SEQUOIA ENVIRONMENTAL
CORPORATION

1111 Aladdin Ave., Suite B
San Leandro, CA 94577
(510) 614-1900 • Fax (510) 614-2923

SUBSURFACE INVESTIGATION REPORT

2345 International Boulevard
Oakland, California

#2116
7-25-01

Prepared For:

Mr. Stanley Wong
2200 East 12th Street
Oakland, CA 94606

By:

Sequoia Environmental Corporation

Project Code SW - 03
July 19, 2001

PROFESSIONAL SIGNATURES

The following individual professionals hereby declare that this report accurately represents the subsurface investigation performed at 2345 International Boulevard (East 14th Street), Oakland, California.

Chris Nwabuzoh — July 19, 2001

Chris 'Wabuzoh — Date
Project Geologist
Registered Environmental Assessor (REA) #02842

July 19, 2001

Ola Balogun — Date
Registered Professional Engineer #C 41747

REGISTERED PROFESSIONAL ENGINEER
OLAITAN S. BALOGUN
NO. 41747
EXP. 3-31-04
CIVIL
STATE OF CALIFORNIA

TABLE OF CONTENTS

FIGURES

APPENDIX

1.0 INTRODUCTION

Mr. Stanley Wong contracted Sequoia Environmental Corporation to perform a subsurface investigation of its property. The subject property is located at 2345 International Boulevard (East 14th Street), Oakland, California (see Figure 1, Site Map). The scope of services performed is listed below.

1.1 Purpose and Objectives

The purpose of the investigation was to determine the extent of petroleum hydrocarbon contamination of soil and groundwater at the subject site. Presence of petroleum hydrocarbon in the subsurface was due to a leakage from an underground storage tank located at the site.

Goals of the investigation are listed below:

- Address the concerns of the Alameda County Department of Environmental Health.
- Document all activities performed at the site.

1.2 Scope of Work

- Acquired necessary permit for field activities.
- Drilled six soil borings and collected soil and grab water samples.
- Drilled one soil boring and complete as a monitoring well, collected soil and groundwater samples.
- Surveyed and monitored four existing on-site groundwater monitoring wells.
- The soil and water samples were analyzed for specified constituents.
- Evaluated soil and groundwater sampling and analytical results.
- Prepared this subsurface investigation report presenting all field activities, observation and laboratory results.

2.0 SITE CHARACTERISTICS

A brief description of the site location and summary of past activities are presented below.

2.1 Site Description

The subject site is located in an area zoned by the City of Oakland for commercial activities. It is bounded in the north by International Boulevard (East 14th Street). In the south and west by commercial buildings. In the east by Miller Avenue. The site is presently occupied by Credit World Auto Sales. The company's business activities are sales and services of used cars.

2.2 Synopsis of Previous Environmental Activities

Previous environmental work performed at the site included the removal of four underground storage tanks, soil excavation, subsurface investigations and quarterly monitoring of on-site groundwater wells.

On August 5, 1988, four underground storage tanks and associated piping were removed from the site by Tank Protect Engineering of Northern California. The capacity of each tank varies from 1,000 to 8,000 gallons. The tanks were used to store unleaded gasoline and waste oil. Soil samples were collected from the bottom locations of the tanks and sent to a state certified laboratory for chemical analyses. The samples collected from the gasoline locations were analyzed for total petroleum hydrocarbons as gasoline (TPH-G), aromatic hydrocarbons as benzene, toluene, ethylbenzene and xylenes (BTEX) and lead. Samples collected from the waste oil tank location were analyzed for total petroleum hydrocarbons as diesel (TPH-D), total oil and grease (TOG) and volatile organics using appropriate EPA Methods.

Laboratory results show that the samples collected from the gasoline tanks' locations contained 130 to 1,500 parts per million (ppm) of TPH-G, 0.17 to 160 ppm of BTEX and 4.6 to 316 ppm of lead. Ethylbenzene and total xylenes were the components of volatile organics detected. Laboratory results of samples collected from the waste oil tank location show TOG range from 570 to 780 ppm and TPH-D range from 65 to 110 ppm.

On October 3, 1988, Tank Protect Engineering performed a subsurface investigation. It involved the drilling of three soil borings. The purpose of the investigation was to characterize the soil in the vicinity of the tanks. Two soil borings (B-1 and B-2) were located in the vicinity of the gasoline tanks and one boring (B-3) was located in the vicinity of the waste oil tank. The borings were drilled to 15 feet below ground surface (bgs). Groundwater was encountered and grab groundwater samples were collected. The soil and grab water samples were sent to a state-certified laboratory for chemical analyses. Soil samples from B-1 and B-2 were analyzed for TPH-G, BTEX, and soil sample from B-3 was analyzed for BTEX, TOG and halogenated volatile organics using appropriate EPA Methods.

Laboratory results of the soil samples show that samples B-1 and B-2 contain 3.4 ppm and 83 ppm of TPH-G respectively. Sample B-3 contains 88 ppm of TOG and BTEX ranging from 0.360 to 0.850 ppm. Results of grab groundwater samples were 67,000 to 110,000 ppb for TOG in samples B-1 and B-2 respectively and BTEX ranging from 2,400 to 17,000 ppb. Grab water sample from boring B-3, contains 290,000 ppb of TOG, and BTEX ranging from 160 to 1,300 ppb.

The subsurface investigation showed that the soil in the vicinity of the former location of the underground storage tanks was impacted by petroleum hydrocarbons.

On May 22, 1991, Earth Systems Environmental, Inc., (ESE) performed a subsurface investigation at the site. The investigation involved drilling of five soil borings (TH-1 through TH-5) and installation of three groundwater monitoring wells (MW-1, MW-2 and MW-3). The purpose of the investigation was to further characterize the soil at the subject property. The soil borings were located as listed below.

Boring TH-1 is at the center of former tank locations.
Boring TH-2 is at the easterly end.
Boring TH-3 is at the westerly end near the waste oil.
Boring TH-4 is between borings TH-1 and TH-3.
Boring TH-5 is at the southerly end.
Monitoring well MW-1 is at the south side of former underground storage tank location.
Monitoring wells MW-2 and MW-3 are located at the northeast and northwest side of the property
lines.

With the exception of boring TH-1, two soil samples were collected from the borings and monitoring wells. Only one soil sample was collected from boring TH-1. With the exception of boring TH-2, all soil samples were collected at 10 and 18 feet bgs. In boring TH-2 a sample was collected at 30 feet bgs. Samples collected from the gasoline tanks areas were analyzed for TPH-G, samples from the waste oil tank area were analyzed for total recoverable hydrocarbons (TRH) and TPH-G, and samples from boring TH-5 were analyzed for TPH-G and BTEX.

Laboratory results for the soil samples are listed below.

With the exception of one sample from TH-5, all the soil samples contained detectable levels of TPH-G that range from 10 to 4,320 ppm.
The soil sample collected at deeper depth from boring TH-5 was non-detect for all the analytes.

All the soil samples contained TRH which ranges from 20 to 1,600 ppm.
BTEX was detected in the samples collected from the former gasoline tanks areas.

Water samples collected from the monitoring wells were analyzed for TPH-G and BTEX. Laboratory results of the groundwater samples show that TPH-G was detected in well MW-1 and MW-2 at concentration of 2,090,000 ppb and 10,000 ppb respectively. BTEX was detected in well MW-1 at concentrations ranging from 2,145 to 23,150 ppb. TPH-G and BTEX were non-detect in well MW-3. Subsequent monitoring of the three groundwater wells shows the presence of free product in all the wells.

On July 22 and 23, 1993, Tank Protect Engineering performed a subsurface investigation of the site. The purpose of the investigation was to determine the extent of lateral and vertical migration of petroleum hydrocarbons in the vadose zone. Two soil borings, MW-4 and MW-5, were drilled and completed as monitoring wells. Boring MW-4 was located at the east corner of the site and MW-5 was located down-gradient from the former tank locations. Borings MW-4 and MW-5 were drilled to 34.5 feet and 24 feet respectively. Soil samples were collected during drilling, and in addition, the new and three existing monitoring wells were monitored to determine the depth to groundwater and any presence of free product. Free product was present and the thickness varies from 0.01 to 0.77 feet. Groundwater samples were also collected from the wells.

All the samples were sent to a state-certified laboratory for chemical analyses. They were analyzed for TPH-G, BTEX using appropriate EPA Methods. Laboratory results of the soil samples collected from wells' MW-4 and MW-5, show that TPH-G was detected in all the samples collected at approximately 16 feet bgs. BTEX was detected only in samples collected from boring MW-5 at a depth of approximately 16 feet bgs. Laboratory results of the groundwater samples show that TPH-G and BTEX were detected in all the five wells. Levels of TPH-G in MW-1, MW-2, MW-3, MW-4 and MW-5 are 150,000 ppb, 49,000 ppb, 9,600 ppb, 150 ppb and 120,000 ppb respectively. Well MW-4, which is located up-gradient, had levels of BTEX that range from 0.8 to 3.7 ppb.

The result of the subsurface investigation shows that well MW-4 is the limit of eastward migration of petroleum hydrocarbons.

In 1994, Tank Protect Engineering performed excavation of the former underground tanks' locations. The purpose of the excavation was to remove soil impacted by petroleum hydrocarbons. Using a backhoe, an area of approximately 2,520 square feet was excavated. Impacted soil was placed on plastic sheeting. Verification samples were collected at various stages during the excavation. Excavated soil was treated on-site and the clean soil was used for

backfilling upon approval by the Alameda County Department of Environmental Health.

On May 5, 1997, Tank Protect Engineering performed a subsurface investigation. The purpose of the investigation was to use soil borings to determine the extent of groundwater contamination. Borings SB-1 and SB-2 were located in the up-gradient direction and SB-3 through SB-5 were located in the down-gradient direction. The borings were drilled to 30 feet bgs, and soil and grab groundwater samples were collected. All the samples were analyzed for TPH-G and BTEX.

Laboratory results show that TPH-G was detected in soil samples collected from boring SB-2 (16.5-17.0 ft) and SB-5 (11.5-12.0 ft) at levels of 3.7 ppm and 91 ppm respectively. Levels of BTEX vary from 0.0071 to 0.042 ppm. Laboratory results of the grab groundwater samples show that TPH-G, benzene and ethylbenzene were detected in water samples collected from SB-2W and SW-5W at concentrations of 6,100 ppb, 870 ppb and 17 ppb; and 890 ppb, 5.4 ppb and 1.4 ppb respectively.

Presently all five groundwater wells are monitored on a quarterly basis by Tank Protect Engineering. The last reported monitoring was performed on December 28, 1999. During the monitoring activities free product was present in wells MW-1, MW-2 and MW-3, and product thickness were 0.25-, 1.32- 4.5 feet respectively. Groundwater samples were collected from all the wells and analyzed for TPH-G, BTEX and MTBE using appropriate EPA Methods. Laboratory results show that TPH-G was detected in wells MW-1, MW-2, MW-3 and MW-5 at concentration of 27,000 ppb, 75,000 ppb, 4,300 ppb and 25,000 ppb respectively. TPH-G, MTBE and BTEX were non-detect in well MW-4. The determined groundwater gradient is 0.02 feet per foot in north-northwest direction.

On August 28, 2000, Sequoia Environmental Corporation prepared a workplan for the mitigation of free product at the site. The plan proposed drilling seven soil borings and completing one boring as a four inch monitoring well. The proposed well will be used with existing on-site wells for the above ground groundwater treatment. The workplan was approved by the Alameda County Department of Environmental Health.

2.3 Geology and Hydrogeology

The topography of the subject site area is of a gentle alluvial slope. The area is about a mile and a half northeast of the Alameda Harbor, and it is west of the Hayward fault. The bedrock west of the Hayward fault in the Oakland area consists of Franciscan formation. It is of hard sandstones, and some shales. Overlying the bedrock is a thick sequence of Pleistocene unconsolidated

sediments. The general soil type consists of dark brown to brown, silty to sandy clay.

During drilling, the soil type encountered from 5 feet to 15 feet below ground surface was mostly sandy clay. The clay was of the lean type, with moderate to high plasticity. The sand grains were mostly coarse to very fine. There was occasional occurrence of gravel. The largest size was about one quarter inch. Generally the soils were mostly moist from 5 feet to 10 feet below ground surface. The capillary fringe or the soil-water interface was encountered at approximately 15 to 20 feet below ground surface, The capillary fringe in boring SB-6 was encountered at about 8 to 10 feet below ground surface. With the exception of boring SB-7, drilling was stopped in each boring when groundwater was encountered. Boring SB-7 was drilled to 20 feet below ground surface and completed as a groundwater monitoring well. Detailed lithologic descriptions are contained in Appendix A.

3.0 INVESTIGATION PROCEDURE

To assess the extent of petroleum hydrocarbon plume, soil borings were drilled at the locations approved by the Alameda County Department of Environmental Health. Soil boring permit was obtained from the County of Alameda Public Works Agency.

3.1 Soil Borings

On May 22, 2001, Sequoia Environmental personnel supervised the drilling of seven soil borings at the subject site. The locations of the soil borings are listed below.

SB-1 and SB-2 were located at the north and northeast corners of monitoring well MW-2 respectively.
SB-3 was located at the southwest corner of monitoring well MW-2.
SB-4 was located at the west corner of monitoring well MW-3.
SB-5 was located at the east corner of monitoring well MW-3.
SB-6 was located at the northeast corner of monitoring well MW-1
SB-7 was located at the south corner of monitoring well MW-1.

See Figure 2, Site Plan, for the locations of soil borings and monitoring wells.

The borings were drilled with a flight of hollow stem augers. Soil samples were collected at 5-foot interval using California Modified Split Spoon Sampler that contained three brass sleeves.

At the end of each sampling episode, the ends of the middle brass sleeve were capped with Teflon foil, Teflon caps and taped with duct tape, and kept in a cooler containing ice. Soil sample from the first brass sleeve was emptied into a zip-lock bag and kept under sunlight for about 60 to 120 seconds. The sample was later screened with an organic vapor analyzer (OVA), examined and described using Universal Soil Classification System (USCS). Detailed lithologic description and OVA readings are contained in Appendix A.

Prior to each sampling run the sampler was washed in trisodium phosphate solution, and double rinsed in water and distilled water. The brass sleeves were fresh pack from the factory.

In addition to collecting soil samples, grab groundwater samples were collected from soil borings SB-1, SB-2, SB-3, SB-4, SB-5 and SB-6. The samples were collected with disposable bailers and put in 40ml glass vials containing hydrochloric acid as preservative. The samples were kept in a cooler containing ice while awaiting transportation to a state-certified environmental laboratory.

3.2 Installation of Groundwater Monitoring Well

Soil boring SB-7 was converted to a groundwater monitoring well MW-6, (see Figure 2 for detailed well location). The well was located in the apparent up-gradient direction at the subject site. The monitoring well was installed at 20 feet below ground surface. The well was constructed with 4-inch 15 feet PVC casing and 4-inch 5 feet PVC screen of .02 inch slot size. The annular space was filled with #3 Monterey sand from 20 feet to 2 feet above the screen/casing joint and 2 feet of bentonite. The remaining annular space was filled with cement grout. The well head was protected with a cap and traffic rated plate cover.

3.3 Groundwater Monitoring and Sampling

On June 13, 2001, five on-site monitoring wells (MW-1, MW-2, MW-3, MW-5 and MW-6) were gauged with interphase probe (IP) to determine the depth to groundwater and free product if any. Prior to gauging each well, the IP was washed with trisodium phosphate solution, and rinsed with water and distilled water. Each well was purged with a peristaltic pump attached with a dedicated plastic hose. The Table 1 below shows the monitoring data.

AUG 14 2001

TABLE 1

Groundwater Monitoring Data Before Purging

Correct

Well Number	Detph to Water (ft)	Depth to Product (ft)	Product Thickness (in)
MW-1	15.83	11.47	4.36
MW-2	14.84	11.69	3.15
MW-3	14.70	14.30	0.4
MW-5	11.31	N/A	
MW-6	12.47	N/A	

During well purging, the temperature, conductivity and pH were measured with appropriate meters. Purging was stopped when the parameters appeared to have stabilized (see Table 2, Monitoring Data during Purging).

TABLE 2

Monitoring Data during Purging

Well #	Temperature			pH			Conductivity			Observation
	oC F						x100			
MW-1	81	80	80	7.35	7.9	8.0	16.05	16.4	16.49	Dark free product
MW-2	83	81	80	8.2	8.5	8.47	11.36	11.06	11.03	Dark free product
MW-3	74	73	71	5.23	5.30	5.35	8.43	8.31	8.29	Free product and water
MW-5	75	72	72	8.30	8.36	8.37	12.17	11.76	11.01	Sheen, hydrocarbon odor
MW-6	70	68	68	7.20	6.85	6.04	11.50	11.16	10.87	Clear, no hydrocarbon odor

Approximately 2.5 gallons of free product and approximately 8 gallons of water were removed from MW-2 and MW-5. Approximately 2 gallons of free product were removed from MW-3 and approximately 5 gallons of water. Approximately 10 gallons of water were removed from MW-6.

After purging each well, depth to groundwater or product if any was measured. The wells were allowed to recharge and later measured with an IP to determine if the wells have recharged to about 80 to 90 percent of their respective initial volumes. At the completion of recharge, groundwater samples were collected with disposable bailers. Groundwater samples were put in 40-ml glass vials containing hydrochloric acid preservative. The vials kept in a cooler containing ice. Groundwater was not collected from wells MW-5 and MW-2 due to the

TABLE 1

Groundwater Monitoring Data Before Purging

Well Number	Detph to Water (ft)	Depth to Product (ft)	Product Thickness (in)
MW-1	11.3	N/A	
MW-2	14.84	11.69	3.15
MW-3	14.70	14.30	0.4
MW-5	15.83	11.47	4.36
MW-6	11.47	N/A	

During well purging, the temperature, conductivity and pH were measured with appropriate meters. Purging was stopped when the parameters appeared to have stabilized (see Table 2, Monitoring Data during Purging).

TABLE 2

Monitoring Data during Purging

Well #	Temperature			pH			Conductivity			Observation
	oC						x100			
MW-1	81	80	80	7.35	7.9	8.0	16.05	16.4	16.49	Sheen, hydrocarbon odor
MW-2	83	81	80	8.2	8.5	8.47	11.36	11.06	11.03	Dark free product
MW-3	74	73	71	5.23	5.30	5.35	8.43	8.31	8.29	Free product and water
MW-5	75	72	72	8.30	8.36	8.37	12.17	11.76	11.01	Dark free product
MW-6	70	68	68	7.20	6.85	6.04	11.50	11.16	10.87	Clear, no hydrocarbon odor

Approximately 2.5 gallons of free product and approximately 8 gallons of water were removed from MW-2 and MW-5. Approximately 2 gallons of free product were removed from MW-3 and approximately 5 gallons of water. Approximately 10 gallons of water were removed from MW-6.

After purging each well, depth to groundwater or product if any was measured. The wells were allowed to recharge and later measured with an IP to determine if the wells have recharged to about 80 to 90 percent of their respective initial volumes. At the completion of recharge, groundwater samples were collected with disposable bailers. Groundwater samples were put in 40-ml glass vials containing hydrochloric acid preservative. The vials kept in a cooler containing ice. Groundwater was not collected from wells MW-5 and MW-2 due to the

presence of free product. It must be mentioned that free product was not present in MW-5 during the initial gauging, and no free product was present in MW-3 after well recharge (see Table 3, Groundwater monitoring data before sampling).

Correct

TABLE 3

Groundwater Data before Sampling

Well Number	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (in)
MW-1	11,82	11.46	0.36
MW-2	14.32	11.50	2.82
MW-3	14.40	N/A	N/A
MW-5	11.20	10.80	0.40
MW-6	11.00	N/A	N/A

3.4 Groundwater Monitoring Well Survey

On June 13, 2001, four on-site groundwater monitoring wells (MW-1, MW-2, MW-5 and MW-6) were surveyed by Renner Survey Company of Burlingame, California. The survey was performed by using mean sea level datum. Monitoring well MW-3 was not surveyed due to obstruction and interference. See Table 5 for groundwater elevation data. Survey data appear to show that groundwater direction is west to southwest (see Figure 5, Groundwater Flow Direction).

TABLE 4

Groundwater Elevation Data

Well I.D	TOC Elevation-ft	DTW from TOC-ft	DTP from TOC-ft	Corrected Elevation-ft
MW-1	24.37	15.83	11.47	11.81
MW-2	23.16	14.84	11.69	10.68
MW-5	23.85	11.31	N/A	12.54
MW-6	23.81	12.47	N/A	11.34

TOC Top of Casing
DTW Depth to Water
DTP Depth to Product

presence of free product. It must be mentioned that free product was not present in MW-5 during the initial gauging, and no free product was present in MW-3 after well recharge (see Table 3, Groundwater monitoring data before sampling).

TABLE 3

Groundwater Data before Sampling

Well Number	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (in)
MW-1	15.83	~~11.47~~ NA	~~4.36~~ NA
MW-2	14.84	11.69	3.15
MW-3	14.70	14.30	0.4
MW-5	11.31	~~N/A~~ 11.47	~~N/A~~ 4.36
MW-6	11.47	N/A	N/A

3.4 Groundwater Monitoring Well Survey

On June 13, 2001, four on-site groundwater monitoring wells (MW-1, MW-2, MW-5 and MW-6) were surveyed by Renner Survey Company of Burlingame, California. The survey was performed by using mean sea level datum. Monitoring well MW-3 was not surveyed due to obstruction and interference. See Table 5 for groundwater elevation data. Survey data appear to show that groundwater direction is west to southwest (see Figure 5, Groundwater Flow Direction).

TABLE 4

Groundwater Elevation Data

Well I.D	TOC Elevation-ft	DTW from TOC-ft	DTP from TOC-ft	Corrected Elevation-ft
MW-1	24.37	15.83	11.47	11.81
MW-2	23.16	14.84	11.69	10.68
MW-5	23.85	11.31	N/A	12.54
MW-6	23.81	11.47	N/A	12.34

TOC Top of Casing
DTW Depth to Water
DTP Depth to Product

When floating product was present, the groundwater elevation was corrected by multiplying the floating product thickness by the density of gasoline (0.75) and adding the resultant value to the groundwater elevation.

4.0 LABORATORY ANALYSIS

4.1 Soil and Grab Groundwater Samples

Selected soil and grab groundwater samples from the soil borings were sent to McCampbell Analytical in Pacheco, California, for chemical analyses. The samples are SB1-10' and SB1-15' from soil boring SB-1; SB2-10', SB2-15' and SB2-20' from boring SB-2, SB3-10', SB3-15' and SB3-20' from boring SB-3; SB4-10', SB4-15' and SB4-20' from boring SB-4; SB5-15' and SB5-20' from boring SB-5; SB6-10' from boring SB-6; SB7-10', SB7-15' and SB7-20' from boring SB-7. Grab groundwater samples are SB-1, SB-2, SB-3, SB-4, SB-5 and SB-6. The samples were sent to the laboratory following proper chain of custody procedure. The samples were analyzed for TPH-G, BTEX and MTBE.

4.2 Groundwater Samples

Groundwater samples from the monitoring wells MW-3 and MW-6, were sent to McCampbell Analytical for chemical analyses following proper chain of custody procedure. The samples were analyzed for TPH-G, BTEX and MTBE. Groundwater samples were not collected from monitoring wells MW-1, MW-2 and MW-5 due to the presence of free product.

5.0 LABORATORY RESULTS

Soil

Laboratory results show that some samples from each boring contained detectable levels of petroleum hydrocarbons. A summary of the laboratory results is presented in Table 5 and detailed laboratory results and chain of custody are presented in Appendix A. Figure 4 shows TPHg map for soil samples collected at soil/water interface or capillary fringe.

TABLE 5

Summary of Soil Samples

Sample ID	TPH(g)	MTBE	Benzene	Toluene	EthylBenzene	xylenes
SB1-10'	240	ND	ND	0.19	0.19	0.45
SB1-15'	3.0	ND	ND	0.005	0.009	0.013
SB2-10'	89	ND	ND	ND	0.033	0.25
SB2-15'	ND	ND	ND	ND	ND	ND
SB2-20'	ND	ND	ND	ND	ND	ND
SB3-10'	300	ND	ND	ND	0.76	1.2
SB3-15'	1800	ND	3.3	5.5	48	53
SB3-20'	8.5	ND	0.009	0.023	0.10	0.12
SB4-10'	ND	ND	ND	ND	ND	ND
SB4-15'	230	ND	0.23	ND	1.5	1.1
SB4-20'	ND	ND	ND	ND	ND	ND
SB5-15'	25	ND	0.035	ND	0.10	0.11
SB5-20'	1.9	ND	0.62	ND	ND	ND
SB6-10'	ND	ND	ND	ND	ND	ND
SB7-10'	18	ND	ND	ND	0.056	0.11
SB7-15	68	ND	0.28	0.25	0.36	0.35
SB7-20'	ND	ND	ND	ND	ND	ND

Concentrations of soil samples are reported in milligrams per kilogram (ppm).
ND None Detect

Grab Groundwater Samples

Laboratory results show that grab water samples from soil borings SB-1, SB-2, SB-3, SB-4 and SB-5, contain detectable levels of petroleum hydrocarbons. A summary of the laboratory results is presented in Table 6. Detailed laboratory results and chain of custody are presented in Appendix A. Figure 3 shows TPHg map for grab water samples.

TABLE 6

Summary of Grab Water Samples

Sample ID	TPH(g)	MTBE	Benzene	Toluene	EthylBenzene	xylenes
SB-1	11,000	ND	8.1	23	81	7.1
SB-2	1,200	ND	ND	3.5	5.5	ND
SB-3	53,000	ND	790	110	2,000	2,000
SB-4	170,000	ND	420	ND	1,500	800
SB-5	27,000	ND	8400	99	230	120
SB-6	ND	ND	ND	ND	ND	ND

Concentrations of groundwater samples are reported in microgram per liter (ppb).
ND None detect.

Groundwater

Laboratory results show that groundwater samples from monitoring well MW-3 and MW-6, contained detectable levels of petroleum hydrocarbons. A summary of the laboratory results is presented in Table 7. Detailed laboratory results and chain of custody are presented in Appendix A.

TABLE 7

Summary of Groundwater Samples

Sample ID	TPH(g)	MTBE	Benzene	Toluene	EthylBenzene	xylenes
MW-3	8,400	ND	1,300	25	64	32
MW-6	7,600	ND	1,400	42	19	14

Concentrations of groundwater samples are reported in microgram per liter (ppb).
ND None detect.

6.0 CONCLUSION

On the bases of field observation, data, and laboratory results, it could be concluded that:
Petroleum hydrocarbons were detected in soil borings SB-1, SB-3, SB-4, SB-5, SB-6 and SB-7.

Grab water samples from the borings contain detectable levels of petroleum hydrocarbons.

Free product is present in monitoring wells MW-2, MW-3 and MW-5.

Groundwater samples from monitoring wells MW-3 and MW-6 contain detectable levels of petroleum hydrocarbons.

Groundwater direction is west to southwest.

The soil at the site consists of mostly sandy clay.

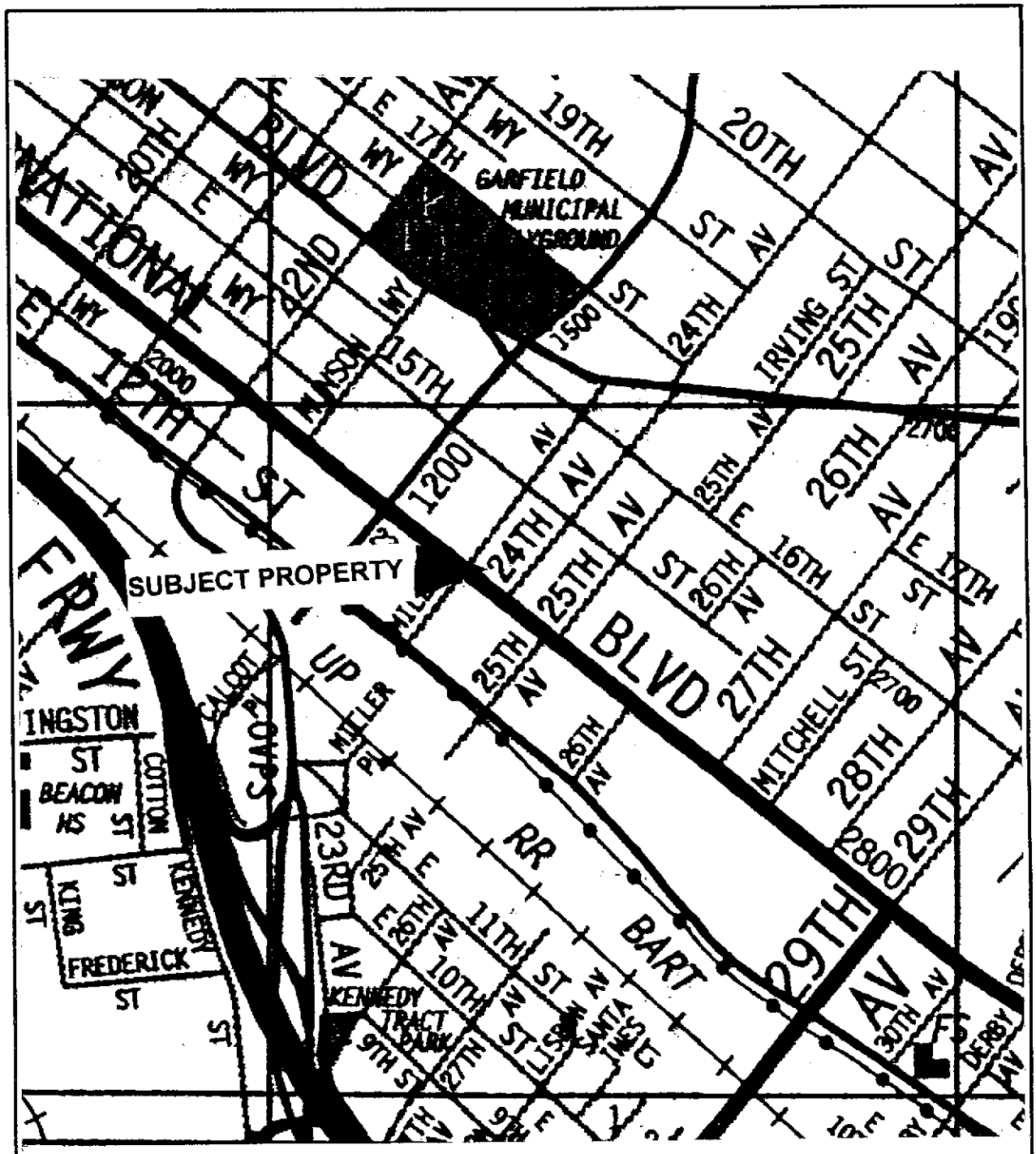

FIGURE 1

MAP TYPE:	SITE MAP	DATE: JULY 10, 2001
SITE ADDRESS:	2345 INTERNATIONAL BOULEVARD, OAKLAND, CALIFORNIA	SCALE: 1" : 2,400'

SEQUOIA ENVIRONMENTAL CORPORATION 1111 Aladdin Avenue, Suite 8, San Leandro, CA 94577 (510)614-1900

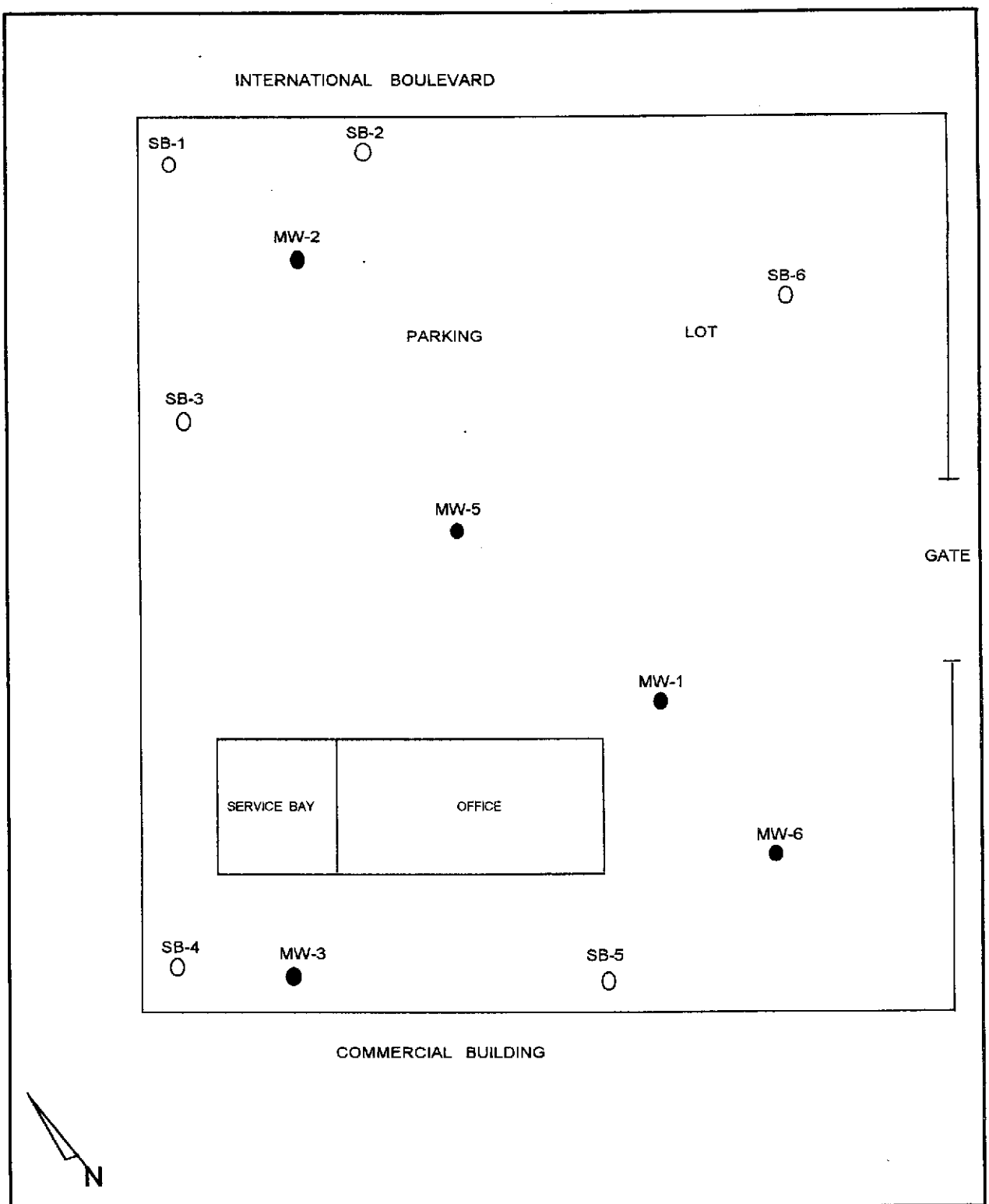

FIGURE 2

MAP TYPE: SITE PLAN	O SOIL BORING ● MONITORING WELL	
SITE ADDRESS:2345 INTERNATIONAL BOULEVARD, OAKLAND, CALIFORNIA	DATE: JULY 10, 2001	SCALE: 1" : 25'

SEQUOIA ENVIRONMENTAL 1111 Aladdin Avenue, Suite B, San Leandro, CA 94577 (510)614-1900

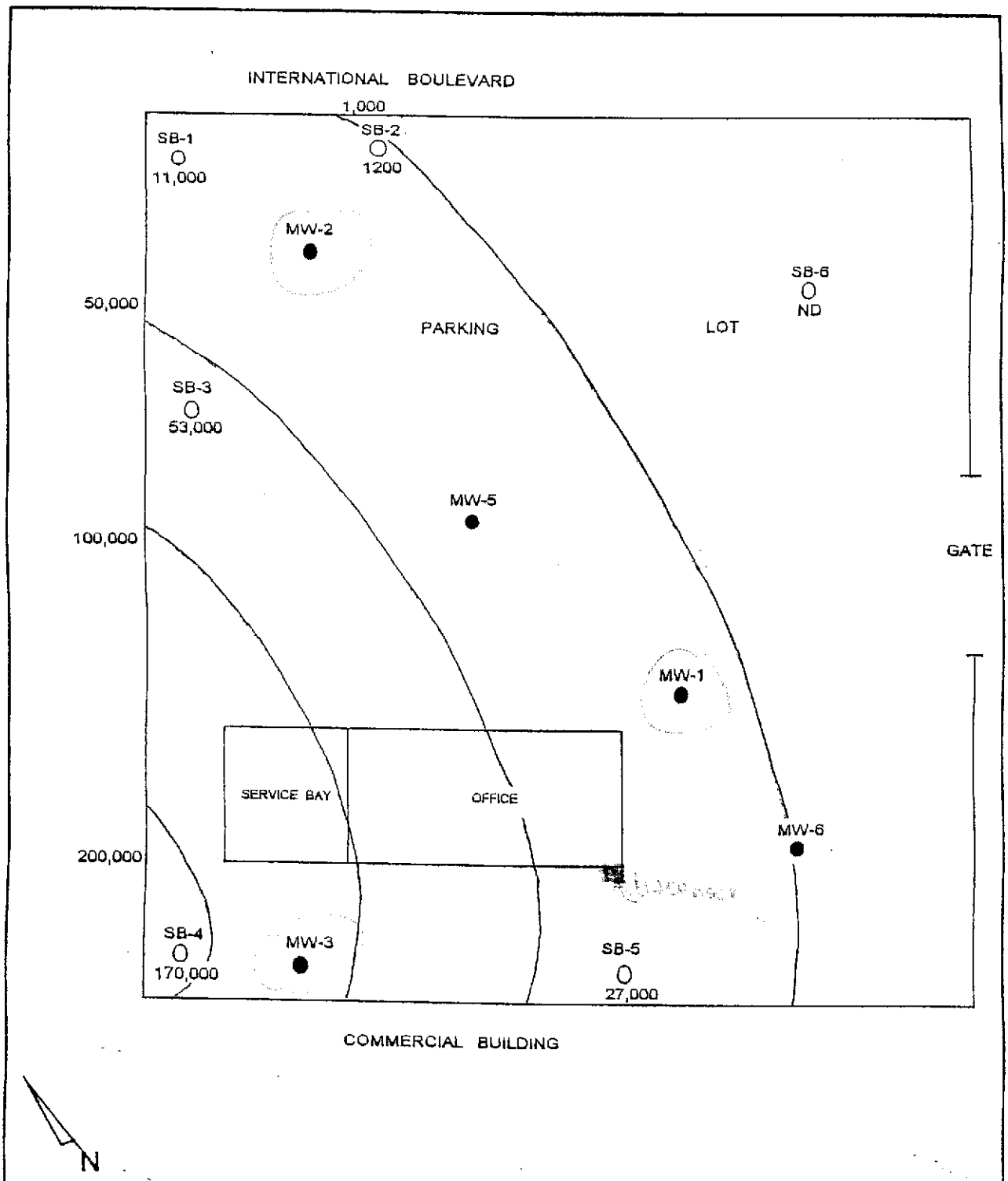

FIGURE 3

MAP TYPE: SITE PLAN	TPH RESULTS - GRAB WATER SAMPLES ppb	
SITE ADDRESS:2345 INTERNATIONAL BOULEVARD, OAKLAND, CALIFORNIA	DATE: JULY 10, 2001	SCALE: 1" : 25'

SEQUOIA ENVIRONMENTAL 1111 Aladdin Avenue, Suite 6, San Leandro, CA 94577 (510) 614-1900

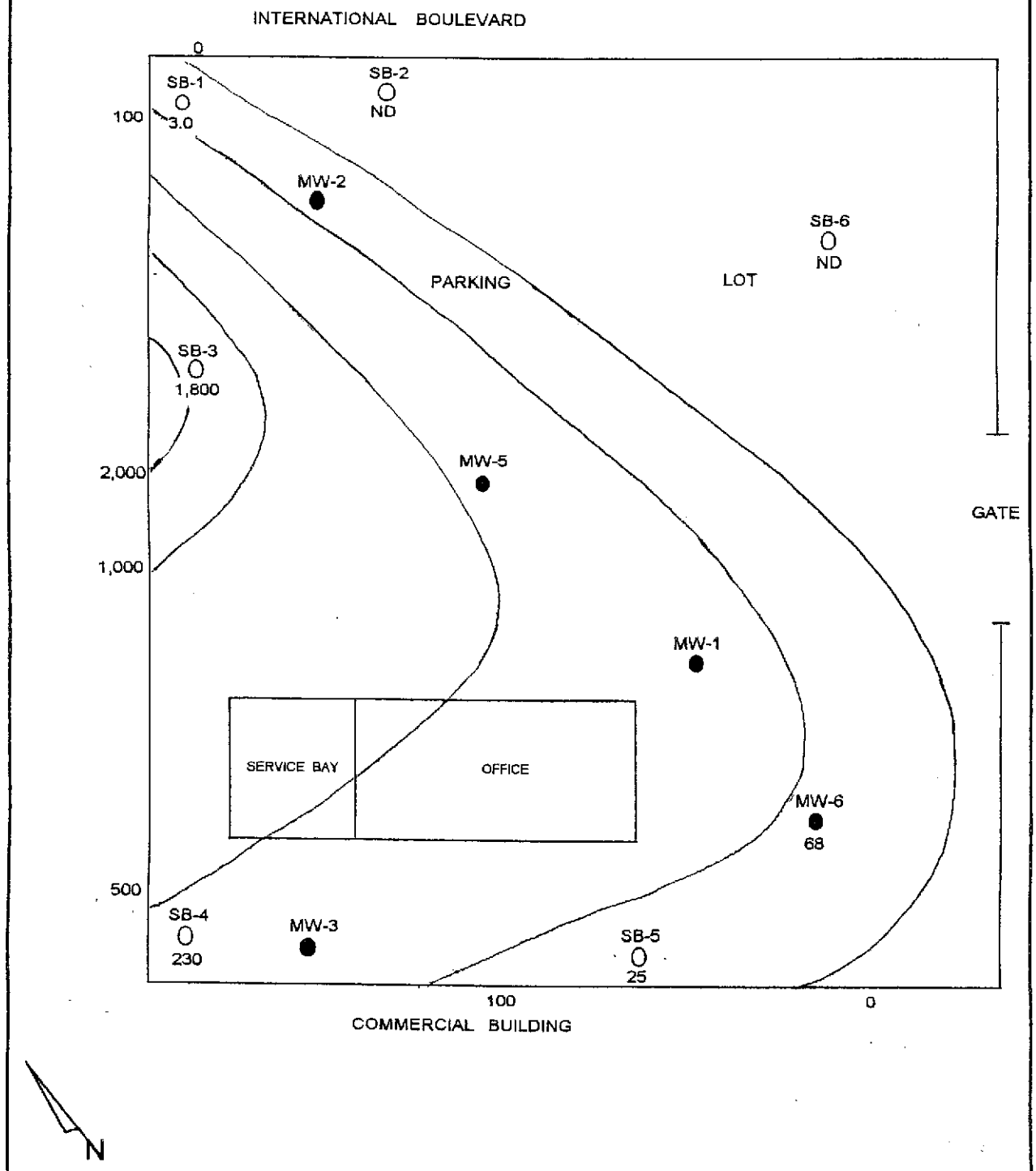

FIGURE 4

MAP TYPE: SITE PLAN	TPH RESULTS - SOIL/WATER INTERFACE (10-15 FT)	
SITE ADDRESS:2345 INTERNATIONAL BOULEVARD, OAKLAND, CALIFORNIA	DATE: JULY 10, 2001	SCALE: 1" : 25'

SEQUOIA ENVIRONMENTAL 111 Aladdin Avenue, Suite 5, San Leandro, CA 94577 (510)614-1906

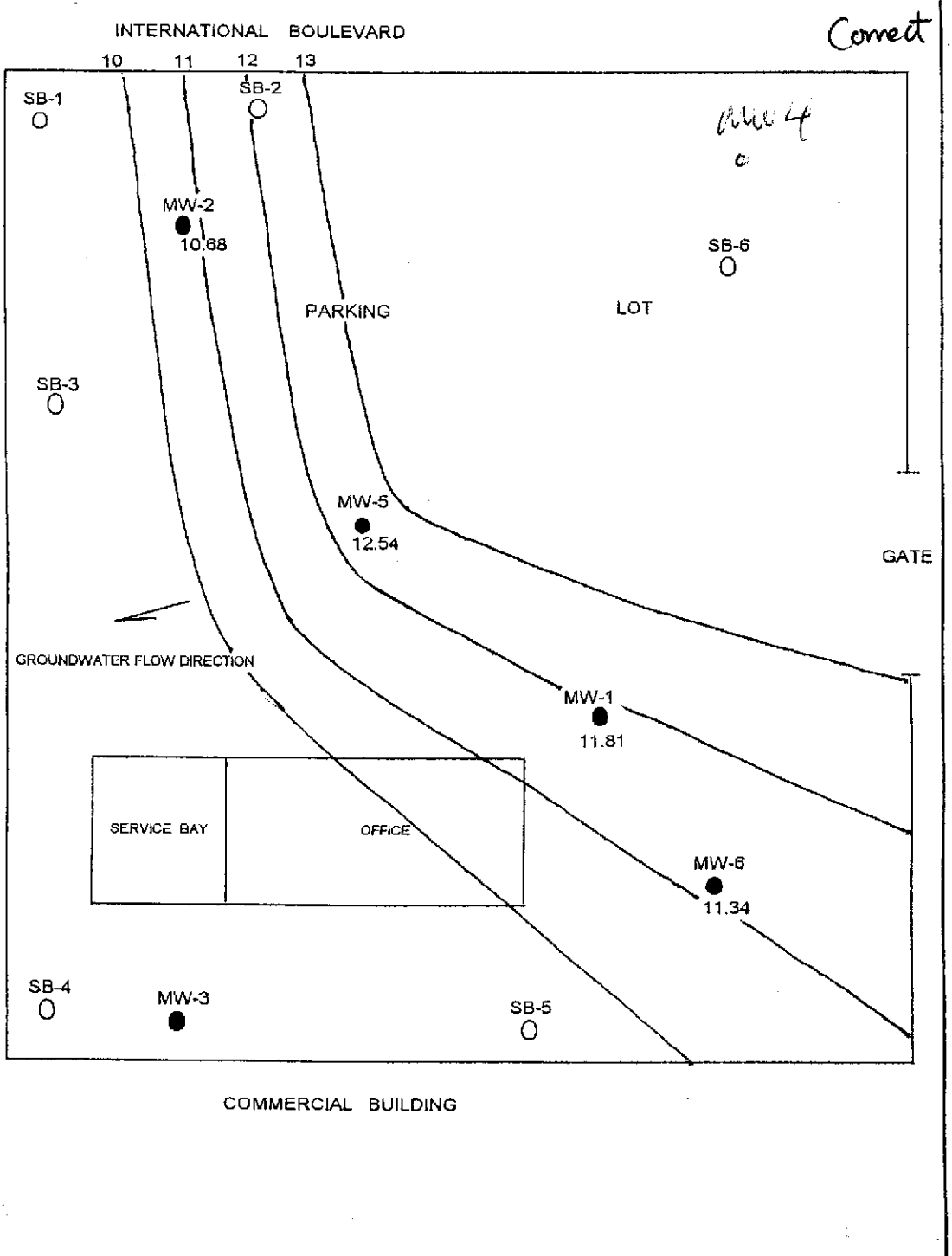

FIGURE 5

MAP TYPE: SITE PLAN (GROUNDWATER FLOW DIRECTION JUNE 13, 2001)	● MONITORING WELL LOCATION	
SITE ADDRESS:2345 INTERNATIONAL BOULEVARD, OAKLAND, CALIFORNIA	DATE: JULY 10, 2001	SCALE: 1" = 25'

SEQUOIA ENVIRONMENTAL 111 Aladdin Avenue, Suite B, San Leandro, CA 94577 (510)614-1900

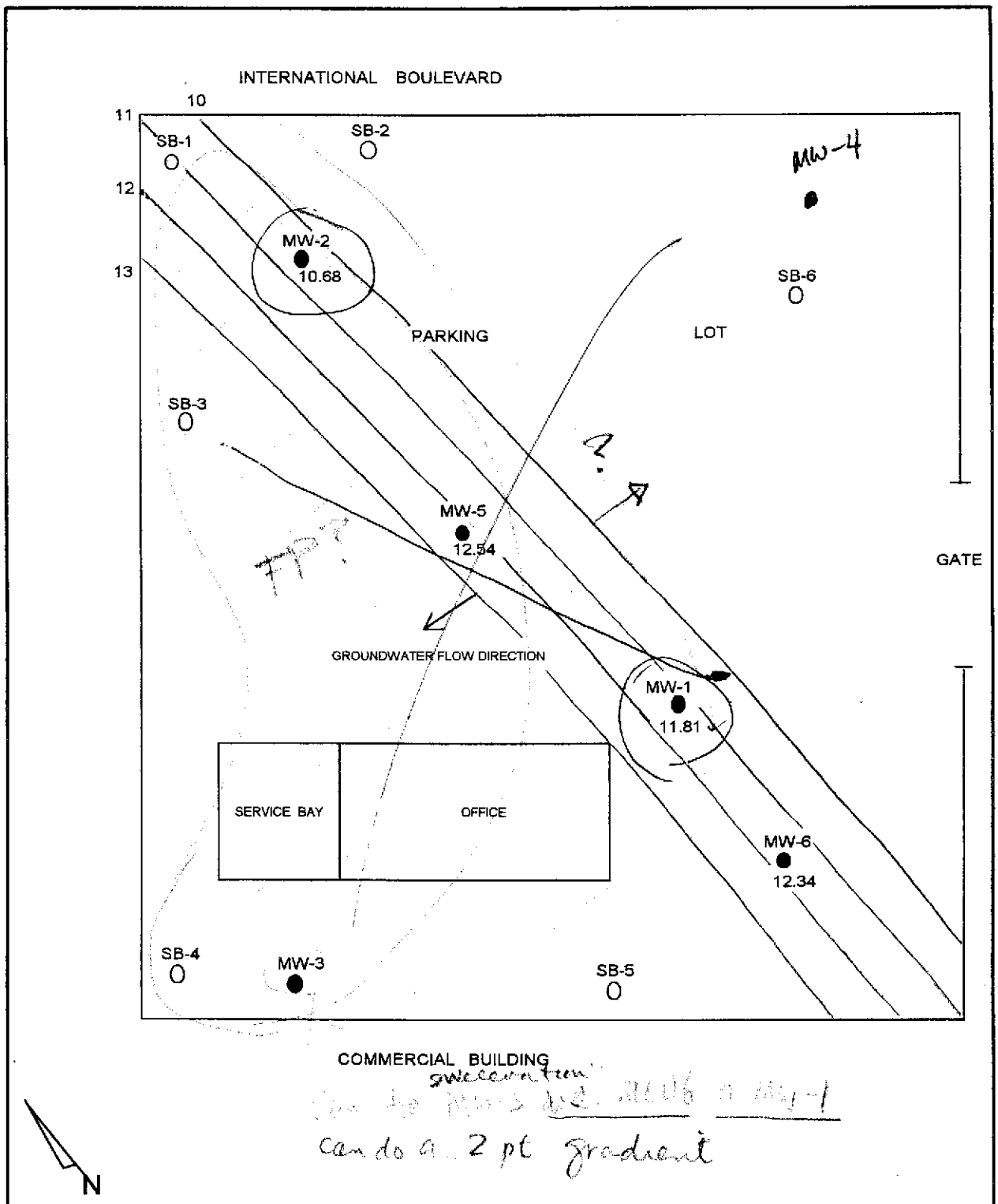

FIGURE 5

MAP TYPE: SITE PLAN (GROUNDWATER FLOW DIRECTION JUNE 13, 2001)	● MONITORING WELL LOCATION	
SITE ADDRESS:2345 INTERNATIONAL BOULEVARD, OAKLAND, CALIFORNIA	DATE: JULY 10, 2001	SCALE: 1" : 25'

SEQUOIA ENVIRONMENTAL 1111 Aladdin Avenue, Suite B, San Leandro, CA 94577 (510)614-1900

Q

- MW-4 left off Figures, should ✓ include in gw contours.
- Will they resurvey MW-3
- gradient, is it correct? maybe not
- do they still plan to go on w/ RAP as proposed? – delay - will remove FP first
- will provide revised 9 & 10.

BORING & MONITORING WELL LOG

BORING/ WELL #SB-1

CLEINT: Stanley Wong — PROJECT NAME: Oakland

PROJECT ADDRESS: 2345 International Boulevard, Oakland, California — DATE DRILLED: May 22, 2001

DRILLING METHOD: Hollow Stem Auger — SAMPLER TYPE: CA Split Spoon Sampler

TOTAL DEPTH OF BORING: 15 Feet — WIDTH OF BORING: 6 3/4 - inches

DEPTH TO GROUNDWATER AT THE TIME OF DRILLING: N/A — STATIC WATER LEVEL: N/A

CASING DIAMETER: N/A — CASING LENGTH: N/A — SCREEN DIAMETER: N/A

SCREEN LENGTH: N/A — SLOT SIZE: N/A

DRILLING COMPANY: Bay Area Exploration — DRILLING LIC.: C57-522125

CORE SAMPLE CONDITION LEGEND: ▒ Undisturbed ☒ Disturbed ☐ No Recovery

LOGGED BY: Chris Wabuzoh — REVIEWED BY: Ola Balogun

DEPTH	SOIL TYPE	PID (ppm)	RECOVERY	CONSTRUCTION: SEAL	CASING	SCREEN
ASPHALT covering						
SANDY CLAY: Brown; about 40% coarse, coarse to fine, hard angular to rounded sand; about 60% clay, moderate plasticity; dry to moist; no hydrocarbon odor; no reaction with hydrochloric acid (HCL).	CL	0	2,3,5 ▒			
5						
SANDY CLAY: Greenish; about 40% coarse to fine, hard subangular to rounded sand; about 60% clay, moderate to high plasticity, moist; has hydrocarbon odor; no reaction with HCL.	CL	264	5,11,17 ▒			
10						
CLAYEY SAND: Brown; about 40% clay, moderate to high plasticity; about 50% coasre to fine, hard rounded sand; about 10% gravel size about 1/4 inch; moist to saturated; no hydrocarbon odor; Groundwater water encountered.	CL	4	5,11,13 ▒			
15						
20						
25						

BORING & MONITORING WELL LOG

BORING/ WEL #SB-2

CLEINT: Stanley Wong — PROJECT NAME: Oakland

PROJECT ADDRESS: 2345 International Boulevard, Oakland, California — DATE DRILLED: May 22, 2001

DRILLING METHOD: Hollow Stem Auger — SAMPLER TYPE: CA Split Spoon Sampler

TOTAL DEPTH OF BORING: 20 Feet — WIDTH OF BORING: 6 3/4 - inches

DEPTH TO GROUNDWATER AT THE TIME OF DRILLING: N/A — STATIC WATER LEVEL: N/A

CASING DIAMETER: N/A — CASING LENGTH: N/A — SCREEN DIAMETER: N/A

SCREEN LENGTH: N/A — SLOT SIZE: N/A

DRILLING COMPANY: Bay Area Exploration — DRILLING LIC.: C57-522125

CORE SAMPLE CONDITION LEGEND: ▒ Undisturbed ☒ Disturbed ☐ No Recovery

LOGGED BY: Chris 'Wabuzoh — REVIEWED BY: Ola Balogun

DEPTH	SOIL TYPE	PID (ppm)	RECOVERY	CONSTRUCTION: SEAL	CASING	SCREEN
ASPHALT covering						
SANDY CLAY: Brown; about 40% coarse to fine, hard angular to subrounded sand; about 60% clay, moderate plasticity; dry to moist; no hydrocarbon odor; no reaction with hydrochloric acid (HCL).	CL	0	4,6,9 ▒			
5						
SANDY CLAY: Gray with iron staining; about 40% coarse to fine, hard subangular to rounded sand; about 60% clay, moderate to high plasticity, moist; has hydrocarbon odor; no reaction with HCL.	CL	270				
10			4,10,12 ▒			
CLAYEY SAND: Brown; about 30% clay, moderate to high plasticity; about 60% coasre to fine, hard rounded sand; about 10% gravel size about 1/4 inch; moist; no hydrocarbon odor; no reaction with HCL.	SC	1				
15			8,11,15 ▒			
SANDY CLAY: Brown; about 30% coarse to very fine, hard rounded sand; about 70% clay moderate to high plasticity; moist to saturated; no hydrocarbon odor; no reaction with HCL.	SC	0				
20			5,10,15 ▒			
25						

BORING & MONITORING WELL LOG

BORING/ WEL #SB-3

CLEINT: Stanley Wong — PROJECT NAME: Oakland

PROJECT ADDRESS: 2345 International Boulevard, Oakland, California — DATE DRILLED: May 22, 2001

DRILLING METHOD: Hollow Stem Auger — SAMPLER TYPE: CA Split Spoon Sampler

TOTAL DEPTH OF BORING: 20 Feet — WIDTH OF BORING: 6 3/4 - inches

DEPTH TO GROUNDWATER AT THE TIME OF DRILLING: N/A — STATIC WATER LEVEL: N/A

CASING DIAMETER: N/A — CASING LENGTH: N/A — SCREEN DIAMETER: N/A

SCREEN LENGTH: N/A — SLOT SIZE: N/A

DRILLING COMPANY: Bay Area Exploration — DRILLING LIC.: C57-522125

CORE SAMPLE CONDITION LEGEND: ▒ Undisturbed ☒ Disturbed ☐ No Recovery

LOGGED BY: Chris Wabuzoh — REVIEWED BY: Ola Balogun

DEPTH	SOIL TYPE	PID (ppm)	RECOVERY	CONSTRUCTION: SEAL	CASING	SCREEN
ASPHALT covering						
NO RECOVERY		0	4,8,11 ☐			
5						
SANDY CLAY: Gray; about 30% coarse to fine, hard subangular to rounded sand; about 60% clay, moderate to high plasticity, moist; has hydrocarbon odor; no reaction with HCL.	CL	346	4,8,11 ▒			
10						
CLAYEY SAND: Gray; about 30% clay, moderate to high plasticity; about 60% coasre to fine, hard rounded sand; about 10% gravel size about 1/4 inch; moist; has hydrocarbon odor; no reaction with HCL.	SC	400	7,11,18 ▒			
15						
SANDY CLAY: Brown; about 35% coarse to very fine, hard rounded sand; about 60% clay moderate to high plasticity; about 5% gravel size about 1/4 inch; moist to saturated; no hydrocarbon odor; no reaction with HCL.	SC	5	4,18,14 ▒			
20						
25						

BORING & MONITORING WELL LOG

BORING/ WEL #SB-4

CLEINT: Stanley Wong — PROJECT NAME: Oakland

PROJECT ADDRESS: 2345 International Boulevard, Oakland, California — DATE DRILLED: May 22, 2001

DRILLING METHOD: Hollow Stem Auger — SAMPLER TYPE: CA Split Spoon Sampler

TOTAL DEPTH OF BORING: 20 Feet — WIDTH OF BORING: 6 3/4 - inches

DEPTH TO GROUNDWATER AT THE TIME OF DRILLING: N/A — STATIC WATER LEVEL: N/A

CASING DIAMETER: N/A — CASING LENGTH: N/A — SCREEN DIAMETER: N/A

SCREEN LENGTH: N/A — SLOT SIZE: N/A

DRILLING COMPANY: Bay Area Exploration — DRILLING LIC.: C57-522125

CORE SAMPLE CONDITION LEGEND: ▒ Undisturbed ☒ Disturbed ☐ No Recovery

LOGGED BY: Chris 'Wabuzoh — REVIEWED BY: Ola Balogun

	DEPTH	SOIL TYPE	PID (ppm)	RECOVERY	CONSTRUCTION		
					SEAL	CASING	SCREEN
ASPHALT covering							
SANDY CLAY: Dark brown; about 40% coarse to fine, hard, angular to subrounded sand; about 60% clay, moderate plasticity; moist; no hydrocarbon odor; no reaction with HCL.	5	CL	0	2,2,3 ▒			
SANDY CLAY: Dark gray; about 30% coarse to fine, hard subangular to rounded sand; about 70% clay, moderate to high plasticity, moist; has slight hydrocarbon odor; no no reaction with HCL.	10	CL	100	4,8,10 ▒			
CLAYEY SAND: Greenish gray; about 40% coarse to fine, hard subangular to rounded sand; about 60% clay; moderate to high plasticity; moist; has hydrocarbon odor; no reaction with HCL.	15	SC	169	8,12,15 ▒			
CLAYEY SAND: Light brown; about 40% coarse to very fine, hard rounded sand; about 60% clay, moderate to high plasticity; some gravel size about 1/4 inch; moist to saturated; groundwater encountered; no hydrocarbon odor; no reaction with HCL.	20	SC	0	3,6,8 ▒			
	25						

BORING & MONITORING WELL LOG

BORING/ WEL #SB-5

CLEINT: Stanley Wong — PROJECT NAME: Oakland

PROJECT ADDRESS: 2345 International Boulevard, Oakland, California — DATE DRILLED: May 22, 2001

DRILLING METHOD: Hollow Stem Auger — SAMPLER TYPE: CA Split Spoon Sampler

TOTAL DEPTH OF BORING: 20 Feet — WIDTH OF BORING: 6 3/4 - inches

DEPTH TO GROUNDWATER AT THE TIME OF DRILLING: N/A — STATIC WATER LEVEL: N/A

CASING DIAMETER: N/A — CASING LENGTH: N/A — SCREEN DIAMETER: N/A

SCREEN LENGTH: N/A — SLOT SIZE: N/A

DRILLING COMPANY: Bay Area Exploration — DRILLING LIC.: C57-522125

CORE SAMPLE CONDITION LEGEND: ▒ Undisturbed ☒ Disturbed ☐ No Recovery

LOGGED BY: Chris Wabuzoh — REVIEWED BY: Ola Balogun

DEPTH	SOIL TYPE	PID (ppm)	RECOVERY	CONSTRUCTION: SEAL	CASING	SCREEN
ASPHALT covering						
SANDY CLAY: Dark brown; about 40% coarse to fine, hard, angular to subrounded sand; about 60% clay, moderate plasticity; moist; no hydrocarbon odor; no reaction with HCL.	CL	0	2,3,5 ▒			
5						
SANDY CLAY: Dark brown; about 30% coarse to fine, hard subangular to rounded sand; about 70% clay, moderate to high plasticity, moist; no hydrocarbon odor; no reaction with HCL.	CL	0	4,5,10 ▒			
10						
CLAYEY SAND: Greenish; about 30% coarse to fine, hard subangular to rounded sand; 70% clay; moderate to high plasticity; some gravel; moist; has hydrocarbon odor; no reaction with HCL.	SC	40	5,13,16 ▒			
15						
GRAVELLY SANDY CLAY: Brown; about 30% coarse to very fine, hard rounded sand; 50% clay, moderate to high plasticity; about 20% gravel size about 1/4 inch; moist to saturated; groundwater encountered; no hydrocarbon odor; no reaction with HCL.	CL	7	4,9,11 ▒			
20						
25						

BORING & MONITORING WELL LOG

BORING/ WEL #SB-6

CLEINT: Stanley Wong — PROJECT NAME: Oakland

PROJECT ADDRESS: 2345 International Boulevard, Oakland, California — DATE DRILLED: May 22, 2001

DRILLING METHOD: Hollow Stem Auger — SAMPLER TYPE: CA Split Spoon Sampler

TOTAL DEPTH OF BORING: 10 Feet — WIDTH OF BORING: 6 3/4 - inches

DEPTH TO GROUNDWATER AT THE TIME OF DRILLING: N/A — STATIC WATER LEVEL: N/A

CASING DIAMETER: N/A — CASING LENGTH: N/A — SCREEN DIAMETER: N/A

SCREEN LENGTH: N/A — SLOT SIZE: N/A

DRILLING COMPANY: Bay Area Exploration — DRILLING LIC.: C57-522125

CORE SAMPLE CONDITION LEGEND: ▒ Undisturbed ☒ Disturbed ☐ No Recovery

LOGGED BY: Chris 'Wabuzoh REVIEWED BY: Ola Balogun

DEPTH	SOIL TYPE	PID (ppm)	RECOVERY	CONSTRUCTION: SEAL	CASING	SCREEN
ASPHALT covering						
SANDY CLAY: Dark brown; about 40% coarse to fine, hard, angular to subrounded sand; about 60% clay, moderate plasticity; moist; no hydrocarbon odor; no reaction with HCL.	CL	0	2,2,2 ▒			
5						
SANDY CLAY: Dark brown; about 30% coarse to fine, hard subangular to rounded sand; about 70% clay, moderate to high plasticity, moist; no hydrocarbon odor; no reaction with HCL.	CL	0	1,2,2 ▒			
10						
15						
20						
25						

BORING & MONITORING WELL LOG

BORING/ WEL #SB-7

CLEINT: Stanley Wong — PROJECT NAME: Oakland

PROJECT ADDRESS: 2345 International Boulevard, Oakland, California — DATE DRILLED: May 22, 2001

DRILLING METHOD: Hollow Stem Auger — SAMPLER TYPE: CA Split Spoon Sampler

TOTAL DEPTH OF BORING: 20 Feet — WIDTH OF BORING: 6 3/4 - inches

DEPTH TO GROUNDWATER AT THE TIME OF DRILLING: N/A — STATIC WATER LEVEL: N/A

CASING DIAMETER: 4 inches — CASING LENGTH: 15 feet — SCREEN DIAMETER: 4 inches

SCREEN LENGTH: 5 feet — SLOT SIZE: 0.02 inch

DRILLING COMPANY: Bay Area Exploration — DRILLING LIC.: C57-522125

CORE SAMPLE CONDITION LEGEND: Undisturbed | Disturbed | No Recovery

LOGGED BY: Chris 'Wabuzoh — REVIEWED BY: Ola Balogun

DEPTH	SOIL TYPE	PID (ppm)	RECOVERY	CONSTRUCTION: SEAL	CONSTRUCTION: CASING	CONSTRUCTION: SCREEN
ASPHALT covering						
SANDY CLAY: Dark brown; about 40% coarse to fine, hard angular to subrounded sand; about 60% clay, moderate plasticity; moist; no hydrocarbon odor; no reaction with HCL.	CL	3	2,2,3	CEMENT GROUT		
5						
SANDY CLAY: Gray; about 30% coarse to fine, hard subangular to rounded sand; about 60% clay, moderate to high plasticity; moist; has hydrocarbon odor; no reaction with HCL.	CL	36	4,5,8		CASING	
10						
CLAYEY SAND: Gray; about 30% clay, moderate to high plasticity; about 60% coasre to fine, hard rounded sand; about 10% gravel size about 1/4 inch; moist; has hydrocarbon odor; no reaction with HCL.	SC	370	6,10,12			
15						
SANDY CLAY: Brown; about 35% coarse to very fine, hard rounded sand; about 60% clay moderate to high plasticity; about 5% gravel size about 1/4 inch; moist to saturated; no hydrocarbon odor; no reaction with HCL.	CL	2	5,7,8			
20						
25						

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Sequoia Environmental	Client Project ID: #SW-02; Oakland	Date Sampled: 05/22/01
1111 Aladdin Ave., Suite B		Date Received: 05/23/01
San Leandro, CA 94577	Client Contact: Chris 'Wabuzoh	Date Extracted: 05/23-05/25/01
	Client P.O:	Date Analyzed: 05/23-05/25/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	% Recovery Surrogate
68163	SB1-10'	S	240,b,j	ND<0.20	ND<0.04	0.19	0.19	0.45	---#
68164	SB1-15'	S	3.0,b,j	ND	ND	0.005	0.009	0.013	113
68165	SB2-10'	S	89,b,j	ND<0.10	ND	ND	0.033	0.25	---#
68166	SB2-15'	S	ND	ND	ND	ND	ND	ND	108
68167	SB2-20'	S	ND	ND	ND	ND	ND	ND	107
68168	SB3-10'	S	300,b,j	ND<0.20	ND<0.01	ND<0.01	0.76	1.2	---#
68169	SB3-15'	S	1800,a	ND<2.0	3.3	5.5	48	53	---#
68170	SB3-20'	S	8.5,a	ND	0.009	0.023	0.10	0.12	---#
68171	SB4-10'	S	ND	ND	ND	ND	ND	ND	103
68172	SB4-15'	S	230,b,j	ND<0.10	0.23	ND	1.5	1.1	---#
68173	SB4-20'	S	ND	ND	ND	ND	ND	ND	99
68174	SB5-15'	S	25,a	ND	0.035	ND	0.10	0.11	---#
68175	SB5-20'	S	1.9,c	ND	0.62	ND	ND	ND	102
68176	SB6-10'	S	ND	ND	ND	ND	ND	ND	96
68177	SB7-10'	S	18,j	ND	ND	ND	0.056	0.11	100
68178	SB7-15'	S	68,a	ND<0.10	0.28	0.25	0.36	0.35	---#
68179	SB7-20'	S	ND	ND	ND	ND	ND	ND	104
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

Date: 05/23/01 Matrix: Soil

Extraction: TTLC

Compound	Concentration: mg/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 52201					Instrument:		GC-12
Surrogate1	0.000	95.000	102.000	100.00	95	102	7.1
Xylenes	0.000	0.306	0.316	0.30	102	105	3.2
Ethyl Benzene	0.000	0.100	0.104	0.10	100	104	3.9
Toluene	0.000	0.100	0.107	0.10	100	107	6.8
Benzene	0.000	0.099	0.106	0.10	99	106	6.8
MTBE	0.000	0.107	0.115	0.10	107	115	7.2
GAS	0.000	0.746	0.748	1.00	75	75	0.3
SampleID: 51701					Instrument:		GC-11 A
Surrogate1	0.000	106.000	104.000	100.00	106	104	1.9
TPH (diesel)	0.000	316.000	293.000	300.00	105	98	7.6

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

25972zsq11.doc 1 of 2

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY

Report To: Chris Wabuzoh Bill To: SAME
Company: Sequoia Environmental
1117 Aladdin Avenue, Suite B
San Leandro, CA 94577
Tele: (510) 614-1900 Fax: (510) 614-2923
Project #: SW-02 Project Name:
Project Location: Oakland
Sampler Signature: Chris Wabuzoh

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	BTEX & TPH as Gas (602/8020 + 8015)/ MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	pH	TSS	Specific Conductivity	Comments
SB1-10'		5.22.01	pm	1			✓				✓				✓																		68163
SB1-15'			pm	1			✓				✓				✓																		68164
SB2-10'			pm	1			✓				✓				✓																		68165
SB2-15'			pm	1			✓				✓				✓																		68166
SB2-20'			pm	1			✓				✓				✓																		68167
SB3-10'			AM	1			✓				✓				✓																		68168
SB3-15'			AM	1			✓				✓				✓																		68169
SB3-20'			AM	1			✓				✓				✓																		68170
SB4-10'			AM	1			✓				✓				✓																		68171
SB4-15'			AM	1			✓				✓				✓																		68172
SB4-20			AM	1			✓				✓				✓																		68173
SB5-15'			AM	1			✓				✓				✓																		68174
SB5-20'			AM	1			✓				✓				✓																		68175
SB6-10'		↓	AM	1			✓				✓				✓																		68176
SB7-10'		5.22.01	pm	1			✓				✓				✓																		68177

Analysis Request | Other | Comments

Relinquished By:	Date:	Time:	Received By:
Chris Wabuzoh	5.23.01	1040	Maria Venegas
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	

VOAS | O&G | METALS | OTHER

ICE/t° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT
PRESERVATION APPROPRIATE ✓
CONTAINERS

Remarks: Normal TAT

cc B.W

McCAMPBELL ANALYTICAL INC.
110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY

Report To: Chris Wabuzoh Bill To: SAME
Company: Sequoia Environmental
1111 Maddin Avenue, Suite B
San Leandro, CA 94577
Tele: (510) 614-1900 Fax: (510) 614-2923
Project #: ~~Oakland~~ SW-02 Project Name:
Project Location: Oakland
Sampler Signature: Chris Wabuzoh

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	BTEX & TPH as Gas (602/8020 + 8015)/ MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	pH	TSS	Specific Conductivity	Comments
SB7-15'		5-22-01	pm	1			✓				✓				✓																		68178
SB7-20'		5-22-01	pm	1			✓				✓				✓																		68179

VOAS | O&G | METALS | OTHER

ICE/+° ✓ PRESERVATION
GOOD CONDITION ✓ APPROPRIATE
HEAD SPACE ABSENT ✓ CONTAINERS

Relinquished By:	Date:	Time:	Received By:
Chris Wabuzoh	5-23-01	1040	Maria Venegas
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Remarks: Normal TAT

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Sequoia Environmental	Client Project ID: #SW-02; Oakland	Date Sampled: 05/22/01
1111 Aladdin Ave., Suite B		Date Received: 05/23/01
San Leandro, CA 94577	Client Contact: Chris 'Wabuzoh	Date Extracted: 05/23-05/30/01
	Client P.O:	Date Analyzed: 05/23-05/30/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	% Recovery Surrogate
68157	SB-1	W	11,000,a	ND<20	8.1	23	81	7.1	---#
68158	SB-2	W	1200,b,j	ND	ND	3.5	5.5	ND	114
68159	SB-3	W	53,000,a,h	ND<200	790	110	2000	2000	102
68160	SB-4	W	170,000,a,h	ND<200	420	ND<45	1500	800	109
68161	SB-5	W	27,000,a	ND<500	8400	99	230	120	106
68162	SB-6	W	ND	ND	ND	ND	ND	ND	104
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

Date: 05/23/01 Matrix: Water

Extraction: TTLC

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 52201					Instrument:		GC-12
Surrogate1	0.000	92.0	93.0	100.00	92	93	1.1
Xylenes	0.000	28.2	28.1	30.00	94	94	0.4
Ethyl Benzene	0.000	9.3	9.3	10.00	93	93	0.0
Toluene	0.000	9.3	9.2	10.00	93	92	1.1
Benzene	0.000	9.2	9.1	10.00	92	91	1.1
MTBE	0.000	10.5	10.4	10.00	105	104	1.0
GAS	0.000	92.2	90.9	100.00	92	91	1.5
SampleID: 52101					Instrument:		GC-11 A
Surrogate1	0.000	114.0	114.0	100.00	114	114	0.0
TPH (diesel)	0.000	7875.0	7800.0	7500.00	105	104	1.0

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

25971ZSQ10.doc

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY

Report To: Chris Walbrzoh Bill To: Same
Company: Sequoia Environmental
1111 Maddux Avenue, Suite B
San Leandro, Ca 94577
Tele: (510) 614-1900 Fax: (510) 614-2923
Project #: SW-02 Project Name:
Project Location: Oakland
Sampler Signature: Chris Walbrzoh

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED Ice	HCl	HNO_3	Other	BTEX & TPH as Gas (602/8020 + 8015)/ MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	pH	TSS	Specific Conductivity	Comments
SB-1		5-22-01	pm	2		✓					✓	✓			✓																		68157 +
SB-2			pm	2		✓					✓	✓			✓																		68158 +
SB-3			pm	2		✓					✓	✓			✓																		68159 +
SB-4			pm	2		✓					✓	✓			✓																		68160 +
SB-5			pm	2		✓					✓	✓			✓																		68161 +
SB-6		5-22-01	pm	2		✓					✓	✓			✓																		68162 +

ICE/t° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
PRESERVATION APPROPRIATE ✓
CONTAINERS ✓
VOAS | O&G | METALS | OTHER

Relinquished By:	Date:	Time:	Received By:
Chris Walbrzoh	5-23-01	1040	Maria Venegas
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Remarks: Normal TAT

TB. MW

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Sequoia Environmental	Client Project ID: #SW-02	Date Sampled: 06/13/01
1111 Aladdin Ave., Suite B		Date Received: 06/14/01
San Leandro, CA 94577	Client Contact: Chris Wabuzoh	Date Extracted: 06/15/01
	Client P.O:	Date Analyzed: 06/15/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	% Recovery Surrogate
69777	MW-3	W	8400,a	ND<20	1300	25	64	32	110
69778	MW-6	W	7600,a	ND<10	1400	42	19	14	---#
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

Date: 06/15/01-06/16/01 Matrix: Water

Extraction: TTLC

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 60201					Instrument:		GC-7
Surrogate1	0.000	102.0	106.0	100.00	102	106	3.8
Xylenes	0.000	30.6	30.8	30.00	102	103	0.7
Ethyl Benzene	0.000	9.6	9.8	10.00	96	98	2.1
Toluene	0.000	9.8	10.0	10.00	98	100	2.0
Benzene	0.000	9.3	9.5	10.00	93	95	2.1
MTBE	0.000	9.5	10.3	10.00	95	103	8.1
GAS	0.000	97.5	94.9	100.00	98	95	2.8
SampleID: 61201					Instrument:		GC-2 A
Surrogate1	0.000	103.0	105.0	100.00	103	105	1.9
TPH (diesel)	0.000	7600.0	7775.0	7500.00	101	104	2.3

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

26307 ZSQA

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY

Report To: Chris Wabuzoh Bill To:
Company: Sequoia Environmental
1111 Aladdin Avenue Suite B
San Leandro, CA 94577
Tele: (510-614-1900 Fax: (510-614-2723
Project #: SW-02 Project Name:
Project Location: Oakland
Sampler Signature: Chris Wabuzoh

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED Ice	HCl	HNO_3	Other
MW-3		6-13-01	pm	2		✓					✓	✓		
MW-6		6-13-01	pm	2		✓					✓	✓		

Analysis Request															Other			Comments
BTEX & TPH as Gas (602/8020 + 8015)/ MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	pH	TSS	Specific Conductivity	
✓																		69777
✓																		69778

Relinquished By:	Date:	Time:	Received By:
Chris Wabuzoh	6-14	1015	Mona Venegas
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Remarks: