

ENVIRONMENTAL
PROTECTION

95 APR 20 PM 2:37



Epigene International
CONSULTING GEOLOGISTS

March 31, 1995

Mr. J. W. Silveira
499 Embarcadero
Oakland, CA 94606

Subject: Installation of Monitoring Wells and First Quarter Monitoring for Site Located
at 1200 20th Ave., Oakland

INTRODUCTION

The site is located at the northeast corner of 20th Avenue and Solano Way in Oakland. A location map is shown on Figure 1. Two gasoline tanks were removed from the site on January 19, 1994. A report documenting the tank removal activities and soil sampling and analysis was prepared by Epigene International dated February 14, 1994.

Based on the presence of soil contamination below the tank, the Alameda County Department of Environmental Health requested a subsurface investigation to assess the possible impact of the contamination on groundwater.

WELL INSTALLATION

Three monitoring wells were installed at the locations shown on Figure 2. Proposed well locations were marked and Underground Service Alert was called to identify the locations of underground utilities in the area of the wells. The well locations were constrained by various logistical concerns including the presence of overhead power lines, the presence of a gas line between the former tank excavation and the building, and the presence of water mains in the street. As all three of the wells are placed on City Of Oakland right-of-way, an excavation permit was obtained from the city prior to the drilling. A copy of the permit is included in Appendix A. Well permits were also obtained from Zone 7 and these permits are included in Appendix A.

MW-1 was installed along the assumed down gradient side of the tank excavations, MW-2 was installed in the assumed up gradient direction and MW-3 was installed in the assumed down gradient direction. The proposed well locations and work plan were provided to and approved by Mr. Barney Chan of Alameda County Department of Environmental Health prior to the initiation of the work.

The wells were installed on February 13 and 14, 1995, using a hollow-stem' augers mounted on a CME 75 drill rig. The drilling contractor was Soils Exploration Services

(license number C-57 582696). Soil cuttings were placed in 55 gallon drums and stored along Solano Way on the edge of the site.

The borings for the three wells were logged in the field by an engineering geologist. The well logs are presented in Appendix B. Wells MW-1 and MW-3 were drilled to a depth of 30 feet after encountering groundwater at a depth of approximately 20 feet. Well MW-2 is located upslope of the other wells and was drilled to a depth of 35 feet.

The construction details for each well are shown on the well logs in Appendix B. They were constructed of 2 inch diameter Schedule 40 PVC pipe. The lower 15 feet of the pipe is factory-cut with .02 inch slots. The bottom of each well is capped with a slip-on end cap. The sand pack is #3 Lonestar sand and extends from the base of the wells to approximately 2 feet above the top of the screened portion of the wells. A transition seal of approximately 2 feet of bentonite was placed above the sand pack. The upper portion of the pipe is solid and extends to just below the ground surface. The well heads are protected in traffic-rated vaults and capped with vapor-proof, locking caps.

SOIL SAMPLING

Soil samples were collected at intervals of five feet starting at a depth of five feet. Two of the samples from each well were selected for analysis. In well MW-1 hydrocarbon odors were detected in all of the soil samples through the depth of the groundwater at a depth of 21 feet. The samples from depths of 5 and 15 were preserved for analysis. The sample from a depth of 10 feet was lost during the initial sampling and was retaken. Due to the disturbed nature of the sample, it was not retained for analysis.

Hydrocarbon odors were not detected in the soil samples from MW-2 and MW-3. Soil samples from the two wells were randomly selected for analysis to characterize the presence or absence of soil contamination at these locations.

The soil samples were collected in a brass tube using a modified California split spoon sampler. The lower most sample from each drive was preserved for analysis. The tubes were sealed with Teflon tape, capped and labeled. They were placed in a cooled ice chest and transported to a State-certified laboratory under chain of custody control.

The selected soil samples were analyzed for TPH as gasoline, BTEX and total lead. The results indicated the presence of contamination in MW-1. The samples from MW-2 and MW-3 were nondetected. Table 1 presents a summary of the results of the soil analysis. The certified laboratory report and chain of custody documentation for the soil samples is included in Appendix C.

GROUNDWATER SAMPLING

The wells were developed, purged and sampled on February 22, 1995. The well development and purging was carried out using an electric submersible pump. Each well was purged of approximately seven to ten casing volumes and allowed to recover prior to sampling. Purge water was placed in 55 gallon drums and stored along the edge of Solano Way on the site.

Groundwater samples were collected in a dedicated bailer and placed in 40 ml VOAS that were supplied by the laboratory. The VOAS were labeled and stored in a cooled ice chest for transportation to a State-certified laboratory under chain of custody control.

The groundwater samples from each well were analyzed for TPH as gasoline, BTEX and total lead. Hydrocarbon contamination was only detected in MW-1. The Table 2 presents a summary of the results. The certified laboratory report and chain of custody documentation for the groundwater samples is presented in Appendix D.

GROUNDWATER GRADIENT

The elevation for the top of casing of each well was surveyed to mean sea level based on the City of Oakland datum. The elevations for each well are shown in Table 3. Depth to groundwater was originally measured on February 22 and remeasured on March 7. The depth to groundwater measurements and calculated groundwater elevations are also presented in Table 3.

The direction and slope of the gradient was calculated using a three-point solution. The direction of the gradient for both the February and March gauging is northward as shown on Figure 3. The slope of the gradient was calculated at 0.07 ft/ft for February and 0.06 ft/ft for March.

CONCLUSIONS AND RECOMMENDATIONS

The wells should be monitored on a quarterly basis to confirm the presence of contamination in MW-1 and the absence of contamination in MW-2 and MW-3. The next quarterly monitoring should be carried out in May of this year.

The northward trend of the groundwater gradient is somewhat anomalous to the northwestward trend that was expected. The trend of the gradient may be somehow related to the heavy winter rains as gradient at 2301 East 12th Street located several blocks away from the site showed a more northerly trend in February. The future gradient

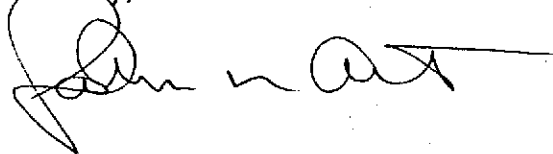
Well Installation and Monitoring Report
1200 20th Avenue, Oakland
March 31, 1995
Page 4

calculations will be used to assess whether the gradient continues to be northward or changes to a northwestwardly trend.

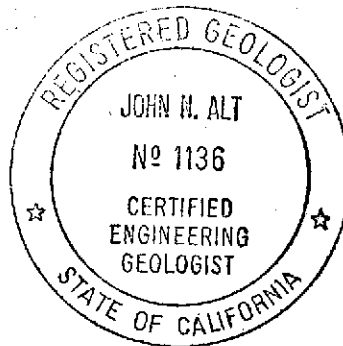
The drums containing the soil cuttings and purge water are to be disposed of by Bernabe and Brinker, Inc. as per the original agreement. The disposal should be completed as soon as possible.

It is a pleasure to work with you on this project. Should you have any questions, please contact the undersigned.

Sincerely,



John N. Alt
Certified Engineering Geologist No. 1136



cc: Mr. James Brinker, Bernabe and Brinker
Mr. Robert Shapiro, Esq.
Mr. Barney Chan, Alameda County Dept. of Environmental Health
Mr. Kevin Graves, Regional Water Quality Control Board

Attachments

Table 2 - Summary of Groundwater Analysis - 1200 20th Avenue Oakland - 2/95

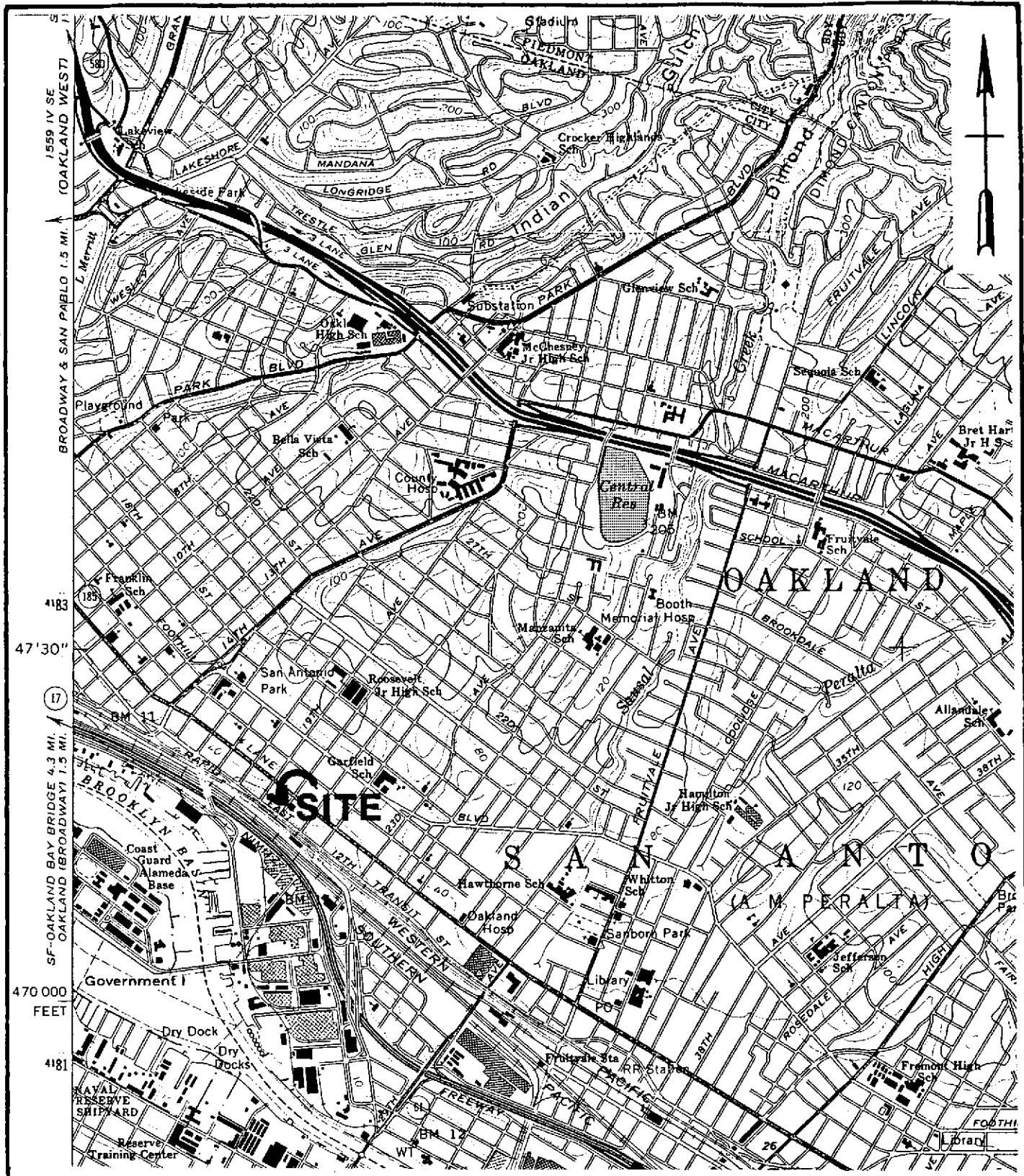
Compound	MW-1	MW-2	MW-3
TPH Gasoline	1900	ND	ND
Benzene	92	ND	ND
Toluene	39	ND	ND
Ethylbenzene	57	ND	ND
Xylenes	260	ND	ND
Lead	0.14	ND	ND

Note: Figures presented in Parts Per Billion (ppb)

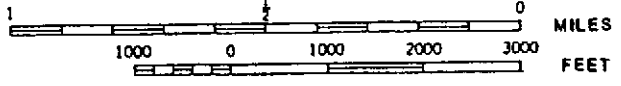
DTW Summary

	MW-1		MW-2		MW-3	
	DTW	Gw Elev	DTW	Gw Elev	DTW	Gw Elev
2/22/95	21.98	-4.83	27.82	-7.66	21.00	-4.87
3/7/95	22.09	-4.84	27.63	-7.47	21.04	-4.91
2/16/96	23.02	-5.87	28.61	-8.45	22.86	-6.23
1/17/97	22.03	5.14 -4.88	27.67	-7.51	21.27	5.14 -4.88
9/17/96	23.18	-6.00	28.58	-8.42	21.83	-5.7

MW-1		2		3	
21.98	22.09	27.82	27.63	21.00	21.04
-4.83	4.84	7.86	7.47	4.87	4.91
17.15	17.15	20.16	20.16	16.13	16.13



1599 IV SE (OAKLAND WEST) 7
 BROADWAY & SAN PABLO 1.5 MI.
 SF-OAKLAND BAY BRIDGE 4.3 MI. (BROADWAY) 1.5 MI.
 47°30'
 470 000 FEET
 4181

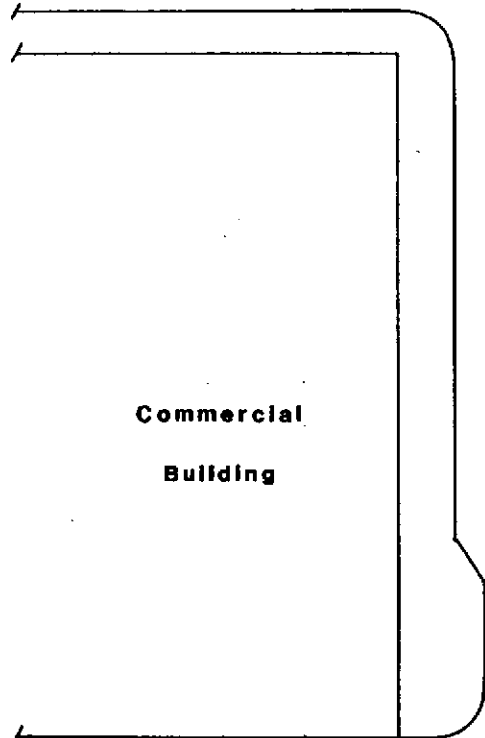


Base map from U.S.G.S. 7 1/2' series
 Oakland East quadrangle, 1980.

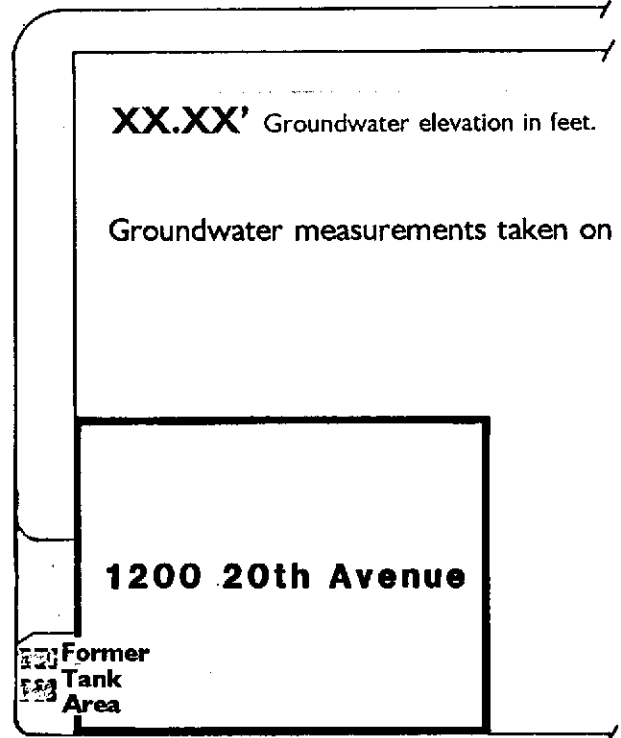
EPIGENE INTERNATIONAL Fig. 1	Project #94087, 1200 20th Avenue, Oakland, California.
	SITE LOCATION MAP

14th

Street



Avenue



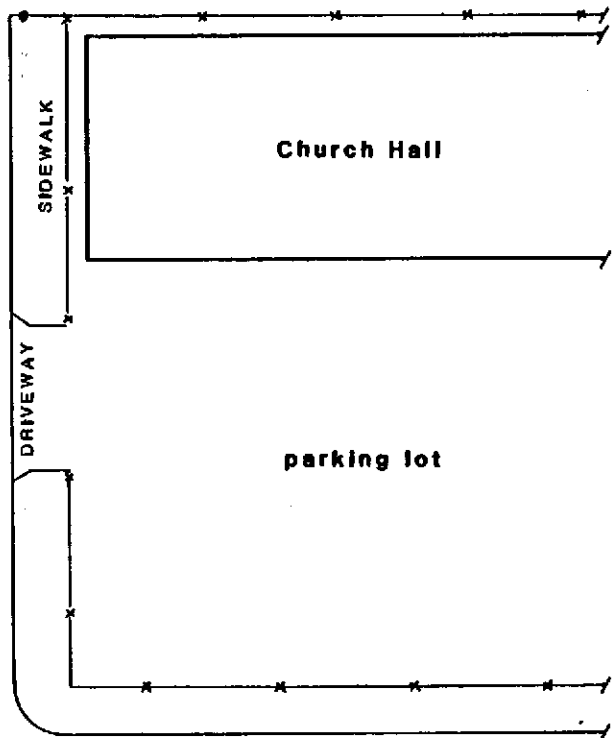
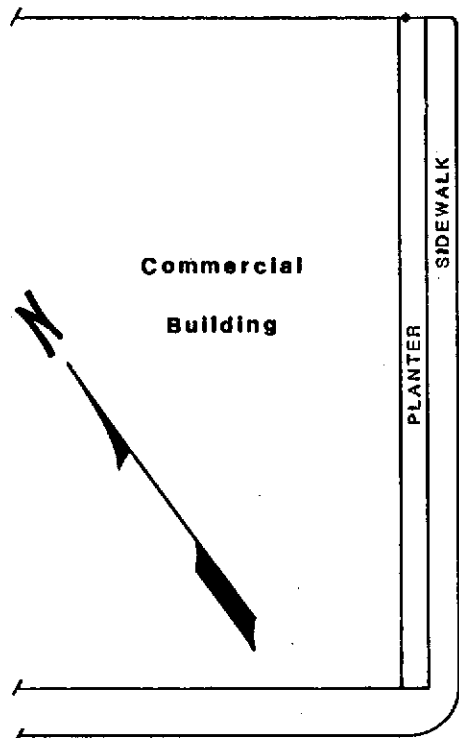
MW-2

MW-1

Solano

Way (alley)

MW-3



20th

12th

Street



Monitoring Well.

EPIGENE INTERNATIONAL

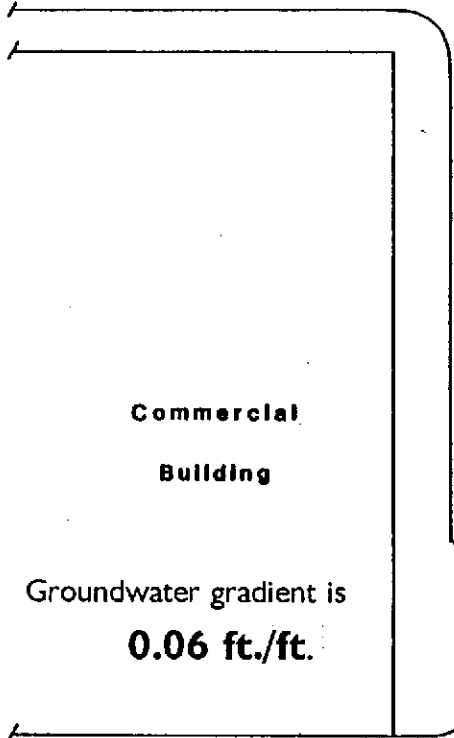
Project # 84087
1200 20th Avenue,
Oakland, California

Fig.

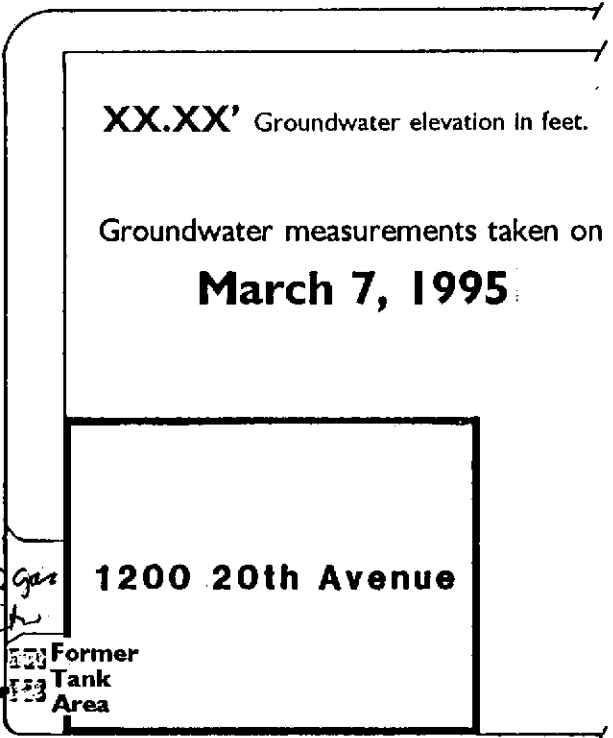
GROUNDWATER GRADIENT

14th

Street



Avenue



MW-2
-7.47'

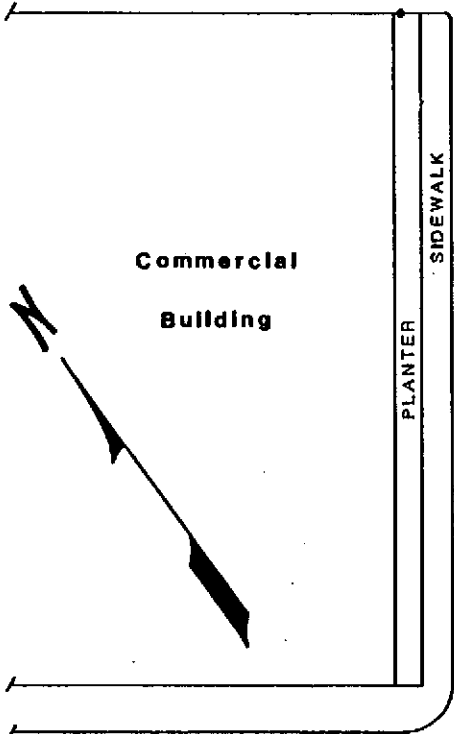
vertical Gas Contaminant

Solano

MW-1
-4.94'

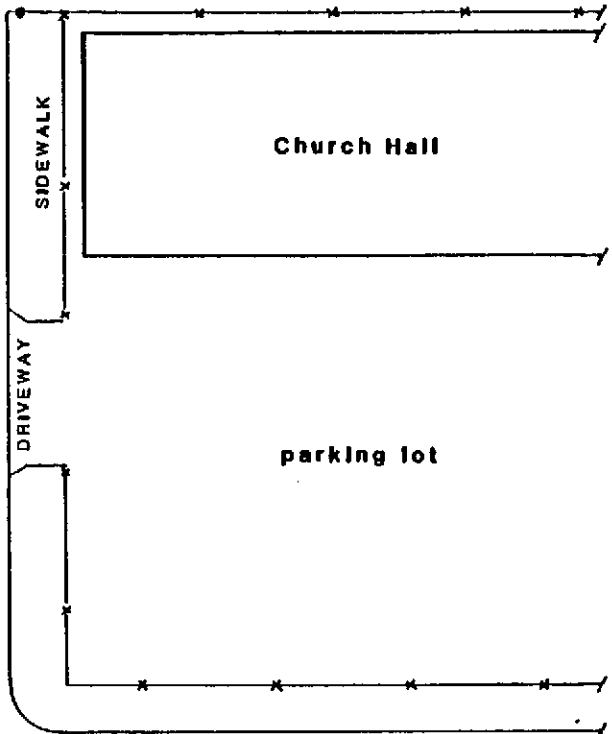
Way

(alley)



MW-3
-4.91'

20th



12th

Street



Monitoring Well.

EPIGENE INTERNATIONAL

Project # 94087

1200 20th Avenue, Oakland, California

Fig.

GROUNDWATER GRADIENT

APPENDIX A

PERMITS

CITY OF OAKLAND

PERMIT TO EXCAVATE IN STREETS OR OTHER WORK AS SPECIFIED

X9500127
Excavation 115.00
Applic. 40.00
Total 235.00
APPL 40.00
EXCV 195.00
SUBTL 235.00
CHECK 235.00

LOCATION OF WORK: 1200 20th Avenue BETWEEN 12th St. AND 14th St.
(Street or Address) (Street/Ave.) (Specify)

PERMISSION TO EXCAVATE IN THE PUBLIC RIGHT-OF-WAY IS HEREBY GRANTED TO:

APPLICANT Soils Exploration Services
ADDRESS P.O. Box 188, Benicia, California, 94510 PHONE #: (707) 745-2928

TYPE OF WORK: GAS _____ ELECTRIC _____ WATER _____ TELEPHONE _____ CABLE TV _____ SEWER _____ OTHER drilling
(Specify) 07-9
NATURE OF WORK: Install groundwater monitoring wells.

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5, Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than \$500):

I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 70044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption in this subdivision on more than two structures more than once during any three-year period. (Sec. 7044, Business and Professions Code).

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License Law).

I am exempt under Sec. _____, B&PC for this reason _____

Signature _____ Date _____

PERMIT VOID 90 DAYS FROM DATE OF ISSUE UNLESS EXTENSION GRANTED BY DIRECTOR OF PUBLIC WORKS.

Approximate Starting Date _____ DATE _____

Approximate Completion Date _____ DATE _____

HOLIDAY RESTRICTION (1 NOV - 1 JAN) YES _____ NO

LIMITED OPERATION AREA (7AM - 9AM/4PM - 6PM) YES _____ NO

DATE STREET LAST RESURFACED _____ DATE _____

SPECIAL PAVING DETAIL REQUIRED YES _____ NO

24-HOUR EMERGENCY (707) 745-2928
PHONE NUMBER PERMIT NOT VALID WITHOUT 24 HOUR NUMBER.

Telephone 238-3668 Forty-eight (48) HOURS BEFORE ACTUAL CONSTRUCTION.

ATTENTION

State law requires that contractor/owner call Underground Service Alert two working days before excavating to have below-ground utilities located. This permit is not valid unless applicant has secured an inquiry identification number issued by Underground Service Alert.

Call Toll Free: 800-642-2444 USA ID Number 11969

I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Workers' Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab C).

Policy # _____ Company Name _____

Certified copy is hereby furnished.

Certified copy is filed with the city building inspection dept.

Signature Michael Dzulgaj Date Feb 7, '95
(This section need not be completed if the permit is for one hundred dollars (\$100) or less.)

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws of California.

Signature _____ Date _____

This permit issued pursuant to all provisions of Chapter 8, Article 2 of the Oakland Municipal Code.

This permit is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance.

CONTRACTOR

I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

LICENSE # 582696 CITY BUSINESS TAX # _____

Michael Dzulgaj Date Feb. 7, 1995
Signature of Contractor Owner or Agent

Agent for Contractor Owner

#1 OFFICIAL USE ONLY
UTILITY COMPANY REPORT

Supervisor _____
Completion Date _____

CITY INSPECTOR'S REPORT

BACKFILL _____ PAVING _____

Initials _____

Hours _____

Date _____

Concrete _____

Asphalt _____

Sidewalk _____

Size of Cut: Sq. Ft. _____ Inches _____

Paved by _____ Type _____

Bill No. _____

Charges Backfill _____

Paving _____

Paving Insp. _____

Traffic Striping Replaced _____ Date _____

APPROVED _____

Engineering Services _____ Date _____

Planning _____ Date _____

Field Services _____ Date _____

Construction _____ Date _____

Traffic Engineering _____ Date _____

Electrical Engineering _____ Date _____

DIRECTOR OF PUBLIC WORKS

APPROVED BY: Thomas M. Bond

DATE: 2/7/95

EXTENSION GRANTED BY: _____

DATE: _____

OWNER/BUILDER

WORKER'S COMPENSATION



ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588

VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 1200 20th Avenue
Oakland
Alameda County, California

PERMIT NUMBER 95042
LOCATION NUMBER _____

CLIENT
Name J. W. Silveira
Address 499 Embarcadero Voice (510) 834-9996
City Oakland Zip 94606

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT
Name Epigene International
38750 Paseo Padre Fax (510) 791-3306
Address Parkway, #A-11 Voice (510) 791-1986
City Fremont, California Zip 94536

TYPE OF PROJECT
Well Construction _____ Geotechnical Investigation _____
Cathodic Protection _____ General _____
Water Supply _____ Contamination _____
Monitoring X Well Destruction _____

PROPOSED WATER SUPPLY WELL USE
Domestic _____ Industrial _____ Other n/a
Municipal _____ Irrigation _____

DRILLING METHOD:
Mud Rotary _____ Air Rotary _____ Auger X
Cable _____ Other _____

DRILLER'S LICENSE NO. C-57 #582696

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum _____
Casing Diameter 2 in. Depth 30 ft.
Surface Seal Depth 10 ft. Number 3

GEOTECHNICAL PROJECTS
Number of Borings n/a Maximum _____
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE January 30, 1995
ESTIMATED COMPLETION DATE January 31, 1995

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [Signature] Date 1/23/95

A. GENERAL

1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER WELLS, INCLUDING PIEZOMETERS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved _____

[Signature]
Wyman Hong

Date 27 Jan 95

APPENDIX B

BORING AND WELL LOGS

WELL LOG

Project	1200 20th Avenue.	Well Number	MW-1
Location	1200 20th Ave., Oakland, California.	Diameter of Boring	8 inches
Project #	94-067	Total Depth of Boring	30 feet
Geologist	J. Alt, CEG	Date Started	February 13, 1995
Drill Company	Soils Exploration Services	Date Completed	February 13, 1995
Comments			

Depth in Feet	WELL CONSTRUCTION DETAIL	Sample #	Blow Counts	Graphic Log	DESCRIPTION	
0	<p>2-inch dia. Sched. 40 PVC tubing with solid walls</p> <p>grout</p> <p>Bentonite seal</p> <p>#3 Lonestar sand</p> <p>2-inch dia. Sched. 40 PVC tubing with 0.02" slots</p>				asphalt	
1					Clayey sand and gravel FILL.	
2						
3						Gray silty CLAY with tan mottling, moist.
4						
5		1	8 9 12			
6						
7						
8						
9					Bluish-gray sandy CLAY, with scattered gravel, moist.	
10		2	7 8 8			
11						
12						
13						
14						
15		3	8 17 25		Dark-gray SAND, scattered pebbled-size gravel. Sand is medium- to coarse-grained, moist.	
16						
17						
18						
19						
20		4	14		(Sample #4: 19 1/2' - 21')	

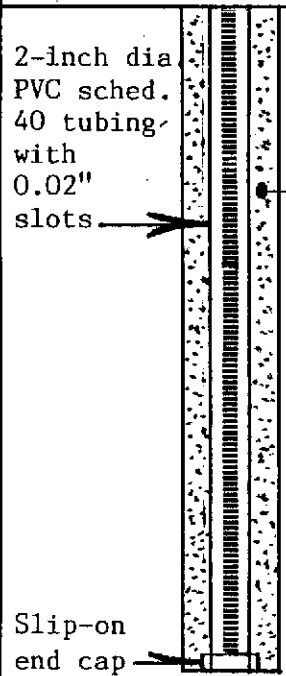

WELL LOG

Project Name 1200 20th Avenue.

Well Number MW-1

Project Number 94-067

Page 2 of 2

Depth in Feet	WELL CONSTRUCTION DETAIL		Sample #	Blow Counts	Graphic Log	DESCRIPTION			
20	2-inch dia PVC sched. 40 tubing with 0.02" slots 	#3 Lonestar sand	4	14 30 41		Dark gray SAND (as above), scattered pebble-size gravel. Sand is medium- to coarse-grained, moist.			
21									
22									
23									Grayish-tan silty CLAY with lenses of brown silty sand,
24									
25						5	5 8 10		grading
26						to			
27									
28						brown fine-grained SAND.			
29	Slip-on end cap								
30						Bottom of boring.			
31			6	6 14 31		Bottom of sampling.			
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									

WELL LOG

Project	1200 20th Avenue.	Well Number	MW-2
Location	1200 20th Ave., Oakland, California.	Diameter of Boring	8 inches
Project #	94-067	Total Depth of Boring	35 feet
Geologist	J. Alt, CEG	Date Started	February 13, 1995
Drill Company	Soils Exploration Services.	Date Completed	February 13, 1995
Comments			

Depth in Feet	WELL CONSTRUCTION DETAIL	Sample #	Blow Counts	Graphic Log	DESCRIPTION	
0	<p>2-inch dia Sched. 40 PVC tubing with solid walls</p> <p>grout</p> <p>Bentonite seal</p> <p>#3 Lonestar sand</p>				asphalt	
1					Brown sand and gravel FILL.	
2						Light-brown silty CLAY, dry.
3						Light-brown SILT with sand, scattered pebbles, moist.
4						
5						
6			1		9 14 17	
7						Brown silty SAND with gravel to 3/4 inch in size, moist.
8						
9						
10			2		12 17 19	
11						As above, moist.
12						
13						
14						Brown SAND with silt and scattered pebbles, moist.
15						
16						
17			3		15 17 21	
18						
19						
20						

WELL LOG

Project Name 1200 20th Avenue.

Well Number MW-2

Project Number 94-067

Page 2 of 2

Depth in Feet	WELL CONSTRUCTION DETAIL	Sample #	Blow Counts	Graphic Log	DESCRIPTION
20	solid wall → 2" dia. → Sched. 40, PVC tubing with 0.02" slots → ← #3 Lonestar sand ← #3 Lonestar sand Slip-on end cap →	4	10		Brown SAND (as above) with silt and scattered pebbles, moist.
21			19		
22			32		
23					
24		5	16		As above.
25			23		
26			34		
27	7	6	As above, wet. Lenses of brown silt.		
28		10			
29		9			
30					
31					
32					
33	8	← Bottom of boring → Brown gravelly SAND with silt, gravel to 1 1/2" in size, sub-round to sub-angular (chert, shale, SS). ← Bottom of sampling →			
34			14		
35			18		
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					

WELL LOG

Project	1200 20th Avenue.	Well Number	MW-3
Location	1200 20th Ave., Oakland, California.	Diameter of Boring	8 inches
Project #	94-067	Total Depth of Boring	30 feet
Geologist	J. Alt, CEG	Date Started	February 14, 1995
Drill Company	Soils Exploration Services.	Date Completed	February 14, 1995
Comments			

Depth in Feet	WELL CONSTRUCTION DETAIL	Sample #	Blow Counts	Graphic Log	DESCRIPTION	
0	<p>2-inch dia Sched. 40 PVC tubing with solid walls</p> <p>grout</p> <p>Bentonite seal</p> <p>Solid-wall tubing</p> <p>2-inch dia. Sched. 40 PVC tubing with 0.02" slots</p> <p>#3 Lonestar sand</p>				Asphalt	
1					Sand and gravel FILL.	
2						Light-brown silty CLAY with scattered coarse sand, moist.
3						
4						
5			1		4 7 8	
6						
7						
8						
9						Tan sandy GRAVEL, moist
10			2		12 21 24	
11						
12						
13						
14						
15			3		4 8 10	
16						
17						
18						
19						
20		4	5			

WELL LOG

Project Name 1200 20th Avenue.

Well Number MW-3

Project Number 94-067

Page 2 of 2

Depth in Feet	WELL CONSTRUCTION DETAIL	Sample #	Blow Counts	Graphic Log	DESCRIPTION
20	<p>2-inch dia Sched. 40 PVC tubing with 0.02" slots</p> <p>#3 Lonestar sand</p> <p>Slip-on end cap</p>	4	5 7 4		Tan SILT with reddish-brown motteling (as above). 1"-thick lens of pebbles.
21		5 11 13	Tan SAND, fine-grained, moist.		
22					
23					
24					
25					
26	5	7 11 15	As above, saturated.		
27	Bottom of boring.				
28					
29	Bottom of sampling				
30					
31	Bottom of sampling				
32					
33	Bottom of sampling				
34					
35	Bottom of sampling				
36					
37	Bottom of sampling				
38					
39	Bottom of sampling				
40					
41	Bottom of sampling				
42					
43	Bottom of sampling				
44					
45	Bottom of sampling				

APPENDIX C

CERTIFIED LABORATORY REPORT

SOIL SAMPLES

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

02/24/95

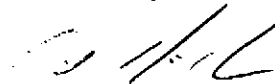
Dear John:

Enclosed are:

- 1). the results of 6 samples from your # 95-067; 1200 20th Avenue, Oakland project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,



Edward Hamilton

Epigene International 38750 Paseo Padre Pkwy, # A11 Fremont, CA 94536	Client Project ID: # 95-067; 1200 20th Avenue, Oakland	Date Sampled: 02/13-02/14/95
	Client Contact: John Alt	Date Received: 02/15/95
	Client P.O:	Date Extracted: 02/15/95
		Date Analyzed: 02/17/95

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with 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) ⁺	Benzene	Toluene	Ethylbenzene	Xylenes	% Rec. Surrogate
50281	MW-1 5'	S	4.8,b	0.005	0.011	0.012	0.026	88
50282	MW-1 15'	S	1.3,a	0.16	0.023	0.044	0.068	99
50283	MW-2 15'	S	ND	ND	ND	ND	ND	101
50284	MW-2 25'	S	ND	ND	ND	ND	ND	98
50285	MW-3 10'	S	ND	ND	ND	ND	ND	108
50286	MW-3 20'	S	ND	ND	ND	ND	ND	113
Detection Limit unless otherwise stated; ND means Not Detected	W	50 ug/L	0.5	0.5	0.5	0.5	0.5	
	S	1.0 mg/kg	0.005	0.005	0.005	0.005	0.005	

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

cluttered chromatogram; sample peak co-elutes 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 are significant; no recognizable pattern; 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 phase is present.

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
 Tele: 510-798-1620 Fax: 510-798-1622

Epigene International 38750 Paseo Padre Pkwy, # A11 Fremont, CA 94536	Client Project ID: # 95-067; 1200 20th Avenue, Oakland	Date Sampled: 02/13-02/14/95
	Client Contact: John Alt	Date Received: 02/15/95
	Client P.O:	Date Analyzed: 02/17/95
		Date Extracted: 02/17/95

Lead*

EPA analytical method 239.2 or 7420⁺

Lab ID	Client ID	Matrix	Extraction ^o	Lead*
50281	MW-1 5'	S	TTLC	5.2
50282	MW-1 15'	S	TTLC	ND
50283	MW-2 15'	S	TTLC	ND
50284	MW-2 25'	S	TTLC	ND
50285	MW-3 10'	S	TTLC	5.9
50286	MW-3 20'	S	TTLC	8.5
Detection Limit unless otherwise stated; ND means Not Detected	W	TTLC		0.005mg/L
	S	TTLC		4.0 mg/kg
	---	STLC,TCLP		0.20 mg/L

* soil samples are reported in mg/kg, and water samples and all STLC & TCLP extracts in mg/L.

⁺ Lead is analysed using EPA method 7420(AA Flame)for soils, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

^o EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC from CA Title 22

DHS Certification No. 1644

14 Edward Hamilton, Lab Director

QC REPORT FOR HYDROCARBON ANALYSES

Date: 02/16-02/17/95

Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
TPH (gas)	0.000	1.884	1.933	2.03	93	95	2.6
Benzene	0.000	0.200	0.200	0.2	100	100	0.0
Toluene	0.000	0.204	0.202	0.2	102	101	1.0
Ethylbenzene	0.000	0.204	0.202	0.2	102	101	1.0
Xylenes	0.000	0.630	0.628	0.6	105	105	0.3
TPH (diesel)	0	284	284	300	95	95	0.2
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

QC REPORT FOR AA METALS

Date: 02/17/95

Matrix: Soil

Analyte	Concentration (mg/kg, mg/L)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
Total Lead	0.0	10.6	10.5	10	106	105	0.9
Total Cadmium	0.0	8.2	8.1	10	82	81	1.1
Total Chromium	0.5	9.3	8.6	10	89	82	8.1
Total Nickel	0.1	9.5	9.0	10	94	89	5.8
Total Zinc	0.7	9.7	9.3	10	90	86	4.6
STLC Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Copper	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

3678AEI35

CHAIN OF CUSTODY



Epigene International

CONSULTING GEOLOGISTS

38750 Paseo Padre Parkway, Suite B-4
Fremont, California, 94536

Business: (510) 791-1986 FAX: (510) 791-3306

Laboratory: <u>McCampbell Analytical, Inc</u>
<u>1102ND Ave South D-7</u>
<u>Pacheco Ca 94553</u>
<u>(510) 798-1620</u>
Contact: <u>Ed Hamilton</u>

Contact: <u>John AH</u>	Sampler: <u>JNA</u>
Project Name: <u>1200 20th Ave. OAKLAND</u>	No. <u>95-067</u>
Date: <u>2/13/95 & 2/14/95</u>	

Sample I.D.	Date/Time Sampled	Matrix Desc.	Container No. of	Type	Lab. #	Analyses Requested						Comments	
						TPH/Gasoline	BTEX	TPH/Diesel	601/8010	602/8020	TOTAL LEAD		
1-MW-1 5'	2/13/95 AM	soil	1	Brass tube		X	X				X		50281
2-MW-1 15'	AM	soil	1			X	X				X		50282
3-MW-2 15'	PM	soil	1			X	X				X		50283
4-MW-2 25'	PM	soil	1			X	X				X		50284
5-MW-3 10'	2/14/95 AM	soil	1			X	X				X		50285
6-MW-3 20'	AM	soil	1			X	X				X		50286
7.													
8.													
9.													
10.													

Relinquished by: <u>John Hart</u>	Date: <u>2/15/95</u>	Time: <u>2:55 PM</u>	Received by: <u>Bob Jensen</u>	Date: <u>2/15/95</u>	Time: <u>2:55</u>
Relinquished by: <u>Bob Jensen</u>	Date: <u>2/15/95</u>	Time: <u>1800</u>	Received by: <u>Crin Mahoney</u>	Date: <u>2/15/95</u>	Time: <u>1800</u>
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

Turnaround Time: <u>Standard</u>
Additional Comments:
Page / of /

APPENDIX D

CERTIFIED LABORATORY REPORT

GROUNDWATER SAMPLES

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

03/06/95

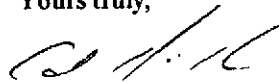
Dear John:

Enclosed are:

- 1). the results of 3 samples from your # 95-067; 1200 20th Ave. Oakland project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,



Edward Hamilton

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
 Tele: 510-798-1620 Fax: 510-798-1622

Epigene International 38750 Paseo Padre Pkwy, # A11 Fremont, CA 94536	Client Project ID: # 95-067; 1200 20th Ave. Oakland	Date Sampled: 02/22/95
	Client Contact: John Alt	Date Received: 02/24/95
	Client P.O:	Date Extracted: 02/24/95
		Date Analyzed: 02/24/95

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with 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) ⁺	Benzene	Toluene	Ethylbenzene	Xylenes	% Rec. Surrogate
50431	MW-1	W	1900,a	92	39	57	260	114 [#]
50432	MW-2	W	ND	ND	ND	ND	ND	95
50433	MW-3	W	ND	ND	ND	ND	ND	96
Detection Limit unless otherwise stated; ND means Not Detected	W		50 ug/L	0.5	0.5	0.5	0.5	
	S		1.0 mg/kg	0.005	0.005	0.005	0.005	

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L
[#] cluttered chromatogram; sample peak co-elutes 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 are significant, no recognizable pattern; 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 phase is present.

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
 Tele: 510-798-1620 Fax: 510-798-1622

Epigene International 38750 Paseo Padre Pkwy, # A11 Fremont, CA 94536	Client Project ID: # 95-067; 1200 20th Ave. Oakland	Date Sampled: 02/22/95
	Client Contact: John Alt	Date Received: 02/24/95
	Client P.O:	Date Extracted: 02/28/95
		Date Analyzed: 03/01/95

Lead*

EPA analytical method 239.2 or 7420*

Lab ID	Client ID	Matrix	Extraction ^o	Lead*
50431	MW-1	W	TTLC	0.14
50432	MW-2	W	TTLC	ND
50433	MW-3	W	TTLC	ND
Detection Limit unless otherwise stated; ND means Not Detected	W	TTLC		0.005mg/L
	S	TTLC		4.0 mg/kg
	---	STLC,TCLP		0.20 mg/L

* soil samples are reported in mg/kg, and water samples and all STLC & TCLP extracts in mg/L
 + Lead is analysed using EPA method 7420 (AA Flame) for soils, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples
^o EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC from CA Title 22

QC REPORT FOR HYDROCARBON ANALYSES

Date: 02/24-02/25/95

Matrix: Water

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
TPH (gas)	0.0	101.3	101.4	100	101.3	101.4	0.1
Benzene	0	9.9	9.9	10	99.0	99.0	0.0
Toluene	0	9.9	9.8	10	99.0	98.0	1.0
Ethyl Benzene	0	9.9	9.7	10	99.0	97.0	2.0
Xylenes	0	30.8	30	30	102.7	100.0	2.6
TPH (diesel)	0	153	145	150	102	97	5.3
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

QC REPORT FOR AA METALS

Date: 03/01/95

Matrix: Water

Analyte	Concentration (mg/L)			Amount	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
Total Lead	0.00	55.00	50.50	50.00	110	101	8.5
Total Cadmium	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Chromium	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Nickel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Zinc	N/A	N/A	N/A	N/A	N/A	N/A	N/A
STLC Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Copper	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

CHAIN OF CUSTODY



Epigene International

CONSULTING GEOLOGISTS

38750 Paseo Padre Parkway, Suite B-4
Fremont, California, 94536

Business: (510) 791-1986 FAX: (510) 791-3306

Laboratory: <u>McCampbell Analytical, Inc</u>
<u>110 2nd Ave. South D-7</u>
<u>Pacheco CA. 94553</u>
<u>(510) 798-1620</u>
Contact: <u>Ed Hamilton</u>

Contact: <u>John Alt</u>	Sampler: <u>APA/MD</u>
Project Name: <u>120020th AVE OAK</u>	No. <u>95-067</u>
Date: <u>2/22/95</u>	

Sample I.D.	Date/Time Sampled	Matrix Desc.	Container No. of	Type	Lab. #	Analyses Requested					Comments	
						TPH/Gasoline	BTEX	TPH/Diesel	601/8010	602/8020		TOTAL LEAD
1. MW-1	2-22-95	H ₂ O	2	VOAS		X	X					50431
2. MW-1	2-22-95	H ₂ O	1	Plastic bottle						X		
3. MW-2	2-22-95	H ₂ O	2	VOAS		X	X					50432
4. MW-2	2-22-95	H ₂ O	1	Plastic bottle						X		
5. MW-3	2-22-95	H ₂ O	2	VOAS		X	X					50433
6. MW-3	2-22-95	H ₂ O	1	Plastic bottle						X		
7.												
8.												
9.												
10.												

ICE/T ✓
 GOOD CONDITION ✓
 HEAD SPACE ABSENT ✓
 PRESERVATIVE APPROPRIATE CONTAINERS ✓
 VOA/D&G/OTHER ✓

Relinquished by: <u>[Signature]</u>	Date: <u>2/23/95</u>	Time: <u>1603</u>	Received by: <u>[Signature]</u>	Date: <u>2/23/95</u>	Time: <u>1603</u>
Relinquished by: <u>[Signature]</u>	Date: <u>2/24/95</u>	Time: <u>9:55</u>	Received by: <u>[Signature]</u>	Date: <u>2/24/95</u>	Time: <u>9:55</u>
Relinquished by: <u>[Signature]</u>	Date: <u>2/24/95</u>	Time: <u>11:18</u>	Received by: <u>[Signature]</u>	Date: <u>2/24/95</u>	Time: <u>11:18</u>

Turnaround Time: STANDARD

Additional Comments: _____

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