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HAZMAT

94 OCT -5 PM 2:19

September 22, 1994

Mr. Robert Mibach
Peralta Community College District
333 East 8th Street
Oakland, CA 94606

RE: Quarterly Groundwater Sampling
Peralta Maintenance Yard, 501 5th Avenue, Oakland, California

Dear Mr. Mibach:

The enclosed report describes the procedures used during quarterly groundwater sapling at the Peralta Maintenance Yard, Oakland, California. This work was performed to evaluate the extent of groundwater contamination.

Groundwater samples were collected from the four on-site monitoring wells and sumitted to Chromalab, Inc. for petroleum hydrocarbon analyses, in accordance with the "Tri Regional Guidelines for Underground Storage Tank Sites".

Analysis of the groundwater samples from monitoring well MW-1 and MW-4indicated below detectable levels of petroleum hydrocarbons. Groundwater samples from monitoring wells MW-2 and MW-3 indicated detectable concentrations of hydrocarbons.

If you have any comments regarding this report, please call me.

Sincerely,

Misty C. Kaltreider
Geologist

cc: Mr. Thomas Peacock - Alameda County Health Care Services - Division of Hazardous Materials

1000 Atlantic Avenue, Suite 110 • Alameda, CA 94501 • (510) 522-8188 • FAX: (510) 865-5731

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QUARTERLY GROUNDWATER INVESTIGATION

PERALTA COMMUNITY COLLEGE - MAINTENANCE YARD
501 5TH AVENUE
OAKLAND, CALIFORNIA, 94606

Prepared for:

Mr. Thomas Peacock
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Division of Hazardous Materials

September 1994

Prepared by: _____
Misty Kaltreider
Project Geologist

Reviewed by: _____
Christopher M. Palmer, CEG #1262
Certified Engineering Geologist

REGISTERED GEOLOGIST
CHRISTOPHER M. PALMER
№ 1262
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

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1.0 INTRODUCTION

This report presents the procedures and findings of quarterly groundwater investigation conducted by ACC Environmental Consultants, Inc., ("ACC") on behalf of the Peralta Community College District, site owner at 501 5th Avenue, Oakland, California. The project objective, as described in the Work Plan prepared on April 27, 1993, was to evaluate the extent of groundwater impact from the previous underground storage of petroleum products using the four monitoring wells on-site.

2.0 BACKGROUND

Five underground storage tanks were installed prior to the 1960's. The tanks were used for storage of fuel and waste oil for the City of Oakland Corporation Yard. The tanks consisted of two 6,000-gallon gasoline, one 2,000-gallon diesel, one 2,000-gallon ethyl (premium) gasoline and one 550-gallon waste oil tank. In 1980 Peralta Community College District acquired the property. The District abandoned the existing five underground tanks by filling with water and installed three fiberglass underground storage tanks. The new tanks consisted of two 6,000-gallon and one 4,000-gallon fiberglass tanks to store gasoline. The new tanks were installed approximately 150 feet from the original tanks.

In 1992, the five originals underground storage tanks were removed. A total of eight soil samples and one grab groundwater sample was collected from the excavation. Laboratory analysis of the soil indicated up to 228 parts per million (ppm) of Total Petroleum Hydrocarbons (TPH) as diesel, 134 ppm to TPH as gasoline, 2,407 parts per billion (ppb) benzene, 4,617 ppb toluene, 7,170 ppb ethylbenzene, 6,147 ppb total xylenes and 5,477 ppm oil and grease. Laboratory analysis of the water collected in the excavation indicated 170 ppm TPH as diesel, 15 ppm TPH as gasoline, 286 ppb benzene, 698 ppb toluene, 300 ppb ethylbenzene, 808 ppb total xylenes and 284 ppm oil and grease.

In September 1992, a preliminary study was performed by Environ of Emeryville to evaluate the soil and groundwater conditions on the site and on neighboring sites. This study indicated that hydrocarbons constituents are regional.

In November of 1992, ACC performed a site assessment of the soil around the former tank excavation. Hydrocarbons as gasoline and motor oil were observed in the soil and groundwater collected from the borings. Laboratory analysis of the soil indicated up to 370 ppm of TPH as gasoline, 12 ppm TPH as diesel, 5,342 ppm motor oil, 76.94 ppm benzene, 73.9 ppm toluene, 30.4 ppm ethylbenzene, and 95.41 ppm xylenes.

In November 1993, three underground gasoline tanks were removed from the property. Soil samples collected from the excavation indicated up to 1.3 ppm TPH as gasoline, 190 ppb benzene, and 18 ppb toluene. Initial groundwater sample collected from the excavation indicated 27 ppm TPH as gasoline, 1,200 ppb benzene, 5,100 ppb toluene, 690 ppb ethylbenzene and 5,700 ppb xylenes.

Approximately 3,500 gallons of water was removed from the excavation. Subsequent groundwater sample was collected. Analysis of the second groundwater sample from the excavation indicated .21 ppm TPH as gasoline, and 14 ppb xylenes.

Due to the detectable levels reported in the soil and groundwater on-site, additional groundwater investigations were required from the regulatory agencies.

In February, 1994, four additional borings (MW-1, MW-2, MW-3 and MW-4) were drilled and converted into 2-inch monitoring wells, on-site. The monitoring wells were used to evaluate the extent of contamination from the two tank excavations.

Laboratory analysis of the groundwater samples collected in February 1994 from monitoring wells MW-1 and MW-4 (down gradient from the tank excavations) indicated below detectable levels of the constituents evaluated. The groundwater results indicated a downgradient extent of groundwater contamination. Laboratory analysis of groundwater collected from monitoring wells MW-2 and MW-3 (upgradient of the former tank excavations) indicated detectable levels of constituents. Samples collected from borings MW-2 and MW-3 indicated detectable levels of TPH as diesel, TPH as gasoline with BTEX. Motor oil was reported in the soil from boring MW-2. However, the motor oil was not detected in the groundwater sample from monitoring well MW-2 and therefore motor oil does not appear to impact the groundwater. TPH as diesel was only detected in the soil from boring MW-2.

An additional soil and groundwater investigation was conducted on May 9, 1994, to evaluate possible upgradient sources on-site. The investigation included drilling five borings upgradient (east) of existing monitoring wells MW-2 and MW-3.

Laboratory analysis of the soil samples collected indicate detectable levels of diesel up to 11 ppm. Detectable levels of motor oil up to 100 ppm, were reported in soil analyzed from the additonal investigation. Below detectable levels of TPH as gasoline, BTEX and kerosene were reported in the soil samples analyzed.

Groundwater was encountered approximately 5 to 6 feet below ground surface (bgs). Laboratory analysis of the groundwater samples collected from the open boreholes, indicated below detectable levels of diesel, kerosene, motor oil and BTEX. Detectable levels of TPH as gasoline up to 61 parts per billion (ppb) were reported in one grab groundwater sample.

Motor oil was not detected in the groundwater samples collected from the borings, therefore motor oil does not appear to currently impact the groundwater.

Results of the analytical data from previous investigations indicate that upgradient sources of TPH and motor oil exist. Finer fill material and Bay Mud appear to restrict the mobility of the contaminates from impacting groundwater. However, groundwater flow direction data suggests that contaminant movement is to the westerly direction, toward the monitoring wells MW-2 and MW-3 on site.

3.0 SITE DESCRIPTION

The site consists of several warehouse/office buildings surrounded by a fenced parking lot. The older tanks were situated within the fenced yard adjacent to the northern entrance, the newer tanks were situated near the southern entrance (Figure 2).

4.0 FIELD PROCEDURES

4.1 Groundwater Sampling

Groundwater samples were taken on August 25, 1994 from monitoring wells MW-1, MW-2, MW-3 and MW-4. Prior to groundwater sampling the depth to the surface of the water table was measured from the top of the PVC casing using a Solinst Water Level Meter.

Information regarding well elevations and groundwater level measurements is summarized in Table 1.

TABLE 1 - Groundwater Depth Information

Well No.	Date Sampled	TOC Elevation	Depth to Groundwater (Ft)	Groundwater Elevation (Ft.)
MW-1	02/14/94	6.78 MSL	3.69	3.09
	05/16/94		6.80	-0.02
	08/25/94		7.05	-0.27
MW-2	02/14/94	8.70 MSL	4.70	4.00
	05/16/94		4.74	3.96
	08/25/94		5.49	3.21
MW-3	02/14/94	8.83 MSL	4.57	4.26
	05/16/94		4.78	4.05
	08/25/94		5.93	2.90
MW-4	02/14/94	5.45 MSL	1.69	3.76
	05/16/94		2.36	3.09
	08/25/94		3.25	2.20

Notes: All measurements in feet
MSL = Mean Sea Level
TOC = Top of Casing

After water-level measurements were taken, each on-site well was purged by hand using a designated precleaned disposable Teflon bailer for each well. Groundwater pH, temperature and electrical conductivity were monitored during well purging. Each well was considered to be purged when these parameters stabilized. Three to four well volumes were removed to purge each well. Worksheets of conditions monitored during purging are attached in Appendix C.

After the groundwater level had recovered to a minimum of approximately 80 percent of its static level, water samples were obtained using designated disposable Teflon bailers. Two 40 ml VOA vials, without headspace, and two 1-liter amber jars were filled from the water collected from each monitoring well.

The samples were preserved on ice and submitted to Chromalab Inc. under chain of custody protocol. Laboratory results with chain of custody forms are attached in Appendix B.

5.0 FINDINGS

5.1 Analytical Results - Groundwater

One groundwater sample each from monitoring wells MW-1, MW-2, MW-3, and MW-4 was collected and submitted to Chromalab for analysis for TPH as gasoline by EPA test method 5030 and BTEX by EPA test method 602 and TEPH as diesel, kerosene, and motor oil by EPA Test Method 8015-Modified. Analysis results from the groundwater samples are summarized in Table 3. Analytical results are attached in Appendix B.

TABLE 2 - Analytical Results - Groundwater

Well No.	Date Sampled	TPH-g (ppb)	TEPH (ppb)	Benzene (ppb)	Toluene (ppb)	E.benzene (ppb)	Xylene (ppb)
MW-1	02/14/94	<50	<50	<0.5	<0.5	<0.5	<0.5
	05/23/94	<50	<50	<0.5	<0.5	<0.5	<0.5
	08/25/94	<50	NT	<0.5	<0.5	<0.5	<0.5
MW-2	02/14/94	200	<50	1.7	<0.5	1.1	1.1
	05/23/94	600	<50	1.8	0.9	0.7	2.1
	08/25/94	70	NT	<50	<0.5	<0.5	0.5
MW-3	02/14/94	780	<50	0.6	0.6	1.7	2.7
	05/23/94	680	<50	<0.5	<0.5	2.2	2.2
	08/25/94	310	NT	6.4	2.7	1.9	4.1
MW-4	02/14/94	<50	<50	<0.5	<0.5	<0.5	<0.5
	05/23/94	93	<50	<0.5	<0.5	<0.5	<0.5
	08/29/94	<50	NT	<0.5	<0.5	<0.5	<0.5

Notes: TPH-g = Total Petroleum Hydrocarbons as gasoline
TEPH = Total Extractable Petroleum Hydrocarbons as diesel, kerosene, and motor oil
ppb = parts per billion
NT = Not tested

5.2 Groundwater Gradient

Prior to calculating the groundwater gradient, elevations for the on-site monitoring wells were surveyed by Ron Archer Civil Engineer, Inc. to an accuracy of one-hundredth of a foot. The well elevations were surveyed at the top of the PVC well casing. The elevations of the monitoring wells were established relative to a nearby benchmark located in the intersection of 7th Street and 5th Avenue.

The groundwater gradient was calculated using the on-site monitoring wells. The location of the wells is shown on Figure 1 - Site Plan. Groundwater elevations were collected from the wells on August 25, 1994. The gradient was evaluated by triangulation using the elevation of the potentiometric surface measured with respect to Mean Sea Level datum. As shown in Figure 2, general direction of flow is west at a gradient of 0.031 foot per foot.

6.0 CONCLUSION

The data and observations discussed herein indicate that groundwater has been impacted due to an unauthorized hydrocarbon release. The analytical parameters used for groundwater sampling performed were in accordance with the guidance document "Tri-Regional Water Quality Control Boards Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites", dated August 10, 1990.

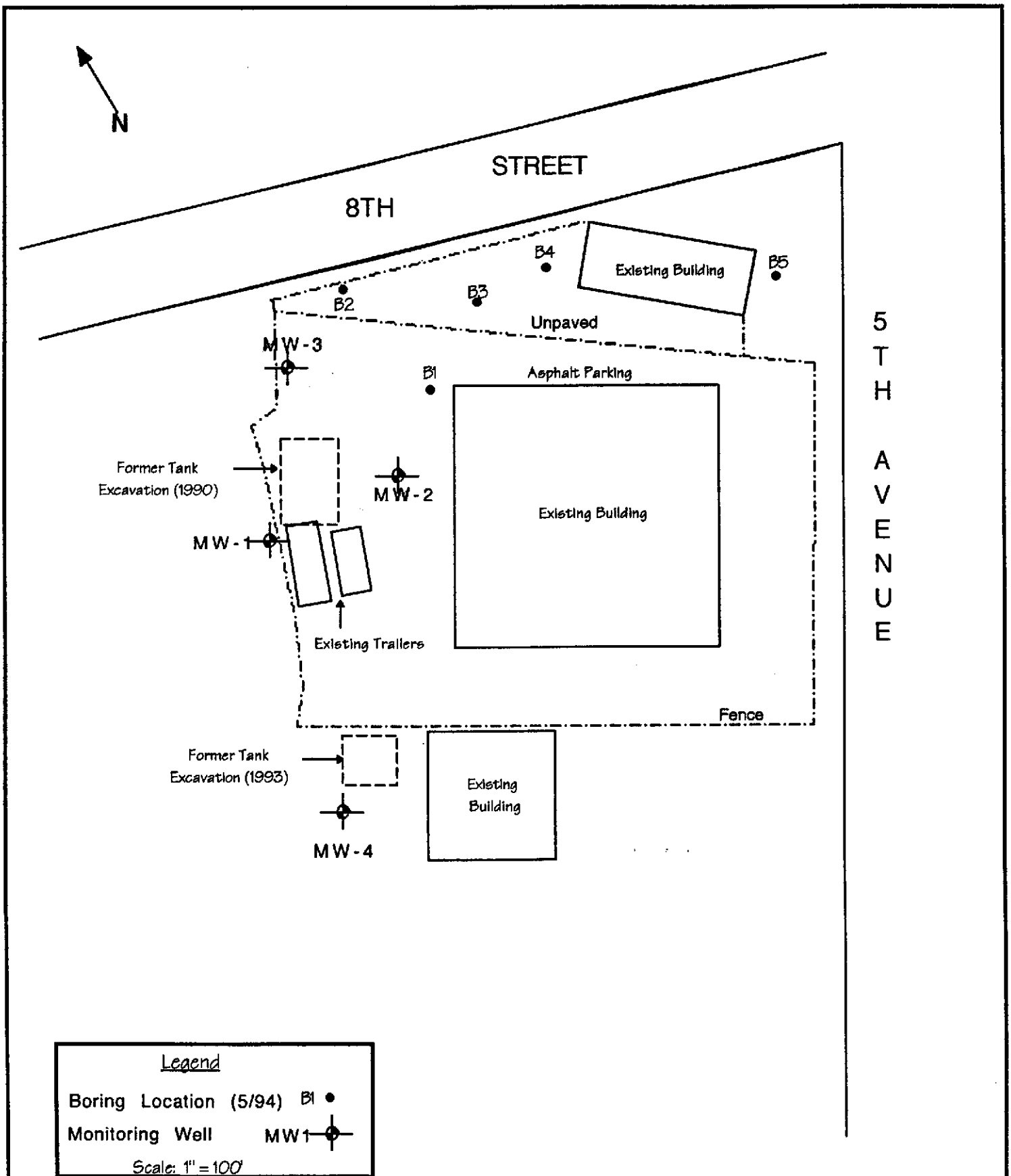
The initial groundwater investigation conducted in February 1994 and the additional subsurface investigation conducted in August 1994 indicated detectable levels of TPH as diesel and motor oil in the soil, upgradient (east) of the former underground storage tank excavations.

Laboratory analysis of the groundwater samples collected from monitoring wells and open boreholes indicated below detectable levels of Total Extractable Petroleum Hydrocarbons (TEPH) as diesel, motor oil and kerosene, therefore TEPH apparently do not impact the groundwater.

The groundwater results indicate that hydrocarbon release from the former underground storage tanks on-site does not impact the groundwater. Laboratory results collected from the downgradient monitoring wells (MW-1 and MW-4) indicated below detectable levels of constituents. **Laboratory analysis of groundwater collected from monitoring wells MW-2 and MW-3 (upgradient of the former tank excavations) indicated detectable levels of constituents indicating upgradient source(s).** Historic observations indicate that the contamination upgradient is not mobile and ACC anticipates a decline in concentrations over time.

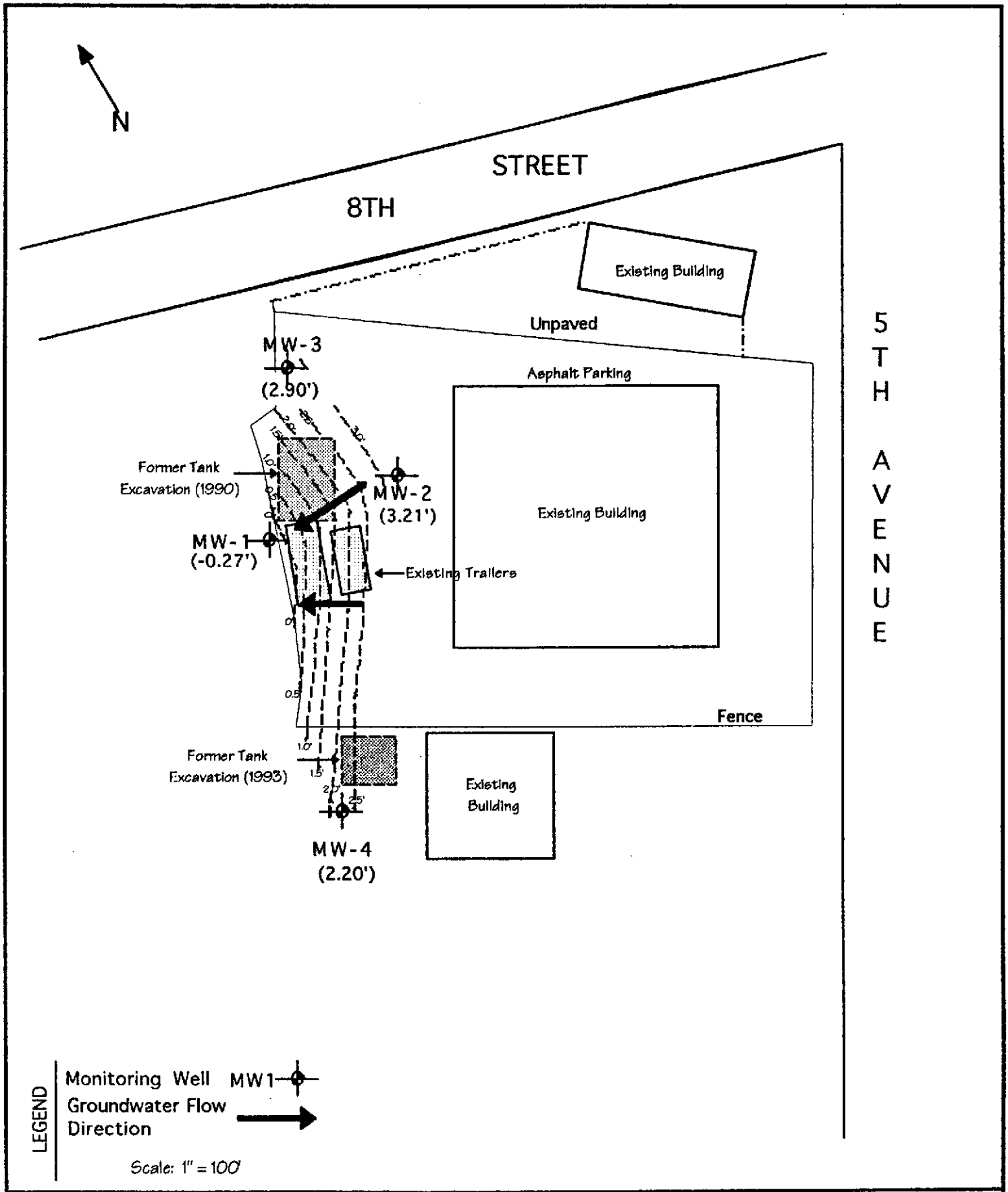
7.0 RECOMMENDATIONS

Pursuant to the Tri-Regional Board guidelines, groundwater sampling and monitoring of the on-site wells should continue on a quarterly basis.



06/16/1994	Drawn By: MCK	Project: 6045-11	Figure 1:	**Site Plan** Peralta Maintainance Yard, Oakland, CA

ACC Environmental Consultants • 1000 Atlantic Avenue, Suite 110 • Alameda, CA 94501 • (510) 522-8188 Fax: (510) 865-5731



08/29/1994	Drawn By: MCK	Project: 6045-10	Figure 2:	**Groundwater Gradient** Peralta Maintainance Yard, Oakland, CA

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Well Sampling [✓] Well Development [ ] check one

Well Number: MW-~~3~~1

Job Number: 6045-4

Job Name: Parcel 4a

Date: 8-25-94

Sampler: Culbert

Depth to Water (measured from TOC): ~~5~~ 7.05

Inside Diameter of Casing: 2"

Depth of Boring: 14'

Method of well development/purging: pump

Amount of Water Bailed/Pumped from well: 5 ~~lbs~~ gallons - Emptied well

Depth to Water after well development: _____

Depth to water prior to sampling: 12.71 - waited one hr to refill.

Bailed water stored on-site ? How ? Drums

Number of well volumes removed: 4+

TSP wash, distilled rinse, new rope ? TSP/Distilled

Water Appearance:

	yes	no
froth		✓
irridesence		✓
oil		✓
smell	✓	
product:		✓
other, describe		✓

Gallons Removed	pH	EC	Temp
5	6.50	.99	67.8
10	6.99	1.01	67.1
15	6.94	1.01	66.5
20	6.90	1.02	66.4
25	6.80	1.01	66.5
30	6.85	1.05	66.4
35			
40			
45			
50			

Samples Obtained:

TPH (gasoline)	
TPH (diesel)	
TPH (motor oil)	
BTXE	
EPA 624	
EPA 625	
EPA 608	
PCBs only	
Metals	
Other, specify	
Field Blank	

Well Sampling [✓] Well Development [ ] check one

Well Number: MW-2

Job Number: 6045-4

Job Name: Peralta

Date: 8-25-94

Sampler: Culbert

Depth to Water (measured from TOC): 5.49

Inside Diameter of Casing: 2"

Depth of Boring: 14'

Method of well development/purging: Pump

Amount of Water Bailed/Pumped from well: 8 - pumped dry

Depth to Water after well development: _____

Depth to water prior to sampling: 12.82' - 1 hr after pumped dry

Bailed water stored on-site ? How ? Drums

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? TSP/Distilled

Water Appearance:

	yes	no
froth		✓
irridesence		✓
oil		✓
smell	✓	
product		✓
other, describe		✓

Gallons Removed	pH	EC	Temp
5	6.01	1.66	66.1
10	6.50	1.04	60.0
15	6.85	1.09	60.6
20	6.80	1.25	60.4
25	6.81	1.00	60.5
30			
35			
40			
45			
50			

Samples Obtained:

TPH (gasoline)	
TPH (diesel)	
TPH (motor oil)	
BTXE	
EPA 624	
EPA 625	
EPA 608	
PCBs only	
Metals	
Other, specify	
Field Blank	

Well Sampling [✓] Well Development [ ] check one

Well Number: MW-3

Job Number: 6045-4

Job Name: Pamida

Date: 8-25-94

Sampler: Gilbert

Depth to Water (measured from TOC): 5.93'

Inside Diameter of Casing: 2"

Depth of Boring: 14'

Method of well development/purging: Pumped

Amount of Water Bailed/Pumped from well: 6 gallons - pumped Dry

Depth to Water after well development: _____

Depth to water prior to sampling: 5.90'

Bailed water stored on-site ? How ? Drums

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? 1

Water Appearance:

	yes	no
froth		✓
irridesence		✓
oil		✓
smell	✓	
product		✓
other, describe		✓

Gallons Removed	pH	EC	Temp
5	6.50	1.10	64.1
10	6.60	1.40	64.2
15	6.65	1.37	64.0
20	6.66	1.35	64.0
25			
30			
35			
40			
45			
50			

Samples Obtained:

TPH (gasoline)	
TPH (diesel)	
TPH (motor oil)	
BTXE	
EPA 624	
EPA 625	
EPA 608	
PCEs only	
Metals	
Other, specify	
Field Blank	

Well Sampling [✓] Well Development [ ] check one

Well Number: MW-4

Job Number: 6045-4

Job Name: Parella

Date: 8-25-94

Sampler: Culbert

Depth to Water (measured from TOC): ~~[illegible]~~ 3.25

Inside Diameter of Casing: 2"

Depth of Boring: 14'

Method of well development/purging: pump

Amount of Water Bailed/Pumped from well: 7.2 g

Depth to Water after well development: _____

Depth to water prior to sampling: 5.55'

Bailed water stored on-site ? How ? Drums

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? TSP/Distilled

Water Appearance:

	yes	no
froth		✓
irridesence		✓
oil	✓	✓
smell	✓	
product		✓
other, describe		✓

Gallons Removed	pH	EC	Temp
5	4.91	1.60	64.1
10	5.66	1.55	63.3
15	5.91	1.50	63.2
20	5.90	1.66	63.3
25			
30			
35			
40			
45			
50			

Samples Obtained:

TPH (gasoline)	
TPH (diesel)	
TPH (motor oil)	
BTXE	
EPA 624	
EPA 625	
EPA 608	
PCBs only	
Metals	
Other, specify	
Field Blank	

CHROMALAB, INC.

Environmental Services (SDB)

September 6, 1994 *Submission #:* 9408357

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: PARALTO *Project#:* 6045-4
Received: August 29, 1994

re: 4 samples for Gasoline and BTEX analysis

Matrix: WATER
Sampled: August 25, 1994 *Analyzed: September 2, 1994*
Method: EPA 5030/M.8015/602

RESULTS:

Sample #	Client Sample I.D.	Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)
61376	MW1	N.D.	N.D.	N.D.	N.D.	N.D.
61377	MW2	0.07	N.D.	N.D.	N.D.	0.5
61378	MW3	0.31	6.4	2.7	1.9	4.1
61376	MW4	N.D.	N.D.	N.D.	N.D.	N.D.
Blank		N.D.	N.D.	N.D.	N.D.	N.D.
Blank Spike Recovery (%)		87	100	113	110	114
Reporting Limit		0.05	0.5	0.5	0.5	0.5

ChromaLab, Inc.

Billy Thach
Analytical Chemist

Ali Kharrazi
Organic Manager

kv

2239 Omega Road,#1 • San Ramon, California 94583
(510) 831-1788 • Facsimile (510) 831-8798
Federal ID #68-0140157

SUBM #: 9408357
CLIENT: ACC
DUE: 09/06/94
REF #:18161

re # 18161

CHROMALAB, INC.

DOHS 1094

2239 Omega Road, #1
510/831-1788

ıain of Custody

DATE Aug 25, 1994 PAGE 1 OF 1

PROJ. MGR. Misty Kaltrieder
COMPANY ACC ENVIRONMENTAL
ADDRESS 1000 Atlantic Ave, Suite 110
Alameda, CA 94501
SAMPLERS (SIGNATURE) Bret Culbert
(PHONE NO.) (510)522-9188

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510/3550, 8015)	PURGEABLE AROMATICS 8TEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)				NUMBER OF CONTAINERS
MW-1	8-25-94	11 am	H_2O	Cold		✓																			3
MW-2		1230				✓																			3
MW-3		12 noon				✓																			3
MW-4		130pm				✓																			3

PROJECT INFORMATION

PROJECT NAME: Peralta
PROJECT NUMBER: 6045-4
P.O. # 6045-4

TAT: STANDARD 5-DAY | | | 24 | 48 | 72 | OTHER

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	12
HEAD SPACE	NNC
RECD GOOD CONDITION/COLD	
CONFORMS TO RECORD	yes

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
Bret Culbert 500pm (SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
BRET CULBERT 8-25-94 (PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
ACC ENVIRONMENTAL (COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3.**
(SIGNATURE) 1259 (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
B Morrow 8-29-94 (PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
Chromalab (COMPANY)	(COMPANY)	(LAB)