JANUARY, 1997 "QUARTERLY" GROUND WATER SAMPLING REPORT FOR STID 553 - GRIMIT AUTO AND REPAIR 1970 SEMINARY AVENUE OAKLAND, CALIFORNIA

January 28, 1997

Prepared by

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TRANSMITTAL

TO Alameda County Health
1131 Harbor Bay Pkwy #250
Alameda CA 94502-6577

DATE 2/5/97
VIA USMail
FAX NO. _____

ATTENTION Dale Klettke

PROJECT 1970 Seminary
Oakland

JOB NO. E-10-1B-1928

DESCRIPTION Quarterly Report 1/28/97

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COPY TO D. Grimit

BY _____
David F. Hoexter

If enclosures are not as noted, kindly notify us at once

Rev. 7/6/93

Geology / Engineering Geology / Environmental Studies

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DAVID F. HOEXTER, RG/CEG/REA

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January 28, 1997

E-10-1B-192B
HCQuartEnvtRpts:Seminary1970/9(1/97)

Mr. Doyle Grimit
14366 Lark Street
San Leandro, California 94578

RE: **JANUARY, 1997 "QUARTERLY"
GROUND WATER SAMPLING REPORT
STID 553 - GRIMIT AUTO AND REPAIR
1970 SEMINARY AVENUE
OAKLAND, CALIFORNIA**

Dear Mr. Grimit:

Enclosed is our January, 1997 ground water sampling report for the property located at 1970 Seminary Avenue, corner of Harmon, in Oakland, California This sampling round is the thirteenth performed by Hoexter Consulting and others at the site, dating from August, 1990. The results of an initial sampling round by Kaldveer Associates, Inc, following well installation, and the previous Hoexter Consulting quarterly and sub-surface investigation sampling, are included in the analytical results summary table.

The results of this investigation indicate that the water samples from the six on-site wells continue to range from relatively low to elevated levels of total petroleum hydrocarbons as gasoline (TPH-G); purgeable aromatic compounds (BTEX) and MTBE; oil (total recoverable petroleum hydrocarbons, TRPH); and halogenated volatile compounds (HVOC). The analyses indicate that all analyzed compounds remain at levels of the same order-of-magnitude as the previous October, 1996 results. In addition, at the request of the Alameda County Health Care Services Agency Local Oversight Program (LOP) representative, baseline analyses were conducted for the second time for dissolved oxygen, ferrous iron, nitrate and sulfate, in anticipation of planned remediation. These latter tests were not initially budgeted.

Ground water levels rose appreciably from the previous October, 1996 sampling event. The wells dewatered or were drawn down during the course of purging, and it was necessary to return the following day to obtain viable samples once the water levels had recovered.

Evaluation of remedial alternatives has been accomplished since the March, 1996 sampling event. We recommended in our July 28, 1996 report that you proceed with remediation of the site. The Alameda County LOP representative, in his September 24, 1996 review letter, concurred with this recommendation. Therefore, feasibility testing of soil vapor extraction (SVE) is currently being conducted. A report is being prepared, and will be completed during February, 1997.

We recommend that copies of the enclosed report be submitted to the Alameda County Health Care Services Agency. The next round of sampling is scheduled to be conducted during April, 1997.

We appreciate the opportunity to provide services to you on this project and trust this report meets your needs at this time. If you have any questions, or require additional information, please do not hesitate to call.

Very truly yours,

HOEXTER CONSULTING, INC.

David F. Hoexter, RG/CEG/REA
Principal Geologist

Copies: Addressee (2)
Alameda County Health Care Services Agency (1)
Attention: Mr. Dale Klettke, Hazardous Materials Specialist

JANUARY, 1997 "QUARTERLY"
GROUND WATER SAMPLING REPORT

For

STID 553 - Grimit Auto and Repair
1970 Seminary Avenue
Oakland, California

To

Mr. Doyle Grimit
14366 Lark Street
San Leandro, California 94578

January 28, 1997

David F. Hoexter, RG/CEG/REA
Principal Geologist

Hoexter Consulting, Inc. 734 Torreya Court, Palo Alto, California 94303 (415) 494-2505

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JANUARY, 1997 QUARTERLY GROUND WATER SAMPLING REPORT FOR STID 553 - GRIMIT AUTO AND REPAIR 1970 SEMINARY OAKLAND, CALIFORNIA

I. INTRODUCTION

This report presents the results of the January, 1997 ground water sampling at 1970 Seminary, Oakland, California. The project location is shown on the Location Map, Figure 1. The scope of services provided during this investigation consisted of collecting and analyzing ground water samples from six on-site monitoring wells. Ground water samples were analyzed for petroleum hydrocarbons and additional parameters. Well locations are shown on the Ground Water Data Maps, Figures 2A and 2B.

II. FIELD INVESTIGATION

The ground water monitoring wells were sampled by representatives of Hoexter Consulting, Inc. Due to past, very slow equilibration of ground water levels, the well caps were loosened on January 13, 1997, two days prior to the planned purging and sampling. The wells were then secured with the caps sufficiently loose to allow venting, and left over the following approximately 48 hours to equilibrate. Following water level measurements, the wells were purged on January 15, and sampled January 16, 1997.

As noted, the well caps were loosened January 13, 1997, two days prior to the final water level measurement, to allow the water level in the wells to equilibrate. Following ground water level measurement (Table 1) on January 15, 1997 at the time of purging, each well was checked for free-product with the bailer, and then four well-casing volumes of water were purged from the well. A dedicated polyethylene bailer was employed for each well. Ground water parameters, including temperature, pH and specific conductivity, were measured prior to and following each purge volume removal.

Following purging of four well volumes, it was noted that the wells were either effectively dewatered, or drawn down to less than 80 per cent of the static water level. Thus, the well caps were left loosely in place overnight to allow the wells to vent and the water levels to rise, and the sampling was conducted the following day, January 16, 1997. The same procedure was followed during the previous, October, 1996 sampling.

The samples were collected using the polyethylene bailer, placed in appropriate sample containers supplied by the analytical laboratory, labeled, and placed in refrigerated storage for transport to the laboratory under chain-of-custody control. All sampling equipment was thoroughly cleaned with "Alconox" detergent and rinsed with distilled water prior to sampling the well. Monitoring well sampling logs and the chain of custody are attached to this report as a part of Appendix A. The laboratory is California EPA/DTSC approved for the requested analyses.

Prior to purging, ground water levels were measured in each well using the top of 2-inch PVC casing (north side) as reference point. Water levels were measured at least twice in each well; the final set of measurements are thought to be essentially representative of stabilized ground water levels in the wells. The ground water elevation increased notably from the prior (October, 1996) sampling event: the two "shallow" wells rose 3.28 and 5.10 feet; the four "deeper" wells each from 5.53 to 8.53 feet. A more uniform increase in ground water elevation would be expected between wells of essentially the same completion depth and interval; the reason for the variability is unknown.

Well-top elevations, depth to water, and calculated water-surface elevations are presented in Table 1. These data have been used to generate the Ground Water Data Maps, Figures 2A and 2B. Figure 2A, representing the "deeper" wells, presents our interpretation of ground water elevation contours and flow.

The ground water flow direction and gradient are essentially consistent with the previous, March and October, 1996 data. The data for the two "shallow" wells appear to indicate an apparent flow towards Seminary Avenue. The two wells are relatively close together, and there is not a third well to provide a triangular configuration for water flow calculation. The data for the four "deeper" wells indicate flow away from Seminary towards the south. The apparent flow gradient varies across the site, but averages 0.13 foot per foot. This gradient is marginally steeper than the 0.10 foot per foot gradient calculated from the March, 1996 data. The approximate gradient flow direction is South 33° East.

As previously observed the data appear to indicate a downward gradient from a relatively shallow (perched ?) zone represented by the two "shallow" wells, to the deeper zone represented by the four "deeper" wells. Based on the slow equilibration and recovery time following purging, we infer a relatively slow ground water flow rate, despite the unusually steep gradient.

III. ANALYTICAL RESULTS

A. Laboratory Procedures

The ground water samples were analyzed by McCampbell Analytical, Inc. of Pacheco, California, with several parameters sub-contracted to GeoAnalytical Laboratories, Inc. of Modesto, California. Both laboratories are certified by the State of California EPA/DTSC for the conducted analyses. The samples were analyzed as follows:

- Total petroleum hydrocarbons as gasoline (TPH-G) using EPA Method 5030/8015.
- Purgeable aromatic compounds (BTEX) and MTBE using EPA Method 8020.
- Oil and grease (total recoverable petroleum, TRPH) using SM 5520B/F, gravimetric with cleanup.
- *Halogenated volatile organics (HVOC) using EPA Method 8010 (**not included in this round**; to be conducted during April, 1997 sampling round).*
- Dissolved oxygen using EPA Method 360.1.
- Ferrous iron using SM-3500-Fe.
- Nitrate and sulfate using SM-300.

Halogenated volatile organics (HVOCs) were included in previous sampling rounds. With agreement of the Alameda County Health Department representative, HVOC is to be analyzed only during alternate sampling rounds, and thus will be included in the coming April, 1997 round. Note that some of the TRPH analyses from *previous* sampling rounds were analyzed by the infrared method of analysis, as opposed to the gravimetric method utilized currently. It is our understanding that the two analytical methods produce essentially the same results.

The dissolved oxygen, ferrous iron, nitrate and sulfate were analyzed at the request of the Alameda County Health Care Services Agency Local Oversight Program (LOP) representative, to establish a baseline in anticipation of planned remediation. This was the second sampling round for these parameters.

B. Analytical Results

Free product was not observed in the initial sounding of the wells, although as previously observed, a sheen (floating film) of oil was observed in well MW-1, and shortly after purging began in well as MW-4. The purge water from well MW-1 contained globules of "oil", which were observed in earlier sampling rounds.

The results of the chemical analyses are presented on Table 2 and are attached to this report as a part of Appendix A. Analytical results of all previous testing are also included. The current analytical results indicate that TRPH, TPH-G, and BTEX compounds are present at elevated levels which are generally on the same order of magnitude as the most recent, previous analyses.

TPH-G was present in MW-1 at 48,000 ug/l (equivalent to parts per billion, ppb). This represents a decrease on the order of 13 per cent from the previous sampling event. MTBE and the BTEX compounds in MW-1 declined in a similar manner. TRPH, however, increased notably.

TPH-G, MTBE and BTEX generally declined in the "deeper" wells and increased in the "shallower" wells. Detected levels in wells MW-2 through 6, as during previous sampling events, are generally one to two orders of magnitude less than in MW-1. TRPH was detected in wells MW-1 and MW-4, the two wells located nearest the source area.

Four additional analytes were tested for the second time at the site. Dissolved oxygen was detected in all six wells and ranged from a low of 1.4 ppm in MW-1 to a maximum of 5.4 ppm in MW-2. Ferrous iron was detected in five of the six wells; it was not previously detected, although the detection limits for this sampling round were 0.05 mg/l (equivalent to parts per million, ppm) as opposed to 0.1 ppm during the previous round. Nitrate was detected in one well, MW-2, at a concentration of 3 ppm. Sulfate ranged from non-detect in MW-1 to from 5 to 25 ppm in the other five wells. The results for nitrate and sulfate were essentially unchanged from the previous sampling round. There was no obvious correlation between the analytical results and the well completions ("shallow" or "deep") for these four tests.

IV. RECOMMENDATIONS

We recommend proceeding with preparation of the remedial action plan and soil vapor extraction (SVE) feasibility testing evaluation.

V. LIMITATIONS

This report has been prepared according to generally accepted geologic and environmental practices. No other warranty, either expressed or implied as to the methods, results, conclusions or professional advice provided is made. The analysis, conclusions and recommendations contained in this report are based on site conditions as they existed at the time of our investigation; review of previous reports relevant to the site conditions; and laboratory results from an outside analytical laboratory.

Changes in the information or data gained from any of these sources could result in changes in our conclusions or recommendations. If such changes do occur, we should be advised so that we can review our report in light of those changes.

****

TABLE 1

GROUND WATER ELEVATION DATA

(All Measurements in Feet)

Well Number and Date of Measurement	Reference Elevation (2)	Depth to Water	Relative Ground Water Elevation (2)
MW-1 ("deep")			
8/6/90	37.0	21.5	15.5
1/28/92		21.0	16.0
4/27/92		20.95	16.05
8/10/92		22.20	14.8
2/11/94		15.93 (3)	21.07 (3)
2/28/94		13.85 (4)	23.15 (4)
9/9/94		20.19	16.81
12/28/94		14.91	22.09
4/13/95		14.18	22.82
11/1/95		20.90	16.10
3/8/96		11.82	25.18
3/25-26/96	36.97	13.54	23.43
10/7/96		21.41	15.59
1/15/97		13.34	23.63
MW-2 ("deep")			
2/11/94	36.40	14.16 (3)	22.24 (3)
2/28/94		16.01 (4)	20.39 (4)
9/9/94		18.96	17.44
12/28/94		21.42	14.98
4/13/95		19.69	16.71
11/1/95		21.91	14.49
3/8/96		14.56 (6)	21.84 (6)
3/25-26/96	36.39	10.84	25.55
10/7/96		18.41	17.98
1/15/97		10.07	26.32
MW-3 ("shallow")			
2/11/94	36.94	6.97 (3)	29.97 (3)
2/28/94		7.74 (4)	29.20 (4)
9/9/94		9.68	27.26
12/28/94		8.15	28.79
4/13/95		8.05	28.89
11/1/95		7.82	29.12
3/8/96		5.69	31.25
3/25-26/96	36.94	6.91	30.03
10/7/96		9.51	27.43
1/15/97		6.23	30.71

Table 1 continued

Well Number and Date of Measurement	Reference Elevation (2)	Depth to Water	Relative Ground Water Elevation (2)
MW-4 ("deep")			
16'-35' 3/25-26/96	36.46	14.14	22.32
10/7/96		22.31	14.15
1/15/97		13.78	22.68
MW-5 ("deep")			
15'-35' 3/25-26/96	36.77	15.63	21.14
10/7/96		22.86	13.91
1/15/97		17.33	19.44
MW-6 ("shallow")			
10'-20' 3/25-26/96	36.42	8.52	27.90
10/7/96		12.82	23.60
1/15/97		7.72	28.70

Notes

(1) N/A = not applicable.
(2) Elevations from a survey conducted by Andreas Deak, California Licensed Land Surveyor, March 21, 1996, City of Oakland datum.
(3) Well under pressure when locking cap removed; water level may not have been stabilized.
(4) Depth to water was measured over a 120 minute period; indicated depths appear to be stabilized readings.
(5) Surveyed elevations of wells MW 1 and MW-2 varied to 0.02 foot on March 21, 1996 survey as compared to February 11, 1994 survey; previously calculated measurements of elevation have **not** been modified to reflect the new survey data.
(6) Well not stabilized (water level rising).

TABLE 2A

GROUND WATER

SUMMARY OF ANALYTICAL TEST RESULTS - PETROLEUM HYDROCARBONS (8)

(Results reported in parts per ***billion***, ug/l) (1)

Well and Date	TPH Gasoline (8)	Benzene	Toluene	Ethyl-benzene	Xylenes	Oil & Grease HVOC (7)
MW-1	("deep")					
8/6/90 (2)	54,000	3,500	3,200	1,900	9,400	7,600
1/28/92	2,000,000	7,400	17,000	28,000	120,000	75,000 (5)
4/27/92 (3)	500,000	3,400	6,400	10,000	45,000	440,000 (6)
4/27/92 (4)	175,000	4,200	4,400	3,200	14,600	N/A
8/10/92	170,000	4,200	4,200	3,300	15,900	120,000 (6)
2/11/94	1,800,000	ND	5,100	5,200	23,900	16,000 (6)
9/9/94	23,000,000	56,000	61,000	9,100	137,000	880,000 (6)
12/28/94	55,000	3,700	5,300	1,400	5,800	83,000 (6)
4/13/95	45,000	2,800	3,400	1,200	5,100	50,000 (5)
11/1/95	44,000	2,600	3,400	1,400	5,900	52,000 (5)
3/25/96	45,000	3,000	4,100	1,600	6,800	46,000 (5) (7)
10/8/96	55,000	3,300	4,500	1,700	7,100	11,000 (5) (7)
1/16/97	48,000	2,600	3,200	1,300	5,300	110,000 (5)
MW-2	("deep")					
2/11/94	130	22	1.1	5.2	7.3	ND (6)
9/9/94	1,000	89	ND	ND	6.9	ND (6)
12/28/94	330	100	3.8	5.4	4.7	5100 (6)
4/13/95	1300	280	6.9	33	23	ND 5)
11/1/95	100	9.9	ND	ND	ND	ND (5)
3/25/96	4500	470	57	220	280	ND (5) (7)
10/8/96	710	1.9	0.54	1.0	1.0	ND (5) (7)
1/16/97	330	41	2.4	1.3	9.9	ND (5)
MW-3	("shallow")					
2/11/94	ND	ND	ND	ND	ND	ND (6)
9/9/94	710	10	ND	ND	3.5	ND (6)
12/28/94	2,300	7.8	ND	130	73	ND (6)
4/13/95	1,700	2.9	ND	61	24	ND (5)
11/1/95	1,100	4.4	ND	27	22	ND (5)
3/25/96	2,300	4.0	0.96	120	65	ND (5) (7)
10/8/96	160	ND	0.5	1.2	0.77	ND (5) (7)
1/16/97	1,800	2.8	0.68	48	66	ND (5)

Table 2A continued

Well and Date	TPH Gasoline (8)	Benzene	Toluene	Ethyl-benzene	Xylenes	Oil & Grease HVOC (7)	
MW-4	("deep")						
3/26/96	9,900	4,000	40	71	100	ND	(5) (7)
10/8/96	7,800	3,900	33	31	40	ND	(5) (7)
1/16/97	4,800	1,900	21	2.5	27	5,200	(5)
MW-5	("deep")						
3/26/96	1,200	43	8.2	83	95	ND	(5) (7)
10/8/96	6,700	260	92	410	370	ND	(5) (7)
1/16/97	3,000	150	68	190	180	ND	(5)
MW-6	("shallow")						
3/26/96	9,900	1,000	150	470	720	ND	(5) (7)
10/8/96	1,300	120	2.3	1.4	4.0	ND	(5) (7)
1/15/97	6,500	570	65	170	630	ND	(5)
EB-4							
3/8/96	15,000	780	840	1,300	590	7,500	(5) (7)
MCL	NA	1	150	700	1750	NA	

Notes

(1) ND - non-detect; N/A - not applicable
(2) Kaldveer Associates report, September, 1990
(3) Sequoia Analytical Laboratory
(4) Applied Remediation Laboratory
(5) Gravimetric Method
(6) Infrared Method
(7) **HVOC detected**: see Table 2C
(8) **MTBE** see Table 2B

TABLE 2B

GROUND WATER

SUMMARY OF ANALYTICAL TEST RESULTS - MTBE

(Results reported in parts per ***billion***, ug/l)

Well and Date	MTBE
MW-1("deep")	
10/8/96	490
1/16/96	310
MW-2 ("deep")	
10/8/96	41
1/16/96	12
MW-3 ("shallow")	
10/8/96	ND
1/16/96	7.1
MW-4 ("deep")	
10/8/96	140
1/16/96	84
MW-5 ("deep")	
10/8/96	190
1/16/96	90
MW-6 ("shallow")	
10/8/96	57
1/16/96	220

TABLE 2C

GROUND WATER

SUMMARY OF ANALYTICAL TEST RESULTS - HALOGENATED VOLATILE ORGANIC COMPOUNDS

(Results reported in parts per billion, ug/l) (1) (2)

Well and Date	CA	1,2 DCB	1,2 DCA	cis 1,2 DCE	trns 1,2 DCE	1,2 DCP	PCE	TCE	VCL
MW-1 ("deep")									
3/25/96	ND<5	7.2	5.3	82	ND<5	ND<5	ND<5	7.8	25
10/8/96	ND<20	ND<20	ND<20	45	ND<20	ND<20	ND<20	ND<20	26
1/16/97	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 ("deep")									
3/25/96	ND<0.5	ND<0.5	8.7	11	ND<0.5	1.0	ND<0.5	3.2	0.92
10/8/96	ND<0.5	ND<0.5	15	9.6	ND<0.5	1.1	ND<0.5	6.6	ND<0.5
1/16/97	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3 ("shallow")									
3/25/96	ND<0.5	ND<0.5	0.56	1.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
10/8/96	ND<0.5	ND<0.5	1.1	0.87	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
1/16/97	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4 ("deep")									
3/26/96	ND<8	22	ND<8	300	9.2	ND<8	38	150	44
10/8/96	ND<15	22	4.9	320	ND<15	ND<15	52	130	60
1/16/97	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-5 ("deep")									
3/26/96	1.4	ND<0.5	2.1	6.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	10
10/8/96	ND<2.5	ND<2.5	4.9	4.4	ND<2.5	ND<2.5	ND<2.5	ND<2.5	9.4
1/16/97	NA	NA	NA	NA	NA	NA	NA	NA	NA

Continued following page

Table 2C continued

MW-6 ("shallow")									
3/26/96	ND<0.5	ND<0.5	3.9	15	ND<0.5	1.9	0.77	2	ND<0.5
10/8/96	ND<0.5	ND<0.5	2.3	9.9	ND<0.5	ND<0.5	ND<0.5	0.57	ND<0.5
1/16/97	NA	NA	NA	NA	NA	NA	NA	NA	NA
EB-4									
3/8/96 (grab)	ND	ND	ND	42	ND	ND	130	340	ND
MCL	NA	600	0.5	6	10	5	7	5	0.5

Notes

(1) ND = non-detect
(2) NA = not applicable
(3) Composite
(4) Abbreviations as follows:

CA	Chloroethane	1,2 DCP	1,2 Dichloropropane
1,2 DCB	1,2 Dichlorobenzene	PCE	Tetrachloroethene (perchloroethene)
1,2 DCA	1,2 Dichloroethane	TCE	trichloroethene
cis 1,2 DCE	cis 1,2 Dichloroethene	VCL	vinyl chloride
trans 1,2 DCE	trans 1,2 Dichloroethene		

TABLE 2D

GROUND WATER

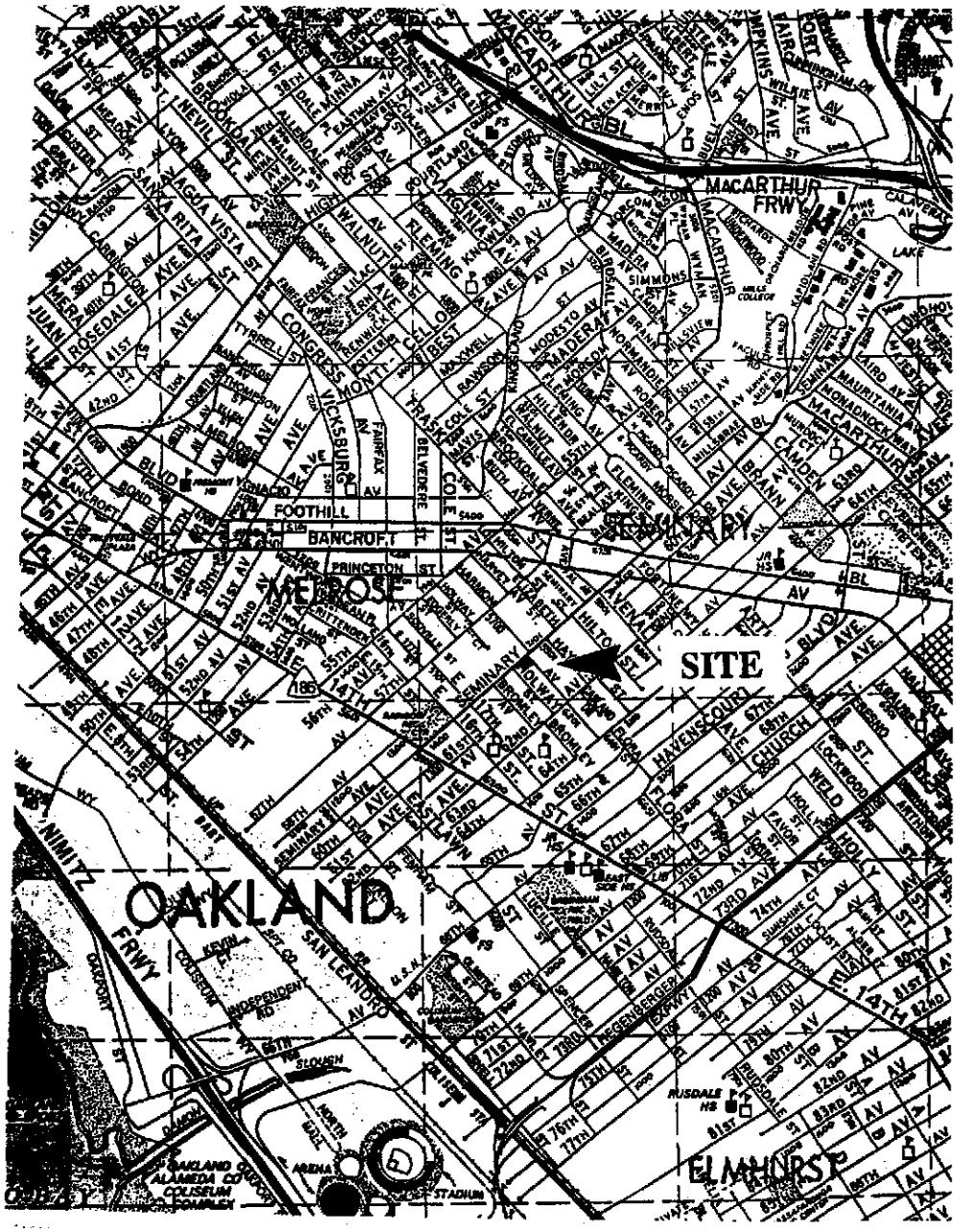
SUMMARY OF ANALYTICAL TEST RESULTS - ADDITIONAL PARAMETERS

(Results reported in parts per ***million***, mg/l) (1)

Well and Date	Dissolved Oxygen	Ferrous Iron	Nitrate	Sulfate
MW-1 ("deep")				
10/8/96	1.5	ND	ND	ND
1/16/97	1.4	3.6	ND	ND
MW-2 ("deep")				
10/8/96	3.7	ND	3	25
1/16/97	5.4	0.28	3	25
MW-3 ("shallow")				
10/8/96	3.8	ND	ND	5
1/16/97	5.2	ND	ND	5
MW-4 ("deep")				
10/8/96	3.0	ND	ND	ND
1/16/97	4.7	0.75	ND	5
MW-5 ("deep")				
10/8/96	2.8	ND	ND	8
1/16/97	3.4	0.38	ND	9
MW-6 ("shallow")				
10/8/96	2.7	ND	ND	6
1/16/97	2.7	0.28	ND	8

Notes

(1) ND - non-detect; N/A - not applicable



ALAMEDA COUNTY

1991 *Thomas Guide.*

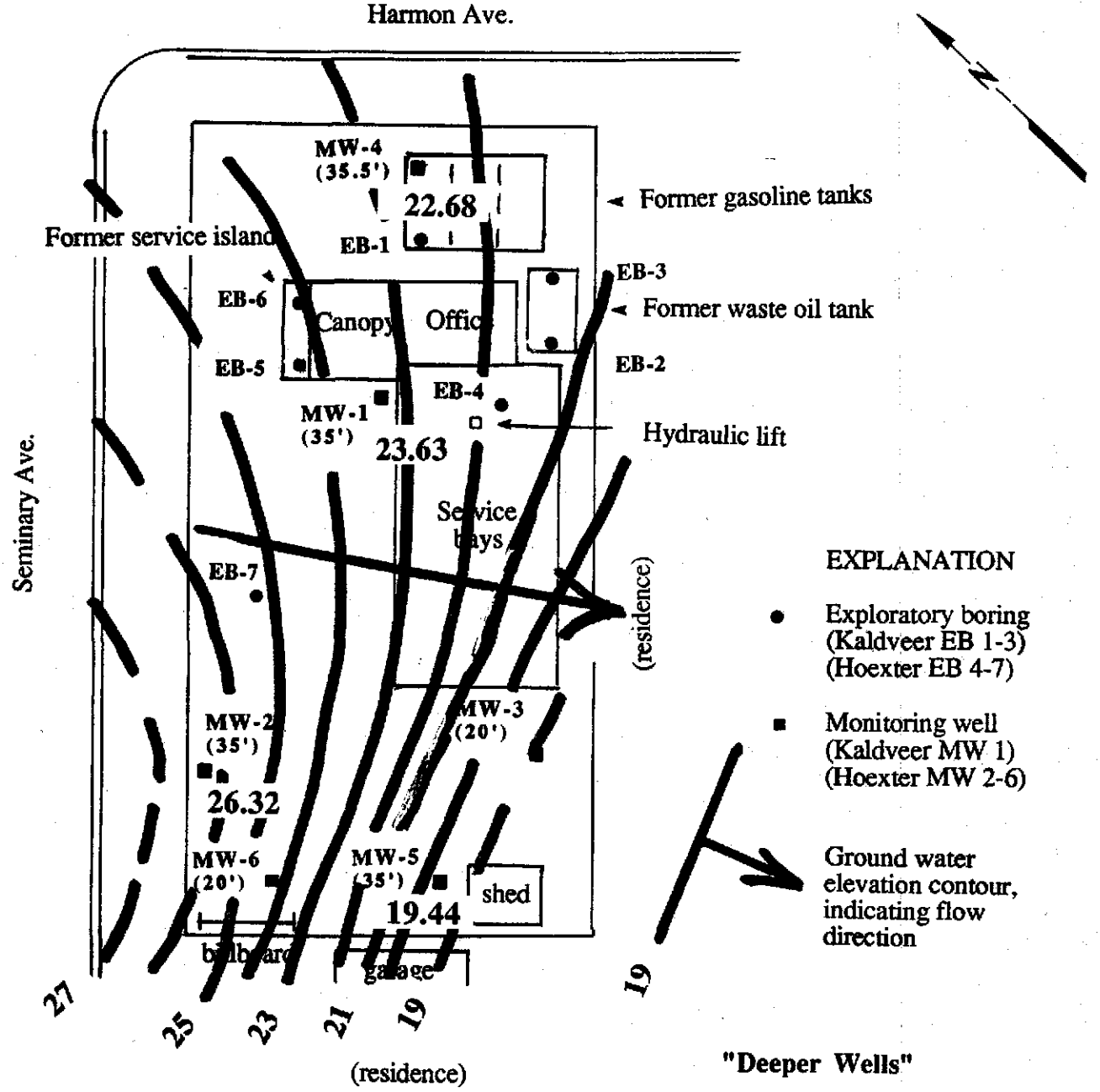
0 1/4 1/2 3/4 1 MILES
0 1 2 .5 1 KILOMETERS

HOEXTER CONSULTING
Geology
Engineering Geology
Environmental Studies

LOCATION MAP

1970 Seminary Ave.
Oakland, California

Project No.	Date	Figure 1
E-10-1B-192B	January, 1997	



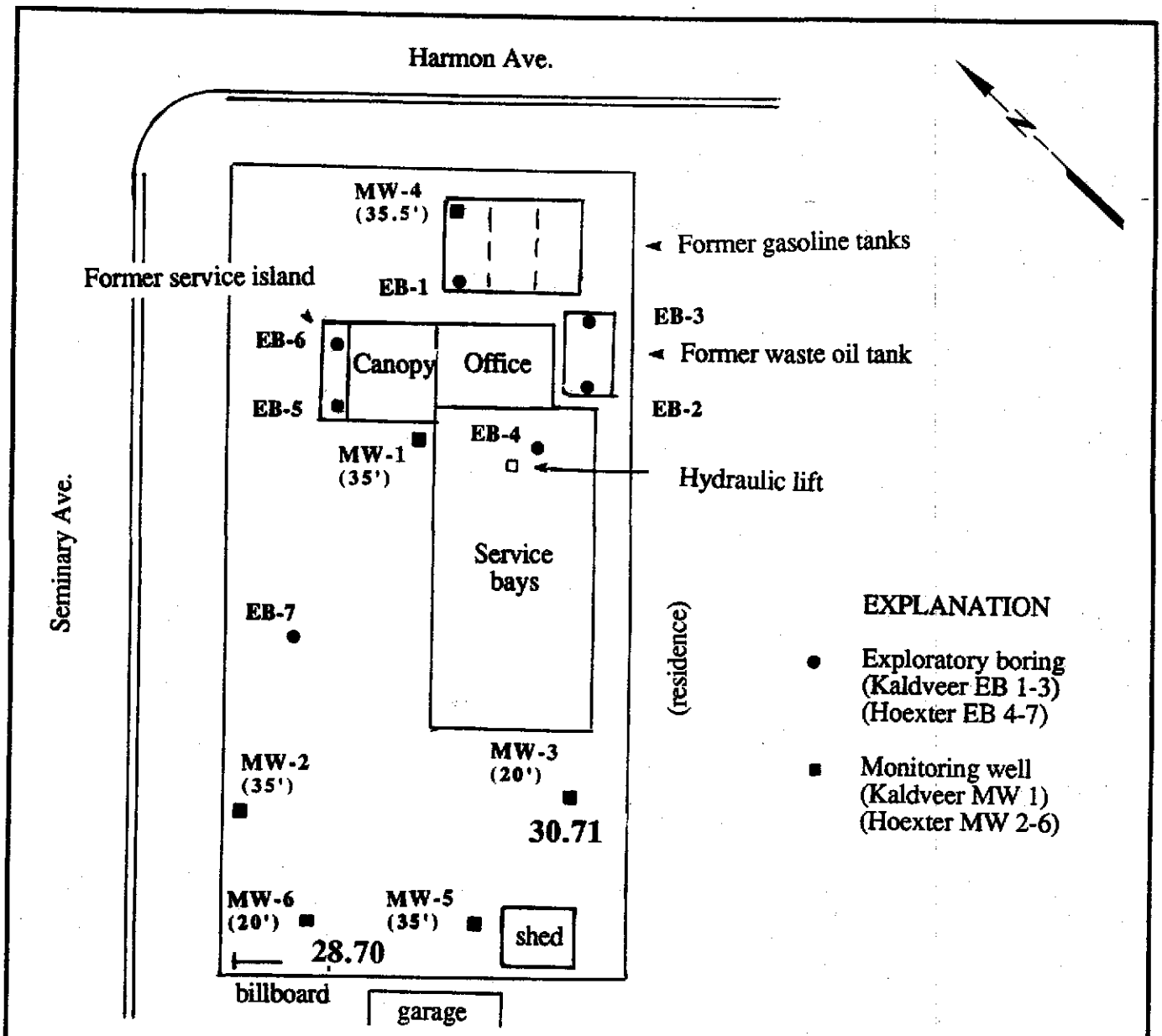
Base: A. Deak, Licensed Land Surveyor, 3/21/96 (wells, streets & property line); Hoexter field sketch, 10/25/93 (explor. borings, other features)

HOEXTER CONSULTING
Geology
Engineering Geology
Environmental Studies

GROUND WATER DATA MAP

1970 Seminary Ave.
Oakland, California

Project No.	Date	Figure 2A
E-10-1B-192B	January, 1997	



Base: A. Deak, Licensed Land Surveyor, 3/21/96 (wells, streets & property line); Hoexter field sketch, 10/25/93 (explor. borings, other features)

HOEXTER CONSULTING
Geology
Engineering Geology
Environmental Studies

GROUND WATER DATA MAP

1970 Seminary Ave.
Oakland, California

Project No.	Date	Figure 2B
E-10-1B-192B	January, 1997	

APPENDIX A

WATER SAMPLE LOG
CHAIN OF CUSTODY
ANALYTICAL TEST RESULTS

HOEXTER CONSULTING

Groundwater Sampling Field Log

Project Name/ No: Seminary / E-10-18-1923
Client: D. Grimit
Project Manager: D. Hoexter
Sampler: J. Forsythe
Casing Diameter: 2 inch X 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 72926
Date: 1/15/97
Sample Location/I.D.: MW-1
Start Time: ____

Depth of Well (feet): 35
Depth to Water (feet): 13.34
Sample Depth (feet): ____

Calculated Purged Volume: 14.12
Actual Purged Volume 16 gal.
35 - 13.34 = 21.66 'wtr.
→ 3.535 gal/vol.

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1624	0	0	6.55	831	54.7	clear	
1635	4	4	6.57	877	58.1	brown-gray	
1646	8	4	6.50	867	57.9	↓	
1656	12	4	6.41	851	57.4		
1707	16	4	6.55	859	58.1	↓	

Purge Method

____ 2" Bladder Pump X Bailer ____ Well Wizard X Dedicated
____ Submersible Pump ____ Cenetrifugal Pump ____ Dipper ____ Other
____ Pneumatic Displacement Pump

Sample Method

____ 2" Bladder Pump X Bailer ____ Well Wizard X Dedicated
____ Surface Sampler ____ Dipper ____ Fultz Pump ____ Other

Well Integrity: OK / Good
Remarks: Strong odor, sheen, oil globules on initial bail.
Sampled 1500 1/16/97

Signature: JF (DHH)

Volumes Per Unit Length Selected Well Casing Diameters

Well Casing I.D. (inches)	Volume Per Unit Length Gal/ft	Cubic Ft/ft	L/M	L/Ft
1.5	0.0918	0.0123	1.140	0.3475
2.0	(0.1632)	0.0218	2.027	0.6178
3.0	0.3672	0.0491	4.560	1.3900
4.0	0.6528	0.0873	8.107	2.4710
6.0	1.4690	0.1963	18.240	5.5600

Conversion Factors

To Convert	Into	Mulitply
Ft. of Water	Lbs/sq.in.	0.4335
Lbs/Sq. inch	Ft. of Water	2.3070
Cubic feet	Gallons	7.4800
Gallons	Liters	3.7850
Feet	Meters	0.30048
Inches	Centimeters	2.5400

MW-1

HOEXTER CONSULTING

Groundwater Sampling Field Log

Project Name/ No: Seminary / E-10-13-1923
Client: D. Gremit
Project Manager: D. Hoexter
Sampler: J. Forsythe
Casing Diameter: 2 inch X 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 72927
Date: 1/15/97
Sample Location/I.D.: MW-2
Start Time: ____

Depth of Well (feet): 35
Depth to Water (feet): 10.07
Sample Depth (feet): ____

Calculated Purged Volume: 16.25
Actual Purged Volume 18 gal
35 - 10.07 = 24.93 ft wtr
→ 4.07 gal/vol

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1312	0	0	6.90	838	59.0	clear	
1324	4.5	4.5	6.94	849	61.5	cloudy	
1336	9	4.5	6.97	812	60.9	↓	
1349	13.5	4.5	6.95	799	60.5	↓	
1403	18	4.5	6.95	807	59.4	↓	

Purge Method

____ 2" Bladder Pump ✓ Bailer ____ Well Wizard ✓ Dedicated
____ Submersible Pump ____ Cenetrifugal Pump ____ Dipper ____ Other
____ Pneumatic Displacement Pump

Sample Method

____ 2" Bladder Pump ✓ Bailer ____ Well Wizard ✓ Dedicated
____ Surface Sampler ____ Dipper ____ Fultz Pump ____ Other

Well Integrity: OK / good
Remarks: Sl. H_2S (?) odor, no sheen or product on initial bailer, ~18" wtr in well following purge 1/15/97; Sampled 16:30 1/16/97
Signature: JF (DTH)

Volumes Per Unit Length Selected Well Casing Diameters

Well Casing I.D. (inches)	Volume Per Unit Length Gal/ft	Cubic Ft/ft	L/M	L/Ft
1.5	0.0918	0.0123	1.140	0.3475
2.0	0.1632	0.0218	2.027	0.6178
3.0	0.3672	0.0491	4.560	1.3900
4.0	0.6528	0.0873	8.107	2.4710
6.0	1.4690	0.1963	18.240	5.5600

Conversion Factors

To Convert	Into	Mulitply
Ft. of Water	Lbs/sq.in.	0.4335
Lbs/Sq. inch	Ft. of Water	2.3070
Cubic feet	Gallons	7.4800
Gallons	Liters	3.7850
Feet	Meters	0.30048
Inches	Centimeters	2.5400

MW-2

HOEXTER CONSULTING

Groundwater Sampling Field Log

Project Name/ No: Seminary / E-10-18-192B
Client: D. Grimit
Project Manager: D. Hoexter
Sampler: J. Forsythe
Casing Diameter: 2 inch X 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 72928
Date: 1/15/97
Sample Location/I.D.: MW-3
Start Time: ____

Depth of Well (feet): 20
Depth to Water (feet): 6.23
Sample Depth (feet): ____

Calculated Purged Volume: 9
Actual Purged Volume 10
20 - 6.23 = 13.77 wtr
→ 2.25 gal/vol

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1106	0	0	6.67	572	56.1	clear	
1112	2.5	2.5	6.68	592	57.8	sl. cloudy	
1119	5	2.5	6.69	594	58.8		
1126	7.5	2.5	6.71	597	58.7		
1139	10	2.5	6.78	593	58.9		

Purge Method

____ 2" Bladder Pump ✓ Bailer ____ Well Wizard ✓ Dedicated
____ Submersible Pump ____ Cenetrifugal Pump ____ Dipper ____ Other
____ Pneumatic Displacement Pump

Sample Method

____ 2" Bladder Pump ✓ Bailer ____ Well Wizard ✓ Dedicated
____ Surface Sampler ____ Dipper ____ Fultz Pump ____ Other

Well Integrity: OK / Good
Remarks: No odor, no sheen or PSH initial bail, Sl. odor while purging - 15" wtr. in well FF purge 1/15/97; Sampled 12:50 1/16/97
Signature: JF (DTH)

Volumes Per Unit Length Selected Well Casing Diameters

Well Casing I.D. (inches)	Volume Per Unit Length Gal/ft	Cubic Ft/ft	L/M	L/Ft
1.5	0.0918	0.0123	1.140	0.3475
2.0	(0.1632)	0.0218	2.027	0.6178
3.0	0.3672	0.0491	4.560	1.3900
4.0	0.6528	0.0873	8.107	2.4710
6.0	1.4690	0.1963	18.240	5.5600

Conversion Factors

To Convert	Into	Mulitply
Ft. of Water	Lbs/sq.in.	0.4335
Lbs/Sq. inch	Ft. of Water	2.3070
Cubic feet	Gallons	7.4800
Gallons	Liters	3.7850
Feet	Meters	0.30048
Inches	Centimeters	2.5400

MW-3

HOEXTER CONSULTING

Groundwater Sampling Field Log

Project Name/ No: Seminary / E-10-1B-19CB
Client: D. Grimit
Project Manager: D. Hoexter
Sampler: J. Forsythe
Casing Diameter: 2 inch ✓ 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 72929
Date: 1/15/97
Sample Location/I.D.: MW-4
Start Time: ____

Depth of Well (feet): 35
Depth to Water (feet): 13.78
Sample Depth (feet): ____

Calculated Purged Volume: 13.84
Actual Purged Volume 16 =
35 - 13.78 = 21.22' wtr
⇒ 3.46 gal/vol.

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1512	0	0	6.75	830	59.8	clear	
1523	4	4	6.78	896	60.5	brown-sed	
1534	8	4	6.81	909	66.2		
1545	12	4	6.76	889	59.5		
1556	16	4	6.59	885	59.1		

Purge Method

____ 2" Bladder Pump ✓ Bailer ____ Well Wizard ✓ Dedicated
____ Submersible Pump ____ Cenetrifugal Pump ____ Dipper ____ Other
____ Pneumatic Displacement Pump

Sample Method

____ 2" Bladder Pump ✓ Bailer ____ Well Wizard ✓ Dedicated
____ Surface Sampler ____ Dipper ____ Fultz Pump ____ Other

Well Integrity: OK / Secured
Remarks: No odor, sheen or prod. on initial bail. Subsequent sheen, odor or purge wtr. Sample collected 1/16/97 14:10

Signature: JF [DJH]

Volumes Per Unit Length Selected Well Casing Diameters

Well Casing I.D. (inches)	Volume Per Unit Length Gal/ft	Cubic Ft/ft	L/M	L/Ft
1.5	0.0918	0.0123	1.140	0.3475
2.0	(0.1632)	0.0218	2.027	0.6178
3.0	0.3672	0.0491	4.560	1.3900
4.0	0.6528	0.0873	8.107	2.4710
6.0	1.4690	0.1963	18.240	5.5600

Conversion Factors

To Convert	Into	Mulitply
Ft. of Water	Lbs/sq.in.	0.4335
Lbs/Sq. inch	Ft. of Water	2.3070
Cubic feet	Gallons	7.4800
Gallons	Liters	3.7850
Feet	Meters	0.30048
Inches	Centimeters	2.5400

MW-4

HOEXTER CONSULTING

Groundwater Sampling Field Log

Project Name/ No: Seminary / E-10-1B-1923
Client: D. Grimit
Project Manager: D. Hoexter
Sampler: J. Forsythe
Casing Diameter: 2 inch X 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 72930
Date: 1/15/97
Sample Location/I.D.: MW-5
Start Time: ____

Depth of Well (feet): 35
Depth to Water (feet): 17.33
Sample Depth (feet): ____

Calculated Purged Volume: 11.52
Actual Purged Volume 12
35 - 17.33 = 17.67 wtr
→ 2.88 gal./vol.

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1206	0	0	6.72	632	57.9	clear	
1216	3	3	6.81	737	59.1	med. brown	
1225	6	3	6.88	771	59.5	↓	
1234	9	3	6.88	818	59.1	↓	
1245	12	3	6.78	828	59.1	↓	

Purge Method

____ 2" Bladder Pump ____ Bailer ____ Well Wizard ✓ Dedicated
____ Submersible Pump ____ Cenetrifugal Pump ____ Dipper ____ Other
____ Pneumatic Displacement Pump

Sample Method

____ 2" Bladder Pump ✓ Bailer ____ Well Wizard ✓ Dedicated
____ Surface Sampler ____ Dipper ____ Fultz Pump ____ Other

Well Integrity: OK / Good
Remarks: No odor, sheen or PRD - initial bail. Sample collected 1/16/97 13:25.

Signature: JF (DJH)

Volumes Per Unit Length Selected Well Casing Diameters

Well Casing I.D. (inches)	Volume Per Unit Length Gal/ft	Cubic Ft/ft	L/M	L/Ft
1.5	0.0918	0.0123	1.140	0.3475
2.0	0.1632	0.0218	2.027	0.6178
3.0	0.3672	0.0491	4.560	1.3900
4.0	0.6528	0.0873	8.107	2.4710
6.0	1.4690	0.1963	18.240	5.5600

Conversion Factors

To Convert	Into	Mulitply
Ft. of Water	Lbs/sq.in.	0.4335
Lbs/Sq. inch	Ft. of Water	2.3070
Cubic feet	Gallons	7.4800
Gallons	Liters	3.7850
Feet	Meters	0.30048
Inches	Centimeters	2.5400

MW-5

HOEXTER CONSULTING

Groundwater Sampling Field Log

Project Name/ No: Seminary/E-10-18-1923
Client: D. Grimit
Project Manager: D. Hoexter
Sampler: J. Forsythe
Casing Diameter: 2 inch X 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 72931
Date: 1/15/97
Sample Location/I.D.: MW-6
Start Time: ____

Depth of Well (feet): 20
Depth to Water (feet): 7.72
Sample Depth (feet): ____

Calculated Purged Volume: 8
Actual Purged Volume 10

20 - 7.72 = 12.28' wtr
→ 2.00 gal/vol

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1428	0	0	6.88	796	58.2	clear	
1435	2.5	2.5	6.89	831	60.5	grg-brwn	
1441	5	2.5	6.90	828	60.8		
1447	7.5	2.5	6.89	822	60.9		
1452	10	2.5	6.91	834	61.0		

Purge Method

____ 2" Bladder Pump ✓ Bailer ____ Well Wizard ✓ Dedicated
____ Submersible Pump ____ Cenetrifugal Pump ____ Dipper ____ Other
____ Pneumatic Displacement Pump

Sample Method

____ 2" Bladder Pump ✓ Bailer ____ Well Wizard ✓ Dedicated
____ Surface Sampler ____ Dipper ____ Fultz Pump ____ Other

Well Integrity: Ok / Good
Remarks: Sl. odor in well, no sheen or prod. in first bail.
Sample collected 1/16/97 - 15:35

Signature: JF (DHH)

Volumes Per Unit Length Selected Well Casing Diameters

Well Casing I.D. (inches)	Volume Per Unit Length Gal/ft	Cubic Ft/ft	L/M	L/Ft
1.5	0.0918	0.0123	1.140	0.3475
2.0	0.1632	0.0218	2.027	0.6178
3.0	0.3672	0.0491	4.560	1.3900
4.0	0.6528	0.0873	8.107	2.4710
6.0	1.4690	0.1963	18.240	5.5600

Conversion Factors

To Convert	Into	Mulitply
Ft. of Water	Lbs/sq.in.	0.4335
Lbs/Sq. inch	Ft. of Water	2.3070
Cubic feet	Gallons	7.4800
Gallons	Liters	3.7850
Feet	Meters	0.30048
Inches	Centimeters	2.5400

MW-6

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name
E-10-18-1923	1970 Seminary Ave Oakland CA

Sampler's Name (printed): J. Forsythe

Boring Number	Date	Time	Soil	Water	Sample Location or Depth	No. of Samples / Type of Containers	Analytical Tests: TPH-G / BTEX / MTBE	SM 5520 C/F	Dissolved Oxygen	Ferrous Iron	Nitrate + Sulfate	Remarks
MW-1	1/16/97	15:00		↓		3 VOA	X					Preserved HCl
						1 amber		X				
						1 amber			X			
						1 amber				X		
						1 plastic					X	
MW-2	1/16/97	16:30				3 VOA	X					Preserved HCl
						1 amber		X				
						1 amber			X			
						1 amber				X		
						1 plastic					X	
MW-3	1/16/97	12:50				3 VOA	X					Preserved HCl
						1 amber		X				
						1 amber			X			
						1 amber				X		
						1 plastic					X	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
J. Forsythe	1/16/97 17:45	Angela Rydelius
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory By:

VOAS | O&G | METALS | OTHER

ICE/T° ✓ | COOD CONDITION ✓ | HEAD SPACE ABSENT ✓ | PRESERVATIVE ✓ | APPROPRIATE CONTAINERS ✓

Ship To: McCampbell Analytical
110 - 2nd Ave S # D-7
Pacheco CA 94553

Attention: E. Hamilton

Phone No: 510-798-1620

Requested Turnaround Time: Normal

Contact: David Hoexter

Phone: 415-494-2505

Remarks: ① NO 8010 ② Analyse per RWQCB LUFT Guidelines ③ Please filter + preserve Fe samples ASAP (not done in field)

Hoexter Consulting
Engineering Geology
734 Torreya Court
Palo Alto, CA 94303

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name
E-10-1B-1923	1970 Seminary Ave - Oakland CA

Sampler's Name (printed): J. Forsythe

Boring Number	Date	Time	Soil	Water	Sample Location or Depth	No. of Samples / Number	Number/Type of Containers	Analytical Tests: TPH-G/BTEX/MTBE	5 M 5520 C/F	[redacted]	Dissolved Oxygen	Ferrous Iron	Nitrate + Sulfate	Remarks
MW-4	1/16/97	14:10				3	VOA	X						Preserved HCl
						1	amber		X					
						1	amber				X			
						1	amber					X		
						1	plastic						X	
MW-5	1/16/97	13:25				3	VOA	X						Preserved HCl
						1	amber		X					
						1	amber				X			
						1	amber					X		
						1	plastic						X	
MW-6	1/16/97	15:35				3	VOA	X						Preserved HCl
						1	amber		X					
						1	amber				X			
						1	amber					X		
						1	plastic						X	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
J. Forsythe	1/16/97 17:45	Angela Rydelius
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Ship To: Mc Campbell Anal

VOAS	O&G	METALS	OTHER

ICE/T ✓
COOD CONDITION ✓
HEAD SPACE ABSENT ✓
PRESERVATIVE ✓
APPROPRIATE ✓
CONTAINERS ✓

Requested Turnaround Time:

Contact: Phone

Remarks: (See page 1)

Hoexter Consulting
Engineering Geology
734 Torreya Court
Palo Alto, CA 94303

McCAMPBELL ANALYTICAL INC.

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

01/28/97

Dear David:

Enclosed are:

1). the results of 6 samples from your # **E-10-1B-192B; 1970 Seminary 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, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Hoexter Consulting Engineering Geology 734 Torreya Court Palo Alto, CA 94303	Client Project ID: # E-10-1B-192B; 1970 Seminary Ave., Oakland	Date Sampled: 01/16/97
		Date Received: 01/16/97
	Client Contact: David Hoexter	Date Extracted: 01/16-01/17/97
	Client P.O:	Date Analyzed: 01/16-01/17/97

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	Ethylben-zene	Xylenes	% Rec. Surrogate
72926	MW-1	W	48,000,a,h	310	2600	3200	1300	5300	109
72927	MW-2	W	330,a	12	41	2.4	1.3	9.9	98
72928	MW-3	W	1800,b,d	7.1	2.8	0.68	48	66	111#
72929	MW-4	W	4800,a,h	84	1900	21	2.5	27	105
72930	MW-5	W	3000,a	90	150	68	190	180	105
72931	MW-6	W	6500,a	220	570	65	170	630	99
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, soil and sludge samples in mg/kg, and all TCLP extracts in mg/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 Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Hoexter Consulting Engineering Geology 734 Torreya Court Palo Alto, CA 94303	Client Project ID: # E-10-1B-192B; 1970 Seminary Ave., Oakland	Date Sampled: 01/16/97 Date Received: 01/16/97
	Client Contact: David Hoexter	Date Extracted: 01/16-01/24/97
	Client P.O:	Date Analyzed: 01/16-01/24/97

Petroleum Oil & Grease (with Silica Gel Clean-up) *

EPA methods 413.1, 9070 or 9071; Standard Methods 5520 D/E&F or 503 D&E for solids and 5520 B&F or 503 A&E for liquids

Lab ID	Client ID	Matrix	Oil & Grease*
72926	MW-1	W	110,h
72927	MW-2	W	ND
72928	MW-3	W	ND
72929	MW-4	W	5.2,h
72930	MW-5	W	ND
72931	MW-6	W	ND
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	5 mg/L
		S	50 mg/kg

* water samples are reported in mg/L and soil and sludge samples in mg/kg

h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Hoexter Consulting Engineering Geology	Client Project ID: # E-10-1B-192B; 1970 Seminary Ave., Oakland	Date Sampled: 01/16/97
		Date Received: 01/16/97
734 Torreya Court	Client Contact: David Hoexter	Date Extracted: ---
Palo Alto, CA 94303	Client P.O:	Date Analyzed: 01/17/97

Metals by ICP*

EPA analytical methods 6010, 200.7

Lab ID	Client ID	Matrix	Extraction°	Ferrous Iron*
72926	MW-1	W	Dissolved	3.6
72927	MW-2	W	Dissolved	0.28
72928	MW-3	W	Dissolved	ND
72929	MW-4	W	Dissolved	0.75
72930	MW-5	W	Dissolved	0.38
72931	MW-6	W	Dissolved	0.28

Dissolved iron assumed to be equal to ferrous iron

Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	TTLC	0.05
		S	TTLC	3.0
		---	STLC,TCLP	0.10

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

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

i) liquid sample that contains greater than ~ 2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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

Hoexter Consulting Engineering Geology 734 Torreya Court Palo Alto, CA 94303	Client Project ID: # E-10-1B-192B; 1970 Seminary Ave., Oakland	Date Sampled: 01/16/97
		Date Received: 01/16/97
	Client Contact: David Hoexter	Date Extracted: 01/16/97
	Client P.O:	Date Analyzed: 01/16/97

			Dissolved Oxygen
Analytical methods			EPA 360.1
Lab ID	Client ID	Matrix	DO*
72926	MW-1	W	1.4
72927	MW-2	W	5.4
72928	MW-3	W	5.2
72929	MW-4	W	4.7
72930	MW-5	W	3.4
72931	MW-6	W	2.7
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	1.0 mg/L at 25°C
		S	N/A

* water samples are reported in mg/L and soil samples in mg/kg

flashpoint values are reported in °C

° solid samples are extracted in accordance with CA Title 22, Chapter 11, Appendix II

DHS Certification No. 1644

Edward Hamilton, Lab Director

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

QC REPORT FOR HYDROCARBON ANALYSES

Date: 01/16/97 Matrix: Water

Analyte	Concentration (mg/L) Sample (#72846)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	88.6	97.2	100.0	88.6	97.2	9.3
Benzene	0.0	10.4	11.0	10.0	104.0	110.0	5.6
Toluene	0.0	10.3	10.8	10.0	103.0	108.0	4.7
Ethyl Benzene	0.0	10.4	10.9	10.0	104.0	109.0	4.7
Xylenes	0.0	31.1	32.7	30.0	103.7	109.0	5.0
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

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QC REPORT FOR HYDROCARBON ANALYSES

Date: 01/16/97 Matrix: Water

Analyte	Concentration (mg/L) Sample (#72925)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ethyl Benzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Xylenes	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil & grease)	0	24600	25400	23700	104	107	3.2

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
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QC REPORT FOR HYDROCARBON ANALYSES

Date: 01/17/97 Matrix: Water

Analyte	Concentration (mg/L) Sample (#72907)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	96.1	96.6	100.0	96.1	96.6	0.5
Benzene	0.0	10.6	10.2	10.0	106.0	102.0	3.8
Toluene	0.0	10.7	10.2	10.0	107.0	102.0	4.8
Ethyl Benzene	0.0	10.9	10.3	10.0	109.0	103.0	5.7
Xylenes	0.0	32.1	30.7	30.0	107.0	102.3	4.5
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
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QC REPORT FOR HYDROCARBON ANALYSES

Date: 01/23/97-01/24/97 Matrix: Water

Analyte	Concentration (mg/L)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ethyl Benzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Xylenes	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil & grease)	0	26400	24900	23700	111	105	5.8

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
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QC REPORT FOR ICP and/or AA METALS

Date: 01/17/97 Matrix: Water/Dissolved

Analyte	Concentration (mg/L)			Amount	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
Total Iron	0.00	0.54	0.52	5.00	11	10	4.5
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
Total Copper	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Organic Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue
Modesto, CA 95351

Phone (209) 572-0900
FAX (209) 572-0916

CERTIFICATE OF ANALYSIS

Report # I022-01
McCampbell Analytical
110 2nd Avenue #D7
Pacheco CA 94553

Date of Report: 01/28/97
Date Received: 01/22/97
Date Started: 01/22/97
Date Completed: 01/23/97

Project Name: 7958

Purchase Order #

Sample ID	Lab ID	Detection Limit	Method	Analyte	Results	Units mg/L
MW-1	I30340	1.0	300	Nitrate	ND	
		1	300	Sulfate	ND	
MW-2	I30341	1.0	300	Nitrate	3	
		1	300	Sulfate	25	
MW-3	I30342	1.0	300	Nitrate	ND	
		1	300	Sulfate	5	
MW-4	I30343	1.0	300	Nitrate	ND	
		1	300	Sulfate	5	
MW-5	I30344	1.0	300	Nitrate	ND	
		1	300	Sulfate	9	
MW-6	I30345	1.0	300	Nitrate	ND	
		1	300	Sulfate	8	

Ramiro Salgado
Chemist

Certification # 1157

Donna Allsup
Laboratory Director

GED

10CC-01

McCAMPBELL ANALYTICAL

110 2nd AVENUE, # D7
PACHECO, CA 94553

(510) 798-1620 FAX (510) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY ☐ ROUTINE

REPORT TO: Ed Hamilton BILL TO: MAI

PROJECT NUMBER: 7958 PROJECT NAME: HC-1970 S.

PROJECT LOCATION:

SAMPLE ID	LOCATION	SAMPLING DATE	SAMPLING TIME	# CONTAINERS	TYPE CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	METHOD PRESERVED: HCL	HNO_3	ICE	OTHER	ANALYSIS REQUEST: EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080 – PCBs Only	EPA 624/8240/8260	EPA 625/8270	CAM – 17 Metals	EPA – Priority Pollutant Metals	LUFT Metals	LEAD (7240/7421/239.2/6010)	ORGANIC LEAD	RCI	OTHER: Nitrate + Sulfate	COMMENTS
MW-1		1/16/97	1500	1	L	X							X								I30340						X	72926
MW-2			1630	1	L	X							X								I30341						X	72927
MW-3			1250	1	L	X							X								I30342						X	72928
MW-4			1416	1	L	X							X								I30343						X	72929
MW-5			1325	1	L	X							X								I30344						X	72930
MW-6		↓	1535	1	L	X							X								I30345						X	72931

	DATE	TIME	
RELINQUISHED BY: Angela Rydelius	1/17/97		RECEIVED BY:
RELINQUISHED BY:			RECEIVED BY:
RELINQUISHED BY:	1/22/97	11:20	RECEIVED BY LABORATORY:

REMARKS:

7958AHC27

CHAIN-OF-CUSTODY RECORD

Pg 1 of 2

Project Number	Project Name
E-10-18-1923	1970 Seminary Ave Oakland CA

Sampler's Name (printed): J- Forsythe

Boring Number	Date	Time	Soil	Water	Sample Location or Depth	No. of Samples Number	Number/Type of Containers	TPH-G/BTEX/MTBE	SM 5520 C/F	Dissolved oxygen	Ferrous Iron	Nitrate + Sulfate	Remarks
+ MW-1	1/16/97	15:00				3	VOA	X					Preserved HCl
						1	amber		X				
						1	amber			X			72926
						1	amber				X		
						1	plastic					X	
+ MW-2	1/16/97	16:30				3	VOA	X					Preserved HCl
						1	amber		X				
						1	amber			X			72927
						1	amber				X		
						1	plastic					X	
+ MW-3	1/16/97	12:50				3	VOA	X					Preserved HCl
						1	amber		X				
						1	amber			X			72928
						1	amber				X		
						1	plastic					X	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
J. Forsythe	1/16/97 17:45	Angela Rydelius
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature) for Laboratory by:

VOAS | O&G | METALS | OTHER

ICE ✓
COOD CONDITION ✓
HEAD SPACE ABSENT ✓
PRESERVATIVE APPROPRIATE ✓
CONTAINERS ✓

Ship To: McCampbell Analytical
110-12th Ave S #D-7
Pacheco CA 94553

Attention: E. Hamilton

Phone No: 510-798-1620

Requested Turnaround Time: Normal

Contact: David Hoexter

Phone 415-494-2505

Remarks: (1) No soil (2) Analyze per RWQCB LUFT Guidelines (3) Please filter + preserve Fe Samples ASAP (not done in field)

Hoexter Consulting
Engineering Geology
734 Torreya Court
Palo Alto, CA 94303

7958AHC27

Pg 2 of 2

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name
E-10-1B-1923	1970 Seminary Ave - Oakland CA

Sampler's Name (printed): J. Forsythe

	Boring Number	Date	Time	Soil	Water	Sample Location or Depth	No. of Samples Number	Number/Type of Containers	TPH-G	BTEX	MTBE	5M 5520 C/F	Dissolved Oxygen	Ferrous Iron	Nitrate & Sulfate	Remarks
1	MW-4	1/16/97	14:10				3	VOA	X							Preserved HCl
							1	amber		X						
							1	amber			X					72929
							1	amber				X				
							1	plastic						X		
4	MW-5	1/16/97	13:25				3	VOA	X							Preserved HCl
							1	amber		X						
							1	amber			X					72930
							1	amber				X				
							1	plastic						X		
4	MW-6	1/16/97	15:35				3	VOA	X							Preserved HCl
							1	amber		X						
							1	amber			X					72931
							1	amber				X				
							1	plastic						X		

Relinquished by: (Signature) J. Forsythe	Date/Time 1/16/97 17:45	Received by: (Signature) Angela Rydelius
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Ship To: Mc Campbell Anal

Attention:

Phone No:

Requested Turnaround Time:

Remarks: See Page

Contact:

ICE/T ✓ COOD CONDITION ✓ HEAD SPACE ABSENT ✓

ICE/T ___ COOD CONDITION ___ HEAD SPACE ABSENT ___

APPROPRIATE CONTAINERS ✓

VOAS ✓ O&G | METALS | OTHER

PRESERVATIVE ✓

Phone

Hoexter Consulting
Engineering Geology
734 Torreya Court
Palo Alto, CA 94303