



ENVIRONMENTAL
PROTECTION
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GROUNDWATER MONITORING REPORT

August 13, 1997

ST. 03292

Peralta Maintenance Yard
501 5th Avenue
Oakland, California

Prepared For:
Mr. Robert Mibach
Peralta Community College District

ACC Project No. 6045-014.00

OAKLAND ▪ SACRAMENTO
SEATTLE ▪ LOS ANGELES

GROUNDWATER MONITORING REPORT

**Peralta Community College District Maintenance Yard
501 5th Avenue
Oakland, California**


ACC Project No. 6045-014.00

Prepared for:

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


August 13, 1997

Prepared by:



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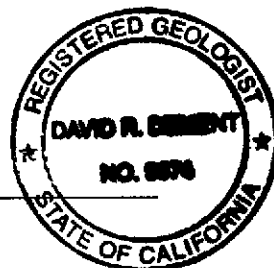


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GROUNDWATER MONITORING REPORT
Peralta Community College District Maintenance Yard
501 5th Avenue
Oakland, California

1.0 INTRODUCTION

This report presents the procedures and findings of groundwater investigation conducted by ACC Environmental Consultants, Inc., (ACC) on behalf of the Peralta Community College District (District), site owner at 501 5th Avenue, Oakland, California (Figure 1). The project objective was to evaluate the extent of groundwater impact from the previous underground storage of petroleum products and to evaluate effectiveness of remedial actions conducted in the summer of 1995 using analysis of groundwater samples collected from **three onsite monitoring wells**.

2.0 BACKGROUND

Five underground storage tanks (USTs) were installed at the subject property prior to the 1960s. 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, the District acquired the property. The District abandoned the five USTs by filling them with water and installed three new fiberglass USTs. The new tanks consisted of two 6,000-gallon and one 4,000-gallon fiberglass tanks used to store gasoline fuel. The new tanks were installed approximately 150 feet from the original tanks.

2.1 UST Removal

In 1992, the five original USTs were removed by R.S. Eagan, contractor. During removal, one grab groundwater sample and eight soil samples were collected from the excavation. Laboratory analysis of the soil samples indicated concentrations up to 228 parts per million (ppm) total petroleum hydrocarbons as diesel (TPHd), 134 ppm total petroleum hydrocarbons as gasoline (TPHg), 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 sample collected from the excavation indicated concentrations of 170,000 ppb TPHd, 15,000 ppb TPHg, 286 ppb benzene, 698 ppb toluene, 300 ppb ethylbenzene, 808 ppb total xylenes, and 284,000 ppb oil and grease.

2.2 Previous Assessments

In September 1992, a preliminary study was performed by Environ of Emeryville, California, to evaluate soil and groundwater conditions at the site and at neighboring sites as part of a due diligence investigation associated with the sale of the property. This study indicated that hydrocarbon constituents reported in the soil and grab groundwater samples at the District Maintenance Yard were possibly a result of regional impact.

In November 1992, ACC performed a subsurface environmental site assessment of the soil around the former tank excavation. Concentrations of TPHg and motor oil were detected in the soil and groundwater samples collected from the borings. Laboratory analysis of the soil samples indicated concentrations up to 370 ppm TPHg, 12 ppm TPHd, 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, the three fiberglass gasoline USTs were removed from the property. Soil samples collected from the excavation indicated concentrations up to 1.3 ppm TPHg, 0.019 ppm benzene, and 0.018 ppm toluene. Initial groundwater samples collected from the excavation indicated 27,000 ppb TPHg, 1,200 ppb benzene, 5,100 ppb toluene, 690 ppb ethylbenzene, and 5,700 ppb xylenes. During removal of the tanks, approximately 3,500 gallons of water were removed from the excavation. Analysis of subsequent groundwater samples from the excavation indicated concentrations of 210 ppb TPHg and 14 ppb xylenes. Due to the detectable levels reported in the soil and groundwater samples, additional groundwater investigation was requested from Alameda County Health Care Services Agency (ACHCSA).

In February 1994, four additional borings were drilled on site and converted into 2-inch-diameter monitoring wells (MW-1, MW-2, MW-3, and MW-4). The monitoring wells were used to evaluate the extent of groundwater impact from the two former excavations (Figure 2). Laboratory analysis of the groundwater samples collected in February 1994 from monitoring wells MW-1 and MW-4 (downgradient from the tank excavations) indicated no 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 samples collected from monitoring wells MW-2 and MW-3 (upgradient of the former tank excavations) indicated detectable levels of constituents. Groundwater samples collected from borings MW-2 and MW-3 indicated detectable levels of TPHd, TPHg, and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Motor oil was reported in the soil sample collected from boring MW-2. However, motor oil was not detected in the groundwater sample collected from monitoring well MW-2. A concentration of TPHd was only detected in the soil sample from boring MW-2.

An additional soil and groundwater investigation was conducted 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 during the additional investigation indicated detectable concentrations of TPHd up to 11 ppm and motor oil up to 100 ppm. No detectable concentrations of TPHg and BTEX were reported in the soil samples analyzed. Groundwater was encountered at a depth of approximately 5 to 6 feet below ground surface (bgs) during the additional investigation. Laboratory analysis of grab groundwater samples collected from the boreholes indicated no detectable concentrations of TPHd, motor oil, and BTEX. A concentration of TPHg of 61 ppb was reported in one grab groundwater sample collected from one boring. Motor oil was not detected in the groundwater samples collected from the borings and monitoring wells. Results of the analytical data from previous investigations indicate that upgradient sources of TPHg and motor oil exist. Fine-grained fill material and Bay Mud appear to restrict the mobility of the petroleum hydrocarbons from impacting groundwater; however,

groundwater flow direction data suggest that constituent movement is to the west, away from monitoring wells MW-2 and MW-3.

2.3 Interim Remedial Action

Based on the findings of the subsurface investigations, elevated concentrations of petroleum hydrocarbons in the soil and groundwater indicate that a source of impact still existed on site. To remediate the source, overexcavation of the area around the former tank excavation was recommended as a cost-effective means. The proposed scope of work, approved by the lead regulatory agency, ACHCSA, included excavating impacted soil in the vicinity of the former tank excavation, actively purging the groundwater during excavation, and destroying well MW-2 during excavation activity.

Interim remedial work as overexcavation of impacted soil around the former tank excavation (removed in 1992) was performed in the summer of 1995. Interim remedial action consisted of source removal including overexcavation and removal of approximately 2,250 cubic yards of impacted soil and removal of approximately 14,888 gallons of excavation water. During soil removal, four previously unknown USTs were discovered, three of which were removed. One UST still exists at the site. In order to protect the adjacent portable building's integrity, the tank was not removed at the time of remedial action. The UST will be removed after relocation of the adjacent building. In addition, during the final UST removal, additional overexcavation will be performed to remove obviously impacted soil not obtained during the 1995 remedial action.

Based on previous investigations conducted on site, the extent of impact in the soil and groundwater was in the immediate vicinity around former monitoring well MW-3 and the existing UST, adjacent to the portable buildings. Due to the findings of the interim remedial action and the existence of previously unknown USTs, groundwater monitoring of the existing three wells (MW-1, MW-3, MW-4) was reinstated after the interim remedial action.

3.0 FIELD PROCEDURES

3.1 Groundwater Monitoring

Before groundwater sampling, the depth to the surface of the water table was measured from the top of the polyvinyl chloride casing using a Solinst water level meter. The water level measurements were recorded to the nearest 0.01 foot with respect to mean sea level (MSL). Groundwater monitoring data obtained at the site is included in Appendix 1. Information regarding well elevations and groundwater level measurements is summarized in Table 1.

TABLE 1 - GROUNDWATER DEPTH INFORMATION

Well No.	Date Monitored	Well Elevation* (above MSL)	Depth to Groundwater	Groundwater Elevation
MW-1	02/14/94	6.78	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
	05/18/95		6.46	0.32
	03/27/96		4.32	2.46
	10/08/96		6.96	-0.18
	01/13/97		3.36	3.42
	07/17/97		6.21	0.57
MW-2	02/14/94	8.70	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
	05/18/95		4.77	3.93
	Destroyed		---	---
MW-3	02/14/94	8.83	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		4.55	2.72
	05/18/95		4.49	4.34
	03/27/96		4.51	4.32
	10/08/96		6.60	2.23
	01/13/97		4.12	4.71
	07/17/97		6.60	2.23
MW-4	02/14/94	5.45	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		6.11	2.72
	05/18/95		2.32	3.13
	03/27/96		2.35	3.10
	10/08/96		3.75	1.70
	01/13/97		1.69	3.76
	07/17/97		3.48	1.97

Notes: *All measurements are reported in feet; well elevation measured to top of casing

3.2 Groundwater Gradient

Groundwater elevations were calculated from water level measurements collected in the wells on July 17, 1997. Groundwater gradient and flow direction were calculated using this data by triangulation using the elevation of the potentiometric surface measured with respect to MSL datum. As shown in Figure 3, general direction of groundwater flow is west at a gradient of 0.05 foot/foot. Historic groundwater flow direction on site is summarized in Table 2. The groundwater gradient is slightly steeper and flow direction is toward the west, which is similar to previous sampling events.

TABLE 2 - GROUNDWATER GRADIENT AND FLOW DIRECTION

Date Monitored	Gradient (foot/foot)	Direction
02/14/94	0.01	west
05/16/94	0.025	west
08/25/94	0.031	west
11/16/94	0.013	west
02/14/95	0.014	northwest
05/18/95	0.033	west
03/27/96	0.033	west-northwest
10/08/96	0.05	west
01/13/97	0.028	west
07/17/97	0.043	west

3.3 Groundwater Sampling

After water level measurements were collected, each onsite well was purged by hand using a designated, disposable polyethylene bailer. 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. The worksheet of conditions monitored during purging is included as Appendix 1.

After the groundwater level had recovered to a minimum of approximately 85 percent of its static level, water samples were obtained from wells MW-1, MW-3, and MW-4 using disposable polyethylene bailers. Two 40-milliliter laboratory-supplied VOA vials, without headspace, were filled from the water collected from each monitoring well. Sample containers were labeled with self-adhesive, preprinted tags. The samples were stored in a pre-chilled, insulated container pending delivery to a state-certified laboratory for analysis.

Water purged during development and sampling was temporarily stored on site in Department of Transportation approved, 55-gallon drums pending laboratory analysis and proper disposal.

4.0 FINDINGS

Groundwater samples were collected from monitoring wells MW-1, MW-3, and MW-4 and submitted to Chromalab, Inc., for analysis of TPHg, BTEX, methyl tertiary butyl ether (MTBE) by Method SW846 8020A Nov 1990/8015 Mod and total extractable petroleum hydrocarbons (TEPH) as diesel, kerosene, and motor oil by EPA Method 8015M. In accordance with revised requirements of the ACHCSA, sites with gasoline USTs must be evaluated for MTBE, a gasoline additive. Analytical results from the groundwater samples are summarized in Table 3. Analytical results and chain of custody records are included as Appendix 2.

TABLE 3 - GROUNDWATER SAMPLE ANALYTICAL RESULTS

Well No.	Date Sampled	TPHg (µg/L)	TEPH (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
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	---	<0.5	<0.5	<0.5	<0.5	---
	11/16/94	<50	---	<0.5	<0.5	<0.5	<0.5	---
	02/14/95	<50	---	<0.5	<0.5	<0.5	<0.5	---
	05/18/95	<50	---	<0.5	<0.5	<0.5	<0.5	---
	03/27/96	<50	120(d)	<0.5	<0.5	<0.5	<0.5	---
	10/08/96	<50	570(d)/670(m)*	<0.5	<0.5	<0.5	<0.5	---
	01/13/97	<50	720(d)/1,000(m)*	<0.5	<0.5	<0.5	<0.5	---
	07/17/97	<50	500(d)*/760(m)	<0.5	<0.5	<0.5	<0.5	<5.0
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	---	<50	<0.5	<0.5	0.5	---
	11/16/94	<50	---	<50	<0.5	<0.5	0.6	---
	02/14/95	160	---	0.7	0.6	<0.5	1.0	---
	05/18/95	50	---	<0.5	<0.5	<0.5	0.6	---
	Destroyed	---	---	---	---	---	---	---
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	---	6.4	2.7	1.9	4.1	---
	11/16/94	650	---	1.6	1.5	<0.5	2.7	---
	02/14/95	70	---	<0.5	<0.5	<0.5	<0.5	---
	05/18/95	470	---	<0.5	1.1	0.7	0.6	---
	03/27/96	740	390(d)*	7.9	19	3.0	8.0	---
	10/08/96	640	640(d)/680(m)	7.6	3.8	3.9	5.6	---
	01/13/97	640	1,300(k)/1,200(m)*	4.4	2.2	2.6	4.0	---
	07/17/97	600	1,400(d)*/1,100(m)	7.3	11	3.6	4.8	<5.0

Well No.	Date Sampled	TPHg (µg/L)	TEPH (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
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	---	< 0.5	< 0.5	< 0.5	< 0.5	---
	11/16/94	100	---	2.7	< 0.5	< 0.5	1.0	---
	02/14/95	60	---	< 0.5	< 0.5	< 0.5	< 0.5	---
	05/18/95	< 50	---	< 0.5	< 0.5	< 0.5	< 0.5	---
	03/27/96	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	---
	10/08/96	< 50	430(d)*	< 0.5	< 0.5	< 0.5	< 0.5	---
	01/13/97	< 50	830(d)/950(m)*	0.8	< 0.5	< 0.5	< 0.5	---
	07/17/97	< 50	190(d)*	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0

Notes: µg/L = micrograms per liter (approximately equivalent to ppb)
 < = Less than laboratory reporting limit indicated
 d = The noted concentration is TEPH as diesel
 m = The noted concentration is TEPH as motor oil
 k = The noted concentration is TEPH as kerosene
 * Hydrocarbons do not match standard profile

5.0 DISCUSSION

Groundwater flow direction is consistent with previous sampling events (west) and the groundwater gradient is slightly steeper compared with the previous sampling event. The concentrations of petroleum hydrocarbons as diesel and motor oil have decreased in wells MW-1 and MW-4 since the previous sampling event. The 1995 remedial action appears to have promoted a more regional groundwater flow (toward the west) by removing preferential pathways. As a result, petroleum hydrocarbons have been observed in wells MW-1, MW-3, and MW-4 since remedial activities.

6.0 CONCLUSIONS

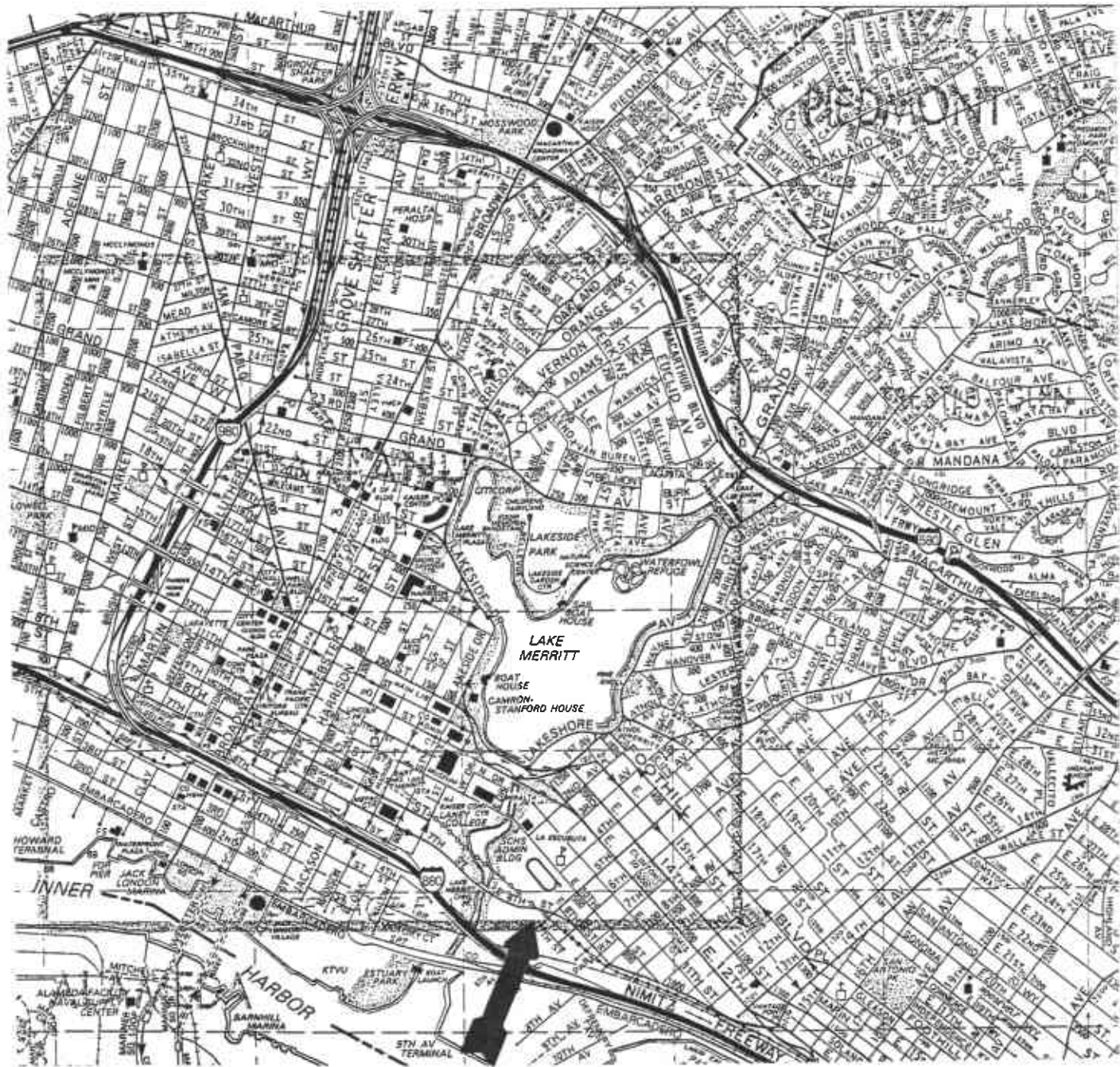
Based on groundwater monitoring and sampling, ACC has the following conclusions:

- Results of the groundwater investigation indicated detectable concentrations of TEPH in the diesel range in groundwater wells MW-1, MW-3, and MW-4. Concentrations of TEPH as motor oil were detected in wells MW-1 and MW-3.
- TPHg was only reported in MW-3. The concentration of TPHg has decreased in well MW-3 since the previous sampling events.
- The overall concentrations of the constituents decreased from the previous sampling event, with the exception of TEPH as diesel in well MW-3, which increased slightly.

- The laboratory reported that hydrocarbons detected in the diesel range did not match the standard profile. These hydrocarbons are likely degraded hydrocarbons from a previous gasoline source which now appear similar to diesel.
- Groundwater flow direction and gradient were calculated to be essentially the same both before and after interim remedial action; however, the removal of preferential pathways and replacement of subsurface material with fill material that allows more consistent groundwater movement may have aided in the migration of constituents downgradient toward well MW-1.

7.0 RECOMMENDATIONS

Based on the interim remedial action and requirements of the ACHCSA and the Regional Water Quality Control Board, the site qualifies as a low risk groundwater case. As such, ACC recommends continuing monitoring and sampling groundwater monitoring wells semiannually to demonstrate plume stability and document established trends in groundwater quality improvement adequately.

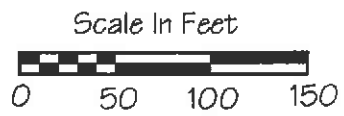
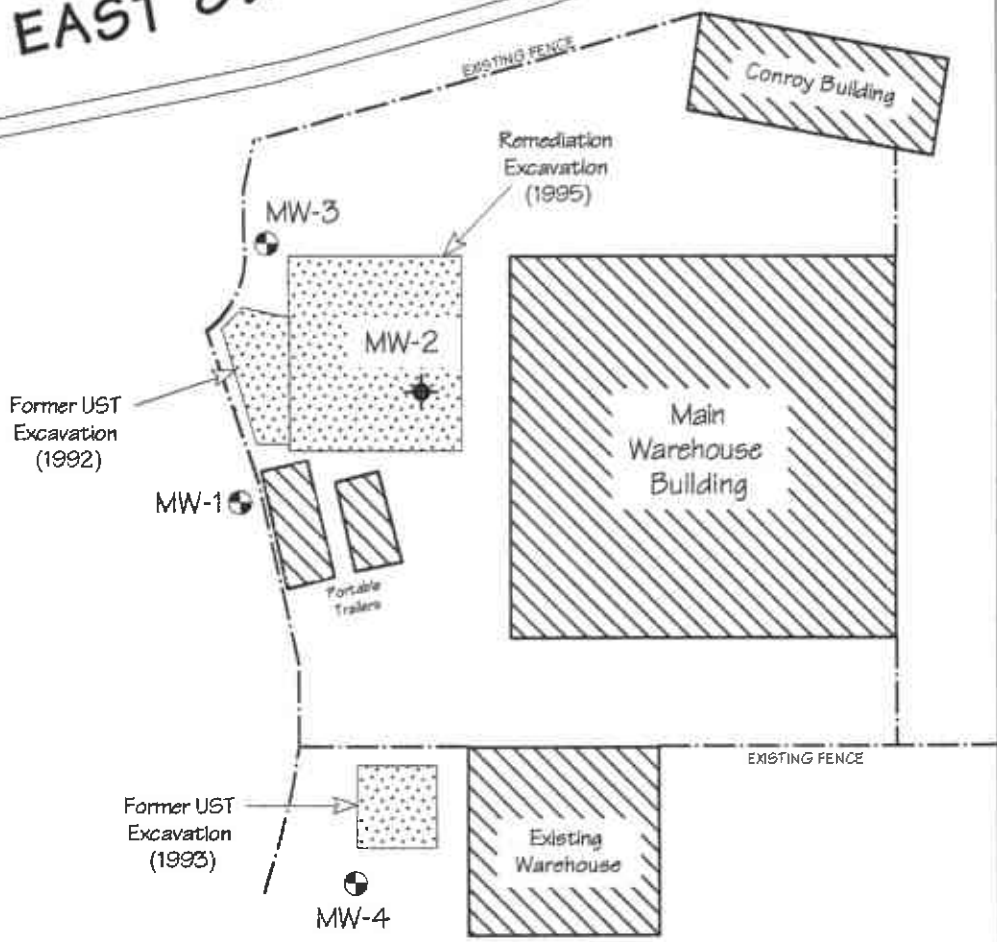


SOURCE: THOMAS BROTHERS GUIDE, 1990 ed.

Location Map Peralta Community College District Maintenance Yard 501 5th Avenue, Oakland, California	
Figure Number: 1.0	Scale: 1" = 1/4 mi
Drawn By: JVC	Date: 3/27/96
Project Number: 6045-14	
ACC Environmental Consultants 7977 Capwell Drive, Suite 100 Oakland, California 94621 (510) 638-8400 Fax: (510) 638-8404	

EAST 8th STREET

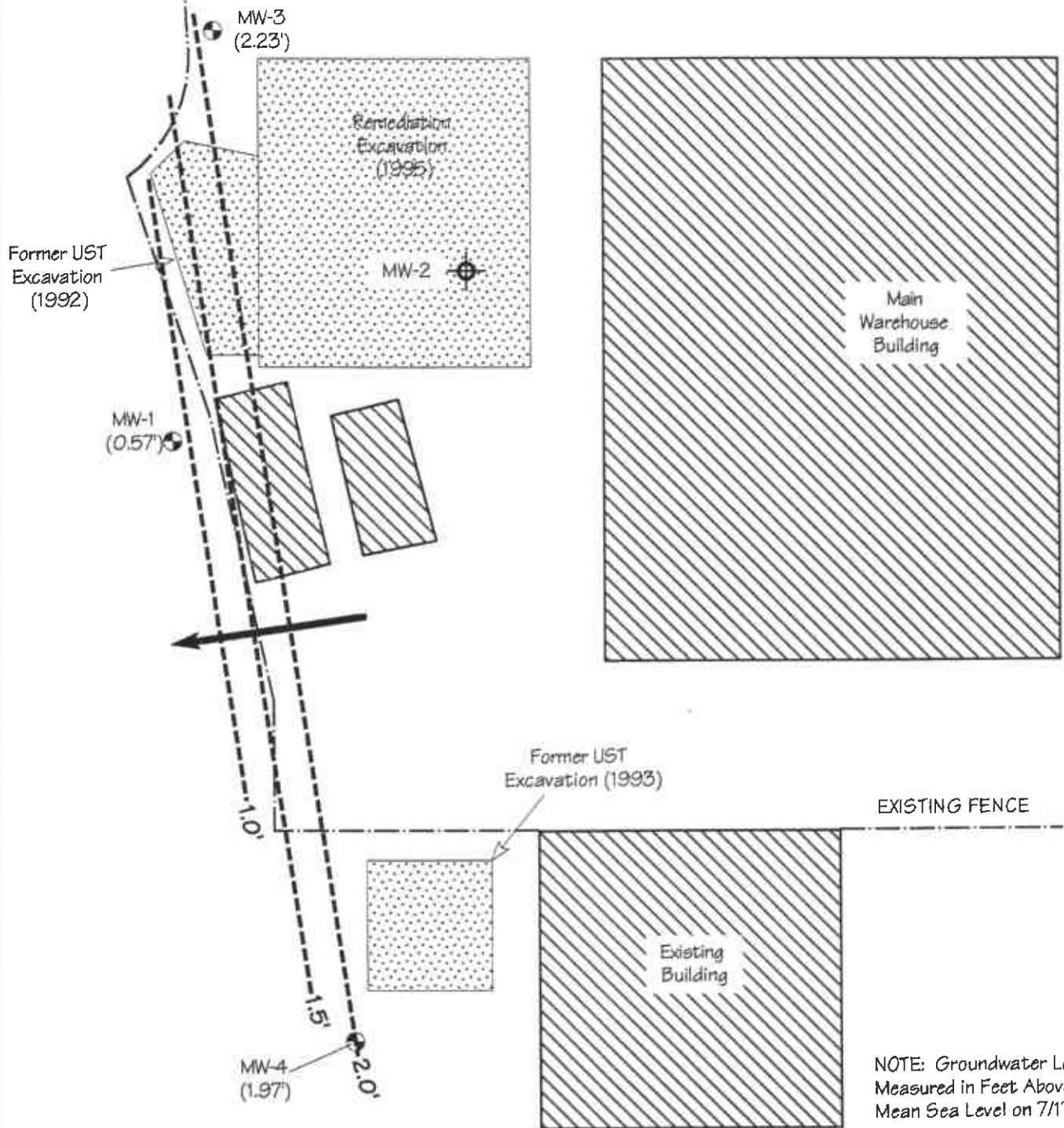
5th AVENUE



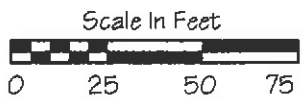
Legend

- MW-3 - Existing Groundwater Monitoring Well
- MW-2 - Former Groundwater Monitoring Well (destroyed)

Site Plan Peralta Community College District Maintenance Yard 501 5th Avenue, Oakland, California	
Figure Number: 2	Scale: 1" = 100'
Drawn By: JVC	Date: 3/27/96
Project Number: 6045-14	
ACC Environmental Consultants 7977 Capwell Drive, Suite 100 Oakland, California 94621 (510) 638-8400 Fax: (510) 638-8404	



NOTE: Groundwater Levels Measured in Feet Above Mean Sea Level on 7/17/97



Legend

- MW-3 - Existing Groundwater Monitoring Well
- MW-2 - Former Groundwater Monitoring Well (destroyed)
- Groundwater Elevation Contour (interval = 1/2 foot)
- Approximate Groundwater Flow Direction: 7/17/97

Groundwater Gradient Map Peralta Community College District Maintenance Yard 501 5th Avenue, Oakland, California	
Figure Number: 3	Scale: 1" = 50'
Drawn By: JVC	Date: 8/5/97
Project Number: 6045-014.00	
ACC Environmental Consultants 7977 Capwell Drive, Suite 100 Oakland, California 94621 (510) 638-8400 Fax: (510) 638-8404	

WELL MONITORING WORKSHEET

JOB NAME: <u>Peralta Corp. Yard</u>	PURGE METHOD: <u>Manual Bailing</u>
SITE ADDRESS: <u>501 5th Ave</u>	SAMPLED BY: <u>E. Cisneros</u>
JOB #: <u>6045-4.0</u>	LABORATORY: <u>Chromalab</u>
DATE: <u>7/17/97</u>	ANALYSIS: <u>TPH, BTEX, TEPH, MTBE</u>
Onsite Drum Inventory SOIL:	MONITORING <input checked="" type="checkbox"/> DEVELOPING <input type="checkbox"/>
EMPTY: WATER: <u>1=100% 1=50%</u>	SAMPLING <input checked="" type="checkbox"/>

	PURGE VOLUME	HYDAC READINGS				OBSERVATIONS
		(Gal)	pH	Temp. (F)	Cond. un/cm	
<u>WELL: MW-1</u>						<input type="checkbox"/> Froth
DEPTH OF BORING: <u>14.33'</u>	<u>1.3</u>	<u>7.56</u>	<u>66.9</u>	<u>521</u>		<input type="checkbox"/> Sheen
DEPTH TO WATER: <u>6.21'</u>	<u>2.6</u>	<u>7.59</u>	<u>66.4</u>	<u>432</u>		<input type="checkbox"/> Odor Type _____
WATER COLUMN: <u>8.12'</u>	<u>3.9</u>	<u>7.61</u>	<u>66.2</u>	<u>398</u>		<input type="checkbox"/> Free Product
WELL DIAMETER: <u>2"</u>						Amount _____ Type _____
WELL VOLUME: <u>≈ 1.3 gal</u>						<input type="checkbox"/> Other
COMMENTS:						
	<u>5.2</u>	<u>7.62</u>	<u>66.0</u>	<u>402</u>		
<u>WELL: MW-3</u>						<input type="checkbox"/> Froth
DEPTH OF BORING: <u>14.22'</u>	<u>1.3</u>	<u>8.07</u>	<u>66.5</u>	<u>382</u>		<input type="checkbox"/> Sheen
DEPTH TO WATER: <u>6.60'</u>	<u>2.6</u>	<u>7.88</u>	<u>66.3</u>	<u>401</u>		<input type="checkbox"/> Odor Type _____
WATER COLUMN: <u>7.62'</u>	<u>3.9</u>	<u>7.81</u>	<u>66.1</u>	<u>387</u>		<input type="checkbox"/> Free Product
WELL DIAMETER: <u>2"</u>						Amount _____ Type _____
WELL VOLUME: <u>≈ 1.3 gal</u>						<input type="checkbox"/> Other
COMMENTS:						
	<u>5.2</u>	<u>7.78</u>	<u>65.9</u>	<u>390</u>		
<u>WELL: MW-4</u>						<input type="checkbox"/> Froth
DEPTH OF BORING: <u>14.35'</u>	<u>1.8</u>	<u>8.09</u>	<u>66.5</u>	<u>391</u>		<input type="checkbox"/> Sheen
DEPTH TO WATER: <u>3.48'</u>	<u>3.6</u>	<u>7.86</u>	<u>66.7</u>	<u>421</u>		<input type="checkbox"/> Odor Type _____
WATER COLUMN: <u>10.87'</u>	<u>5.4</u>	<u>7.81</u>	<u>66.3</u>	<u>393</u>		<input type="checkbox"/> Free Product
WELL DIAMETER: <u>2"</u>						Amount _____ Type _____
WELL VOLUME: <u>≈ 1.8 gal</u>						<input type="checkbox"/> Other
COMMENTS:						
	<u>7.2</u>	<u>7.82</u>	<u>66.2</u>	<u>393</u>		

ANALYTICAL RESULTS AND CHAIN OF CUSTODY RECORD

CHROMALAB, INC.

Environmental Services (SDB)

July 21, 1997

Submission #: 9707242

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: 501 5TH AVE
Received: July 17, 1997

Project#: 6045-4.0

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: MW-1

Spl#: 140318

Matrix: WATER

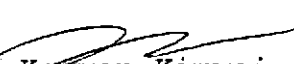
Moisture: %


Sampled: July 17, 1997

Run#: 7839

Analyzed: July 18, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	50	N.D.	93	1
MTBE	N.D.	5.0	N.D.	106	1
BENZENE	N.D.	0.50	N.D.	100	1
TOLUENE	N.D.	0.50	N.D.	94	1
ETHYL BENZENE	N.D.	0.50	N.D.	97	1
XYLENES	N.D.	0.50	N.D.	93	1


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

510-638-8404

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

PM V132 O: BTEXQC0220
KAYVAN 12:15

CHROMALAB, INC.

Environmental Services (SDB)

July 25, 1997

Submission #: 9707242

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: 501 5TH AVE
Received: July 17, 1997

Project#: 6045-4.0

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: MW-3

Spl#: 140319

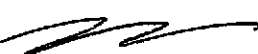
Matrix: WATER


Sampled: July 17, 1997

Run#: 7839

Analyzed: July 18, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	600	50	N.D.	93	1
MTBE	N.D.	5.0	N.D.	106	1
BENZENE	7.3	0.50	N.D.	100	1
TOLUENE	11	0.50	N.D.	94	1
ETHYL BENZENE	3.6	0.50	N.D.	97	1
XYLENES	4.8	0.50	N.D.	93	1


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

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(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

PM V132 O: BTEXQC0220
KAYVAN 07:40

CHROMALAB, INC.

Environmental Services (SDB)

July 21, 1997

Submission #: 9707242

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: 501 5TH AVE
Received: July 17, 1997

Project#: 6045-4.0

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: MW-4

Spl#: 140320

Sampled: July 17, 1997


Matrix: WATER

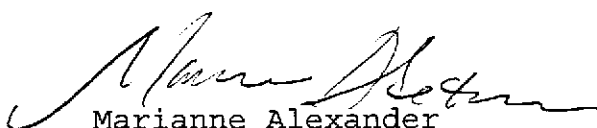
Run#: 7839

Moisture: %

Analyzed: July 19, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	50	N.D.	93	1
MTBE	N.D.	5.0	N.D.	106	1
BENZENE	N.D.	0.50	N.D.	100	1
TOLUENE	N.D.	0.50	N.D.	94	1
ETHYL BENZENE	N.D.	0.50	N.D.	97	1
XYLENES	N.D.	0.50	N.D.	93	1


Kayvan Kimyai
Chemist


Marianne Alexander
Gas/BTEX Supervisor

510-638-8404

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

PM V132 O: BTEXQC022C
KAYVAN 12:15

CHROMALAB, INC.

Environmental Services (SDB)

July 24, 1997

Submission #: 9707242

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: 501 5TH AVE
Received: July 17, 1997

Project#: 6045-4.0

re: 3 samples for TEPH analysis.
Method: EPA 8015M

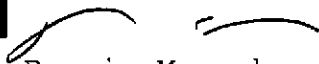
Sampled: July 17, 1997 Matrix: WATER Extracted: July 22, 1997
Run#: 7872 Analyzed: July 22, 1997


Spl#	CLIENT SPL ID	Kerosene (ug/L)	Diesel (ug/L)	Motor Oil (ug/L)
140318	MW-1	N.D.	500	760
Note: Hydrocarbon reported as Diesel is in the late Diesel Range and does not match our Diesel Standard.				
140319	MW-3	N.D.	1400	1100
Note: Hydrocarbon reported as Diesel is in the late Diesel Range and does not match our Diesel Standard.				

Sampled: July 17, 1997 Matrix: WATER Extracted: July 22, 1997
Run#: 7872 Analyzed: July 23, 1997

Spl#	CLIENT SPL ID	Kerosene (ug/L)	Diesel (ug/L)	Motor Oil (ug/L)
140320	MW-4	N.D.	190	N.D.
Note: Hydrocarbon reported as Diesel is in the late Diesel Range and does not match our Diesel Standard.				

Reporting Limits	50	50	500
Blank Result	N.D.	N.D.	N.D.
Blank Spike Result (%)	--	77.0	--


Dennis Mayugba
Chemist


Alex Tam
Semivolatiles Supervisor

244140318-140320

SUBM #: 9707242 REF: PM
CLIENT: ACC
DUE: 07/24/97
REF #: 34703

34703

CHROMALAB, INC.

Chain of Custody

DATE 7/17/97 PAGE 1 OF 1

Environmental Services (SDB) (DOHS 1094)

PROJ. MGR Misty Kaltrieder
COMPANY ACC Environmental
ADDRESS 7977 Capwell Dr., Suite 100
Oakland, CA 94621

SAMPLERS (SIGNATURE) [Signature] (PHONE NO.) (510)638-8400
(FAX NO.) (510)638-8404

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Aromatics (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, 8+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)	MTBE	LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)	NUMBER OF CONTAINERS
MW-1	7/17/97	10:45	H ₂ O	Cold	X	X	X	X	X	X	X	X	X	X	X	X	X					4
MW-3	7/17/97	11:30	H ₂ O	Cold	X	X	X	X	X	X	X	X	X	X	X	X	X					4
MW-4	7/17/97	12:30	H ₂ O	Cold	X	X	X	X	X	X	X	X	X	X	X	X	X					4

PROJECT INFORMATION

PROJECT NAME: 501 5th Ave

PROJECT NUMBER: 6045-4.0

P.O. #: 6045-4.0

TAT: STANDARD 5-DAY

SPECIAL INSTRUCTIONS/COMMENTS:

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS: 12

HEAD SPACE: _____

REC'D GOOD CONDITION/COLD: _____

CONFORMS TO RECORD: _____

TAT: 24 48 72 OTHER

RELINQUISHED BY

1. [Signature] 1507 (TIME)
Eloy Cisneros 7/17/97 (DATE)
ACC Environmental (COMPANY)

2. _____ (TIME)
_____ (DATE)
_____ (COMPANY)

3. _____ (TIME)
_____ (DATE)
_____ (COMPANY)

RECEIVED BY

1. [Signature] 1507 (TIME)
[Signature] 7-17-97 (DATE)
Chromalab (COMPANY)

2. _____ (TIME)
_____ (DATE)
_____ (COMPANY)

3. [Signature] 1800 (TIME)
[Signature] 7/17/97 (DATE)
Chromalab (LAB)

CHROMALAB, INC.

Environmental Service (SDB)

Sample Receipt Checklist

Client Name: ACC ENVIRONMENTAL CONSULTANTS Date/Time Received: 07/17/97 | 1507
Reference/Submis: 34703 | 9707242 Received by: BM
Checklist completed by: Chris Rowley 7/18/97 Reviewed by: M 7-18-97
Signature Date Initials Date
Matrix: H2O Carrier name: Client - C/L

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Chain of custody signed when relinquished and received?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Chain of custody agrees with sample labels?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Samples in proper container/bottle?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Sample containers intact?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Sufficient sample volume for indicated test?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
All samples received within holding time?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Container/Temp Blank temperature in compliance?		Temp: <u>5.0</u> °C	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water - VOA vials have zero headspace?		No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water - pH acceptable upon receipt? <u>yes</u>		Adjusted? <input type="checkbox"/>	Checked by <u>CR</u> chemist for VOAs

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action: _____