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May 4, 1995

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 sampling at the Peralta Maintenance Yard, Oakland, California. This work was performed to evaluate the extent of groundwater impact from previous underground storage of petroleum hydrocarbons.

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

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

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

Sincerely,

Misty C. Kaltreider
Geologist

page - 678-3649

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

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QUARTERLY GROUNDWATER INVESTIGATION WITH DISCUSSION OF SELECTED REMEDIAL OPTIONS

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

May 1995

Job Number 6045-11

Prepared by: _____
Misty Kaltreider
Project Geologist

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TABLE OF CONTENTS

TABLES

ATTACHMENTS

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 analysis of groundwater samples collected from four monitoring wells onsite.

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 tanks, one 2,000-gallon diesel tank, one 2,000-gallon ethyl (premium) gasoline tank, 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 fuel. The new tanks were installed approximately 150 feet from the original tanks.
In 1992, the five original underground storage tanks were removed. During removal, a total of eight soil samples and one grab groundwater sample were collected from the excavation. Laboratory analysis of the soil samples indicated up to 228 parts per million (ppm) of Total Petroleum Hydrocarbons (TPH) as diesel, 134 ppm of TPH as gasoline, 2.4 ppm benzene, 4.6 ppm toluene, 7.17 ppm ethylbenzene, 6.15 ppm total xylenes and 5,477 ppm oil and grease. Laboratory analysis of the water samples collected from the excavation indicated 170,000 parts per billion (ppb) TPH as diesel, 15,000 ppb TPH as gasoline, 286 ppb benzene, 698 ppb toluene, 300 ppb ethylbenzene, 808 ppb total xylenes and 284,000 ppb 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 reported in the soil and grab groundwater samples are possibly a result of regional impact.

In November 1992, ACC performed a subsurface environmental site assessment of the soil around the former tank excavation. Petroleum hydrocarbons as gasoline and motor oil were detected in the soil and groundwater samples 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, 0.190 ppm benzene, and 0.018 ppm toluene. Initial groundwater samples collected from the excavation indicated 27,000 ppb 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 were removed from the excavation. Analysis of subsequent groundwater samples from the excavation indicated 210 ppb TPH as gasoline, and 14 ppb xylenes.

Due to the detectable levels reported in the soil and groundwater onsite, additional groundwater investigations were requested from the regulatory agencies.

In February 1994, four additional borings (MW-1, MW-2, MW-3 and MW-4) were drilled onsite and converted into 2-inch monitoring wells. The monitoring wells were used to evaluate the extent of groundwater impact from the two former excavations (See Figure 2 - Site Plan).

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 from monitoring well MW-1 indicated a downgradient extent of groundwater impact. 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, and TPH as gasoline with BTEX. Motor oil was reported in the soil from boring MW-2. However, motor oil was not detected in the groundwater sample from monitoring well MW-2. 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 onsite. The investigation included drilling five borings upgradient (east) of existing monitoring wells MW-2 and MW-3. Laboratory analysis of the soil samples collected during the additional investigation indicate detectable levels of diesel up to 11 ppm and motor oil up to 100 ppm. Below detectable levels of TPH as gasoline and BTEX were reported in the soil samples analyzed.

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

Motor oil was not detected in the groundwater samples collected from the borings and monitoring wells, 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. Fine-grain fill material and Bay Mud appear to restrict the mobility of the petroleum hydrocarbons from impacting groundwater. However, groundwater flow direction data suggests that constituent movement is to the westerly direction, away from monitoring wells MW-2 and MW-3.

3.0 SITE DESCRIPTION

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

4.0 FIELD PROCEDURES

4.1 Groundwater Sampling

Groundwater samples were collected on February 14, 1995 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 in feet above mean sea level (msl) and 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
	11/16/94		3.50	3.28
	02/14/95		3.91	2.87
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
	11/16/94		5.03	3.67
	02/14/95		4.55	4.15
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
	11/16/94		4.04	4.79
	02/14/95		6.11	2.72

TABLE 1 (cont.) - Groundwater Depth Information

Well No.	Date Sampled	TOC Elevation	Depth to Groundwater (Ft)	Groundwater Elevation (Ft.)
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
	11/16/94		1.01	4.44
	02/14/95		2.16	3.29

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

After water-level measurements were collected, each onsite 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 A.

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 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. Analysis results from the groundwater samples are summarized in Table 2. 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
	11/16/94	<50	NT	<0.5	<0.5	<0.5	<0.5
	02/14/95	<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
	11/16/94	<50	NT	<50	<0.5	<0.5	0.6
	02/14/95	160	NT	0.7	0.6	<0.5	1.0
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
	11/16/94	650	NT	1.6	1.5	<0.5	2.7
	02/14/95	70	NT	<0.5	<0.5	<0.5	<0.5
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
	11/16/94	100	NT	2.7	<0.5	<0.5	1.0
	02/14/95	60	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 onsite 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 onsite monitoring wells. The location of the wells is shown on Figure 2 - Site Plan. The gradient was evaluated by triangulation using the elevation of the potentiometric surface measured with respect to Mean Sea Level datum. Groundwater elevations were collected from the wells on February 14, 1995 and are illustrated on Figure 3, Groundwater

Gradient Map. Table 3 summarizes the historic groundwater gradient and the direction of groundwater flow onsite.

TABLE 3 - Historic Groundwater Gradient

Date Monitored	Gradient (foot/foot)	Direction
02/14/94	0.01	west
05/16/94	0.025	west
08/25/95	0.031	west
11/16/94	0.013	west
02/14/95	0.014	northwest

During the initial subsurface investigation conducted onsite, varying thicknesses of fill material was encountered onsite. In some areas onsite, the groundwater was migrating through the fill material producing preferential pathways. This mode of groundwater migration may be most evident during seasons of heavy rainfall when the groundwater is elevated. As observed during collection of the groundwater samples on November 16, 1994, elevated levels of groundwater was recorded in all the wells, however, was most prominent in monitoring well MW-4. This fluctuation may cause differential (radial) gradient patterns, as observed in Figure 3.

6.0 REMEDIAL ACTION

In accordance with request from Peralta Community College District, for performing work to move toward site closure, Remedial Action is proposed for this site. Several remedial options were evaluated for cleanup leading to ultimate site closure at the Maintenance Yard and are discussed below.

6. 1 DISCUSSION

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 groundwater samples collected from monitoring wells and boreholes indicated below detectable levels of Total Extractable Petroleum Hydrocarbons (TEPH) as diesel, motor oil and kerosene. TEPH apparently has not impacted the groundwater.

Results of the subsurface investigations conducted onsite indicate soil and groundwater is impacted with TPH as gasoline with BTEX. The impacted soil and groundwater appears to be concentrated north of the former 1992 tank excavation, between the former 1992 tank excavation and monitoring wells MW-2 and MW-3, see Figures 2 and 3.

6.2 PROPOSED REMEDIAL OPTIONS

Based on the investigations performed to date, there are at least three options for remedial action of the affected soil and groundwater.

6.2.1 Option 1 - Groundwater Monitoring

Due to the levels of constituents in the groundwater reported in monitoring wells MW2 and MW3 and the relative immobility of constituents through the soil, an extended monitoring program can be continued as a passive approach to remediate the groundwater. Levels of constituents may fluctuate, however, over time the constituents should degrade.

Groundwater monitoring is required as the minimum from the regulatory agencies prior to granting "No Further Action" and "Site Closure". Monitoring of the onsite wells should be performed during any remedial action to establish background constituent levels and degradation of petroleum hydrocarbons in the groundwater.

Groundwater monitoring conducted without remedial action is considered a long-term process. Levels of constituents in the groundwater will be documented to statically demonstrate degradation of petroleum hydrocarbon concentrations. The estimated time for passive monitoring of the onsite wells is 3 to 5 years. Sampling and monitoring of the groundwater wells will initially occur on a quarterly basis and may be modified to biannual sampling at a future date.

Passive remediation includes groundwater sampling and monitoring of the existing four groundwater wells onsite for petroleum hydrocarbons on a quarterly basis for approximately 3 to 5 years. Continual monitoring can be performed to verify the limited migration of contaminants and to demonstrate that concentrations within the groundwater will degrade overtime. However, this can be a long term process. The initial estimated cost for continual monitoring is approximately $8,000 per year.

6.2.2 Option 2 Excavation/Aeration

Since the area northeast of the former 1992 tank excavation has reported soil impact with petroleum hydrocarbons, excavation of the impacted soil can be performed as a remedial action measure. The area of soil impact is located between the former 1992 tank excavation and borings B3, L2, B1, and monitoring well MW-2. The proposed area of excavation will be approximately 100 feet by 50 feet and is illustrated on figure 4. The excavation should be completed to the depth of groundwater, approximately 6 feet below surface for an anticipated total volume of 1200 cubic yards to be removed. Water within the bottom of the excavation would be pumped and disposed. The actual excavation of the impacted area will be slow due to unknown and unmarked underground utilities in the area.

The soil removed will consist of primarily fill material and Bay Mud which will need to be aerated prior to disposal or used as backfill material. During aeration, the excavation will remain open and secure. However, due to the large area proposed for excavation, security for the area is a concern.

Once the removed material has sufficiently aerated, the material will be returned to the excavation and compacted. The total time for removal of impacted soil, aeration, and final backfilling of the excavation with aerated material is approximately four to five month.

To avoid one large open excavation, the actual soil removal can be performed in three segments of approximately 400 cubic yards each. Between each excavation, the pit will be lined with plastic sheeting and clean fill material will be compacted within the excavation prior to beginning the next excavation.

If soil removal is performed in segments, approximately 3 months of additional time will be added to the overall project for aeration of the soil.

If the soil can not be sufficiently aerated, than it will need to be disposed at an accepting landfill and imported clean material will need to be placed within the excavation.

6.2.3 Option 3 - Vapor Extraction

"Two-Phase Extraction" is one form of soil vapor extraction that may work extremely well at this site. "Two-Phase Extraction" consists of a high-flow air vacuum which is lowered into one or more of the existing monitoring wells to the approximate groundwater/air level. The vacuum is connected to a carbon filter for air filtration (polishing) and a collection tank for the water. During the vacuuming process, vapor will be drawn into the system along with some water. Water collected will be polished through carbon canisters and ultimately disposed into the sanitary sewer system assuming permits for disposal to the sanitary sewer can be obtained.

This type of system works well with volatile constituents and low permeable soils, similar to conditions onsite. The estimated time for permitting and operation startup is approximately four months. To speed up the process, one to two additional monitoring wells may need to be installed onsite for better hydrocarbon removal and evaluation of the remedial system.

Vapor extraction includes utilizing the existing monitoring wells and additional extractions well(s) for contaminated vapor and water extraction. Vapor extraction involves placing a high-flow air vacuum into one or more monitoring well(s). The vacuum pulls volatile organic laden groundwater and vapor from the surrounding soils into polishing canisters prior to releasing into the sanitary sewer and atmosphere. Permitting and setup of this type of technology takes approximately four months. In addition, due to the fine-grain soils onsite, the actual time to vacuum and remediate the surrounding area is estimated to be approximately 6 - 12 additional months. In addition to the extraction, quarterly monitoring will need to be conducted to monitor the progress of cleanup and prior to submission of request for site closure. The estimate cost for extraction including setup, permitting, and operation for approximately 12 months is $160,000.

6.3 Summary

Excavation and soil aeration can be conducted for areas effected with soil and groundwater contamination. Impacted soil onsite consists of fine-grain soil which may be difficult in remediating using groundwater monitoring or soil vapor extraction. However, by excavating affected soils, the source of impact is removed.

These options were based on the geology and hydrogeology onsite, the levels of contaminants detected within the soil and groundwater, and the time available for remedial action.

Verification monitoring should be conducted after excavation is complete prior to request for site closure. Excavation, soil and groundwater removal including backfilling can be conducted in approximately 4 to 5 months. The total estimated cost for excavation, soil and groundwater removal, and disposal is approximately $300,000.

In general, remediation of fine-grained soil without source removal has met with limited success using standard remedial technologies. Therefore, source removal can be a time saving measure that is met with greater success for site closure.

7.0 CONCLUSION

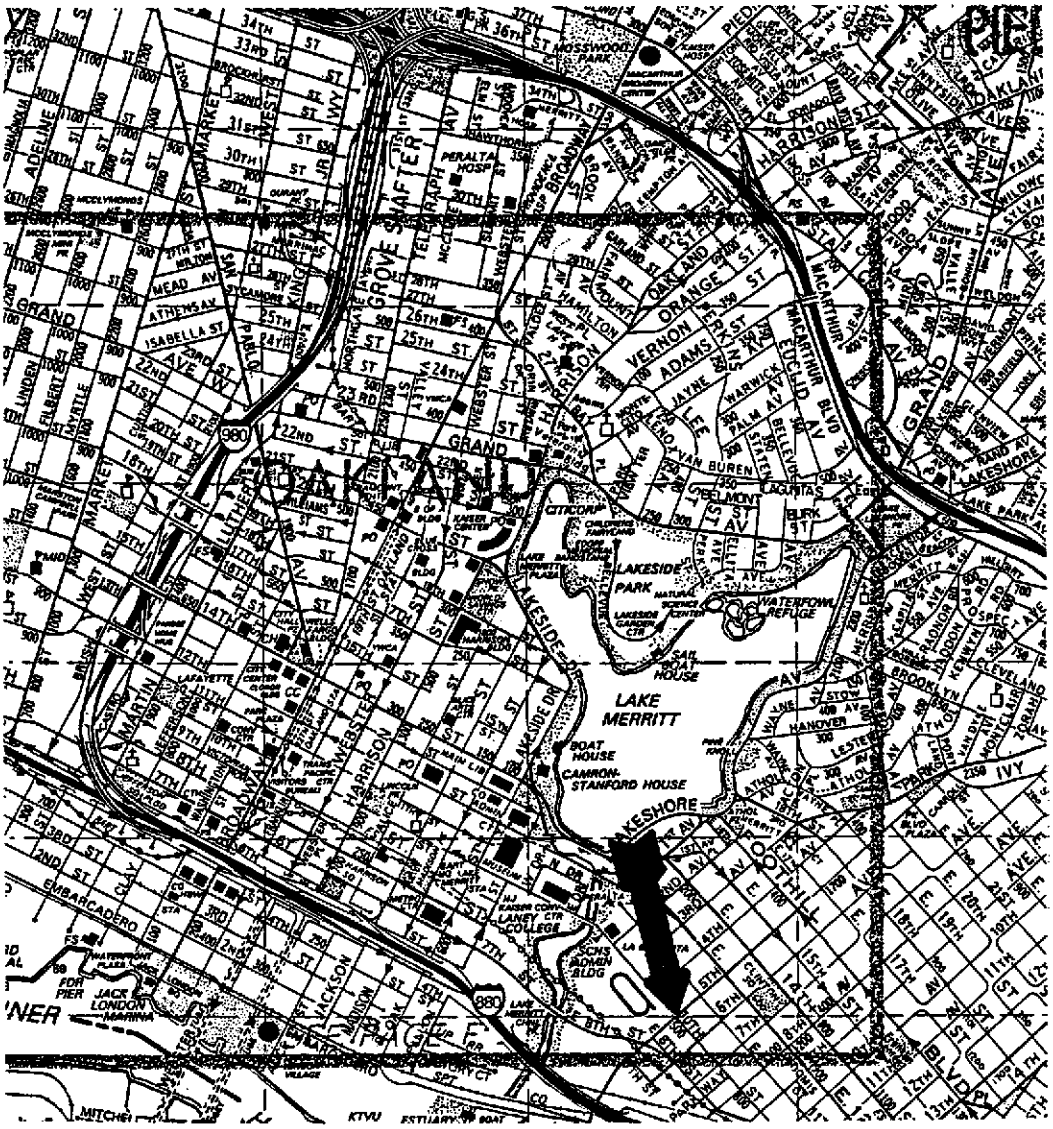
The analytical results and observations discussed herein indicate that groundwater has been impacted due to an unauthorized hydrocarbon release. The analytical parameters used for groundwater sampling performed were in accordance with the guidance document "Tri-Regional Water Quality Control Boards Staff 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 does not impact the groundwater.

Laboratory results collected from the downgradient monitoring well (MW-1) indicated below detectable levels of constituents. Laboratory analysis of groundwater collected from monitoring well MW-3 (upgradient of the former tank excavations) indicated detectable levels of constituents indicating upgradient source(s). The groundwater results indicate that a hydrocarbon release from the former underground storage tanks onsite does not appear impact the groundwater downgradient from the tank excavation (MW-1). Historic observations indicate that the soil and groundwater impact upgradient is restricted in mobility due to the fine-grain soil. ACC anticipates a decline in concentrations of petroleum hydrocarbons over time. Groundwater levels appear to fluctuate onsite due to seasonal changes in precipitation and preferential pathways of shallow groundwater within the fill material. These seasonal changes appear to cause differential gradient patterns as evidenced by inconsistent fluctuations in water elevation levels in the four onsite groundwater monitoring wells.

8.0 RECOMMENDATIONS

Remedial Action as soil and groundwater removal from excavation is proposed to begin late May 1995.



Location Map
Peralta Community College
Maintenance Yard

05/01/95	Drawn By: AJH	Project: 6045-11	Figure 1

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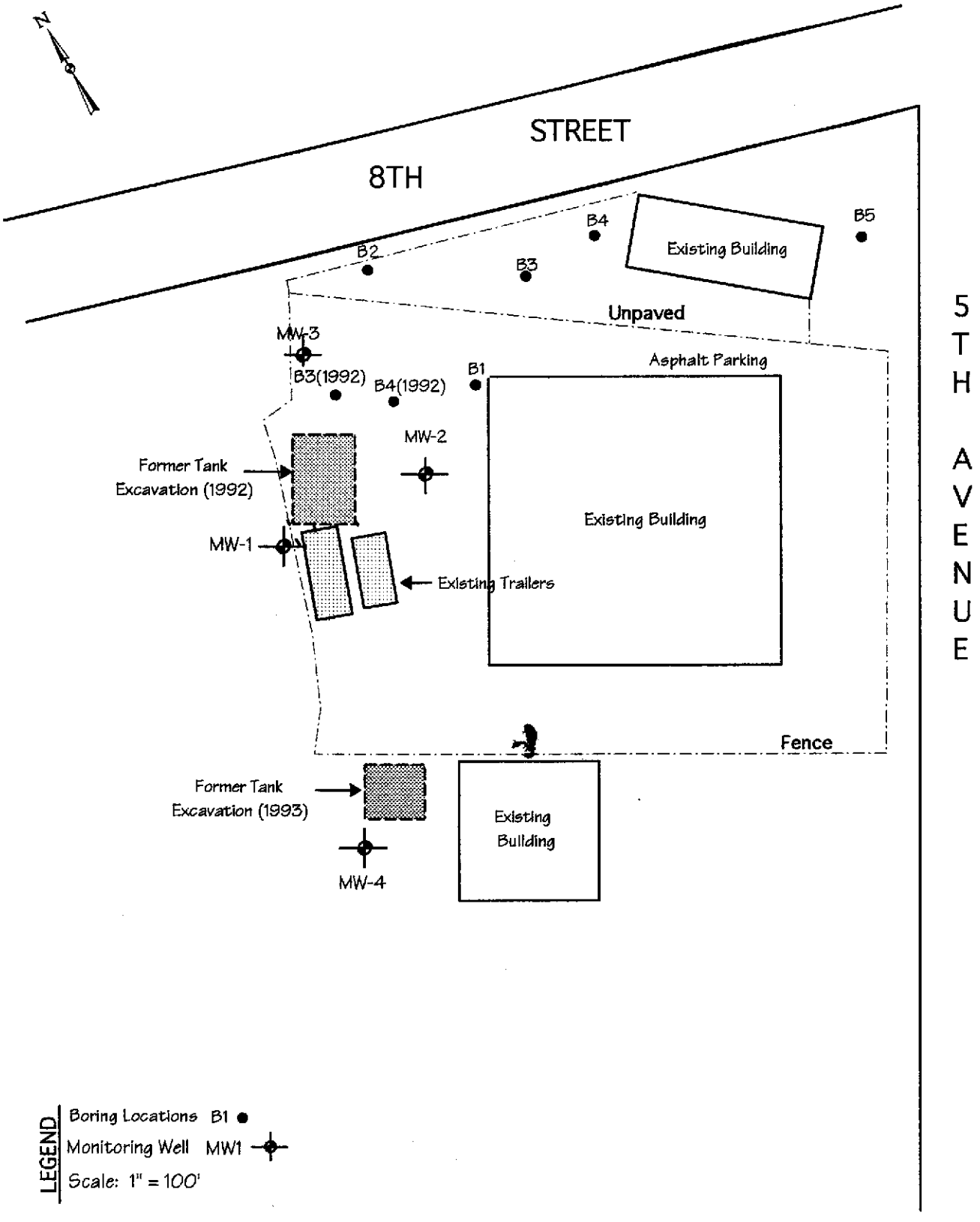

11/29/1994	Drawn By: MCK	Project: 6045-11	Figure 2:	**Site Plan** Peralta Maintainance Yard, Oakland, CA

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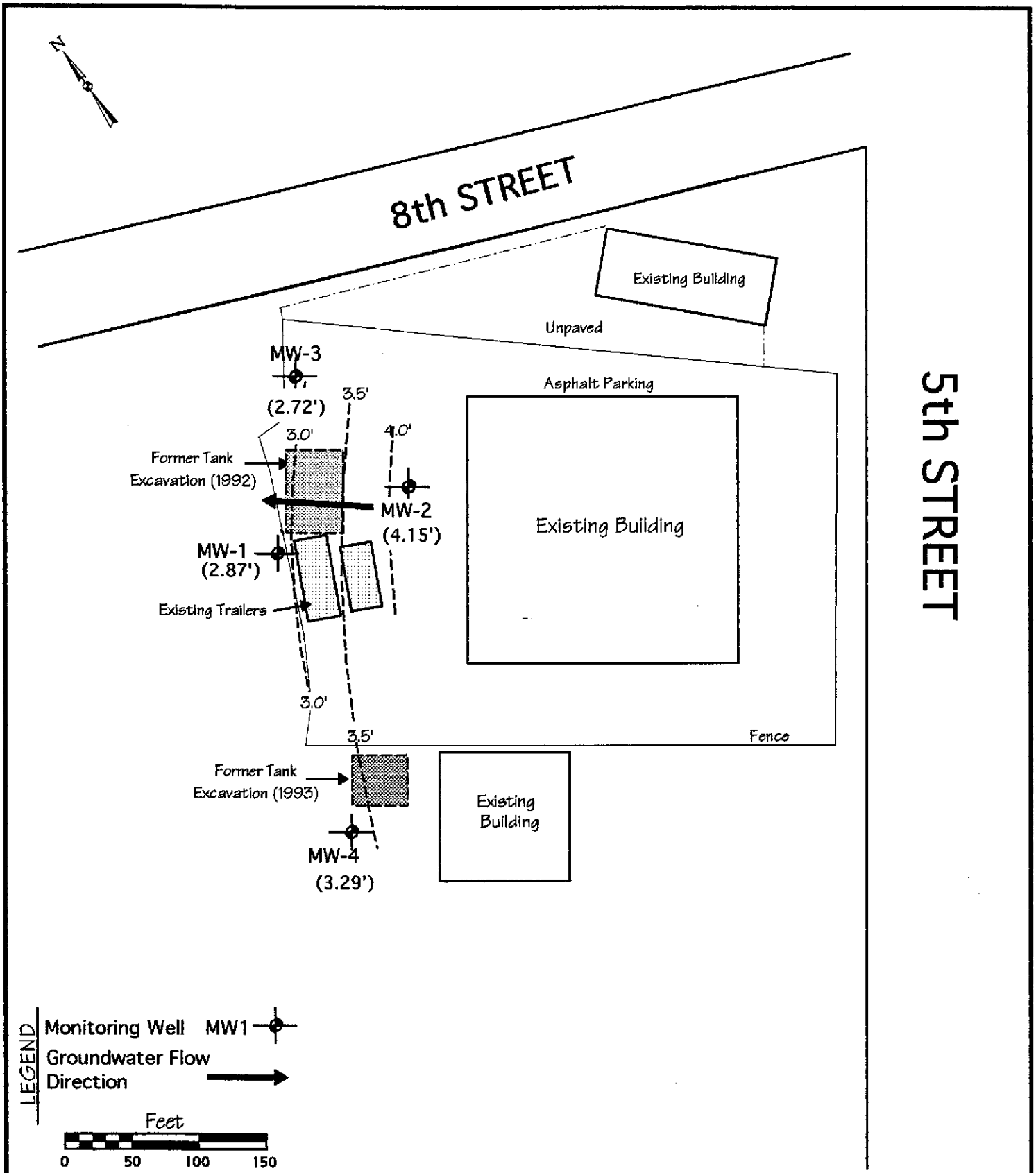

Elevations in Feet Above Mean Sea Level **Measured on 02/14/95**

02/14/1995	Drawn By: MCK	Project: 6045-11	Figure 3:	**Groundwater Gradient** Peralta Maintainance Yard, Oakland, CA

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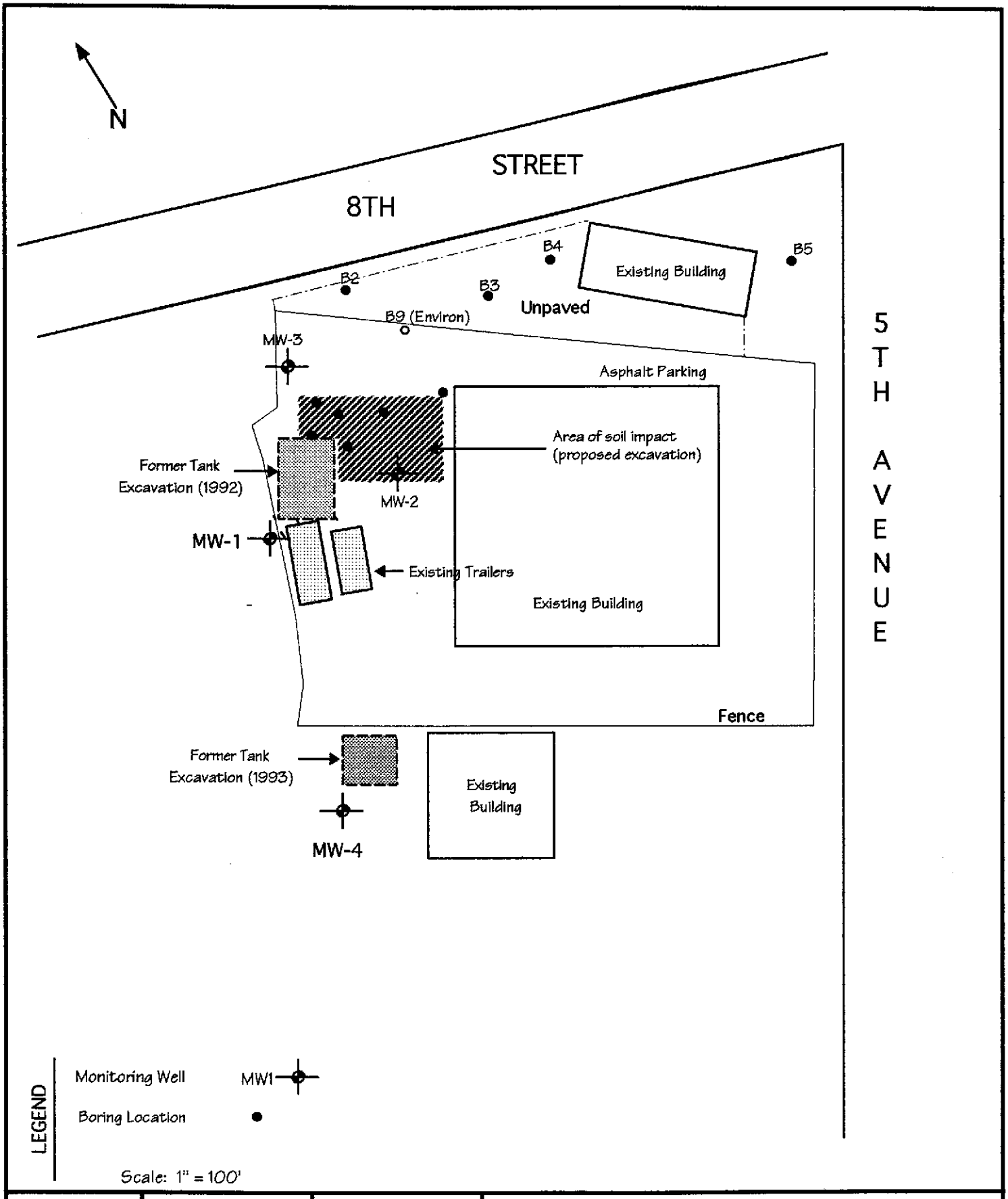

08/29/1994	Drawn By: MCK	Project: 6045-10	Figure 4:	**Proposed Excavation** Peralta Maintainance Yard, Oakland, CA

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APPENDIX A

NOTES OF WELL SAMPLING

Well Sampling [✓] Well Development [ ] check one

Well Number: MW-1

Job Number: _____

Job Name: Peralta

Date: 2-14-95

Sampler: Bret Culbert

Depth to Water (measured from TOC): 3.91'

Inside Diameter of Casing: 2"

Depth of Boring: 15'

Method of well development/purging: bail

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

Depth to Water after well development: _____

Depth to water prior to sampling: 10.22'

Bailed water stored on-site ? How ? Drums

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? New

Water Appearance:

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

Gallons Removed	pH	EC	Temp
5			
10			
15			
20			
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	

Well Sampling [ ] Well Development [ ] check one

Well Number: MW-2

Job Number: Par

Job Name: Peralta

Date: 2-14-95

Sampler: Bret Gilbert

Depth to Water (measured from TOC): 4.55'

Inside Diameter of Casing: 2"

Depth of Boring: 20"

Method of well development/purging: BAIL

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

Depth to Water after well development: _____

Depth to water prior to sampling: 9.80 - waited 1.5 hrs to refill

Bailed water stored on-site ? How ? Drums

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? new

Water Appearance:

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

Gallons Removed	pH	EC	Temp
5			
10			
15			
20			
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	

Well Sampling [~] Well Development [ ] check one

Well Number: MW-3

Job Number: _____

Job Name: Paralta

Date: 2-14-95

Sampler: Bret Culbert

Depth to Water (measured from TOC): 6.11'

Inside Diameter of Casing: 2"

Depth of Boring: 20'

Method of well development/purging: Bail

Amount of Water Bailed/Pumped from well: 10 g

Depth to Water after well development: _____

Depth to water prior to sampling: 6.68

Bailed water stored on-site ? How ? Drums

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? New

Water Appearance:

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

Gallons Removed	pH	EC	Temp
5			
10			
15			
20			
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	

Well Sampling [✓] Well Development [ ] check one

Well Number: MW-4

Job Number: _____

Job Name: Peralta

Date: 2-14-95

Sampler: Bret Culbert

Depth to Water (measured from TOC): 2.16'

Inside Diameter of Casing: 2"

Depth of Boring: 15'

Method of well development/purging: bail

Amount of Water Bailed/Pumped from well: 10 gallon

Depth to Water after well development: _____

Depth to water prior to sampling: 2.27

Bailed water stored on-site ? How ? Drums

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? NEW

Water Appearance:

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

Gallons Removed	pH	EC	Temp
5			
10			
15			
20			
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	

APPENDIX B

ANALYTICAL RESULTS
CHAIN OF CUSTODY

CHROMALAB, INC.

Environmental Services (SDB)

February 21, 1995 *Submission #:* 9502197

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: PERALTA *Project#:* 6045-11
Received: February 15, 1995

re: 4 samples for Gasoline and BTEX analysis.

Matrix: WATER
Sampled: February 14, 1995 *Run#:* 5446 *Analyzed:* February 17, 1995
Method: EPA 5030/8015M/602/8020

Spl # CLIENT SMPL ID	Gasoline (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
77859 MW-1	N.D.	N.D.	N.D.	N.D.	N.D.
77860 MW-2	0.16	0.7	0.6	N.D.	1.0
77861 MW-3	0.07	N.D.	N.D.	N.D.	N.D.
77862 MW-4	0.06	N.D.	N.D.	N.D.	N.D.
Reporting Limits	0.05	0.5	0.5	0.5	0.5
Blank Result	N.D.	N.D.	N.D.	N.D.	N.D.
Blank Spike Result (%)	109	95	99	102	109

Billy Thach
Chemist

Ali Kharrazi
Organic Manager

QC JACK 11:09:18

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

DOHS 1094

SUBM #: 9502197
CLIENT: ACC
DUE: 02/23/95
REF #:20526

3

197/77859-77862
20526

Chain of Custody

DATE Feb 14, 1995 PAGE _____ OF _____

PROJ. MGR. Misty Kaltreider
COMPANY ACC Environ
ADDRESS 1000 Atlantic Ave, Ste 110
Alameda, CA 94501

SAMPLERS (SIGNATURE) Bret Culbert
(PHONE NO.) 5105228188

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 BTEX (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	2-14-95	1 pm	H_2O	Cold		✓																			3
-2		12 noon				✓																			3
-3		11 am				✓																			3
-4	↓	1130 Am	↓	↓		✓																			3

PROJECT INFORMATION

PROJECT NAME: Pavalta
PROJECT NUMBER: 6045-11
P.O. # 6045-11
TAT: STANDARD 5-DAY | 24 | 48 | 72 | OTHER

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	12
HEAD SPACE	
REC'D GOOD CONDITION/COLD	✓
CONFORMS TO RECORD	

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
Bret Culbert 2pm (SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
Bret Culbert 2-14-95 (PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
ACC (COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3.**
(SIGNATURE) 1332 (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
B Mercer 2-15-95 (PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
Chromalab (COMPANY)	(COMPANY)	(LAB)