



Epigene International
CONSULTING GEOLOGISTS

*Conw/J. Alt -
#71 prepared closure report +
wp for add. SSI by B/16/93*

June 25, 1993

Bernabe and Brinker, Inc.
1281 30th Street
Oakland, CA 94608

Attn: Mr. James Brinker

Subject: Progress Report and Results of Groundwater Sampling and
Analyses, 2301 East 12th Street, Oakland, April - June,
1993

Dear Mr. Brinker:

The site is located at the southwest corner of the intersection of East 12th Street and 23rd Ave. The location is shown on the attached location map (Figure 1). As per our agreement, the following tasks were carried out at the subject site in May and June of this year:

- 1) Monitoring of groundwater levels at the site as required as part of the overall site monitoring;
- 2) Establishing relative elevations for the top of casing for the three existing wells and calculating the groundwater gradient;
- 3) Quarterly sampling and analyses of the groundwater from the three wells on site as required by Alameda County. The water sample from each well were tested for TPH as gasoline with

BTEX and TPH as diesel fuel.

- 4) Analyses of the water samples from MW-1 and MW-2 by EPA method 8010 as per the request of Mr. Barney Chan of Alameda County. The sample from MW-2 was also analyzed oil and grease and five metals (Cd, Cr, Pb, Ni and Zn).
- 5) Provide recommendations for additional work as may be required to comply with the requests from the county.

The groundwater levels measured for the three wells are listed in Table 2. The relative elevations for the top of casing for the wells were surveyed on May 26th. The top of casing for MW-1 was assigned an assumed elevation of 10.00 feet. The City of Oakland does not have any benchmarks in the vicinity of the site. The relative elevations are shown in Table 2. The relative groundwater elevations for May are also listed along with those of the previous two quarters for comparison.

The gradient for the May data is essentially due north. The gradient for the previous two quarters had more of a southerly trend. A gradient map is shown on Figure 3.

Wells MW-2 and MW-3 were purged, by bailing, of approximately 7 gallons of water and a groundwater sample was collected using a disposable bailer for each well. Because of the extended depth of MW-1, it was purged of approximately 15 gallons of water. MW-1 was sampled as discussed above. The samples were placed in a cooled ice chest and transported to a Certified Laboratory for analyses following chain of custody procedures. A copy of the chain of custody form is included in Appendix A. The purge water was placed

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in 55 gallon drums that were present on site.

Prior to purging, each well was checked for the presence of floating product. No floating product was observed in any of the wells. Both MW-2 and MW-3 had a sheen observed on the purge water.

The laboratory results are attached to this report as Appendix A and are summarized on Table 1. They indicate that relatively high levels of TPH as both gasoline and diesel continue to be present in all three wells with the highest concentration in MW-2. BTEX compounds are also present in the groundwater samples from each of the wells. The results of the 8010 analyses for MW-1 and MW-2 were all "nondetected" except for 0.0068 ppm of TCE in MW-1 which is consistent with the results from the last quarter. Oil and grease in MW-2 was reported to be 32 ppm. The metals in MW-2 were "nondetected" except for zinc which had a reported concentration of 50 ppb, well below the action levels. The locations of the wells are shown on the attached site plan (Figure 2).

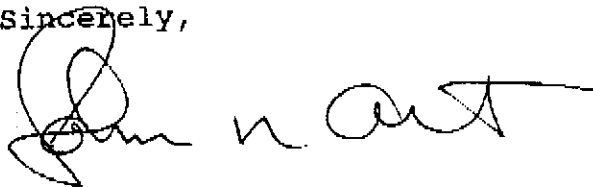
Weekly purging of the three wells was carried out by Bernabe and Brinker as an interim remediation to remove the floating product previously observed in MW-2 and help lower the concentration of contamination present. The field data related to the purging of the wells is presented in Appendix B.

Because of the relatively high concentrations of TPH as diesel and gasoline and BTEX in the groundwater, additional exploratory work is required to further characterize the site and site area. In addition, groundwater remediation will be required at the site. The recommendations for additional characterization and remediation will be provided in a separate letter.

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It is recommended that the quarterly sampling and monitoring of groundwater levels in the three existing wells continue. The purging of the wells should continue until a more permanent remediation system is installed. It is a pleasure to continue to work with you on this project. Should you have any questions please contact the undersigned.

Sincerely,



John N. Alt, CEG No. 1136

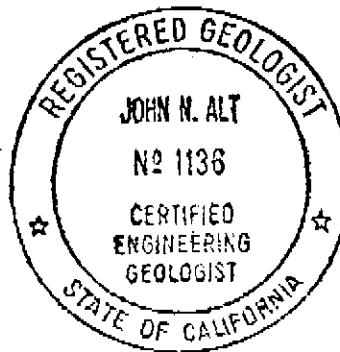


TABLE 1 - SUMMARY OF GROUNDWATER ANALYSES RESULTS IN PARTS PER MILLION (ppm)

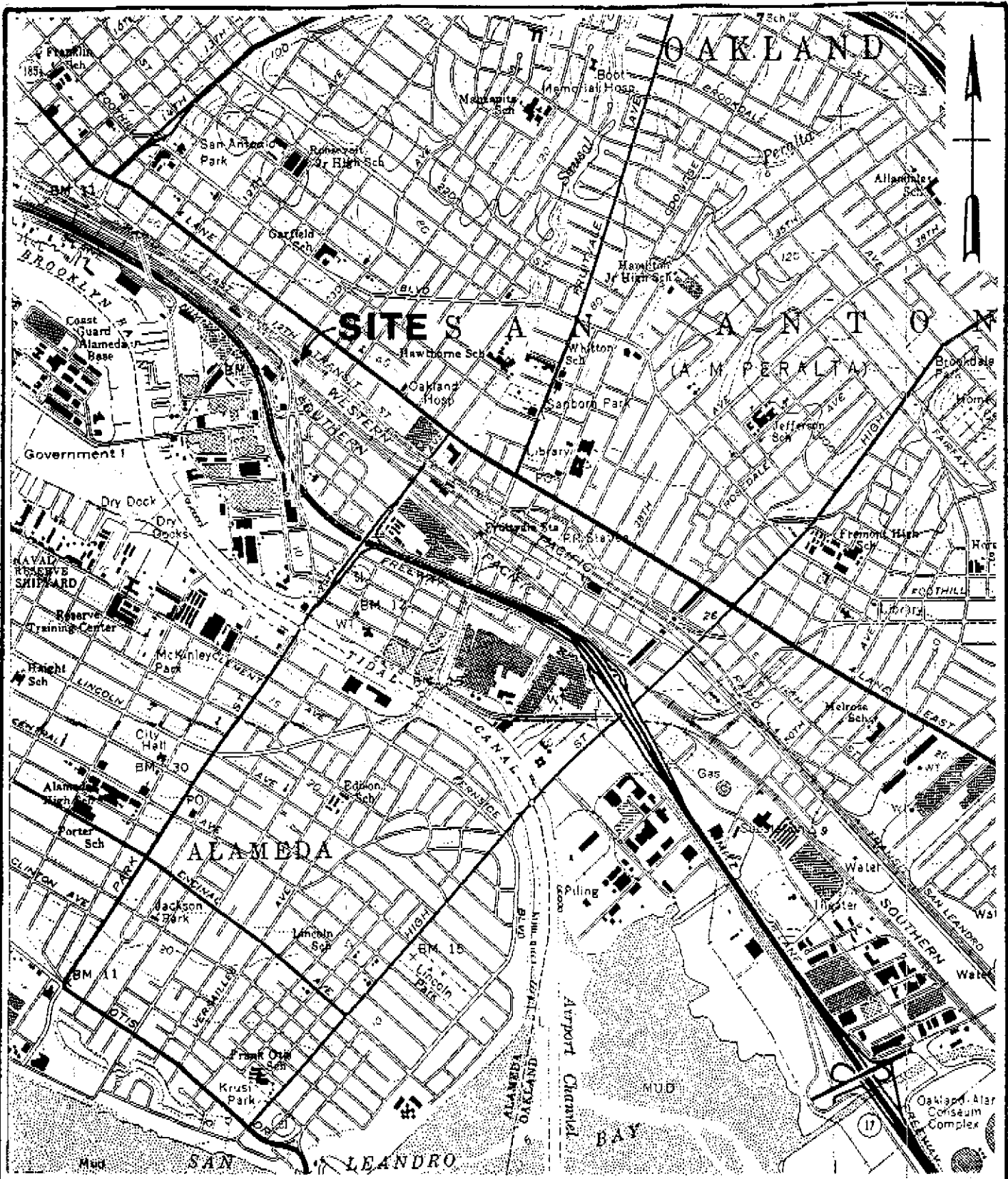
2301 12 Street, Oakland

DATE	WELL NO.	OIL AND GREASE	TPH DIESEL	TPH GASOLINE	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENE
7/27/92*	MW-1	NA	0.360	1.800	0.600	0.005	0.013	0.018
	MW-2	NA	1.500	20.000	0.110	0.006	0.037	0.039
	MW-3	NA	4.000	8.800	0.150	0.009	0.088	0.013
11/6/92	MW-1	NA	0.670	8.000	2.400	0.006	0.041	ND
	MW-2	NA	17.000	19.000	2.800	0.120	0.790	1.100
	MW-3	NA	21.000	10.000	0.078	0.003	0.830	0.013
3/02/93	MW-1	NA	1.100	5.600	3.800	ND	0.120	ND
	MW-2	NA	37.000	14.000	3.800	0.110	0.950	1.100
	MW-3	NA	9.300	3.900	0.120	ND	0.240	0.037
5/26/93	MW-1	NA	1.700	4.800	3.400	0.044	0.140	0.150
	MW-2	32.000	6.000	11.000	5.200	0.140	1.000	0.990
	MW-3	NA	4.400	7.400	0.570	0.004	0.640	0.008

* Data for 7/27/92 from Artesian Environmental Consultants
 NA is not analyzed

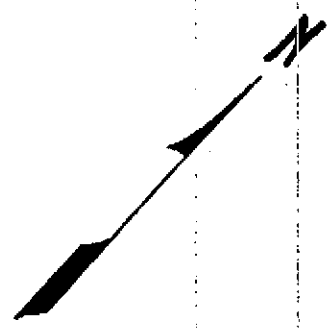
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P.05



From U.S.G.S. 7 1/2' Quadrangle OAKLAND EAST

PLATE	No.
SITE LOCATION MAP	



Cul-de-sac

23RD AVENUE

MW-2

MW-3

Approximate

Curb Line

Asphalt Pavement

Garage Area

MW-1

Parts Store

12TH STREET

Garage Area

Map derived from
Artesian Environmental Consultants,
NMI Valley, California
July, 1992

Approximate Scale: 1 inch equals 20 Feet

PLATE	No.
SITE MAP	

Table 2 - Summary of groundwater elevation measurements
2301 East 12th Street, Oakland

DATE	MEASUREMENT	MW-1	MW-2	MW-3
5/26/93	ELEVATION TOP OF CASING*	10.00 ft.	8.23 ft.	8.72 ft.
11/06/92	DEPTH TO GROUNDWATER	9.15 ft.	7.30 ft.	7.59 ft.
11/06/92	GROUNDWATER ELEVATIONS	0.85 ft.	0.93 ft.	1.13 ft.
3/02/93	DEPTH TO GROUNDWATER	7.45 ft.	5.71 ft.	6.07 ft.
3/02/93	GROUNDWATER ELEVATIONS	2.55 ft.	2.52 ft.	2.65 ft.
5/26/93	DEPTH TO GROUNDWATER	8.05 ft.	6.28 ft.	7.22 ft.
5/26/93	GROUNDWATER ELEVATIONS	1.95 ft.	1.95 ft.	1.50 ft.

* Based on an assumed elevation of 10.00 ft. for MW-1

gradient ↗

Cul-de-sac

23RD AVENUE

MW-2

MW-3

1.95

1.50 Approximate

Asphalt Pavement

Garage Area

MW-1

Curb Line

212TH STREET

Parts Store

Garage Area

Slope of gradient 0.036 ft/ft

Map derived from
Artesian Environmental Consultants,
Mid Valley, California
July, 1992

Approximate Scale: 1 inch equals 20 Feet

May 1993

PLATE 3	No.
GROUNDWATER GRADIENT	

APPENDIX A

LABORATORY DATA

Trace Analysis Laboratory, Inc.

3423 Investment Boulevard, #8 • Hayward, California 94545

Telephone (510) 783-6960

Facsimile (510) 783-1512



June 22, 1993

Mr. John N. Alt
Epigene International
38750 Paseo Padre Parkway, Suite B-4
Fremont, California 94536

Dear Mr. Alt:

Trace Analysis Laboratory received three water samples on May 26, 1993 for your Project No. 93-008, 2301 E. 12th Street, Oakland (our custody log number 3277).

These samples were analyzed according to your chain of custody. Our analytical report and the completed chain of custody form are enclosed for your review.

Trace Analysis Laboratory is certified under the California Environmental Laboratory Accreditation Program. Our certification number is 1199.

If you should have any questions or require additional information, please call me.

Sincerely yours,

A handwritten signature in cursive script that reads "Scott T. Ferriman".

Scott T. Ferriman
Project Specialist

Enclosures

Trace Analysis Laboratory, Inc.

3423 Investment Boulevard, #8 • Hayward, California 94545

Telephone (510) 783-6960
Facsimile (510) 783-1512



LOG NUMBER: 3277
DATE SAMPLED: 05/26/93
DATE RECEIVED: 05/26/93
DATE EXTRACTED: 06/01/93
DATE ANALYZED: 06/10/93
DATE REPORTED: 06/22/93

CUSTOMER: Epigene International
REQUESTER: John N. Alt
PROJECT: No. 93-008, 2301 E. 12th Street, Oakland

Sample Type: Water

Method and Constituent:	Units	MW-1		MW-2		MW-3	
		Concentration	Reporting Limit	Concentration	Reporting Limit	Concentration	Reporting Limit
DHS Method: Total Petroleum Hydrocarbons as Diesel	ug/l	1,700	50	6,000	50	4,400	50

Method and Constituent:	Units	Method Blank	
		Concentration	Reporting Limit
DHS Method: Total Petroleum Hydrocarbons as Diesel	ug/l	ND	50

QC Summary:

% Recovery: 87
% RPD: 6.2

Concentrations reported as ND were not detected at or above the reporting limit. These samples contain compounds eluting earlier than the diesel standard.



Trace Analysis Laboratory, Inc.

LOG NUMBER: 3277
 DATE SAMPLED: 05/26/93
 DATE RECEIVED: 05/26/93
 DATE ANALYZED: 06/03/93 and 06/04/93
 DATE REPORTED: 06/22/93
 PAGE: Two

Sample Type: Water

Method and Constituent:	Units	MW-1		MW-2		MW-3	
		Concen- tration	Reporting Limit	Concen- tration	Reporting Limit	Concen- tration	Reporting Limit
DHS Method:							
Total Petroleum Hydro- carbons as Gasoline	ug/l	4,800	240	11,000	600	7,400	100
Modified EPA Method 8020 for:							
Benzene	ug/l	3,400	11	5,200	28	570	1.5
Toluene	ug/l	44	11	140	28	4.1	1.3
Ethylbenzene	ug/l	140	12	1,000	30	640	1.6
Xylenes	ug/l	150	32	990	80	8.4	4.4

Method and Constituent:	Units	Method Blank	
		Concen- tration	Reporting Limit

DHS Method:			
Total Petroleum Hydro- carbons as Gasoline	ug/l	ND	50
Modified EPA Method 8020 for:			
Benzene	ug/l	ND	0.50
Toluene	ug/l	ND	0.50
Ethylbenzene	ug/l	ND	0.50
Xylenes	ug/l	ND	1.5

QC Summary:

% Recovery: 86 92
 % RPD: 20 3.6

Concentrations reported as ND were not detected at or above the reporting limit.