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HAZMAT

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ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

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January 27, 1994

LF 3015.00-10

Mr. Barney Chan, Hazardous Materials Specialist
Alameda County Health Care Services Agency
Department of Environmental Health
Division of Hazardous Materials
80 Swan Way, Room 350
Oakland, California 94621

Subject: Ground-Water Monitoring Technical Report for December
1993, 625 Hegenberger Road, Oakland, California

Dear Mr. Chan:

This ground-water monitoring technical report is submitted by Levine-Fricke, Inc. ("Levine-Fricke") on behalf of Diversified Investment and Management Corp., for the former gasoline service station location at 625 Hegenberger Road, Oakland, California.

Summary of Field Activities

Levine-Fricke measured the depth to ground water and collected water samples from all five existing wells on December 22, 1993. Well locations are shown in Figure 1. The sampling procedure for each monitoring well involved measuring the initial water level, purging stagnant water from the well to allow collection of more representative formation water, and collecting water samples.

Before sampling, depth to water and total well depths from the top of the well casings were measured, using an electric water-level meter. Wells were purged and ground-water samples were collected using a clean Teflon bailer fitted with a new nylon rope. Field parameters (temperature, pH, specific conductance, and turbidity) were measured during purging and sampling. After approximately three to four casing volumes had been removed and field parameters had stabilized, the wells were sampled. Bailer blanks were collected for monitoring wells MW-12 and MW-16.

Ground-water samples were then slowly poured into laboratory-supplied bottles for analysis, labeled, and placed in an ice-chilled cooler for transportation to the analytical laboratory under standard chain-of-custody protocol. The ground-water samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Method 8020, for total petroleum hydrocarbons as gasoline (TPHg) using EPA Method

3015\3015093.QMR:FNC

1900 Powell Street, 12th Floor
Emeryville, California 94608
(510) 652-4500
Fax (510) 652-2246

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5030 GCFID, for TPH as diesel and oil (TPHd and TPHo) using EPA Method 3510, and for total lead using EPA Method 7420. The samples were analyzed by American Environmental Network Laboratories of Pleasant Hill, California (AEN; formerly Quanteq), a state-certified laboratory.

Ground water sampled from all five wells was analyzed for BTEX, TPHg, TPHd, and TPHo. Ground water was analyzed for total lead for all wells except MW-16. A sample for total lead analysis was collected from this well, but turbidity in the filtered sample indicated that the filter had broken and the sample was not suitable for analysis. The bailer blank collected for MW-12 was analyzed for BTEX and TPHg. The bailer blank collected for MW-16 was analyzed for total lead.

Field Results

Ground-water elevation data are summarized in Table 1 and shown in Figure 1. The ground-water elevation contours and the ground-water flow direction are shown in Figure 1. A summary of field parameters measured during purging and sampling is presented in Table 2. Well sampling sheets are attached.

Ground-water elevations were determined for monitoring wells MW-8, MW-10, MW-11, and MW-12 using the available well casing elevations (Subsurface Consultants, boring logs dated April 25, 1988 through July 16, 1990). There was no available well casing elevation for monitoring well MW-16. Ground-water levels ranged from -1.49 to -1.84 feet above mean sea level (msl).

~~The general direction of the ground-water flow at the time of measurement was west to northwest under a horizontal hydraulic gradient of approximately 0.003 foot/foot (ft/ft). However, some tidal fluctuation may result in varied orientation and gradient of shallow ground water. Previous measurements indicate that the ground-water flow was to the west in May 1993 (HartCrowser, letter to Barney Chan of Alameda County Department of Environmental Health dated June 16, 1993, reporting ground-water sampling results).~~

Ground-Water Quality

A summary of ground-water quality data, including available historical data, is presented in Table 3. Laboratory analysis certificates are attached.

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BTEX was detected in ground-water samples collected from monitoring wells MW-8, MW-11, and MW-16. TPHg was detected in samples collected from MW-8, MW-11, MW-12, and MW-16. TPHd was detected in samples from all five wells. TPHo and total lead were not detected in any of the samples. A slight hydrocarbon sheen was observed on the ground-water collected from MW-8. The BTEX and TPHg concentrations detected in the ground-water samples collected during the December 22, 1993 monitoring event indicate an increase in BTEX and TPHg concentrations. However, more data are needed to determine if this increase represents a possible trend.

Recommendations

Levine·Fricke recommends that quarterly monitoring should be continued, with the next event scheduled for February 1994. During the next monitoring event, the well casing for monitoring well MW-16 should be surveyed to be included in site gradient flow assessment. Additionally, we recommend that ground-water elevations be measured twice on one day, approximately six hours apart, to determine if there is any tidal influence that affects the ground-water flow direction.

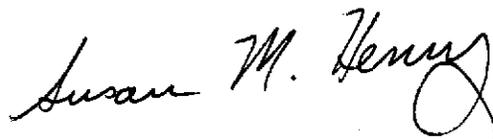
Levine·Fricke also recommends that Diversified Investment and Management Corp. pursue fuel leak case closure in accordance with applicable state and county regulations. In accordance with this effort, it is our opinion that the appropriate next step is collection of supplemental site soil and ground-water data.

Please do not hesitate to call either of the undersigned if you have any questions.

Sincerely,



John Sturman, P.E., R.G.
Senior Geotechnical Engineer



Susan M. Henry, Ph.D.
Senior Project Environmental
Engineer

cc: James Graeb, Diversified Investment and Management Corp.

TABLE 1
GROUND-WATER ELEVATIONS
DIVERSIFIED INVESTMENT
625 HEGENBERGER ROAD, OAKLAND, CALIFORNIA

Well ID	Well Elevation* (ft, msl)	28-May-93 Ground-water Elevation (ft, msl)	22-Dec-93 Depth to Water (ft)	22-Dec-93 Ground-water Elevation (ft, msl)	Difference between May and December Readings
MW-8	4.88	-1.52	6.72	-1.84	-0.32
MW-10	4.21	-1.41	6.00	-1.79	-0.38
MW-11	5.04	-1.56	6.84	-1.80	-0.24
MW-12	4.58	-1.16	6.07	-1.49	-0.33
MW-16	NA	NA	7.48	NA	

Data entered by MEK/11 Jan 94 Data proofed by *JMH 1/12/94*

Well elevation measured from top of casing.

ft - feet

ft, msl - feet above mean sea level

Well elevation levels obtained from Subsurface Consultants boring logs dated April 25, 1988 through July 16, 1990.

TABLE 2
 WATER-QUALITY PARAMETERS MEASURED DURING SAMPLING
 DIVERSIFIED INVESTMENT
 625 HEGENBERGER ROAD, OAKLAND, CALIFORNIA

Well Number	Date Sampled	Well Volume** (gallons)	Volume Withdrawn (gallons)	Stabilized Temperature (deg. C)	Stabilized pH	Stabilized Specific Conductance (umhos/cm)	Qualitative Turbidity
MW-8	22-Dec-93	1.5	4.5	19.4	6.95	2,440	Turbid*
MW-10	22-Dec-93	1.6	7.0	20.8	7.08	5,430	Moderately turbid
MW-11	22-Dec-93	1.5	4.5	20.2	6.94	3,750	Turbid
MW-12	22-Dec-93	1.6	5.3	20.3	6.87	2,880	Moderately turbid
MW-16	22-Dec-93	1.1	4.5	20.5	6.88	6,550	Turbid

Data entered by MEK/11 Jan 94 Data proofed by SMH 1/14/94

* A slight hydrocarbon sheen was observed.
 ** At time of monitoring.

TABLE 3
 HISTORICAL WATER QUALITY
 DIVERSIFIED INVESTMENT
 625 HEGENBERGER ROAD, OAKLAND, CALIFORNIA
 (concentrations reported in milligrams per liter [mg/l])

Sample ID	Date Sampled	Consultant/ Lab	Benzene	Toluene	Ethyl- benzene	Xylenes	TPHg	TPHd	TPHo
MW-8	*	SUB (1)	3.7	BDL	0.29	0.69	NA	NA	NA
	28-May-93	HC/SUP	6.4	0.028	0.16	0.036	19	1	NA
MW-10	*	SUB	0.0017	BDL	BDL	BDL	NA	NA	NA
	28-May-93	HC/SUP	<0.0003	<0.0003	<0.0003	<0.0009	<0.05	0.054	NA
	22-Dec-93	LF/AEN	<0.0005	<0.0005	<0.0005	<0.002	<0.05	0.58	<0.2
MW-11	*	SUB (2)	0.053	BDL	BDL	BDL	NA	NA	NA
	28-May-93	HC/SUP	0.45	0.0017	0.0015	0.0021	1.2	<0.05	NA
	22-Dec-93	LF/AEN	4.3	0.0022**	0.012	0.043	9.2	0.53	<0.2
MW-12	*	SUB	BDL	BDL	BDL	BDL	NA	NA	NA
	28-May-93	HC/SUP	<0.0003	<0.0003	<0.0003	<0.0009	<0.05	<0.05	NA
	22-Dec-93	LF/AEN	<0.0005	<0.0005	<0.0005	<0.002	0.05	0.3	<0.2
MW-16	*	SUB (3)	BDL	BDL	BDL	BDL	NA	NA	NA
	28-May-93	HC/SUP	0.0028	<0.0003	0.0007	<0.0009	<0.05	<0.05	NA
	22-Dec-93	LF/AEN	<0.0005	<0.0005	<0.0005	<0.002	2.2	0.52	<0.2
BLANKS									
Trip Blank	28-May-93	HC/SUP	<0.0003	<0.0003	<0.0003	<0.0009	<0.05	NA	NA
MW-12-BB	22-Dec-93	LF/AEN	<0.0005	0.0007	<0.0005	<0.002	<0.05	NA	NA
MW-16-BB	22-Dec-93	LF/AEN	NA	NA	NA	NA	NA	NA	NA

Data entered by MEK/11 Jan 94 Data proofed by SMH 1/12/94 QA/QC by SMH 1/17/94

* Date of ground-water sampling unavailable. Ground-water monitoring results accompanied well development and boring logs dated March 1990 through June 1990.

** Toluene detections for 22-Dec-93 were qualified using 0.0007 mg/l as a baseline. The bailer blank (MW-12-BB) contained toluene at 0.0007 mg/l.

All samples collected by Subsurface Consultants were also analyzed for total lead and organic lead. Both compounds were below detection limits (detection limits unavailable), except as noted.

All May 1993 samples also analyzed for total organic lead (DHS Method). The compound was not detected above the detection limit of 4 mg/l.

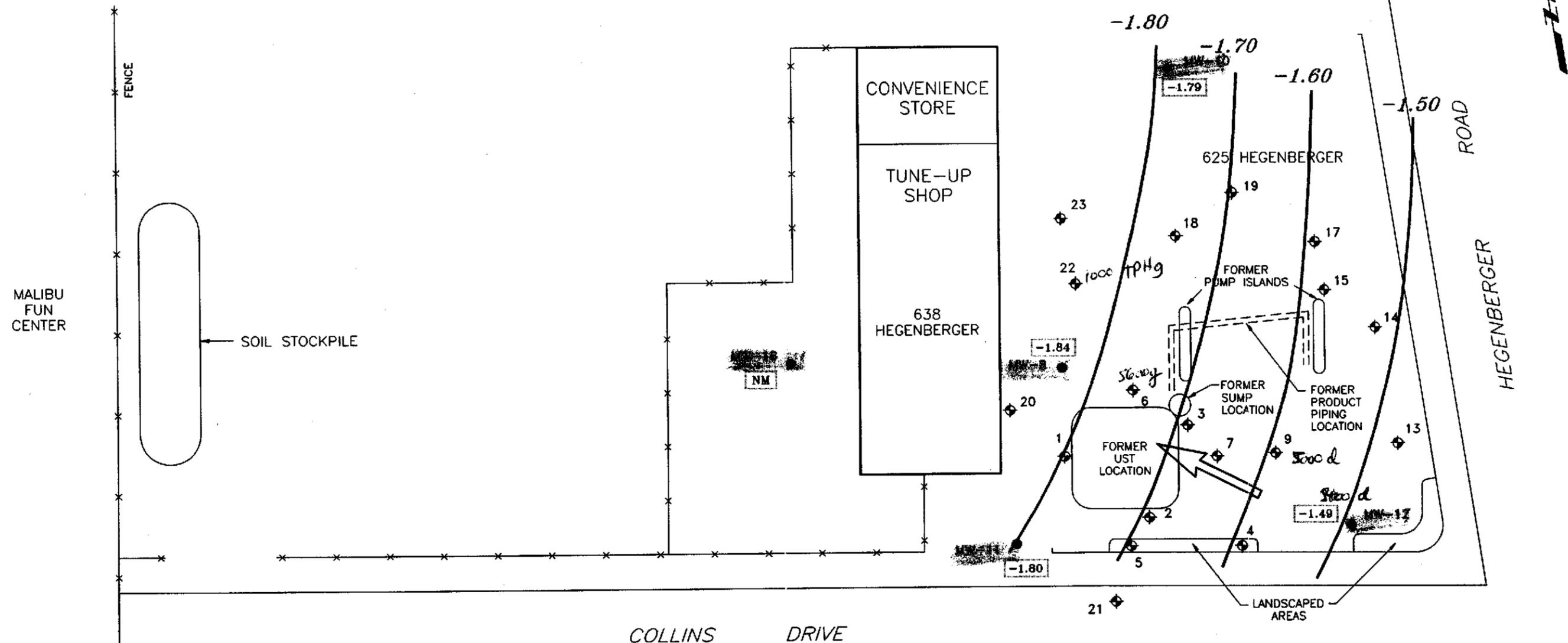
All December 1993 samples also analyzed for total lead (EPA Method 7420). The compound was not detected above the detection limit of 0.04 mg/l.

BDL - below detection limit; detection limit undocumented

TPHd - Total petroleum hydrocarbons as diesel
 TPHg - Total petroleum hydrocarbons as gasoline
 TPHo - Total petroleum hydrocarbons as oil

AEN - American Environmental Network, Pleasant Hill, California
 HC - HartCrowser, San Francisco, California
 LF - Levine-Fricke, Emeryville, California
 SUB - Subsurface Consultants, Oakland, California
 SUP - Superior Analytical Laboratories, Martinez, California

- (1) 18 mg/l total volatile hydrocarbons also detected.
- (2) 0.24 mg/l total volatile hydrocarbons and 0.21 mg/l total lead also detected.
- (3) 0.38 mg/l total volatile hydrocarbons also detected.
- (4) A slight hydrocarbon sheen was observed on the surface of the well water.



- EXPLANATION
- ◆ Approximate soil boring location installed 1988 and 1990 by Subsurface Consultants
 - Approximate monitoring well location installed 1990 by Subsurface Consultants
 - [-1.84] Ground-water elevation (feet, mean sea level)
 - 1.80 ~ Ground-water elevation contour (feet, mean sea level)
 - [NM] Not measured
 - ← Estimated ground-water flow direction

0 20 40 FEET
 Approximate Scale: 1" = 40'
 Base Map: Subsurface Consultants, May 9, 1990

Figure 1
 GROUND-WATER ELEVATIONS AND GRADIENT
 DECEMBER 22, 1993

Project No. 3015 **LEVINE·FRICKE**
 ENGINEERS, HYDROGEOLOGISTS, & APPLIED SCIENTISTS

American Environmental Network

DOHS Certification: 1172

PAGE 1

CERTIFICATE OF ANALYSIS

LEVINE-FRICKE
1900 POWELL ST., 12TH FLOOR
EMERYVILLE, CA 94608

ATTN: SUE HENRY

CLIENT PROJ. ID: 3015.10
C.O.C. SERIAL NO: 12630
PROJ. NAME: DIVERSIFIED INVESTMENT

REPORT DATE: 01/13/94

DATE SAMPLED: 12/22/93

DATE RECEIVED: 12/23/93

AEN JOB NO: 9312278

PROJECT SUMMARY:

On December 23, 1993, this laboratory received seven (7) water samples.

Client requested samples be analyzed for inorganic and organic parameters. Sample identification, methodologies, results and dates analyzed are summarized on the following pages.

All laboratory quality control parameters were found to be within established limits. Batch QC data is included at the end of this report.

If you have any questions, please contact Client Services at (510) 930-9090.


Larry Klein
General Manager

Results FAXed 01/06/94

LEVINE-FRICKE

SAMPLE ID: MW-12-1293
 AEN LAB NO: 9312278-01
 AEN WORK ORDER: 9312278
 CLIENT PROJ. ID: 3015.10

DATE SAMPLED: 12/22/93
 DATE RECEIVED: 12/23/93
 REPORT DATE: 01/13/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion - Water		-		Prep Date	12/27/93
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	12/31/93
Toluene	108-88-3	ND	0.5	ug/L	12/31/93
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/31/93
Xylenes, Total	1330-20-7	ND	2	ug/L	12/31/93
Purgeable HCs as Gasoline	5030/GCFID	0.05 *	0.05	mg/L	12/31/93
#Extraction for Diesel/Oil	EPA 3510	-		Extrn Date	12/27/93
TPH as Diesel	GC-FID	0.3 *	0.05	mg/L	12/28/93
TPH as Oil	GC-FID	ND	0.2	mg/L	12/28/93
Lead	EPA 7420	ND	0.1	mg/L	01/11/94

ND = Not detected

* = Indicates value above reporting limit

LEVINE-FRICKE

SAMPLE ID: MW-10-1293
 AEN LAB NO: 9312278-02
 AEN WORK ORDER: 9312278
 CLIENT PROJ. ID: 3015.10

DATE SAMPLED: 12/22/93
 DATE RECEIVED: 12/23/93
 REPORT DATE: 01/13/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion - Water		-		Prep Date	12/27/93
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	12/31/93
Toluene	108-88-3	ND	0.5	ug/L	12/31/93
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/31/93
Xylenes, Total	1330-20-7	ND	2	ug/L	12/31/93
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	12/31/93
#Extraction for Diesel/Oil	EPA 3510	-		Extrn Date	12/27/93
TPH as Diesel	GC-FID	0.58 *	0.05	mg/L	12/28/93
TPH as Oil	GC-FID	ND	0.2	mg/L	12/28/93
Lead	EPA 7420	ND	0.1	mg/L	01/11/94

ND = Not detected

* = Indicates value above reporting limit

LEVINE-FRICKE

SAMPLE ID: MW-16-1293
 AEN LAB NO: 9312278-03
 AEN WORK ORDER: 9312278
 CLIENT PROJ. ID: 3015.10

DATE SAMPLED: 12/22/93
 DATE RECEIVED: 12/23/93
 REPORT DATE: 01/13/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	12/31/93
Toluene	108-88-3	ND	0.5	ug/L	12/31/93
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/31/93
Xylenes, Total	1330-20-7	ND	2	ug/L	12/31/93
Purgeable HCs as Gasoline	5030/GCFID	2.2 *	0.05	mg/L	01/05/94
#Extraction for Diesel/Oil	EPA 3510	-		Extrn Date	12/27/93
TPH as Diesel	GC-FID	0.52 *	0.05	mg/L	12/28/93
TPH as Oil	GC-FID	ND	0.2	mg/L	12/28/93

ND = Not detected

* = Indicates value above reporting limit

LEVINE-FRICKE

SAMPLE ID: MW-11-1293
 AEN LAB NO: 9312278-04
 AEN WORK ORDER: 9312278
 CLIENT PROJ. ID: 3015.10

DATE SAMPLED: 12/22/93
 DATE RECEIVED: 12/23/93
 REPORT DATE: 01/13/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion - Water		-		Prep Date	12/27/93
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	4,500 *	0.5	ug/L	12/31/93
Toluene	108-88-3	39 *	0.5	ug/L	12/31/93
Ethylbenzene	100-41-4	12 *	0.5	ug/L	12/31/93
Xylenes, Total	1330-20-7	43 *	2	ug/L	12/31/93
Purgeable HCs as Gasoline	5030/GCFID	9.2 *	0.05	mg/L	12/31/93
#Extraction for Diesel/Oil	EPA 3510	-		Extrn Date	12/27/93
TPH as Diesel	GC-FID	0.53 *	0.05	mg/L	12/28/93
TPH as Oil	GC-FID	ND	0.2	mg/L	12/28/93
Lead	EPA 7420	ND	0.1	mg/L	01/11/94

ND = Not detected

* = Indicates value above reporting limit

LEVINE - FRICKE

SAMPLE ID: MW-8-1293
 AEN LAB NO: 9312278-05
 AEN WORK ORDER: 9312278
 CLIENT PROJ. ID: 3015.10

DATE SAMPLED: 12/22/93
 DATE RECEIVED: 12/23/93
 REPORT DATE: 01/13/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion - Water		-		Prep Date	12/27/93
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	16,000 *	0.5	ug/L	01/05/94
Toluene	108-88-3	6,000 *	0.5	ug/L	12/31/93
Ethylbenzene	100-41-4	650 *	0.5	ug/L	12/31/93
Xylenes, Total	1330-20-7	2,700 *	2	ug/L	12/31/93
Purgeable HCs as Gasoline	5030/GCFID	56 *	0.05	mg/L	01/05/94
#Extraction for Diesel/Oil	EPA 3510	-		Extrn Date	12/27/93
TPH as Diesel	GC-FID	0.3 *	0.05	mg/L	12/28/93
TPH as Oil	GC-FID	ND	0.2	mg/L	12/28/93
Lead	EPA 7420	ND	0.1	mg/L	01/11/94

ND = Not detected

* = Indicates value above reporting limit

LEVINE-FRICKE

SAMPLE ID: MW-12-BB-1293
AEN LAB NO: 9312278-06
AEN WORK ORDER: 9312278
CLIENT PROJ. ID: 3015.10

DATE SAMPLED: 12/22/93
DATE RECEIVED: 12/23/93
REPORT DATE: 01/13/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	12/31/93
Toluene	108-88-3	0.7 *	0.5	ug/L	12/31/93
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/31/93
Xylenes, Total	1330-20-7	ND	2	ug/L	12/31/93
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	12/31/93

ND = Not detected

* = Indicates value above reporting limit

LEVINE-FRICKE

SAMPLE ID: MW-16-BB-1293
AEN LAB NO: 9312278-07
AEN WORK ORDER: 9312278
CLIENT PROJ. ID: 3015.10

DATE SAMPLED: 12/22/93
DATE RECEIVED: 12/23/93
REPORT DATE: 01/13/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion - Water		-		Prep Date	12/27/93
Lead	EPA 7420	ND	0.1	mg/L	01/11/94

ND = Not detected
* = Indicates value above reporting limit

QUALITY CONTROL DATA

DATE EXTRACTED: 12/23/93
 DATE ANALYZED: 12/24/93
 CLIENT PROJ. ID: 3015.10

AEN JOB NO: 9312278
 SAMPLE SPIKED: D.I. WATER
 INSTRUMENT: C

METHOD SPIKE RECOVERY SUMMARY
 TPH EXTRACTABLE WATERS
 METHOD: EPA 3510 GCFID

ANALYTE	Spike Conc. (mg/L)	Average Percent Recovery	RPD
Diesel	2.02	83	4

CURRENT QC LIMITS (Revised 10/18/93)

Analyte	Percent Recovery	RPD
Diesel	(55-119)	8

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

CLIENT PROJ. ID: 3015.10

AEN JOB NO: 9312278

INSTRUMENT: F

SURROGATE STANDARD RECOVERY SUMMARY
 METHOD: EPA 8020, 5030 GCFID
 (WATER MATRIX)

Date Analyzed	SAMPLE IDENTIFICATION		SURROGATE RECOVERY (PERCENT)
	Client Id.	Lab Id.	Fluorobenzene
12/31/93	MW-12-1293	01	87
12/31/93	MW-10-1293	02	87
12/31/93	MW-16-1293	03	87
12/31/93	MW-11-1293	04	94
12/31/93	MW-8-1293	05	110
12/31/93	MW-12-BB-1293	06	88

CURRENT QC LIMITS

<u>ANALYTE</u>	<u>PERCENT RECOVERY</u>
Fluorobenzene	(70-115)

QUALITY CONTROL DATA

DATE ANALYZED: 12/30/93
 SAMPLE SPIKED: 9312258-03
 CLIENT PROJ. ID: 3015.10

AEN JOB NO: 9312278
 INSTRUMENT: F

MATRIX SPIKE RECOVERY SUMMARY
 METHOD: EPA 8020, 5030 GCFID
 (WATER MATRIX)

ANALYTE	Spike Conc. (ug/L)	Average Percent Recovery	RPD
Benzene	10.7	96	5
Toluene	38.5	95	5
Hydrocarbons as Gasoline	500	90	6

CURRENT QC LIMITS (Revised 05/14/92)

Analyte	Percent Recovery	RPD
Benzene	(81-115)	10
Toluene	(85-112)	9
Gasoline	(72-119)	12

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

MATRIX: WATER

AEN JOB NO: 9312278

CLIENT PROJ. ID: 3015.10

SAMPLE SPIKED: 9312278-01

DIGESTION DATE: 12/27/93

MATRIX SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	SPIKE ADDED (mg/L)	AVERAGE % REC.	RPD	QC CONTROL LIMITS	
					% REC. LIMIT	RPD LIMIT
Pb, Lead	V22/7420	0.5	94	<1	80-120	15

METHOD SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	SPIKE ADDED (mg/L)	AVERAGE % REC.	RPD	QC CONTROL LIMITS	
					% REC. LIMIT	RPD LIMIT
Pb, Lead	V22/7420	0.5	98	3	80-120	15

RPD = Relative Percent Difference
 < = Less Than

Reagent method blank showed no contamination.

*** END OF REPORT ***

C-115-3 M-1, 0-1 R-1, 0-1
CHAIN OF CUSTODY / ANALYSES REQUEST FORM

9312278

Project No.: 3015.10	Field Logbook No.:	Date: 12-22-93	Serial No.:
Project Name: Diversified Investment	Project Location: Oakland/625 Hegenberger		No 12630

Sampler (Signature): *Priscilla C. Field* ANALYSES Samplers: **SCH/SMH**

SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CON-TAINERS	SAMPLE TYPE	ANALYSES							HOLD	RUSH	REMARKS
						EPA 601	EPA 624	STEX 8020	TPH 5030	TPH 3510	Pb 7420				
MW-12-1293	12/22/93	1030	01A-F	6	W										
MW-10-1293		1135	02A-F	1											
MW-16-1293		1315	03A-F	1							*			Please call re MW-16 Pb sample	
MW-11-1293		1400	04A-F	1											
MW-8-1293		1435	05A-F	1										no Pb aliquot rec'd for MW-12-BB-1293 ASH	
MW-12-BB-1293		1035	06A-C	3						*				NORMAL TAT	
MW-16-BB-1293		1300	07A	1											
														• FAX Results to Sue Henry	
														• MAIL FINAL REPORT TO: Sue Henry	
														* Please hold sample MW-16 -1293 for Pb only per client 12/23/93 - RS.	

RELINQUISHED BY: (Signature) <i>Priscilla C. Field</i>	DATE	TIME	RECEIVED BY: (Signature) <i>[Signature]</i>	DATE	TIME
RELINQUISHED BY: (Signature) <i>[Signature]</i>	12/23/93	10:45	RECEIVED BY: (Signature) <i>[Signature]</i>	12/23/93	12:45
RELINQUISHED BY: (Signature) <i>[Signature]</i>	12/23/93	11:55	RECEIVED BY: (Signature) <i>Jim Gillespie</i>	12-23-93	1155
METHOD OF SHIPMENT:	DATE	TIME	LAB COMMENTS:	DATE	TIME

Sample Collector: LEVINE-FRICKE 1900 Powell Street, 12th Floor Emeryville, California 94608 (510) 652-4500	Analytical Laboratory: <div style="font-size: 2em; font-weight: bold; text-align: center;">AEN</div>
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WATER-QUALITY SAMPLING INFORMATION

Project Name Diversified Investment

Project No. 3015.10

Date 12-22-93

Sample No. MW-8-1293

Samplers Name SCH SMH

Sampling Location Oakland, 625 Heegenbergen

Sampling Method Handbail / Teflon Bailers

Analyses Requested TPH₉ + BTEX, TPH₄₊₀, Pb

Number and Types of Sample Bottles used 3 VOA/HCl; 2 amber-1/HCl;

Method of Shipment Courier 500ml plas/HNO₃

16.10
6.72

9.28
.16

5568
928

14848

GROUND WATER

SURFACE WATER

Well No. MW-8

Stream Width _____

Well Diameter (in.) 2

Stream Depth 2

Depth to Water. Static (ft) 6.72

Stream Velocity _____

Water in Well Box yes

Rained recently? no

Well Depth (ft) 16.1

Other _____

Height of Water Column in Well 9.28

2-inch casing = 0.16 gal/ft

4-inch casing = 0.65 gal/ft

Water Volume in Well 1.5

5-inch casing = 1.02 gal/ft

6-inch casing = 1.47 gal/ft

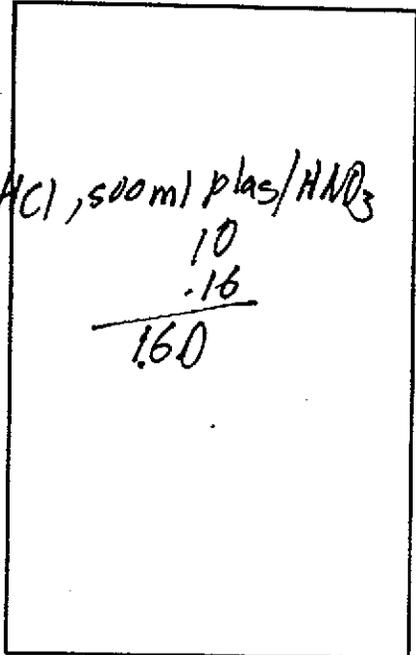
LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (mhos/cm)	OTHER		REMARKS
1420								Start Bailing
1422		1.5	19.8	6.83	1950			Turbid/Slight Sheen/
1425		3.0	19.0	6.89	2280			" " " TPH odor "
1426		4.5	19.4	6.95	2440			" " "
1435								Sample MW-8
1446	6.75							

Suggested Method for Purging Well _____

WATER-QUALITY SAMPLING INFORMATION

Project Name Diversified Investment Project No. 3015.10
 Date 12-22-93 Sample No. MW-10-1293
 Samplers Name SCH SMH
 Sampling Location Oakland / 625 Hegenberger
 Sampling Method Hand bail / Teflon bailer
 Analyses Requested TPH + BTEX, TPHdeo, Pb
 Number and Types of Sample Bottles used 3 VOA/Hel; 2 amber L/HCl, 500ml plas/HNO₃
 Method of Shipment Courier



10
 .16

 160

<p>GROUND WATER</p> <p>Well No. <u>MW-10</u></p> <p>Well Diameter (in.) <u>2</u></p> <p>Depth to Water, Static (ft) <u>6.00</u></p> <p>Water in Well Box <u>Yes</u></p> <p>Well Depth (ft) <u>16.00</u></p> <p>Height of Water Column in Well <u>10.00</u></p> <p>Water Volume in Well <u>1.60 ~ 1.75</u></p>	<p>SURFACE WATER</p> <p>Stream Width _____</p> <p>Stream Depth _____</p> <p>Stream Velocity _____</p> <p>Rained recently? <u>No</u></p> <p>Other _____</p> <p>2-inch casing = 0.16 gal/ft</p> <p>4-inch casing = 0.65 gal/ft</p> <p>5-inch casing = 1.02 gal/ft</p> <p>6-inch casing = 1.47 gal/ft</p>
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LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (umhos/cm)	OTHER		REMARKS
11:18								Start Bailing
11:20		1.75	20.0	7.05	4420			Mod. Turbid!
11:23		3.5	20.3	7.04	5070			"
11:25		5.25	20.7	7.07	5440			" / Stop ^{SMH}
11:28		7.0	20.8	7.08	5430			" / STOP
11:35								Sample MW-10
11:49	6.02							

Suggested Method for Purging Well _____

WATER-QUALITY SAMPLING INFORMATION

Project Name Diversified Investment Project No. 3015.10
 Date 12-22-93 Sample No. MW-11-1293
 Samplers Name SCH SMH
 Sampling Location Oakland / 625 Heegenberger
 Sampling Method Handbail / Teflon bailer
 Analyses Requested TPHg + BTEX, TPHd to, Pb
 Number and Types of Sample Bottles used 3 VOA/HCl; 2 amber liter/HCl; 500ml plas/HNO₃
 Method of Shipment Courier

GROUND WATER

SURFACE WATER

Well No. MW-11 Stream Width _____
 Well Diameter (in.) 2 Stream Depth _____
 Depth to Water, Static (ft) 6.84 Stream Velocity _____
 Water in Well Box Yes Rained recently? No
 Well Depth (ft) 15.60 Other _____
 Height of Water Column in Well 8.76
 Water Volume in Well 1.50

2-inch casing = 0.16 gal/ft
 4-inch casing = 0.65 gal/ft
 5-inch casing = 1.02 gal/ft
 6-inch casing = 1.47 gal/ft

15.60
 - 6.84

 8.76
 - .16

 8.60
 5232
 8760

 14992

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (umhos/cm)	OTHER		REMARKS
1344								Start Bailing
1345		1.5	19.9	6.76	4230			Turbid
1347		3.0	19.9	6.93	3970			Turbid / TPH odor
1352		4.5	20.2	6.94	3750			Turbid / TPH odor / STOP
1400								Sample MW-11
1410	7.62							

START SAMPLING OK

Suggested Method for Purging Well _____

WATER-QUALITY SAMPLING INFORMATION

Project Name Diversified Investment Project No. 3015.10
 Date 12-22-93 Sample No. MW-12-1293
MW-12-BB-1293
 Samplers Name SCH SMH
 Sampling Location Oakland / 625 Hesperberger
 Sampling Method Hand bail / Teflon bailer
 Analyses Requested TPH, BTEX; TPH, TPA, Pb
 Number and Types of Sample Bottles used 6 UOA/Hei; 4 amber 4/Hei; 500 ml plas/HNO₃
 Method of Shipment Courier 2 SMH

GROUND WATER		SURFACE WATER	
Well No.	<u>MW-12</u>	Stream Width	_____
Well Diameter (in.)	<u>2</u>	Stream Depth	_____
Depth to Water, Static (ft)	<u>6.07</u>	Stream Velocity	_____
Water in Well Box	<u>NO</u>	Rained recently?	<u>NO</u>
Well Depth (ft)	<u>16.00</u>	Other	_____
Height of Water Column in Well	<u>9.93</u>	2-inch casing = 0.16 gal/ft	
Water Volume in Well	<u>1.58 ≈ 1.75</u>	4-inch casing = 0.65 gal/ft	
		5-inch casing = 1.02 gal/ft	
		6-inch casing = 1.47 gal/ft	

16.00
 6.07

 9.93
 16

 5958
 993

 15888

LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (umhos/cm)	OTHER		REMARKS
1015								pH, Cond. Calib.
1028								Start bailing
1030		1.75	20.3	6.80	2650			Mod. Turbid
1033		3.5	20.4	6.83	2880			"
1036		5.25	20.3	6.87	2880			" / stop
1040								Sample MW-12
1035								MW-12-BB-1293
1105	6.26							

Suggested Method for Purging Well _____

WATER-QUALITY SAMPLING INFORMATION

Project Name Diversified Investments Project No. 3015.10
 Date 12-22-93 Sample No. MW-16-1293
 Samplers Name SCH SMH MW-16BB-1293
 Sampling Location Oakland/625 Hegenberger
 Sampling Method Hand bail / Teflon Bailers
 Analyses Requested TPHg, BTEX, TPHd+o, Pb
 Number and Types of Sample Bottles used 3 VOA/HCl; 2 amber liter-HCl; 500ml plas/HNO₃
 Method of Shipment courier

GROUND WATER

SURFACE WATER

Well No. MW-16 Stream Width _____
 Well Diameter (in.) 2 Stream Depth _____
 Depth to Water, Static (ft) 7.48 Stream Velocity _____
 Water in Well Box yes Rained recently? No
 Well Depth (ft) 14.0 Other _____
 Height of Water Column in Well 6.52
 Water Volume in Well 1.06 ± 1.5

2-inch casing = 0.16 gal/ft
 4-inch casing = 0.65 gal/ft
 5-inch casing = 1.02 gal/ft
 6-inch casing = 1.47 gal/ft

14.00
 7.48

 6.52
 x .16

 4012
 6520

 0632
 LOCATION MAP

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN (gallons)	TEMP (deg. C)	pH (S.U.)	COND (umhos/cm)	OTHER		REMARKS
13:00								MW-16BB-1293
13:05	5							Start Bailing
13:07		1.5	39.1 ^{SMH}	6.85	6130			Turbid
13:10		3.0	20.4	6.85	6150			"
13:13		4.5	20.5	6.88	6550			" / STOP
13:15								Sample MW-16
13:32	7.51							
For Lead sample, it appeared that some turbidity was getting past the filter. Filtered sample for MW-16-1293 was turbid. Filtered samples for two previously sampled wells were not.								

Suggested Method for Purging Well _____