June 10, 1996
SCI 838.003

Ms. Eva Chu
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway #250
Alameda, California 94502-6577

Groundwater Monitoring Event
April 1996.
2801 MacArthur Boulevard
Oakland, California

Dear Ms. Chu:

This letter presents quarterly groundwater monitoring results for the referenced site. Monitoring services were provided by Subsurface Consultants, Inc. (SCI) on behalf of the APA Fund Limited. Groundwater monitoring has been performed in accordance with the revised program agreed upon at the October 17, 1995 meeting attended by Ms. Eva Chu of the Alameda County Health Care Services Agency (ACHCSA), Ms. Aniko Molnar of APA Fund, and SCI. The location of the site is shown on Plate 1.

Groundwater Sampling

On April 17, 1996, a groundwater monitoring event was performed. For this event wells M2, M4 through M6 and piezometer P2 were purged and sampled. The groundwater monitoring event consisted of (1) measuring groundwater levels in all the wells (M1-M6) & piezometers (P1-P3) using an electric well sounder, (2) checking for free product in the wells and piezometers to be sampled, (3) purging water from each well to be sampled until pH, conductivity and temperature had stabilized (approximately 3 well volumes), and (4) after the wells had recovered to at least 80 percent of their initial level, sampling the wells with new disposable bailers. Samples were retained in containers pre-cleaned by the supplier in accordance with EPA protocol. The containers were placed in an ice filled cooler and remained iced until delivery to the analytical laboratory. Chain-of-Custody documents accompanied the samples to the laboratory. Purge water is stored on-site in 55-gallon steel drums. The groundwater level data generated to date are presented in Table 1.

■ Subsurface Consultants, Inc.

171 12th Street • Suite 201 • Oakland, California 94607 • Telephone 510-268-0461 • FAX 510-268-0137

Analytical Testing

Analytical testing was performed by Curtis & Tompkins, Ltd., a laboratory certified by the State of California Department of Health Services for hazardous waste and water testing. A sample from each well was analyzed for the following:

1. Total volatile hydrocarbons, as gasoline (TVH-gas), sample preparation and analysis using EPA Methods 5030 (purge and trap) and 8015 modified (gas chromatograph coupled to a flame ionization detector), and

2. Benzene, toluene, xylenes and ethylbenzene (BTXE) sample preparation and analysis using EPA Methods 5030 and 8020 (gas chromatograph coupled to a photoionization detector).

A summary of the current and previous analytical test results are presented in Table 2. Well sampling forms, analytical test reports, and Chain-of-Custody documents are attached. All sampling events prior to May 17, 1993 were conducted by Streamborn, the previous environmental consultant.

Conclusions

The groundwater level data indicates that the regional groundwater flow direction is toward the south at a gradient of approximately 4 to 6 percent. The groundwater flow direction and gradient has been consistently to the south and southwest and from approximately 2 to 8 percent throughout the monitoring program.

The relative distribution of dissolved petroleum hydrocarbon constituents on-site remains similar to previous events. No contaminants of concerns have been detected during the last two quarterly events in the off-site downgradient wells MW-5 and MW-6. Although no free product was measured in any of the wells during this event, a petroleum hydrocarbon odor was observed in piezometer P2 and Wells M2 and M4.

In accordance with the monitoring plan, the next monitoring event is scheduled for July 1996. If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

Jerome de Verrier
Project Engineer

Jeriann N. Alexander
Civil Engineer 40469 (expires 3/31/99)

JD:JNA:sld

Attachments:
Table 1 - Groundwater Elevation Data
Table 2 - Hydrocarbon Concentrations in Groundwater
Plate 1 - Site Plan
Well Sampling Forms
Analytical Test Reports
Chain-of-Custody Records

4 copies submitted

cc: Aniko Molnar
Environmental Consultant
7 Morning Sun Avenue
Mill Valley, California 94941

APA Fund Ltd.
c/o Mr. Nicholas Molnar
1904 Franklin Street, Suite 501
Oakland, California 94612

Table 1
Groundwater Elevation Data

Well	TOC[1] Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)
M1	1000	10/24/90	36.1	963.9
		10/25/90	36.1	963.9
		11/2/90	36.4	963.6
		11/6/90	36.8	963.2
		11/16/90	36.8	963.2
		11/23/90	36.9	963.1
		11/28/90	37.0	963.0
		12/5/90	37.2	963.0
		3/18/91	35.8	964.2
		3/29/91	32.4	967.6
		4/3/91	31.9	968.1
		4/9/91	31.6	968.4
		4/16/91	31.2	968.8
		1/23/92	35.5	964.5
		3/9/93	29.1	970.9
		6/1/93	27.5	972.9
		12/13/93	33.9	966.1
		3/7/94	32.3	967.7
		8/23/94	32.3	967.7
		10/11/94	34.1	965.9
		4/26/95	24.4	975.6
		10/27/95	31.3	968.7
		1/22/96	31.1	968.9
		4/15/96	25.6	974.4
M2	999.6	4/30/91	31.1	968.5
		5/7/91	31.3	968.3
		1/16/92	35.1	964.5
		3/9/93	33.6	966.0
		5/17/93	27.2	972.4
		6/1/93	27.6	972.0
		8/17/93	30.4	969.2
		12/13/93	34.0	965.6
		3/7/94	30.1	969.5
		8/23/94	32.3	967.3
		10/11/94	34.2	965.4

Table 1
Groundwater Elevation Data

Well	TOC[1] Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)
M2		4/26/95	24.4	975.2
		10/27/95	31.4	968.2
		1/22/96	31.2	968.4
		4/15/96	25.6	974.0
M3	992.8	5/17/93	22.2	970.6
		6/1/93	23.3	969.5
		8/17/93	25.0	967.8
		12/13/93	25.8	967.0
		3/7/94	23.1	969.7
		8/23/94	25.8	967.0
		10/11/94	27.4	965.4
		4/26/95	19.6	973.2
		10/27/95	25.4	967.4
		1/22/96	24.2	968.6
		4/15/96	20.9	971.9
M4	999.6	5/17/93	33.8	965.8
		6/1/93	32.5	965.7
		12/13/93	36.8	962.8
		3/7/94	33.0	966.6
		8/23/94	35.4	964.2
		10/11/94	37.1	962.5
		4/26/95	29.8	969.8
		10/27/95	34.2	965.4
		1/22/96	30.1	969.5
		4/15/96	30.1	969.5
M5	992.9	8/23/94	31.8	961.1
		10/11/94	33.6	959.3
		4/26/95	20.5	972.4
		10/27/95	31.5	961.4
		1/22/96	25.6	967.3
		4/15/96	21.7	971.2
M6	997.7	8/23/94	41.2	956.6

Table 1
Groundwater Elevation Data

Well	TOC[1] Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)
M6		10/11/94	38.2	959.5
		4/26/95	27.8	969.9
		10/27/95	34.9	962.8
		1/22/96	22.0	975.7
		4/15/96	28.5	969.2
P1	999.6	10/24/90	37.9	961.7
		10/25/90	38.0	961.6
		11/2/90	38.4	961.2
		11/6/90	38.7	960.9
		11/16/90	38.3	961.3
		11/23/90	38.1	961.5
		11/28/90	38.3	961.3
		12/5/90	38.2	961.4
		3/18/91	37.8	961.8
		3/29/91	36.9	962.7
		4/3/91	36.8	962.8
		4/9/91	36.9	962.7
		4/16/91	36.7	962.9
		4/18/91	36.8	962.8
		4/30/91	36.3	963.3
		5/7/91	36.2	963.4
		1/16/92	36.6	963.0
		3/9/93	32.8	966.8
		6/1/93	30.0	969.6
		12/13/93	33.7	965.9
		3/7/94	32.6	967.0
		8/23/94	32.7	966.9
		10/11/94	33.5	966.1
		4/26/95	27.6	972.0
		10/27/95	31.8	967.8
		1/22/96	33.3	966.3
		4/15/96	28.2	971.4
P2	997.8	10/24/90	41.1	956.7
		10/25/90	40.6	957.2

Table 1
Groundwater Elevation Data

Well	TOC[1] Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)
P2		11/2/90	38.4	959.4
		11/6/90	37.0	960.8
		11/16/90	37.4	960.4
		11/23/90	35.9	961.9
		11/28/90	35.4	962.4
		2/5/90	35.03	962.83
		3/18/91	31.43	966.43
		3/29/91	28.23	969.63
		4/3/91	26.83	971.03
		4/9/91	26.53	971.33
		4/16/91	26.53	971.33
		4/18/91	26.53	971.33
		4/30/91	26.73	971.13
		5/7/91	27.03	970.83
		1/16/92	33.73	964.13
		3/9/93	23.63	974.2
		5/17/93	23.73	974.1
		6/1/93	24.43	973.4
		8/17/93	28.33	969.5
		12/13/93	31.03	966.8
		3/7/94	25.43	972.4
		8/23/94	30.3	967.5
		10/11/94	32.3	965.5
		4/26/95	19.9	977.9
		10/27/95	29.6	968.2
		1/22/96	27.4	970.4
		4/15/96	21.3	976.5
P3	999.1	3/29/91	24.7	974.4
		4/3/91	25.1	974
		4/9/91	25.9	973.2
		4/16/91	26.2	972.9
		4/18/91	26.2	972.9
		4/30/91	26.8	972.3
		5/7/91	27.4	971.7
		1/23/92	32.5	966.6

Table 1
Groundwater Elevation Data

Well	TOC[1] Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)
P3		3/9/93	24.8	974.3
		6/4/93	23.9	975.2
		8/17/93	28.5	970.6
		12/13/93	29.3	969.8
		3/7/94	25.0	974.1
		8/23/94	30.1	969
		10/11/94	32.0	967.1
		4/26/95	20.5	978.6
		10/27/95	27.8	971.3
		1/22/96	26.7	972.4
		4/15/96	21.4	977.7

Note 1 - Elevations relative to site-specific datum. Temporary Bench Mark No. 1, top of concre at west corner of northernmost pump island. Assumed elevation = 1,000.0 feet.

Table 2
Hydrocarbon Concentrations in Groundwater

Sample Location	Sample Date	TVH (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl-benzene (ug/l)	Xylenes (ug/l)
P-1	1/16/92	6,700	500	4.4	80	40
	3/9/93	5,600	1,100	29	63	120
P-2	11/6/90	33,000	4,700	2,100	380	630
	1/16/92	99,000	6,500	12,000	2,000	16,000
	3/9/93	70,000	5,900	11,000	2,100	12,000
	5/17/93	87,000	6,600	13,000	2,200	13,000
	8/17/93	80,000	5,800	12,000	2,000	12,000
	12/13/93	100,000	5,600	12,000	2,200	14,000
	3/7/94	77,000	5,100	11,000	2,000	12,000
	8/23/94	70,000	3,800	8,700	1,500	9,900
	4/27/95	44,000	3,600	8,500	1,500	9,300
	10/30/95	66,000	4,600	11,000	2,100	13,600
	4/17/96	58,000	4,800	9,900	1,900	12,900
P-3	8/17/93	900	180	65	10	93
	10/30/95	2000	650	45	31	156
M-2	5/7/91	16,000	1,300	950	170	890
	1/16/92	22,000	960	570	370	1,800
	3/9/93	27,000	1,100	970	490	1,400
	5/17/93	17,000	1,200	770	480	1,300
	8/17/93	20,000	1,700	910	540	1,400
	12/13/93	51,000	2,200	1,400	700	2,600
	3/7/94	28,000	1,400	900	640	1,800
	8/23/94	21,000	1,600	540	520	1,100
	4/26/95	14,000	1,200	510	490	870
	10/30/95	16,000	1,700	830	470	1,120
	4/17/96	10,000	1,300	610	380	810
M-3	5/17/93	<50	<0.5	<0.5	<0.5	<0.5
	8/17/93	<50	<0.5	<0.5	<0.5	<0.5
	12/13/93	<50	<0.5	<0.5	<0.5	<0.5
	3/7/94	<50	<0.5	<0.5	<0.5	<0.5
	8/23/94	<50	<0.5	<0.5	<0.5	<0.5
	4/27/95	<50	<0.5	<0.5	<0.5	<0.5

Table 2
Hydrocarbon Concentrations in Groundwater

Sample Location	Sample Date	TVH (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl-benzene (ug/l)	Xylenes (ug/l)
M-4	5/17/93	7,500	1,200	230	11	350
	8/17/93	13,000	3,000	330	130	700
	12/13/93	11,000	2,700	190	90	360
	3/7/94	3,800	980	33	49	140
	8/23/94	19,000	5,800	200	460	630
	4/27/95	2,300	510	40	69	120
	11/1/95	1,100	470	14	23	26
	4/17/96	550*	330	<2.5	5.9	16.1
M-5	8/23/94	<50	<0.5	<0.5	<0.5	<0.5
	4/27/95	<50	<0.5	<0.5	<0.5	<0.5
	11/1/95	<50	<0.5	<0.5	<0.5	<0.5
	4/17/96	<50	<0.5	<0.5	<0.5	<0.5
M-6	10/11/94	3,600	340	27	65	240
	4/26/95	150	9.3	<0.5	5.6	1.7
	11/1/95	170	0.6	<0.5	<0.5	0.6
	1/22/96	<50	<0.5	<0.5	<0.5	<0.5
	4/17/96	<50	<0.5	<0.5	<0.5	1

TVH = Total volatile hydrocarbons, as gasoline
ug/l = Micrograms per liter = parts per billion
<50 = Analyte not present at a concentration above the stated detection limit.
* = Sample exhibits a fuel pattern which does not resemble the standard

MAC ARTHUR BOULEVARD

COOLIDGE AVENUE

GEORGIA STREET

SIDEWALK

SIDEWALK

STATION

FORMER GASOLINE TANKS

FORMER WASTE OIL TANK

PUMP ISLAND

PUMP ISLAND

B-1 B-2 B-3 B-4 B-5 B-6 B-7 B-8 B-9 B-10 B-11 B-12

M-1 M-2 M-3 M-4 M-5 M-6

P-1 P-2 P-3

977 976 975 974 973 972 971 970

Date	TVH	B	T	E	X
5/7/91	16,000	1,300	950	170	890
1/16/92	22,000	980	570	370	1,800
3/9/93	27,000	1,100	970	490	1,400
5/17/93	17,000	1,200	770	480	1,300
8/17/93	20,000	1,700	910	540	1,400
12/13/93	51,000	2,200	1,400	700	2,600
3/7/94	28,000	1,400	900	640	1,800
8/23/94	21,000	1,800	540	520	1,100
04/26/95	14,000	1,200	510	490	870
10/30/95	16,000	1,700	830	470	1,120
4/17/96	10,000	1,300	610	380	810

Date	TVH	B	T	E	X
8/17/93	900	180	65	10	93
10/30/95	2,000	650	45	31	156

Date	TVH	B	T	E	X
11/6/90	33,000	4,700	2,100	380	630
1/16/92	99,000	6,500	12,000	2,000	16,000
3/9/93	70,000	5,900	11,000	2,100	12,000
5/17/93	87,000	6,600	13,000	2,200	13,000
8/17/93	80,000	5,800	12,000	2,000	12,000
12/13/93	100,000	5,800	12,000	2,200	14,000
3/7/94	77,000	5,100	11,000	2,000	12,000
8/23/94	70,000	3,800	8,700	1,500	9,900
04/27/95	44,000	3,600	8,500	1,500	9,300
10/30/95	66,000	4,600	11,000	2,100	13,600
4/17/96	58,000	4,800	9,900	1,900	12,900

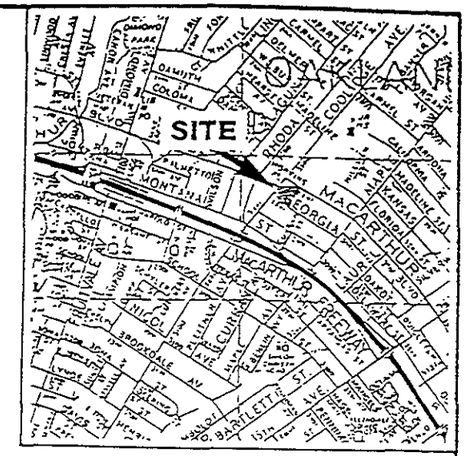
Date	TVH	B	T	E	X
1/16/92	6,700	500	4.4	80	40
3/9/93	5,600	1,100	29	63	120

Date	TVH	B	T	E	X
5/17/93	7,500	1,200	230	11	350
8/17/93	13,000	3,000	330	130	700
12/13/93	11,000	2,700	190	90	360
3/7/94	3,800	980	33	49	140
8/23/94	19,000	5,800	200	460	630
4/27/95	2,300	510	40	69	120
11/1/95	1,100	470	14	23	26
4/17/96	550	330	<2.5	5.9	16.1

Date	TVH	B	T	E	X
5/17/93	<50	<0.5	<0.5	<0.5	<0.5
8/17/93	<50	<0.5	<0.5	<0.5	<0.5
12/13/93	<50	<0.5	<0.5	<0.5	<0.5
3/7/94	<50	<0.5	<0.5	<0.5	<0.5
8/23/94	<50	<0.5	<0.5	<0.5	<0.5
4/27/95	<50	<0.5	<0.5	<0.5	<0.5

Date	TVH	B	T	E	X
8/23/94	<50	<0.5	<0.5	<0.5	<0.5
04/27/95	<50	<0.5	<0.5	<0.5	<0.5
11/1/95	<50	<0.5	<0.5	<0.5	<0.5
4/17/96	<50	<0.5	<0.5	<0.5	<0.5

Date	TVH	B	T	E	X
12/11/94	2600	340	27	45	240
04/26/95	150	9.3	<0.5	5.8	1.7
11/1/95	170	3.8	<0.5	<0.5	0.9
4/17/96	450	<2.5	<2.5	<2.5	*



VICINITY MAP

- TEST BORING BY SCI
- MONITORING WELL BY SCI
- TEST BORING BY OTHERS
- MONITORING WELL BY OTHERS
- FORMER EXCAVATION
- PROPERTY BOUNDARY
- EXISTING BUILDING
- GROUNDWATER SURFACE ELEVATION CONTOURS APRIL 1996

TVH	TOTAL VOLATILE HYDROCARBONS (µg/l)
B	BENZENE (µg/l)
T	TOLUENE (µg/l)
E	ETHYLBENZENE (µg/l)
X	TOTAL XYLENES (µg/l)

APPROXIMATE SCALE (feet)

0 30 60

SITE PLAN

8501 MACARTHUR BLVD - OAKLAND CA

Subsurface Consultants

JOB NUMBER	DATE	APPROVED
831.003	8.6.96	

PLATE 1

GROUNDWATER DEPTHS

Project Name: APA FUND

Job No.: 838.003

Measured by: DWA

Well	Date	Time	Groundwater Depth (feet)	Comments
P-1	4/15/96	0800	28.24	
P-2	↓	0825	21.33	
P-3		0820	21.43	
M-1		0805	25.56	
M-2		0815	25.57	
M-3		0755	20.94	
M-4		0830	30.09	
M-5		0835	21.72	
M-6	↓	0745	28.50	

WELL SAMPLING FORM

Project Name: APA Fund
Well Number: P-2
Job No.: 838.003
Well Casing Diameter: 2 inch
Sampled By: DWA
Date: 4/15/96
TOC Elevation:
Weather: partly cloudy

Depth to Casing Bottom (below TOC) 42.00 feet
Depth to Groundwater (below TOC) 21.33 feet
Feet of Water in Well 20.67 feet
Depth to Groundwater When 80% Recovered 25.44 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 3.4 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
2	10.80	65.4	537		clear/strong odor
4	10.86	65.6	518		spotty sheen
6	10.41	65.3	469		
8	10.07	65.7	438		
10	10.32	66.4	511		

Total Gallons Purged 10 gallons
Depth to Groundwater Before Sampling (below TOC) 22.70 on 4/17/96 @ 0730 feet
Sampling Method disposable bailer
Containers Used 3 (40 ml) ____ (liter) ____ (pint)

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE

WELL SAMPLING FORM

Project Name: APA Fund
Well Number: M-2
Job No.: 838.003
Well Casing Diameter: 2 inch
Sampled By: DWA
Date: 4/15/96
TOC Elevation:
Weather: partly cloudy

Depth to Casing Bottom (below TOC) 45.00 feet
Depth to Groundwater (below TOC) 25.57 feet
Feet of Water in Well 19.43 feet
Depth to Groundwater When 80% Recovered 29.46 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 3.2 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer

moderate/slow recharge

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
2	7.70	66.4	802		clear/strong odor spotty sheen
4	7.60	66.2	806		
6	7.61	65.8	786		
8	7.37	66.5	784		
10	7.34	66.5	794		murky

Total Gallons Purged 10 gallons
Depth to Groundwater Before Sampling (below TOC) 25.57 on 4/17/96 @ 0745 feet
Sampling Method disposable bailer
Containers Used 3 (40 ml) ____ (liter) ____ (pint)

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE

WELL SAMPLING FORM

Project Name: APA Fund
Well Number: M-4
Job No.: 838.003
Well Casing Diameter: 2 inch
Sampled By: DWA
Date: 4/15/96
TOC Elevation:
Weather: partly cloudy

Depth to Casing Bottom (below TOC) 45.00 feet
Depth to Groundwater (below TOC) 30.09 feet
Feet of Water in Well 14.91 feet
Depth to Groundwater When 80% Recovered 33.07 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.5 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer slow recharge

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
2	8.69	68.2	305		semi-clear/slight odor
4	8.52	67.9	260		clear
6	8.32	66.2	250		↓ increasing odor
8	7.93	66.0	447		

Total Gallons Purged 8 gallons
Depth to Groundwater Before Sampling (below TOC) 33.41 on 4/17/96 @ 0830 feet
Sampling Method disposable bailer
Containers Used 3 (40 ml) ____ (liter) ____ (pint)

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE

WELL SAMPLING FORM

Project Name: APA Funo
Well Number: M-5
Job No.: 838.003
Well Casing Diameter: 2 inch
Sampled By: DWA
Date: 4/15/96
TOC Elevation:
Weather: partly cloudy

Depth to Casing Bottom (below TOC) 37.50 feet
Depth to Groundwater (below TOC) 21.72 feet
Feet of Water in Well 15.78 feet
Depth to Groundwater When 80% Recovered 24.88 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.6 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer

FIELD MEASUREMENTS

slow recharge overnight

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
2	8.20	65.9	524		clear/no odor
4	7.87	66.1	517		
6	7.48	65.5	545		
8	7.47	64.7	591		

Total Gallons Purged 8 gallons
Depth to Groundwater Before Sampling (below TOC) 24.96 on 4/17/96 @ 0815 feet
Sampling Method disposable bailer
Containers Used 3 (40 ml) ____ (liter) ____ (pint)

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: APA FUND
Well Number: M-6
Job No.: 838.003
Well Casing Diameter: 2 inch
Sampled By: DWA
Date: 4/15/96
TOC Elevation:
Weather: partly cloudy

Depth to Casing Bottom (below TOC) 47.00 feet
Depth to Groundwater (below TOC) 28.50 feet
Feet of Water in Well 18.50 feet
Depth to Groundwater When 80% Recovered 32.20 feet
Casing Volume (feet of water x Casing DIA ² x 0.0408) 3.0 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer

very slow recharge (overnight)

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
2	8.73	68.5	1030		clear/no odor/ orange tint
4	8.38	68.3	506		
6	8.24	67.3	440		decreasing tint faint odor
8	8.09	66.9	467		↓
10	8.03	67.4	512		

Total Gallons Purged 10 gallons
Depth to Groundwater Before Sampling (below TOC) 33.10' on 4/17/96 @ 0800 feet
Sampling Method disposable bailer
Containers Used 3 (40 ml) ____ (liter) ____ (pint)

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 25-APR-96
Lab Job Number: 125232
Project ID: 838.003
Location: APA Fund

Reviewed by: _____

Reviewed by: _____

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 838.003
Location: APA Fund

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125232-001	P-2	27180	04/17/96	04/24/96	04/24/96	
125232-002	M-2	27180	04/17/96	04/24/96	04/24/96	
125232-003	M-4	27180	04/17/96	04/24/96	04/24/96	
125232-004	M-5	27180	04/17/96	04/23/96	04/23/96	

Analyte Diln Fac:	Units	125232-001 100	125232-002 10	125232-003 5	125232-004 1
Gasoline	ug/L	58000	10000	550 Y	<50
Surrogate					
Trifluorotoluene	%REC	98	99	96	96
Bromobenzene	%REC	91	99	84	82

Y: Sample exhibits fuel pattern which does not resemble standard

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 838.003
Location: APA Fund

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125232-005	M-6	27180	04/17/96	04/23/96	04/23/96	

Analyte	Units	125232-005
Diln Fac:		1
Gasoline	ug/L	<50
Surrogate		
Trifluorotoluene	%REC	96
Bromobenzene	%REC	84

BTXE

Client: Subsurface Consultants
Project#: 838.003
Location: APA Fund

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125232-001	P-2	27180	04/17/96	04/24/96	04/24/96	
125232-002	M-2	27180	04/17/96	04/24/96	04/24/96	
125232-003	M-4	27180	04/17/96	04/24/96	04/24/96	
125232-004	M-5	27180	04/17/96	04/23/96	04/23/96	

Analyte Diln Fac:	Units	125232-001 100	125232-002 10	125232-003 5	125232-004 1
Benzene	ug/L	4800	1300	330	<0.5
Toluene	ug/L	9900	610	<2.5	<0.5
Ethylbenzene	ug/L	1900	380	5.9	<0.5
m,p-Xylenes	ug/L	8500	540	5.1C	<0.5
o-Xylene	ug/L	4400	270	11	<0.5
Surrogate					
Trifluorotoluene	%REC	100	104	99	98
Bromobenzene	%REC	95	100	88	86

C: Presence of this compound confirmed by second column, however, the confirmation concentration differed from the reported result by more than a factor of two

BTXE

Client: Subsurface Consultants
Project#: 838.003
Location: APA Fund

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125232-005	M-6	27180	04/17/96	04/23/96	04/23/96	

Analyte	Units	125232-005
Diln Fac:		1
Benzene	ug/L	<0.5
Toluene	ug/L	<0.5
Ethylbenzene	ug/L	<0.5
m,p-Xylenes	ug/L	<0.5
o-Xylene	ug/L	1
Surrogate		
Trifluorotoluene	%REC	99
Bromobenzene	%REC	88

Curtis & Tompkins, Ltd.

Lab #: 125232

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons	
Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 838.003	Prep Method: EPA 5030
Location: APA Fund	
METHOD BLANK	
Matrix: Water	Prep Date: 04/23/96
Batch#: 27180	Analysis Date: 04/23/96
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC19999

Analyte	Result	
Gasoline	<50	
Surrogate	**%Rec**	**Recovery Limits**
Trifluorotoluene	95	69-120
Bromobenzene	78	70-122

Curtis & Tompkins, Ltd.

Lab #: 125232

BATCH QC REPORT

BTXE	
Client: Subsurface Consultants	Analysis Method: EPA 8020
Project#: 838.003	Prep Method: EPA 5030
Location: APA Fund	
METHOD BLANK	
Matrix: Water	Prep Date: 04/23/96
Batch#: 27180	Analysis Date: 04/23/96
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC19999

Analyte	Result
Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
m,p-Xylenes	<0.5
o-Xylene	<0.5

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	98	58-130
Bromobenzene	82	62-131

Curtis & Tompkins, Ltd.

Lab #: 125232 BATCH QC REPORT

TVH-Total Volatile Hydrocarbons	
Client: Subsurface Consultants	Analysis Method: CA LUFT (EPA 8015M)
Project#: 838.003	Prep Method: EPA 5030
Location: APA Fund	
LABORATORY CONTROL SAMPLE	
Matrix: Water	Prep Date: 04/23/96
Batch#: 27180	Analysis Date: 04/23/96
Units: ug/L	
Diln Fac: 1	

LCS Lab ID: QC20000

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	1893	2000	95	80-120
Surrogate	**%Rec**	**Limits**		
Trifluorotoluene	102	69-120		
Bromobenzene	96	70-122		

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 1 outside limits

Curtis & Tompkins, Ltd.

Lab #: 125232 BATCH QC REPORT

BTXE	
Client: Subsurface Consultants	Analysis Method: EPA 8020
Project#: 838.003	Prep Method: EPA 5030
Location: APA Fund	

LABORATORY CONTROL SAMPLE	
Matrix: Water	Prep Date: 04/23/96
Batch#: 27180	Analysis Date: 04/23/96
Units: ug/L	
Diln Fac: 1	

LCS Lab ID: QC20001

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	21.6	20	108	80-120
Toluene	24	20	120	80-120
Ethylbenzene	22.2	20	111	80-120
m,p-Xylenes	45.1	40	113	80-120
o-Xylene	23.2	20	116	80-120

Surrogate	%Rec	Limits
Trifluorotoluene	100	58-130
Bromobenzene	87	62-131

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 5 outside limits

Curtis & Tompkins, Ltd.

Lab #: 125232 BATCH QC REPORT

BTXE

Client: Subsurface Consultants
Project#: 838.003
Location: APA Fund

Analysis Method: EPA 8020
Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
Lab ID: 125258-004
Matrix: Water
Batch#: 27180
Units: ug/L
Diln Fac: 1

Sample Date: 04/19/96
Received Date: 04/19/96
Prep Date: 04/23/96
Analysis Date: 04/23/96

MS Lab ID: QC20002

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	20	<0.5000	21.3	106	75-125
Toluene	20	<0.5000	22.7	114	75-125
Ethylbenzene	20	<0.5000	21.7	108	75-125
m,p-Xylenes	40	<0.5000	44.2	110	75-125
o-Xylene	20	<0.5000	22.7	114	75-125

Surrogate	%Rec	Limits
Trifluorotoluene	99	58-130
Bromobenzene	87	62-131

MSD Lab ID: QC20003

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	20	21.6	108	75-125	1	<20
Toluene	20	22.9	114	75-125	1	<20
Ethylbenzene	20	22.1	110	75-125	2	<20
m,p-Xylenes	40	44.5	111	75-125	1	<20
o-Xylene	20	23	115	75-125	1	<20

Surrogate	%Rec	Limits
Trifluorotoluene	99	58-130
Bromobenzene	87	62-131

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

CHAIN OF CUSTODY FORM

125232

PAGE OF

PROJECT NAME: APA Fund

JOB NUMBER: 838.003 LAB: Curtis & Tompkins

PROJECT CONTACT: Jeri Alexander TURNAROUND: Normal

SAMPLED BY: Dennis Alexander REQUESTED BY: Jeri Alexander

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR	CONTAINERS: VOA	LITER	PINT	TUBE	METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES	ANALYSIS REQUESTED: TVH/BTXE
-1	P-2	X				3				X			X		04	17	96	0730		X
-2	M-2	X				3				X			X					0745		X
-3	M-4	X				3				X			X					0830		X
-4	M-5	X				3				X			X					0815		X
-5	M-6	X				3				X			X		04	17	96	0800		X

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
Dennis Alexander	4/17/96 1:50 p.m.		4-17-96 1:50
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:

Subsurface Consultants, Inc.

171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607

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