



A.P.A. Fund Limited
c/o Nicholas Molnar
Califrance Corporation
1904 Franklin Street
Oakland CA 94612

92 JAN 24 11:30 AM

28 January 1992

Project No. P12

Data Submittal - Groundwater Monitoring
Former Service Station
2801 MacArthur Boulevard 94602
Oakland CA

Dear Mr. Molnar:

Attached is our data submittal documenting analytical results of groundwater sampling performed on 16 January 1992 for piezometers P1 and P2, and monitoring well M2 (Figures 1 and 2).

Analytical results of previous groundwater monitoring were originally presented in our 20 August 1991 report. This submittal includes the following updated tables:

- Table 1 is chronology of groundwater monitoring activity.
- Table 2 summarizes groundwater elevation measurements.
- Table 3 includes groundwater purging and sampling information.
- Table 4 contains analytical results of groundwater sampling.

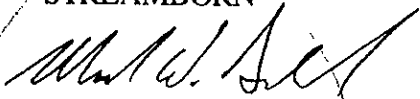
Analytical results revealed elevated concentrations of total petroleum hydrocarbons as gasoline and benzene, toluene, ethylbenzene, and xylenes.

The groundwater sampling forms are contained in Attachment 1, the chain-of-custody form is presented in Attachment 2, and the laboratory data sheet is contained in Attachment 3. Purge water generated prior to sampling was containerized in 55-gallon drums.

We appreciate the opportunity to serve A.P.A. Fund Limited. Please call with any questions.

Sincerely,

STREAMBORN


Mark W. Buscheck
Geologist

Attachments

Table 1
Chronology of Field Work

Date	Performed By	Field Activity
May 1989	Riedel	Three underground gasoline tanks removed from a single excavation; verification soil sampling conducted.
12 June 1989	Riedel	Drilling and soil sampling of boring B1.
3 July 1989	Riedel	Underground waste oil tank and associated petroleum-stained soil removed, verification soil sampling conducted.
13 and 14 July and 25, 28, and 30 August 1989	Riedel	Drilling and soil sampling of borings B2 through B9.
18 October 1990	Streamborn	Drilling and soil sampling of borings B10 and B11. Measurement of water levels.
19 October 1990	Streamborn	Drilling and soil sampling of P1. Partial drilling and soil sampling of P2. Completion of P1 as a piezometer. Surveying of ground surface at B10, B11, P1, and P2. Measurement of water levels.
20 October 1990	Streamborn	Complete drilling and soil sampling of P2. Partial completion of P2 as a piezometer. Drilling, soil sampling, and partial completion of M1 as a monitoring well. Measurement of water levels.
21 October 1990	Streamborn	Completion of M1 and P2. Grouting of B10 and B11. Measurement of water levels.
25 October 1990	Streamborn	Surveying of measuring points for M1, P1, and P2. Measurement of water levels.
26 October 1990	Streamborn	Measurement of water levels. Bailing of P1, P2, and M1 to allow recovery and verification of water levels.
2 November 1990	Streamborn	Measurement of water levels. Monitoring for floating product at P1, P2, and M1 using an interface probe (no product detected).
6 November 1990	Streamborn	Development and sampling of P2.
16 November 1990	Streamborn	Measurement of water levels.
23 November 1990	Streamborn	Measurement of water levels.
28 November 1990	Streamborn	Measurement of water levels.
5 December 1990	Streamborn	Measurement of water levels.
18 March 1991	Streamborn	Drilling, soil sampling, and completion of P3 as a piezometer. Measurement of water levels.
29 March 1991	Streamborn	Measurement of water levels.
3 April 1991	Streamborn	Measurement of water levels.
9 April 1991	Streamborn	Measurement of water levels.
16 April 1991	Streamborn	Measurement of water levels.
18 April 1991	Streamborn	Drilling, soil sampling, and completion of M2 as a monitoring well. Measurement of water levels.
30 April 1991	Streamborn	Development of M2. Measurement of water levels.
7 May 1991	Streamborn	Purging and sampling of M2. Measurement of water levels.
16 January 1992	Streamborn	Measurement of water levels, purging and sampling of P1, P2, and M2.
23 January 1992	Streamborn	Measurement of water levels.

General Notes

(a) Riedel = Riedel Environmental Services, Richmond CA.

(b) Streamborn = Streamborn, Berkeley CA.

Table 2
Groundwater Elevation Measurements

Location Measuring Point	B10		B11		M1		M2		P1		P2		P3	
	Ground Surface-N Side, Elevation 998.6		Ground Surface-N Side, Elevation 997.8		Top of PVC Casing-N Side, Elevation 1,000.0 (Ground Surface-N Side, Elevation 1,000.3)		Top of PVC Casing-N Side, Elevation 999.6 (Ground Surface-N Side, Elevation 999.9)		Top of PVC Casing-N Side, Elevation 999.6 (Ground Surface-N Side, Elevation 999.8)		Top of PVC Casing-N Side, Elevation 997.8 (Ground Surface-N Side, Elevation 998.1)		Top of PVC Casing-N Side, Elevation 999.1 (Ground Surface-N Side, Elevation 999.3)	
	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation
Intercepted Interval	0.0 to 50.0	948.6 to 998.6	0.0 to 51.5	946.3 to 997.8	32.5 to 45.9	954.4 to 967.8	35 to 45	954.9 to 964.9	27.5 to 38.8	961.0 to 972.3	33 to 43	955.1 to 965.1	35 to 45	964.3 to 954.3
18 October 1990 (18:45 hrs)	45.6	953	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
19 October 1990 (10:00 hrs)	37.8	960.8	32.0	965.8	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
19 October 1990 (13:20 hrs)	37.2	961.4	31.6	966.2	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
20 October 1990 (8:00 hrs)	35.0	963.8	32.2	965.6	NM	NM	NM	NM	38.0 (1)	961.8 (1)	NM	NM	NM	NM
21 October 1990 (9:00 hrs)	34.5	964.1	32.4	965.4	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
24 October 1990	NM	NM	NM	NM	36.1	963.9	NM	NM	37.9	961.7	41.1	956.7	NM	NM
25 October 1990	NM	NM	NM	NM	36.1	963.9	NM	NM	38.0	961.6	40.6	957.2	NM	NM
2 November 1990 (2)	NM	NM	NM	NM	36.4	963.6	NM	NM	38.4	961.2	38.4	959.4	NM	NM
6 November 1990	NM	NM	NM	NM	36.8	963.2	NM	NM	38.7	960.9	37.0	960.8	NM	NM
16 November 1990	NM	NM	NM	NM	36.8	963.2	NM	NM	38.3	961.3	37.4	960.4	NM	NM
23 November 1990	NM	NM	NM	NM	36.9	963.1	NM	NM	38.1	961.5	35.9	961.9	NM	NM
28 November 1990	NM	NM	NM	NM	37.0	963.0	NM	NM	38.3	961.3	35.4 (3)	962.4 (3)	NM	NM
5 December 1990	NM	NM	NM	NM	37.2	962.8	NM	NM	38.2	961.4	35.0 (3)	962.8 (3)	NM	NM
18 March 1991	NM	NM	NM	NM	35.8	964.2	NM	NM	37.8	961.8	31.4 (3)	966.4 (3)	NM	NM
29 March 1991	NM	NM	NM	NM	32.4	967.6	NM	NM	36.9	962.7	28.2 (3)	969.6 (3)	24.7	974.4
3 April 1991	NM	NM	NM	NM	31.9	968.1	NM	NM	36.8	962.8	26.8 (3)	971.0 (3)	25.1	974.0
9 April 1991	NM	NM	NM	NM	31.6	968.4	NM	NM	36.9	962.7	26.5 (3)	971.3 (3)	25.9	973.2
16 April 1991	NM	NM	NM	NM	31.2	968.8	NM	NM	36.7	962.9	26.5 (3)	971.3 (3)	26.2	972.9
18 April 1991	NM	NM	NM	NM	31.1	968.9	NM	NM	36.8	962.8	26.5 (3)	971.3 (3)	26.2	972.9
30 April 1991	NM	NM	NM	NM	31.1	968.9	31.1 (3)	968.5 (3)	36.3	963.3	26.7 (3)	971.1 (3)	26.8	972.3
7 May 1991	NM	NM	NM	NM	31.2	968.8	31.3 (3)	968.3 (3)	36.2	963.4	27.0 (3)	970.8 (3)	27.4	971.7
16 January 1992	NM	NM	NM	NM	NM	NM	35.1 (3)	964.5 (3)	36.6 (3)	963.0 (3)	33.7 (3)	964.1 (3)	NM	NM
23 January 1992	NM	NM	NM	NM	35.5	964.5	NS	NS	NS	NS	NS	NS	32.5	966.6
Most recent total depth	NM	NM	NM	NM	44.4	955.6	45.0	954.6	38.8	960.8	42.4	955.4	44.9	954.2

General Notes

- (a) Measurements in units of feet.
- (b) Elevations relative to site-specific datum. Temporary Bench Mark No. 1, top of concrete at west corner of northernmost pump island. Assumed elevation = 1,000.00 feet.
- (c) NM = not measured.
- (d) NS = groundwater level not stabilized due to recent purging (16 January 1992).
- (e) For borings B10 and B11, water levels measured relative to ground surface. The remaining water levels measured relative to casing, except as footnoted.

Footnotes

- (1) Measured relative to ground surface prior to surveying of PVC casing.
- (2) An interface probe was used to discern whether free product was present - free product was not detected with the probe.
- (3) A petroleum odor and/or coating was observed on the water level probe.

Table 3
Groundwater Purging and Sampling Information

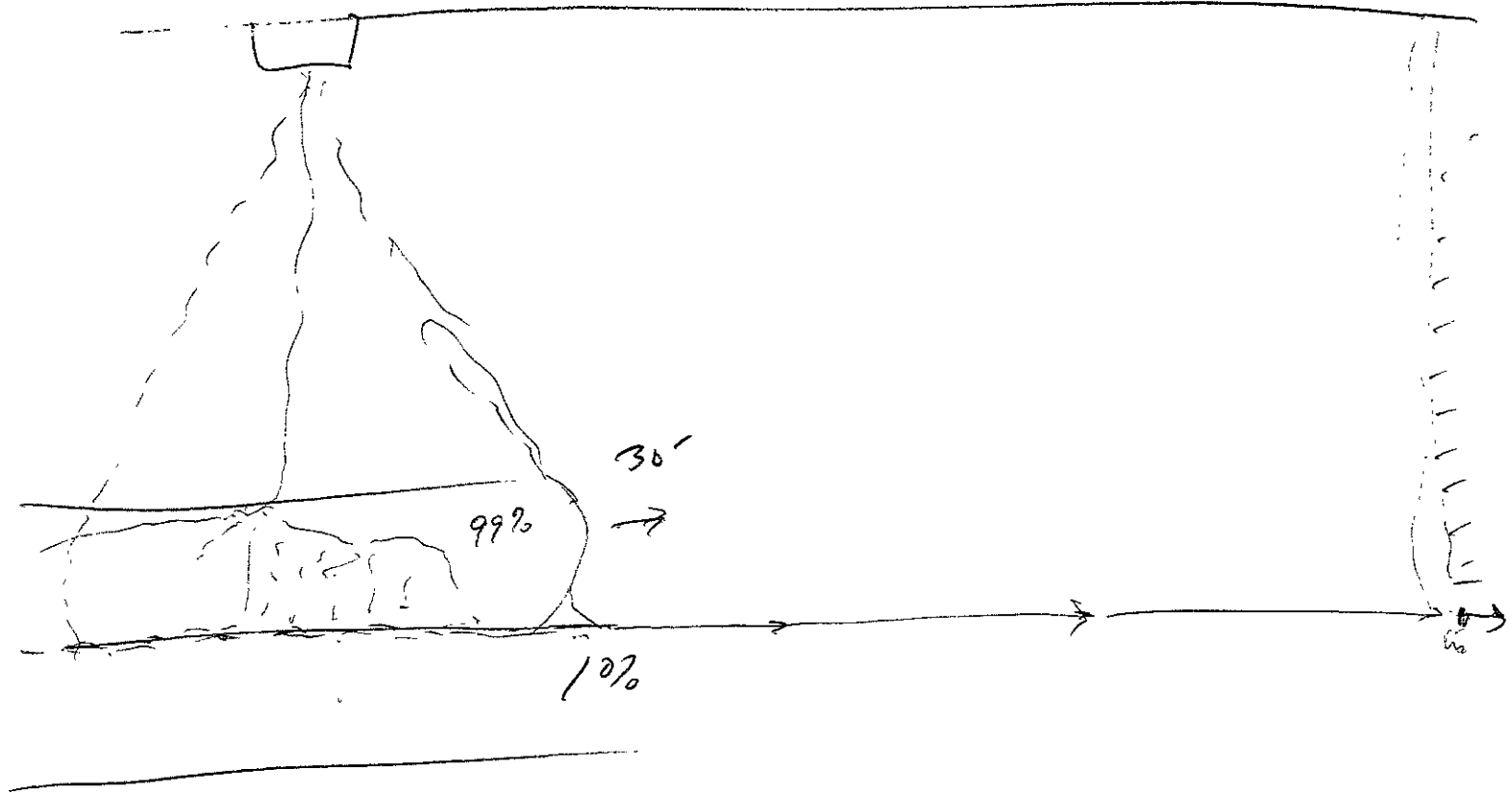
Location	Sample Designation	Sample Date	Sample Time	Type of Sample	Specific Conductance ($\mu\text{mho}/\text{cm}^2$ at field temperature)	pH	Temperature (degrees F)	Purge Method	Purge Duration (minutes)	Volume Purged (gallons)	Static Casing Volumes Removed	Comments
P1	16Jan92P1	16 January 1992	9:40	Grab (bailer)	2,100	7.3	62.6	Bailer	40	1.0	± 3	Translucent, white
P2	P2	6 November 1990	9:40	Grab (bailer)	13,650	12.6	61.5	Bailer	85	2.9	± 3	Well was dewatered twice during purging and allowed to recover to approximately 75% of the original standing water height prior to sample collection.
P2	16 Jan92P2	16 January 1992	12:30	Grab (bailer)	3,520	12.1	66.2	Bailer	30	4.0	± 3	Approximately 1/16-inch of free product was initially observed in bailer. Otherwise, purge water clear.
M2	M2	7 May 1991	13:30	Grab (bailer)	2,820	7.3	78.4	Bailer	70	5.0	± 2.3	Opaque, colorless
M2	16Jan92M2	16 January 1992	11:15	Grab (bailer)	2,120	6.8	65.8	Bailer	45	5.0	± 3	Opaque, light brown

Table 4
Results of Groundwater Analyses

Sample Location	Sample Designation	Sample Date	Sample Collection Method	Total Petroleum Hydrocarbons As Gasoline (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	Comments
P2	P2	6 November 1990	Purge and Sample with Bailer	33,000	4,700	2,100	380	630	Elevated specific conductance and pH were measured during sampling. These elevated measurements reflect the effect of grout seal abutting the base of the filter-pack.
P2	16Jan92P2	16 January 1992	Purge and Sample with Bailer	99,000	6,500	12,000	2,000	16,000	Elevated pH and partially elevated specific conductance measured during sampling. The elevated measurements reflect the effect of grout seal abutting the base of the filter-pack. Approximately 1/16-inch of free product was initially observed in bailer and a product sheen was observed in the sample container.
M2	M2-GW1	7 May 1991	Purge and Sample with Bailer	16,000	1,300	950	170	890	
M2	16Jan92M2	16 January 1992	Purge and Sample with Bailer	22,000	960	570	370	1,800	
P1	16Jan92P1	16 January 1992	Purge and Sample with Bailer	6,700	500	4.4	80	40	

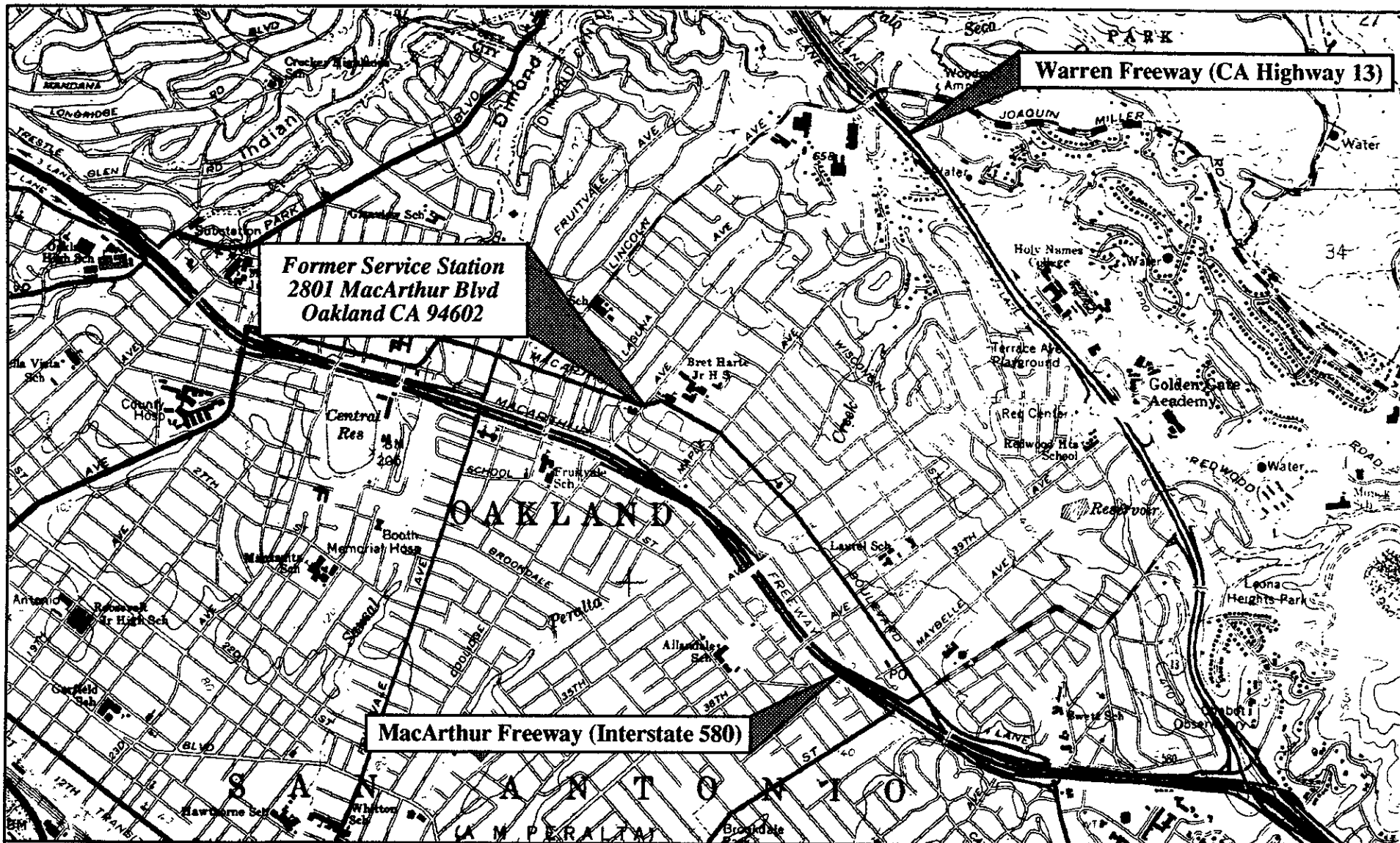
General Note

(a) Laboratory analyses by Chromalab, San Ramon CA



mon. being 4/yr.

4 clean ND above



Basemap Reference: U.S. Geological Survey, 7.5 Minute Topographic Quadrangle, Oakland East CA, 1959 (photorevised 1980)

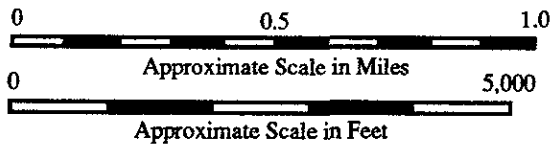
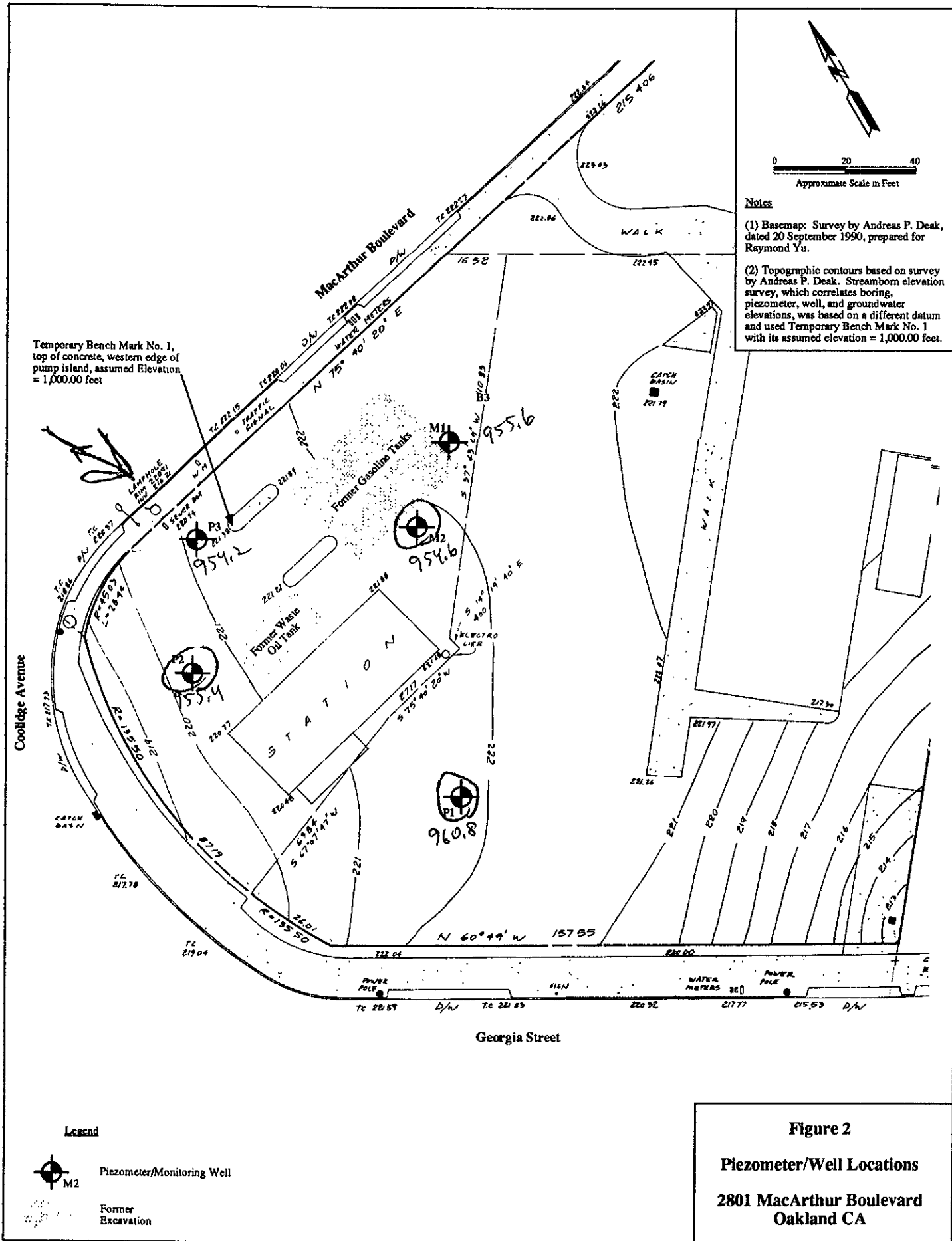


Figure 1
Location Map
2801 MacArthur Boulevard
Oakland CA



Notes

(1) Basemap: Survey by Andreas P. Deak, dated 20 September 1990, prepared for Raymond Yu.

(2) Topographic contours based on survey by Andreas P. Deak. Streamborn elevation survey, which correlates boring, piezometer, well, and groundwater elevations, was based on a different datum and used Temporary Bench Mark No. 1 with its assumed elevation = 1,000.00 feet.

Temporary Bench Mark No. 1, top of concrete, western edge of pump island, assumed Elevation = 1,000.00 feet

Figure 2
Piezometer/Well Locations
2801 MacArthur Boulevard
Oakland CA

ATTACHMENT 1
Groundwater Sampling Forms

Water Sampling Log

Project Name/Number: 2801 MacArthur Blvd, P12	Logged By: Tamara Rose
Property Location: 2801 MacArthur Blvd, Oakland CA	Date: 16 January 1992
Well Number: P1 (East/back side of building)	Sample Type: Grab (bailer)
Sampling Equipment: Teflon bailer	Depth to Water: 36.55
Measuring Point: Top of casing	Total Depth: 38.90
Free Product: None observed	Odor: Yes (strong)
Comments: OVM = 375 ppm (upon removing well cap)	Sample Number: 16 Jan 92 P1

Note obstructions, well damage, or other compromising features under comments. Record depths in feet.

Total Depth (feet)	-	Depth to Water (feet)	x	0.16 gallons/foot for 2-inch well 0.65 gallons/foot for 4-inch well 1.47 gallons/foot for 6-inch well	=	Casing Volume (gallons)
38.90	-	36.55	x	0.16 gal/ft	=	0.34

3 casing volumes
= 1 gal

Purge Volume	Time	pH	SC	T	Turbidity	Color	Purged Dry?	Comments
0	0900	7.1	2.2 mS	16°C	Translucent	White		Start purge Odor & white particulates
.5	0920	7.1	2.1 mS	18°C	Translucent	White		"
1	0940	7.3	2.1 mS	17°C	Translucent	White		"
								Collect sample

Note observations of odor and sheen, plus other observations of contamination under comments. Record purge volume in gallons. Record SC in $\mu\text{mhos/cm}^2$. Record T in degrees Fahrenheit. Record turbidity as clear, translucent, opaque, cloudy, or turbid.

Water Sampling Log

Project Name/Number: 2801 MacArthur Blvd, P12	Logged By: Tamara Rose
Property Location: 2801 MacArthur Blvd, Oakland CA	Date: 16 January 1992
Well Number: P2 (south-west corner of building)	Sample Type: Grab (bailer)
Sampling Equipment: Teflon Bailer	Depth to Water: 33.68
Measuring Point: TBC - Top of casing	Total Depth: 42.15
Free Product: Yes	Odor: Yes - strong
Comments: O.M. = 258 upon removing well cap (steady @ 150)	Sample Number: 16 Jan 92 P2

Note obstructions, well damage, or other compromising features under comments. Record depths in feet.

Total Depth (feet)	-	Depth to Water (feet)	x	0.16 gallons/foot for 2-inch well 0.65 gallons/foot for 4-inch well 1.47 gallons/foot for 6-inch well	=	Casing Volume (gallons)
42.15	-	33.68	x	0.16 gal/ft	=	1.4 gal

3 casing volumes = 4 gal

Purge Volume	Time	pH	SC	T	Turbidity	Color	Purged Dry?	Comments
0	12:00	11.5	1430µS	19°C	Clear	Clear		Start purge Sheen in sample container
1	12:10	11.5	1100µS	19°C	Clear	Clear		Layer (w/10") of free product in bair
2.5	12:20	11.8	2.05mS	19°C	Clear	Clear		Sheen in sample container
4	12:30	12.1	3.52mS	19°C	Clear	Clear		Sheen in sample container
								Collect sample

Note observations of odor and sheen, plus other observations of contamination under comments. Record purge volume in gallons. Record SC in µmhos/cm². Record T in degrees Fahrenheit. Record turbidity as clear, translucent, opaque, cloudy, or turbid.

Water Sampling Log

Project Name/Number: 2801 MacArthur Blvd, P12	Logged By: Tamara Rose
Property Location: 2801 MacArthur Blvd, Oakland CA	Date: 16 January 1992
Well Number: M2 (North side of building)	Sample Type: Grab (bailey)
Sampling Equipment: Teflon Bailey	Depth to Water: 35.12
Measuring Point: TOC - Top of casing	Total Depth: 44.9
Free Product: None observed	Odor: Yes (moderate)
Comments: OVM = 22 ppm upon removing well cap	Sample Number: 10JAN92M2

Note obstructions, well damage, or other compromising features under comments. Record depths in feet.

Total Depth (feet)	-	Depth to Water (feet)	x	0.16 gallons/foot for 2-inch well 0.65 gallons/foot for 4-inch well 1.47 gallons/foot for 6-inch well	=	Casing Volume (gallons)	<i>3 casing volumes = 4.7 gal</i>
44.9	-	35.1	x	0.16 gal/ft	=	1.6 gal	

Purge Volume	Time	pH	SC	T	Turbidity	Color	Purged Dry?	Comments
0 gal	10:30	6.8	2.17 mS	17°C	Clear	Clear		Start purge
1 gal	10:40	6.9	2.20 mS	17.8°C	Clear	very lt brn		
2.5 gal	10:55	6.9	2.09 mS	17.6°C	Opaque	lt brown		
4 gal	11:05	6.8	2.12 mS	17.9°C	Opaque	lt. brown		
5	11:15	6.8	2.12 mS	18.8°C	Opaque	"		
								Collect sample

Note observations of odor and sheen, plus other observations of contamination under comments. Record purge volume in gallons. Record SC in $\mu\text{mhos}/\text{cm}^2$. Record T in degrees Fahrenheit. Record turbidity as clear, translucent, opaque, cloudy, or turbid.

ATTACHMENT 2

Chain-of-Custody Form

CHAIN-OF-CUSTODY FORM

PROJECT: 2801 MacArthur Blvd
 PROJECT NUMBER: P12

PROJECT LOCATION: 2801 MacArthur Blvd, Oakland CA
 SAMPLER: Tamara Rose

CHROMALAB FILE # 192116
 ORDER # 5127

Sample Designation	Date	Time	Matrix			Type		Number of Containers	Type of Containers	Preservative	Filtration	Turnaround			Analyses			Sampler Comments	Laboratory Comments
			Soil	Water	Vapor	Grab	Composite					48 Hour	5 Working Days	10 Working Days	Oil & Grease	TPH-Diesel	TPH-Gasoline/BTEX		
16 Jan 92 P1	16 Jan 92			X		X	4	40 ml vials				X				X			
16 Jan 92 P2	16 Jan 92			X		X	4	40 ml vials				X				X			
16 Jan 92 M2	16 Jan 92			X		X	4	40 ml vials				X				X			

Relinquished By: Tamara Rose Received By: PSH Date: 16 Jan 92 Time: 8:50 PM
 Relinquished By: _____ Received By: _____ Date: _____ Time: _____

#410 P02

FAX NO: 510/831-8798

JAN-28-'92 TUE 09:16 ID:CHROMALAB INC

ATTACHMENT 3

Laboratory Data Sheet

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

January 23, 1992

ChromaLab File No.: 0192116

STREAMBORN

Attn: Tamara Rose

RE: Three water samples for Gasoline/BTEX analysis

Project Name: CALIFRANCE

Project Number: P12

Date Sampled: Jan. 18, 1992

Date Submitted: Jan. 16, 1992


Date Extracted: Jan. 22, 1992

Date Analyzed: Jan. 22, 1992

RESULTS:

Sample I.D.	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
P1	6700	500	4.4	80	40
P2	99000	6500	12000	2000	16000
M2	22000	960	570	370	1800
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	99%	94%	99%	93%	95%
DETECTION LIMIT	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/8015	602	602	602	602

ChromaLab, Inc.


Mary Cappelli
Analytical Chemist


Eric Tam
Laboratory Director