#541

geo - logic *geotechnical and environmental consulting services*
1140 - 5th Avenue, Crockett, CA 94525 (510) 787-6867 - Fax (510) 787-1457

GL-98-125.R1
December 23, 1998
Paradiso Job No. 278

Paradiso Mechanical, Inc.
P. O. Box 1836
2600 Williams Street
San Leandro, California 94577

Attention: Mr. Tracy Lum

RE: Report of Soil Sampling below
Waste Oil Tank and Fuel Dispensers
Chevron Service Station
451 Hegenberger Road
Oakland, California

Dear Mr. Lum:

This report summarizes the results of soil sampling performed by Geo-Logic at the referenced site. All work was performed in compliance with the guidelines established by the Regional Water Quality Control Board, the Alameda County Health Care Services Agency - Department of Environmental Health (ACDEH), and the City of Oakland Fire Services Agency (OFSA).

The scope of the work performed by Geo-Logic consisted of the following:

Coordination with the regulatory agencies

Collection of soil samples from beneath the waste oil tank and beneath four fuel dispenser locations

Delivery of soil samples with properly executed Chain of Custody documentation to a certified analytical laboratory

Technical review of data and preparation of this report

SITE DESCRIPTION

The subject site is an operating Chevron service station located at the northeastern corner of the intersection of Hegenberger Road and Edgewater Drive in Oakland, California, as shown on Figure 1 attached to this report. The waste oil tank location and the dispenser islands, where Geo-Logic's work was conducted, are also shown on Figure 1.

FIELD ACTIVITIES

Geo-Logic's work at the site was conducted on December 17, 1998, during station upgrade work. On that date, a 1,000-gallon single wall fiberglass waste oil tank was removed from the site. Mr. Hernan E. Gomez of the OFSA witnessed the waste oil tank removal. The tank appeared to be in good condition and no holes were observed in the tank. Following tank removal, groundwater with floating product was observed in the excavation at a depth of approximately 5.5 feet below ground surface.

One soil sample, labeled WO-E (5'), was collected from native soils on the eastern sidewall of the excavation, near the soil/groundwater interface. The sample was collected from bulk material excavated by backhoe. The sample was placed in a clean, two-inch diameter brass tube, sealed with foil and plastic caps, and stored in a cooled ice chest for delivery to a certified laboratory. Mr. Hernan E. Gomez of the OFSA witnessed collection of the sample. The location of the sample is shown on Figure 1.

Four soil samples were also collected beneath four unleaded gasoline fuel dispensers. The four samples, designated as Disp NE (2'), Disp NW (2'), Disp SE (2'), and Disp SW (2'), were collected from the excavations at the depths indicated. The samples were collected by hand-driving the liner tubes into the soil. The liners containing the samples were handled as described above. Mr. Hernan E. Gomez of the OFSA witnessed collection of the samples. The sample locations are shown on Figure 1.

SUBSURFACE CONDITIONS

The native soil encountered in the waste oil tank excavation consisted of dark gray silty clay. The soil encountered beneath the four dispenser islands also consisted of dark gray silty clay which appeared to be fill or disturbed native soil. Groundwater was encountered in the waste oil tank excavation at approximately 5.5 feet bgs.

ANALYTICAL RESULTS

The samples were analyzed by Calcoast Analytical in Emeryville, California, and were accompanied by properly executed Chain of Custody documentation. All of the samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline by EPA method 8015, benzene toluene, ethylbenzene, and xylene (BTEX) and methyl-tert-butyl ether (MTBE) by EPA Method 8020. Sample WO-E (5'), taken

Also :

from the waste oil tank excavation, was also analyzed for TPH as diesel and Total Oil and Grease by EPA Method 8020, volatile organic compounds by EPA Method 8010, and the metals cadmium, chromium, nickel, lead, and zinc.

The results of the soil analyses are summarized in Table 1. Copies of the laboratory analyses and the Chain of Custody documentation are attached to this report.

DISTRIBUTION

A copy of this report should be sent to Mr. Hernan E. Gomez of the OFSA, and to the ACDEH.

LIMITATIONS

Soil deposits and rock formations may vary in thickness, lithology, saturation, strength and other properties across any site. In addition, environmental changes, either naturally-occurring or artificially-induced, may cause changes in the extent and concen tration of any contaminants. Our studies assume that the field and laboratory data are reasonably representative of the site as a whole, and assume that subsurface conditions are reasonably conducive to interpolation and extrapolation.

The results of this study are based on the data obtained from the field and laboratory analyses obtained from a state certified laboratory. We have analyzed this data using what we believe to be currently applicable engineering techniques and principles in the Northern California region. We make no warranty, either expressed or implied, regarding the above, including laboratory analyses, except that our services have been performed in accordance with generally accepted professional principles and practices existing for such work.

Should you have any questions regarding this report, please feel free to call me at (510) 787-6867.

Sincerely,

Geo-Logic

Joel G. Greger, C.E.G.
Certified Engineering Geologist

License No. EG 1633
Exp. Date 8/31/2000

Attachments: Table 1
Figure 1
Laboratory Analyses and Chain of Custody

Geo-Logic
GL-98-125.R1
December 23, 1998

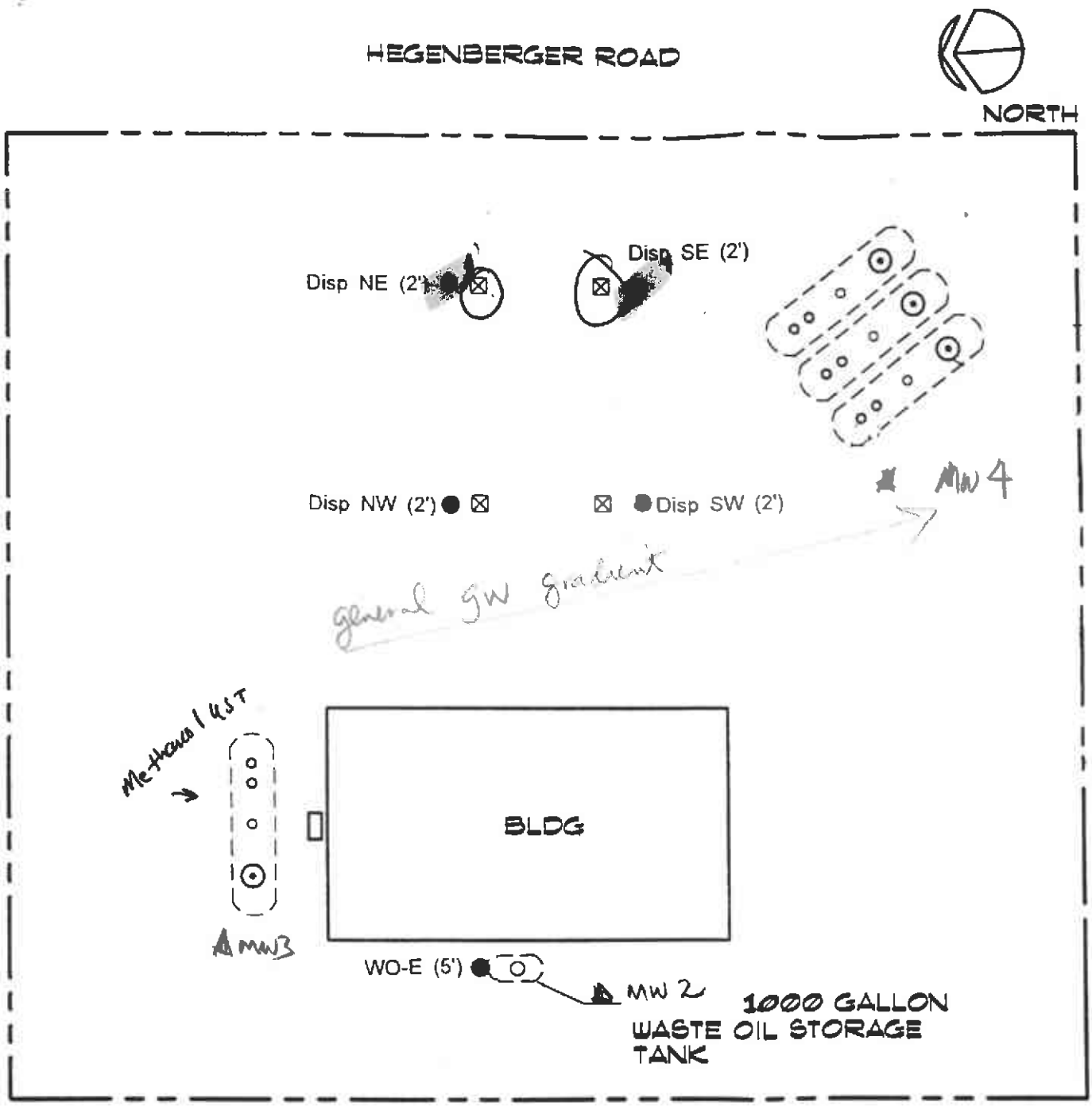
TABLE 1

SUMMARY OF LABORATORY ANALYSES
SOIL

Sample/depth	TPH Gas	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE
			(Collected on December 17, 1998)			
WO-E (5')	<0.1	<0.005	<0.005	<0.005	<0.005	<0.1
Disp NW (2')	200	<0.005	<0.005	27	14	<0.1
Disp NE (2')	2,700	200	64	310	290	<0.1
Disp SW (2')	120	<0.005	27	41	33	<0.1
Disp SE (2')	3,800	170	93	240	270	<0.1
Method Blank/ Detection Limit	<0.1	<0.005	<0.005	<0.005	<0.005	<0.1

Sample/depth	TPH Diesel	TOG	Cadmium	Chromium	Lead	Nickel	Zinc
			(Collected on December 17, 1998)				
WO-E (5')	<0.1	240	0.89	1.2	2.0	14	39
Method Blank/ Detection Limit	<0.1	<5.0	<0.50	<2.0	<2.0	<0.50	<0.25

Results are in milligrams per kilogram (mg/kg).



LEGEND

● Soil Sample (depth)

NOT TO SCALE

Map after Paradiso Mechanical, Inc.'s Site Plan, Sheet R01

Chevron Station 451 Hegenberger Road Oakland, CA	Figure No: 1	Date: 12/20/98 Drawn By: JG/Geo-Logic

Site Plan

CALCOAST ANALYTICAL

Materials Chemistry

Certified by
California Department of Health Services
City of Los Angeles Dept. of Building & Safety

December 21, 1998

Geo-Logic
1140 - 5th Avenue
Concord, CA 94525

Attn: Mr. Joel Greger

Ref: Lab File No. 1217-3A/E-98(b)

1. SAMPLE:

Four (4) soil cores from Chevron, 451 Hegenberger, Oakland. Job No. 278.
Samples: A. Disp NW (2')
B. Disp NE (2')
C. Disp SW (2')
D. Disp SE (2')

Collected: *December 17, 1998*
Received: *December 17, 1998*

2. ANALYSIS REQUIRED:

A. Total Petroleum Hydrocarbons - gasoline (TPH-g)by Gas Chromatography (GC).

B. Benzene, Toluene, Ethylbenzene and Xylene (BTEX) by GC.

C. Methyl-tert-buryl ether (MTBE) by GC.

3. METHODS OF ANALYSIS:

A. EPA Method 8015; SW-846

B. EPA Method 8020; SW-846

C. EPA Method 8020; SW-846

TELEPHONE (510) 652-2979
FAX (510) 652-3085
P.O. BOX 8702 • EMERYVILLE, CA 94662
4072 WATTS STREET • EMERYVILLE, CA 94608

4. RESULTS:

A. TPH-gasoline

Sample	TPH-gasoline (mg/kg)
A. Disp NW	200
B. Disp NE	2,700
C. Disp SW	120
D. Disp SE	3,800

Method Blank/Detection Limit = <0.1 mg/kg (none detected)
Mean Spike Recovery = 102%

B. BTEX

DESCRIPTION	CONCENTRATION (Mg/Kg) ppm			
	BENZENE	TOLUENE	ETHYLBENZENE	XYLENE
A. Disp NW	<MDL(ND)	<MDL(ND)	27	14
B. Disp NE	200	64	310	290
C. Disp SW	<MDL(ND)	2.7	41	33
D. Disp SE	170	93	240	270
Method Blank	< 0.005 (ND)	< 0.005 (ND)	< 0.005 (ND)	< 0.005 (ND)
Mean Spike Recovery	94%	103%	103%	109%

C. MTBE

Sample	MTBE (mg/kg)
A. Disp NW	<0.1 (ND)
B. Disp NE	<0.1 (ND)
C. Disp SW	<0.1 (ND)
D. Disp SE	<0.1 (ND)

Method Blank/Detection Limit = <0.1 mg/kg (none detected)

Ronald W. Shrewsbury
Analytical Chemist
RWS:ab(4)

CALCOAST ANALYTICAL

Materials Chemistry

Certified by
California Department of Health Services
City of Los Angeles, Dept. of Building & Safety

December 21, 1998

Geo-Logic
1140-5th Avenue
Crockett, CA 94525

Attn: Mr. Joel Greger

Ref: Lab File No. 1217-3A/E-98(a)

1. SAMPLE(s):

One (1) soil cores;

Project: Chevron, 451 Hegenberger, Oakland

Sample: A. WOE (5')

Collected: December 17, 1998
Received: December 17, 1998

2. ANALYSIS REQUIRED:

A. Total Petroleum Hydrocarbons - gasoline (TPH-g) by Gas Chromatography (GC)

B. Total Petroleum Hydrocarbons - diesel (TPH-d) by GC

C. Benzene, Toluene, Ethylbenzene and Xylene (BTEX) by GC

D. Methyl-tert-butyl ether (MTBE) by GC

E. Total Oil & Grease by G.C.

F. Halogenated Volatile Organics by G.C.

G. Total cadminm (Cd), chromiuym (Cr), lead (Pb), nickel (Ni), and zinc (Zn) content by Atomic Absorption Spectroscopy (AAS)

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3. METHODS / PROCEDURES USED FOR ANALYSIS:

A. EPA Method 8015; sw-846

B. EPA Method 8015; SW-846

C. EPA Method 8020; SW-846

D. EPA Method 8020; SW-846

E. EPA Method 8020; SW-846

F. EPA Method 8010; SW-846

E. Sample Digestion - EPA Method 3050; SW-846
AAS Analysis - EPA 7000 Series Methods; SW-846

4. RESULTS:

A. TPH - gasoline

Sample	TPH-Gasoline (mg/kg)
A. WOE	< 0.1 (ND)

Method Blank/Detection Limit = < 0.1 mg/kg (none detected)
Mean Spike Recovery = 102%

B. TPH - diesel

Sample	TPH- Diesel (mg/kg)
A. WOE	< 0.1 (ND)

Method Blank/Detection Limit = < 0.1 mg/kg (none detected)
Mean Spike Recovery = 103%

4. RESULTS con't:

C. BTEX

Sample	Concentration (µg/kg)			
	Benzene	Toluene	Ethylbenzene	Xylene
A. WOE	< 5.0 (ND)	< 5.0 (ND)	< 5.0 (ND)	< 5.0 (ND)
Method Blank/ Detection Limit	< 5.0 (ND)	< 5.0 (ND)	< 5.0 (ND)	< 5.0 (ND)
Mean Spike Recovery	94%	103%	103%	109%

D. MTBE

Sample	MTBE(mg/kg)
A. WOE	< 0.1 (ND)

Method Blank/Detection Limit = < 0.1 mg/kg (none detected)

E. Oil & Grease

Sample	Total Oil & Grease (mg/kg)
A. WOE	240

Method Blank/Detection Limit = < 5.0 mg/kg (none detected)

F. Halogenated Volatiles

The submitted sample contains less than 0.5 mg/kg (non detected) total halogenated volatile organic compounds.

(data sheet attached)

4. RESULTS con't:

G. Metals

Sample A. WOE

Element	Regulatory Limit (mg/kg)	Detected Level (mg/K\kg)	Method Detection Limit (mg/kg)	Method Blank (mg/ky)	Mean Spike Recovery
Cadminium	100	0.89	0.50	<MDL(ND)	104%
Chromium (III/VI)	2,500/500	1.2	2.0	<MDL(ND)	108%
Lead	1,000	2.0	2.0	<MDL(ND)	107%
Nickel	2,000	14	0.50	<MDL(ND)	101%
Zinc	5,000	39	0.25	<MDL(ND)	107%

Ronald W. Shrewsbury
Analytical Chemist

RS/ki(1)

HALOGENATED VOLATILE ORGANICS

SAMPLE: GEO-LOGIC; CHEVRON, 451 HENENGERGER; WOE (5')

COMPOUND	CONCENTRATION (µg/kg)	METHOD DETECTION LIMIT (µg/kg)
Benzyl chloride	< MDL (ND)	ND
Bis (2-chloroethoxy) methane	< MDL (ND)	ND
Bis (2-chloroisopropyl) ether	< MDL (ND)	ND
Bromobenzene	< MDL (ND)	ND
Bromodichloromethane	< MDL (ND)	0.10
Bromoform	< MDL (ND)	0.20
Bromomethane	< MDL (ND)	ND
Carbon tetrachloride	< MDL (ND)	0.12
Chloroacetaldehyde	< MDL (ND)	ND
Chlorobenzene	< MDL (ND)	0.25
Chloroethane	< MDL (ND)	0.52
Chloroform	< MDL (ND)	0.05
1-Chlorohexane	< MDL (ND)	ND
2-Chloroethyl vinyl ether	< MDL (ND)	0.13
Chloromethane	< MDL (ND)	0.08
Chloromethylmethyl ether	< MDL (ND)	ND
Chlorotoluene	< MDL (ND)	ND
Dibromochloromethane	< MDL (ND)	0.09
Dibromomethane	< MDL (ND)	ND
1,2-Dichlorobenzene	< MDL (ND)	0.15
1,3-Dichlorobenzene	< MDL (ND)	0.32
1,4-Dichlorobenzene	< MDL (ND)	0.24
Dichlorodifluoromethane	< MDL (ND)	ND
1,1-Dichloroethane	< MDL (ND)	0.07
1,2-Dichloroethane	< MDL (ND)	0.03
1,1-Dichloroethylene	< MDL (ND)	0.13
trans-1,2-Dichloroethylene	< MDL (ND)	0.10
Dichloromethane	< MDL (ND)	ND
1,2-Dichloropropane	< MDL (ND)	0.04
trans-1,3-Dichloropropylene	< MDL (ND)	0.34
1,1,2,2-Tetrachloroethane	< MDL (ND)	0.03
1,1,1,2-Tetrachloroethane	< MDL (ND)	ND
Tetrachloroethylene	< MDL (ND)	0.03
1,1,1-Trichloroethane	< MDL (ND)	0.03
1,1,2-Trichloroethane	< MDL (ND)	0.02
Trichloroethylene	< MDL (ND)	0.12
Trichlorofluoromethane	< MDL (ND)	ND
Trichloropropane	< MDL (ND)	ND
Vinyl chloride	< MDL (ND)	0.18

Chain of Custody

Date 12/17/98 Page 1 of 1

Calcoast Analytical, Inc.

Proj. Mgr.:	Joel Gregor Geo-Logic
Company:	for Paradiso Mediacal
Address:	POB 1836 2600 Williams ST San Leandro CA
Samples (signature)	Joel G.
(Phone No.)	510 7876867
(Fax No.)	510 7871457

Analysis Request

Sample ID	Type	Date	Time	Matrix	Preservation	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (8020, 8015) w/ BTEX (EPA 602, 8020)	TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 8260)	BASE/NEUTRALS, ACIDS (EPA 625/8270, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B&F, E-F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)					NUMBER OF CONTAINERS
WDE (5')		12/17/98	AM	Soil	—		X	X		X			X					X									
DispNW(2')					—		X																				
DispNE(2')					—		X																				
DispSW(2')					—		X																				
DispSE(2')					—		X																				

Project Information

Project Name	Chevron 445 Hegenberger Oakland
Project No.	
PO#	45

Sample Receipt

Total No. of Containers	
Head Space	
Rec'd Good Condition/Cold	
Conforms To Record	

TAT	Standard	5-Day	24	48	72	Other
	✓					

Special Instructions / Comments:

Job # 278

Put site address on lab sheets + invoice

Send invoice to the attention of Paul Paradiso

	1.	2.	3.
Relinquished By: (Signature)	Joel G.		
(Printed Name)	Joel G. Gregor		
(Date) (Time)	12/17/98 11:30 AM		
Received By: (Signature)			
(Printed Name)	Ronald Shrewsbury		
(Date) (Time)	12/17/98 11:30 AM		

TPH 8015 on 8020