	<0.0005	0.0011	<0.0005	<0.0005	--
MW-F3	8/16/93	<0.1	<0.5	<0.002	<0.002	<0.002	<0.002	<0.002
	6/29/94	<0.05	--	<0.0005	0.0029	<0.0005	<0.0005	--
<u>Field Blank</u>								
MW-F8	6/29/94	<0.05	--	<0.0005	<0.0005	<0.0005	<0.0005	--

Notes: -- = Compound not analyzed.

TPH = Total petroleum hydrocarbons.

Samples locations are shown on Figure 2.

Laboratory reports for June 1994 groundwater analyses are included in Attachment B.

¹ Test method = EPA 5030/8015.

² Test method = EPA 3510/8015.

³ Test Method = EPA 624.

⁴ Duplicate sample MW-FB collected.

TABLE 2

GROUNDWATER ELEVATION DATA AND GRADIENT CALCULATIONS
2662 Fruitvale Avenue, Oakland

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	12.15	90.07	11.99	90.43	S88W	0.025
6/29/94	10.38	93.53	11.74	90.48	11.40	91.02	N87W	0.026

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.

ATTACHMENT A
GROUNDWATER SAMPLING FORMS

GROUNDWATER SAMPLING

Project no.	<u>92404-D0</u>	Well no.	<u>MW-F1</u>	Date	<u>6/29/94</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>		
		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>10.88</u>	Time	<u>9:21</u>
Precip in past		Product level from TOC (feet)	<u>None</u>	Time	<u>9:21</u>
5 days (inch)	<u>0</u>	Water level measurement	<u>Dual-interface probe</u>		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

$$[(25.11 \text{ ft}) - (10.88 \text{ ft})] \times (0.083 \text{ ft})^2 \times 3.14 \times 7.48 = \begin{array}{l} \underline{2.3} \text{ gallons in one well volume} \\ \underline{11.5} \text{ gallons in 5 well volumes} \\ \underline{9.0} \text{ total gallons removed} \end{array}$$

Well depth Water level Well radius

CALIBRATION:

	Time	Temp (° C)	pH	EC (µmho/cm)
Calibration Standard:	9:10	18.4	7.00/10.01	1,000
Before Purging:	9:11	18.4	7.00/10.01	900
After Purging:	12:24	28.3	7.00/9.83	900

FIELD MEASUREMENTS

Time	Temp (° C)	pH	EC (µmho/cm)	Cumulative Gallons Removed	Appearance
9:36	18.1	7.08	490	1.5	Clear
9:40	17.9	7.03	445	3.0	Clear
9:50	17.9	7.04	445	6.0	Clear
9:55	18.1	7.05	445	9.0	Clear

Water level after purging prior to sampling (feet)	<u>10.89</u>	Time	<u>11:26</u>
Appearance of sample	<u>Clear</u>	Time	<u>11:30</u>
Duplicate/blank number	<u>MW-FB</u>	Time	<u>11:25</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>

(92404GW2.xlw-8/1/94)

GROUNDWATER SAMPLING

Project no.	<u>92404-D0</u>	Well no.	<u>MW-F2</u>	Date	<u>6/29/94</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>11.74</u>	Time	<u>9:23</u>
Precip in past		Product level from TOC (feet)	<u>None</u>	Time	<u>9:23</u>
5 days (inch)	<u>0</u>	Water level measurement	<u>Dual-interface probe</u>		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

$$[(19.88 \text{ ft}) - (11.75 \text{ ft})] \times (0.083 \text{ ft})^2 \times 3.14 \times 7.48 = \underline{1.3} \text{ gallons in one well volume}$$

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:	9:10	18.4	7.00/10.01	1,000
Before Purging:	9:11	18.4	7.00/10.01	900
After Purging:	12:24	28.3	7.00/9.83	900

FIELD MEASUREMENTS

Time	Temp (° C)	pH	EC (µmho/cm)	Cumulative Gallons Removed	Appearance
10:02	18.9	7.12	650	1.0	Clear
10:10	19.2	7.16	650	3.0	Clear
10:20	19.5	7.20	650	5.5	Clear
10:22	Well ran dry				

Water level after purging prior to sampling (feet)	<u>15.23</u>	Time	<u>12:15</u>
Appearance of sample	<u>Clear</u>	Time	<u>12:20</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>

(92404GW2.xlw-B/1/94)

GROUNDWATER SAMPLING

Project no.	<u>92404-D0</u>	Well no.	<u>MW-F3</u>	Date	<u>6/29/94</u>
Project name	<u>Fruitvale</u>	Depth of well from TOC (feet)	<u>24.6 (23.74)</u>	<u>Dirt in bottom</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>Sunny</u>	TOC elevation (feet)	<u>102.42</u>		
Precip in past		Water level from TOC (feet)	<u>11.40</u>	Time	<u>9:25</u>
5 days (inch)	<u>0</u>	Product level from TOC (feet)	<u>None</u>	Time	<u>9:25</u>
		Water level measurement	<u>Dual-interface probe</u>		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

$$[(24.60 \text{ ft}) - (11.40 \text{ ft})] \times (0.083 \text{ ft})^2 \times 3.14 \times 7.48 = \underline{2.1} \text{ gallons in one well volume}$$

Well depth Water level Well radius

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

$$\underline{16.0} \text{ total gallons removed}$$

CALIBRATION:

	Time	Temp (°C)	pH	EC (µmho/cm)
Calibration Standard:	9:10	18.4	7.00/10.01	1,000
Before Purging:	9:11	18.4	7.00/10.01	900
After Purging:	12:24	28.3	7.00/9.83	900

FIELD MEASUREMENTS

Time	Temp (°C)	pH	EC (µmho/cm)	Cumulative Gallons Removed	Appearance
10:25					Removed some gravel-sand-silt from bottom of well. Removed 10 gallons of water.
11:20	20.7	6.89	700	12.5	Very slightly turbid
11:50	20.6	6.95	700	14.0	Very slightly turbid-clear
12:10	20.5	6.97	700	16.0	Clear

Water level after purging prior to sampling (feet)	<u>13.15</u>	Time	<u>12:35</u>
Appearance of sample	<u>Clear</u>	Time	<u>12:40</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>

(92404GW2.xlw-8/1/94)

ATTACHMENT B
LABORATORY REPORTS



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

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

RECEIVED

JUL 12 1994

BASELINE

ANALYTICAL REPORT

Prepared for:

Baseline Environmental
5900 Hollis Street
Suite D
Emeryville, CA 94608

Date: 08-JUL-94
Lab Job Number: 116147
Project ID: 92404-AU
Location: Fruitvale

Reviewed by:

Reviewed by:

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LABORATORY NUMBER: 116147
 CLIENT: BASELINE ENVIRONMENTAL
 PROJECT ID: 92404-AU
 LOCATION: FRUITVALE

DATE SAMPLED: 06/29/94
 DATE RECEIVED: 06/29/94
 DATE ANALYZED: 07/05/94
 DATE REPORTED: 07/08/94

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions
 TVH by California DOHS Method/LUFT Manual October 1989
 BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
116147-1	MW-FB	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
116147-2	MW-F1	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
116147-3	MW-F2	ND(50)	ND(0.5)	1.1	ND(0.5)	ND(0.5)
116147-4	MW-F3	ND(50)	ND(0.5)	2.9	ND(0.5)	ND(0.5)
METHOD BLANK	N/A	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

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

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	94

LABORATORY NUMBER: 116147
CLIENT: BASELINE ENVIRONMENTAL
PROJECT ID: 92404-AU
LOCATION: FRUITVALE

DATE SAMPLED: 06/29/94
DATE RECEIVED: 06/29/94
DATE ANALYZED: 06/29/94
DATE REPORTED: 07/08/94

=====
ANALYSIS: TURBIDITY
ANALYSIS METHOD: EPA 180.1
=====

LAB ID	SAMPLE ID	RESULT	UNITS
116147-4	MW-F3	18	NTU

QA/QC SUMMARY:

=====
RPD, %

<1
=====

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

116147

CHAIN OF CUSTODY RECORD

Turn-around Time Normal
 Lab Cadde & Tompkins
 BASELINE Contact Person Bill Scott

Project No. 92404-AU		Project Name and Location Fruitvale, 2662 Fruitvale Ave				Analysis												Remarks/ Composite	Dete- ction Limits											
Samplers: (Signature) <i>William K Scott</i>						TEH	TPH with BTX&E	Oil & Grease	Motor Oil	PNAs	Title 22 Metals	Total Lead	Turbidity																	
Sample ID No. Station	Date	Time	Media	Depth	No. of Contain- ers																									
MW-FB	6-29-94	11:25	water		1	X																								
MW-F1	↓	11:30	↓		2	X																								
MW-F2		12:20			2	X																								
MW-F3	↓	12:40	↓		3	X							X																	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Conditions of Samples Upon Arrival at Laboratory: <i>Cold</i>
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks:
Relinquished by: (Signature) <i>William K Scott</i>	Date / Time 6-29-94/14:50	Received by: (Signature) <i>Bill Scott</i>	Date / Time 6/29/94 14:50	