



WESTERN GEOLOGIC RESOURCES INC.

16 DIGITAL DRIVE, SUITE 108
NOVATO, CALIFORNIA 94949 / FAX 415.382.7415
TELE 415.382.7400

1001067

17 May 1991

Ms. Lucia Chou
Chevron USA
2410 Camino Ramon
San Ramon, California 94583-0804

Re: Former Chevron Terminal
Emeryville, California
WGR Project #1-045.51

Dear Ms. Chou:

The following is a summary of the soil sampling performed by Western Geologic Resources, Inc. (WGR) at the request of Chevron USA on 18 March 1991 at the former Chevron Terminal in Emeryville, California.

SCOPE OF WORK

WGR was authorized by Chevron to collect soil samples from the area under the three remaining structures as shown in Figure 1. Chevron specified that twenty-two borings be drilled at approximately 35 foot (ft) centers in the pattern as indicated in Figure 2. The soil samples were specified to be collected at 3 ft below surface from each boring. Because the structures stand on concrete pads, a concrete cutting service chosen by WGR was authorized to core through the concrete. Superior Analytical Laboratories of San Francisco, California was designated by Chevron to perform the following analyses on the soil samples: EPA Method 8010 for halogenated volatile organics, EPA Method 8015 for total purgeable petroleum hydrocarbons (TPPH) as gasoline, EPA Method 8020 for benzene, toluene, ethylbenzene, and total xylenes (BTEX), and Standard Method 503A&E for oil and grease. Also, Superior would hold a set of samples to be analyzed for total concentrations of cadmium, chromium, lead, nickel, and zinc. This analysis would be done only if warranted by the results of the analyses for organics.

PROCEDURE

On 19 and 20 March 1991, Vickers of Concord, California cored 19 4-inch holes through the concrete at the boring points as depicted in Figure 3. Three boring points, B-1, B-2 and B-3, did not have a concrete cover and therefore required no coring. A 2-inch diameter hand auger was used to bore through the soil down to 3 ft below surface. Seven boring points required a greater depth to collect a soil sample because of obstructions at 3 ft below surface. These drilling depths are stated in Figure 3. Five boring points could not be sampled because the obstructions could not



L. Chou/17 May 1991

2

be penetrated. For those points where obstructions were not a problem, the hand auger was used to collect soils samples in 1-1/2-inch diameter by 4-inch brass tubes and laboratory-issued glass jars.

All brass tubes were sealed with plastic caps and duct tape. The glass jars were securely covered with their respective lids. All brass tubes and glass jars were labeled, placed in a cooler and shipped under chain-of-custody to Superior Analytical Laboratories of San Francisco, California.

ANALYTICAL RESULTS

The results of the analyses are listed in Table 1. TPPH as gasoline were found in the soil sample taken from boring B-21 at 53 parts-per-million (ppm). Oil and grease was found in the soil samples taken from borings B-15 at 51 ppm and B-22 at 260 ppm. Toluene and xylene were found in soil samples taken from most of the borings. The highest concentration for toluene was 0.011 ppm and the highest concentration for xylene was 0.160 ppm. The soil sample from boring B-9 was found to contain tetrachloroethene at 0.007 ppm.

Western Geologic Resources, Inc. is pleased to provide environmental consulting services to Chevron USA. If there are any additional questions, please call me at (415) 382-7400.

Sincerely,
Western Geologic Resources, Inc.

A handwritten signature in cursive script that reads "Kevin Spala".

Kevin Spala
Project Chemist

KS:vw



L. Chou/17 May 1991

3

FIGURES

1. Site Map with Soil Sampling Area
2. Site Map with Accepted Boring Pattern
3. Site Map with Actual Boring Locations

TABLE

1. Analytical Results of Soil Samples taken from Underneath the Remaining Structures at Emeryville

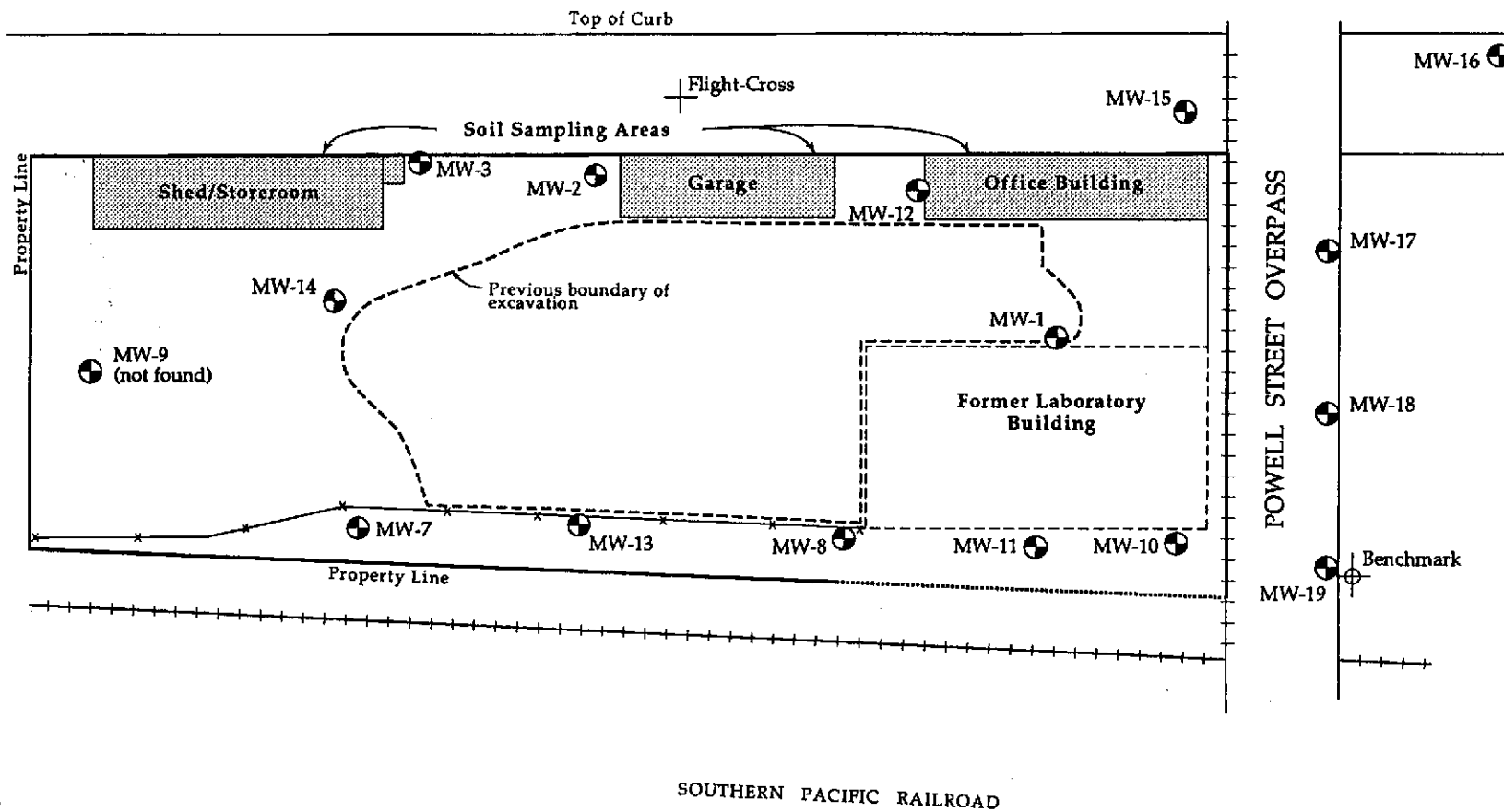
ATTACHMENTS

- A. Chain-of-Custody Form
- B. Laboratory Report



FIGURES

LANDREGAN STREET



4/91

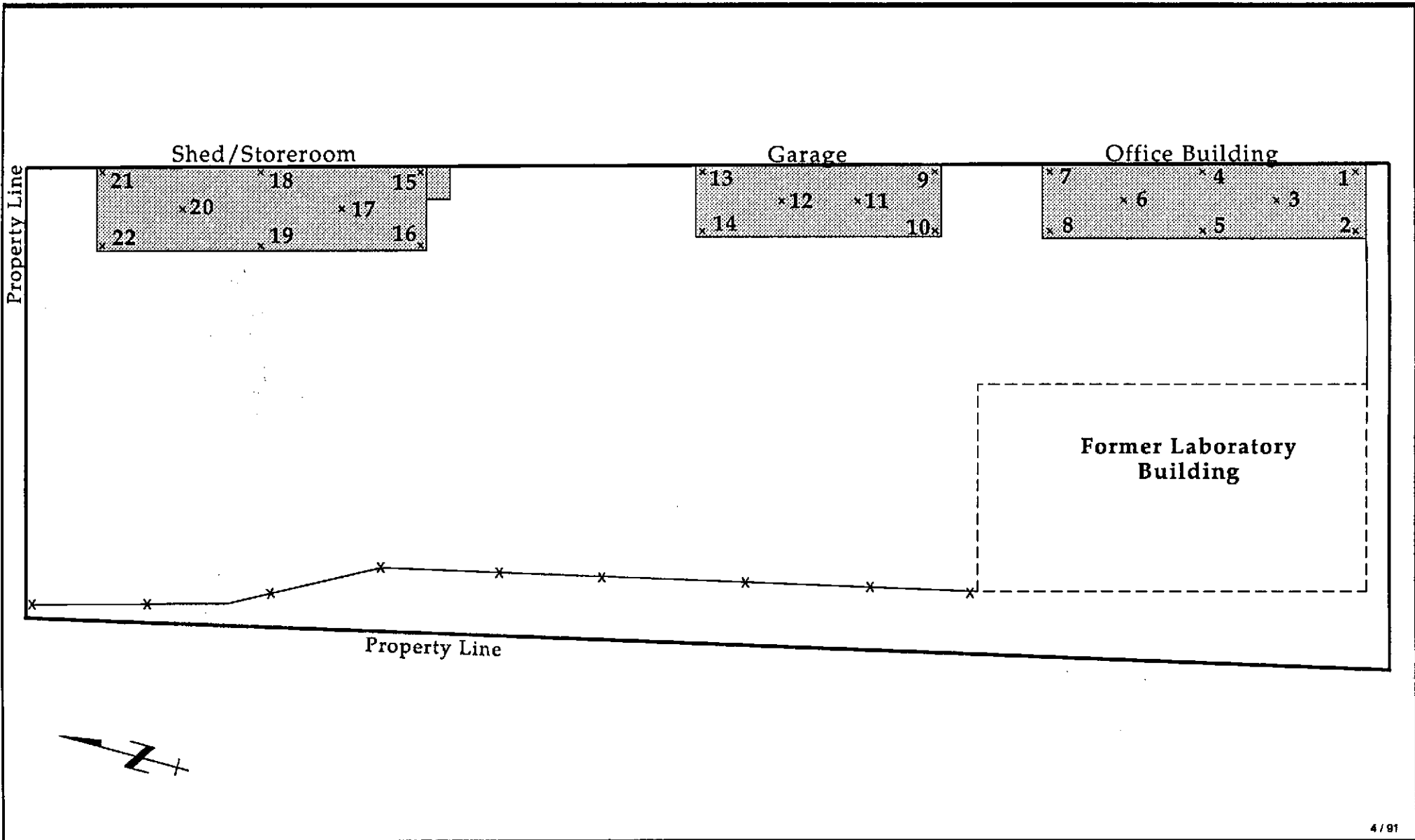
EXPLANTAION

⊕ MW-8 Monitor Well location

Site Map with Soil Sampling Area
Former Chevron Asphalt Plant and Terminal
Emeryville, California

FIGURE

1



4 / 81

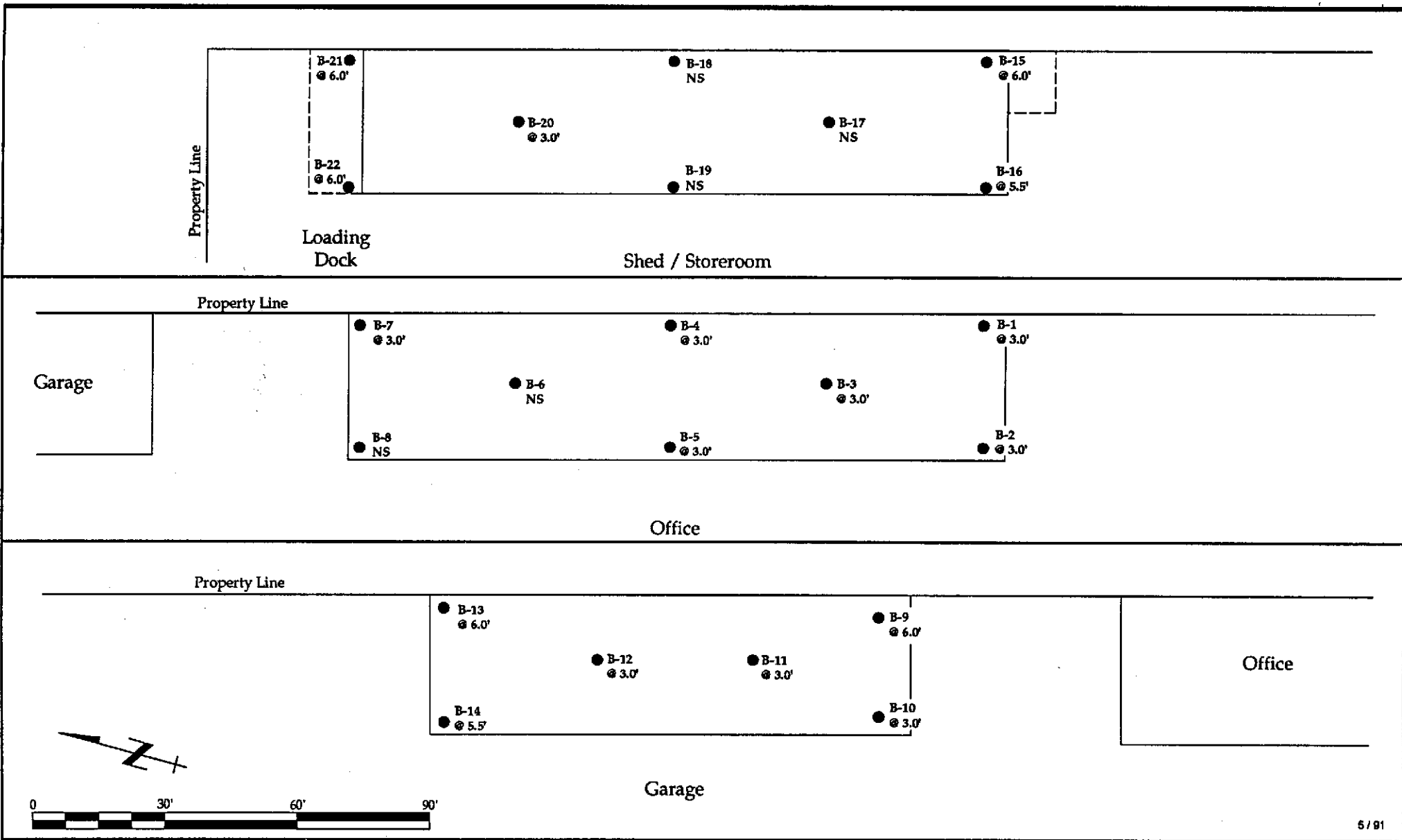
NOT TO SCALE

x Designated boring location

Site Map with Accepted Boring Pattern
Former Chevron Asphalt Plant and Terminal
Emeryville, California

FIGURE

2



6 / 91

EXPLANATION

- B-12 @ 3.0' Boring location and sample depth below floor
- NS Not Sampled

Actual Boring Locations
Former Chevron Asphalt Plant and Terminal
Emeryville, California

FIGURE

3



TABLE



TABLE 1. Analytical Results of Soil Samples taken from
Underneath the Remaining Structures at Emeryville

Boring	TPPH (Gas)	←-----ppm----->					
		B	T	E	X	O&G	PCE
1	<1	<0.005	0.005	<0.005	0.011	<50	<0.005
2	<1	<0.005	0.006	<0.005	0.011	<50	<0.005
3	<1	<0.005	0.005	<0.005	0.010	<50	<0.005
4	<1	<0.005	0.006	<0.005	0.011	<50	<0.005
5	<1	<0.005	0.011	<0.005	0.012	<50	<0.005
6	Not Sampled						
7	<1	<0.005	0.006	<0.005	0.011	<50	<0.005
8	Not Sampled						
9	<1	<0.005	0.006	<0.005	0.022	<50	<0.007
10	<1	<0.005	0.006	<0.005	0.013	<50	<0.005
11	<1	<0.005	0.006	<0.005	0.012	<50	<0.005
12	<1	<0.005	<0.005	<0.005	0.010	<50	<0.005
13	<1	<0.005	0.005	<0.005	0.010	<50	<0.005
14	1	<0.005	<0.005	<0.005	0.016	<50	<0.005
15	<1	<0.005	<0.005	<0.005	0.010	51	<0.005
16	<1	<0.005	0.009	<0.005	0.017	<50	<0.005
17	Not Sampled						
18	Not Sampled						
19	Not Sampled						



TABLE 1. Analytical Results of Soil Samples taken from
Underneath the Remaining Structures at Emeryville (continued)

Boring	TPPH (Gas)	B	T	E	X	O&G	PCE
		<-----ppm----->					
20	1	<0.005	0.006	<0.005	0.014	<50	<0.005
21	53	<0.005	<0.005	<0.005	0.16	<50	<0.005
22	<1	<0.005	<0.005	<0.005	<0.005	260	<0.005

NOTES:

TPPH (Gas) = Total Purgeable Petroleum Hydrocarbons as Gasoline

B = Benzene

T = Toluene

E = Ethylbenzene

X = Total Xylenes

O&G = Oil and Grease

PCE = Tetrachloroethene

ppm = parts-per-million



ATTACHMENT A
CHAIN-OF-CUSTODY

Chain-of-Custody Record

Chevron U.S.A. Inc.
 P.O. Box 5004
 San Ramon, CA 94583
 FAX (415) 842-9591

Chevron Facility Number _____
 Consultant Release Number _____ Consultant Project Number 1-045.51
 Consultant Name Western Geologic Resources
 Address 2169 E. Francisco Bl., San Rafael
 Fax Number 415-457-8521
 Project Contact (Name) Kevin Spala
 (Phone) 415-457-2545

Chevron Contact (Name) Lucia Chou
 (Phone) 415-842-9655
 Laboratory Name Superior Analytical
 Contract Number 5096800
 Samples Collected by (Name) Randall Smith / Dave Brady
 Collection Date 3-19, 20-91
 Signature R.D. Smith

Sample Number	Lab Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite	Time	Sample Preservation	Iced	Analyses To Be Performed							Remarks
								Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline	Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline + Diesel	503 Oil and Grease	Arom. Volatiles - BTXE Soil: 8020/Wtr.: 602	Arom. Volatiles - BTXE Soil: 8240/Wtr.: 624	Total Lead DHS-Luft	EDB DHS-AB 1803	
0319-01A		1	S			NONE	X	X	X	X			X		
0319-02A															
0319-03A															
0319-04A															
0319-05A															
0319-07A															
0320-09A															
0319-10A															
0319-11A															
0319-12A															
0319-13A															
0320-14A															
0320-15A															

Please initial: [Signature]
 Samples Stored in Ice. [Signature]
 Appropriate containers. [Signature]
 Samples preserved. [Signature]
 VOA's without headspace. [Signature]
 Comments: [Signature]

Relinquished By (Signature) <u>R.D. Smith</u>	Organization <u>WGR, Inc.</u>	Date/Time <u>3-21-91/12</u>	Received By (Signature) <u>B. Woods</u>	Organization <u>Express St</u>	Date/Time <u>3/21 9:45</u>	Turn Around Time (Circle Choice) 24 Hrs <u>48 Hrs</u> 5 Days 10 Days
Relinquished By (Signature) <u>B. Wood</u>	Organization <u>Express St</u>	Date/Time <u>3/21 2:00</u>	Received By (Signature)	Organization	Date/Time	
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature) <u>[Signature]</u>		Date/Time <u>3/21/91 14:00</u>	

Chain-of-Custody Record

<p>Chevron U.S.A. Inc. P.O. Box 5004 San Ramon, CA 94583 FAX (415) 842-9591</p>	Chevron Facility Number _____	Chevron Contact (Name) <u>Lucia Chou</u>	
	Consultant Release Number _____	Consultant Project Number <u>1-045.51</u>	(Phone) <u>415-842-9655</u>
	Consultant Name <u>Western Geologic Resources</u>	Address <u>2169 E. Francisco Bl., San Rafael</u>	Laboratory Name <u>Superior Analytical</u>
	Fax Number <u>415-457-8521</u>	Project Contact (Name) <u>Kevin Spala</u>	Contract Number <u>5096800</u>
	(Phone) <u>415-457-2595</u>		Samples Collected by (Name) <u>R. Smith / D. Brady</u>
		Collection Date <u>3-19-20-91</u>	
		Signature <u>R.D. Smith</u>	

Sample Number	Lab Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite	Time	Sample Preservation	Iced	Analyses To Be Performed							Remarks
								Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline	Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline + Diesel	503 Oil and Grease	Arom. Volatiles - BTXE Soil: 8020/Wtr.: 602	Arom. Volatiles - BTXE Soil: 8240/Wtr.: 624	Total Lead DHS-Luft	EDB DHS-AB 1803	
14 0320-16A		1	S			NONE	X	X	X	X					
15 0320-20A		↓	↓			↓	↓	↓	↓	↓					
16 0320-21A		↓	↓			↓	↓	↓	↓	↓					
17 0320-22A		↓	↓			↓	↓	↓	↓	↓					
18 0319-01B		1	S			NONE									Held for metals analysis ↓
19 0319-02B		↓	↓			↓									
20 0319-03B		↓	↓			↓									
21 0319-04B		↓	↓			↓									
22 0319-05B		↓	↓			↓									
23 0319-07B		↓	↓			↓									
24 0320-09B		↓	↓			↓									
25 0319-10B		↓	↓			↓									

Please initial:

Samples Stored in ice.

Appropriate containers.

Samples preserved.

VOA's without headspace.

Comments: OK

Relinquished By (Signature) <u>R.D. Smith</u>	Organization <u>WGR, Inc.</u>	Date/Time <u>3-21-91/947</u>	Received By (Signature) <u>B. Woods</u>	Organization <u>Express It</u>	Date/Time <u>3/21 9:45</u>	Turn Around Time (Circle Choice) 24 Hrs 48 Hrs <input checked="" type="radio"/> 5 Days 10 Days
Relinquished By (Signature) <u>B. Woods</u>	Organization <u>Express It</u>	Date/Time <u>3/21 2:00</u>	Received By (Signature)	Organization	Date/Time	
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature) <u>M. Goldenberg</u>		Date/Time <u>3/21/91 14:00</u>	



ATTACHMENT B
LABORATORY REPORT

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649
 CLIENT: Western Geologic Resources
 CLIENT JOB NO.: 1-045.51

DATE RECEIVED: 03/21/91
 DATE REPORTED: 04/04/91

Page 1 of 5

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
11649- 1	0319-01A	03/19/91	03/25/91
11649- 2	0319-02A	03/19/91	03/25/91
11649- 3	0319-03A	03/19/91	03/25/91
11649- 4	0319-04A	03/19/91	03/25/91
11649- 5	0319-05A	03/19/91	03/25/91
11649- 6	0319-07A	03/19/91	03/25/91
11649- 7	0320-09A	03/20/91	03/25/91
11649- 8	0319-10A	03/19/91	03/25/91
11649- 9	0319-11A	03/19/91	03/25/91
11649-10	0319-12A	03/19/91	03/25/91

Laboratory Number:	11649	11649	11649	11649	11649
	1	2	3	4	5

ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)				
OIL AND GREASE:	ND<50	ND<50	ND<50	ND<50	ND<50
TPH/GASOLINE RANGE:	ND<1	ND<1	ND<1	ND<1	ND<1
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
TOLUENE:	0.005	0.006	0.005	0.006	0.011
ETHYL BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
XYLENES:	0.011	0.011	0.010	0.011	0.012

Laboratory Number:	11649	11649	11649	11649	11649
	6	7	8	9	10

ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)				
OIL AND GREASE:	ND<50	ND<50	ND<50	ND<50	ND<50
TPH/GASOLINE RANGE:	ND<1	ND<1	ND<1	ND<1	ND<1
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
TOLUENE:	0.006	0.006	0.006	0.006	ND<.005
ETHYL BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
XYLENES:	0.011	0.022	0.013	0.012	0.010

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649
 CLIENT: Western Geologic Resources
 CLIENT JOB NO.: 1-045.51

DATE RECEIVED: 03/21/91
 DATE REPORTED: 04/04/91

Page 2 of 5

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
11649-11	0319-13A	03/19/91	03/25/91
11649-12	0320-14A	03/20/91	03/25/91
11649-13	0320-15A	03/20/91	03/25/91
11649-14	0320-16A	03/20/91	03/25/91
11649-15	0320-20A	03/20/91	03/25/91
11649-16	0320-21A	03/20/91	03/25/91
11649-17	0320-22A	03/20/91	03/25/91
11649-18	0319-01B	03/19/91	/ /
11649-19	0319-02B	03/19/91	/ /
11649-20	0319-03B	03/19/91	/ /

Laboratory Number:	11649	11649	11649	11649	11649
	11	12	13	14	15

ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)				
OIL AND GREASE:	ND<50	ND<50	51	ND<50	ND<50
TPH/GASOLINE RANGE:	ND<1	1	ND<1	ND<1	1
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
TOLUENE:	0.005	ND<.005	ND<.005	0.009	0.006
ETHYL BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
XYLENES:	0.010	0.016	0.010	0.017	0.014

Laboratory Number:	11649	11649	11649	11649	11649
	16	17	18	19	20

ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)				
OIL AND GREASE:	ND<50	260	NA	NA	NA
TPH/GASOLINE RANGE:	53	ND<1	NA	NA	NA
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<.005	ND<.005	NA	NA	NA
TOLUENE:	ND<.005	ND<.005	NA	NA	NA
ETHYL BENZENE:	ND<.005	ND<.005	NA	NA	NA
XYLENES:	0.16	ND<.005	NA	NA	NA

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SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649
 CLIENT: Western Geologic Resources
 CLIENT JOB NO.: 1-045.51

DATE RECEIVED: 03/21/91
 DATE REPORTED: 04/04/91

Page 3 of 5

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
11649-21	0319-04B	03/19/91	/ /
11649-22	0319-05B	03/19/91	/ /
11649-23	0319-07B	03/19/91	/ /
11649-24	0320-09B	03/20/91	/ /
11649-25	0319-10B	03/19/91	/ /
11649-26	0319-11B	03/19/91	/ /
11649-27	0319-12B	03/19/91	/ /
11649-28	0319-13B	03/19/91	/ /
11649-29	0320-14B	03/20/91	/ /
11649-30	0320-15B	03/20/91	/ /

Laboratory Number:	11649	11649	11649	11649	11649
	21	22	23	24	25

ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	NA	NA	NA	NA	NA
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	NA	NA	NA	NA	NA
TOLUENE:	NA	NA	NA	NA	NA
ETHYL BENZENE:	NA	NA	NA	NA	NA
XYLENES:	NA	NA	NA	NA	NA

Laboratory Number:	11649	11649	11649	11649	11649
	26	27	28	29	30

ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	NA	NA	NA	NA	NA
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	NA	NA	NA	NA	NA
TOLUENE:	NA	NA	NA	NA	NA
ETHYL BENZENE:	NA	NA	NA	NA	NA
XYLENES:	NA	NA	NA	NA	NA

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DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649
CLIENT: Western Geologic Resources
CLIENT JOB NO.: 1-045.51

DATE RECEIVED: 03/21/91
DATE REPORTED: 04/04/91

Page 4 of 5

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
11649-31	0320-16B	03/20/91	/ /
11649-32	0320-20B	03/20/91	/ /
11649-33	0320-21B	03/20/91	/ /
11649-34	0320-22B	03/20/91	/ /

Laboratory Number:	11649	11649	11649	11649
	31	32	33	34

ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)			
OIL AND GREASE:	NA	NA	NA	NA
TPH/GASOLINE RANGE:	NA	NA	NA	NA
TPH/DIESEL RANGE:	NA	NA	NA	NA
BENZENE:	NA	NA	NA	NA
TOLUENE:	NA	NA	NA	NA
ETHYL BENZENE:	NA	NA	NA	NA
XYLENES:	NA	NA	NA	NA

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

Page 5 of 5
QA/QC INFORMATION
SET: 11649

NA = ANALYSIS NOT REQUESTED

ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT

mg/kg = part per million (ppm)

OIL AND GREASE ANALYSIS By Standard Methods Method 503E:
Minimum Detection Limit in Soil: 50mg/kg

Modified EPA-SW846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Soil: 1mg/kg
Standard Reference: NA

EPA-SW846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Soil: 1mg/kg
Standard Reference: 08/24/90

SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Soil: 0.005mg/kg
Standard Reference: 01/28/91

ANALYTE	REFERENCE	SPIKE LEVEL	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Oil & Grease	04/02/91	10mg	92	5	50-130
Diesel	NA	NA	NA	NA	NA
Gasoline	08/24/90	200ng	83/84	0.8	58-120
Benzene	01/28/91	200ng	94/93	1.1	65-121
Toluene	01/28/91	200ng	99/99	0.0	65-120
Ethyl Benzene	01/28/91	200ng	103/102	1.5	65-122
Total Xylene	01/28/91	600ng	105/104	0.8	65-122

Richard Srna, Ph.D.

Cecilia G. Jaquini (for)
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649-1
CLIENT: Western Geo. Resources
JOB NO.: 1-045.51

DATE SAMPLED: 03/19/91
DATE RECEIVED: 03/21/91
DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: 0319-01A

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 90 % :MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia G. Joergensen (for)
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.

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DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649-2
CLIENT: Western Geo. Resources
JOB NO.: 1-045.51

DATE SAMPLED: 03/19/91
DATE RECEIVED: 03/21/91
DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: 0319-02A

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 90 % :MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia Graziani (for)
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

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DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649-3
CLIENT: Western Geo. Resources
JOB NO.: 1-045.51

DATE SAMPLED: 03/19/91
DATE RECEIVED: 03/21/91
DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: 0319-03A

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 90 % :MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia G. Joazeiro (for)
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

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DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649-4
CLIENT: Western Geo. Resources
JOB NO.: 1-045.51

DATE SAMPLED: 03/19/91
DATE RECEIVED: 03/21/91
DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: 0319-04A

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 90 % :MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia G. Joaquin (for)
Laboratory Director

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DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649-5
CLIENT: Western Geo. Resources
JOB NO.: 1-045.51

DATE SAMPLED: 03/19/91
DATE RECEIVED: 03/21/91
DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: 0319-05A

<u>Compound</u>	<u>MDL (ug/kg)</u>	<u>RESULTS (ug/kg)</u>
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 90 % :MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Keilia Grogan (SR)
Laboratory Director

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DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649-6
CLIENT: Western Geo. Resources
JOB NO.: 1-045.51

DATE SAMPLED: 03/19/91
DATE RECEIVED: 03/21/91
DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: 0319-07A

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 90 % : MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia G. Jorgensen (for)
Laboratory Director

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DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 11649-7
 CLIENT: Western Geo. Resources
 JOB NO.: 1-045.51

DATE SAMPLED: 03/20/91
 DATE RECEIVED: 03/21/91
 DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
 HALOGENATED VOLATILE ORGANICS
 SAMPLE: 0319-09A

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	7
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 90 % :MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia J. Fragan (for)
 Laboratory Director

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DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 11649-8
CLIENT: Western Geo. Resources
JOB NO.: 1-045.51

DATE SAMPLED: 03/19/91
DATE RECEIVED: 03/21/91
DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: 0319-10A

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 90 % :MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia G. Jacquin (tr)
Laboratory Director

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SUPERIOR ANALYTICAL LABORATORY, INC.

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DHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 11649-9
CLIENT: Western Geo. Resources
JOB NO.: 1-045.51

DATE SAMPLED: 03/19/91
DATE RECEIVED: 03/21/91
DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: 0319-11A

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 90 % :MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia J. Joaguis (for)
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.

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DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649-10

DATE SAMPLED: 03/19/91

CLIENT: Western Geo. Resources

DATE RECEIVED: 03/21/91

JOB NO.: 1-045.51

DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: 0319-12A

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 90 % :MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia G. Longwin (for)
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.

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DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649-11
CLIENT: Western Geo. Resources
JOB NO.: 1-045.51

DATE SAMPLED: 03/19/91
DATE RECEIVED: 03/21/91
DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: 0319-13A

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 90 % :MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia G. Joaquin (for)
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

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DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649-12
 CLIENT: Western Geo. Resources
 JOB NO.: 1-045.51

DATE SAMPLED: 03/20/91
 DATE RECEIVED: 03/21/91
 DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
 HALOGENATED VOLATILE ORGANICS
 SAMPLE: 0319-14A

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit
 ug/kg = parts per billion (ppb)
 QA/QC Summary: Daily Standard RPD = <15
 MS/MSD average recovery = 90 % :MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia J. Jaeger
 Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.

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DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649-13

DATE SAMPLED: 03/20/91

CLIENT: Western Geo. Resources

DATE RECEIVED: 03/21/91

JOB NO.: 1-045.51

DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: 0319-15A

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 90 % :MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia G. Joagui (for)
Laboratory Director

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DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649-14
 CLIENT: Western Geo. Resources
 JOB NO.: 1-045.51

DATE SAMPLED: 03/20/91
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 DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
 HALOGENATED VOLATILE ORGANICS
 SAMPLE: 0319-16A

Compound -----	MDL (ug/kg) -----	RESULTS (ug/kg) -----
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 90 % : MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia J. Jozwi (for)
 Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649-15
CLIENT: Western Geo. Resources
JOB NO.: 1-045.51

DATE SAMPLED: 03/20/91
DATE RECEIVED: 03/21/91
DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: 0319-20A

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 90 % :MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia G. Jorgensen
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649-16
CLIENT: Western Geo. Resources
JOB NO.: 1-045.51

DATE SAMPLED: 03/20/91
DATE RECEIVED: 03/21/91
DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: 0319-21A

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 90 % :MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia J. Grogan (for)
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

11644

3 of 3

Chain-of-Custody Record

Chevron U.S.A. Inc.
 P.O. Box 5004
 San Ramon, CA 94583
 FAX (415) 842-9591

Chevron Facility Number _____
 Consultant _____ Consultant Project Number 1-045.51
 Release Number _____
 Consultant Name Western Geologic Resources, Inc.
 Address 2169 E. Francisco Bl., San Rafael
 Fax Number 415-457-8521
 Project Contact (Name) Kevin Spala
 (Phone) 415-457-4595

Chevron Contact (Name) Lucia Chou
 (Phone) 415-842-9653
 Laboratory Name Superior Analytical
 Contract Number 5096800
 Samples Collected by (Name) R. Smith / D. Brady
 Collection Date 3-19, 20-91
 Signature R. D. Smith

Sample Number	Lab Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite	Time	Sample Preservation	Iced	Analyses To Be Performed										Remarks						
								Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline	Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline + Diesel	503 Oil and Grease	Arom. Volatiles - BTXE Soil: 8020/Wtr.: 602	Arom. Volatiles - BTXE Soil: 8240/Wtr.: 624	Total Lead DHS-Luft	EDB DHS-AB 1803	Metals Cr, Cd, Pb, Fe, Ni									
26 0319-11B		1	S			NONE	X																	
27 0319-12B																								
28 0319-13B																								
29 0320-14B																								
30 0320-15B																								
31 0320-16B																								
32 0320-20B																								
33 0320-21B																								
34 0320-22B																								

Please initial: _____

Samples Stored in ice. _____

Appropriate containers. _____

Samples preserved. _____

VOA's without headspace _____

Comments: (OK)

Relinquished By (Signature) <u>R. D. Smith</u>	Organization <u>WGR, Inc.</u>	Date/Time <u>3-21-91/1943</u>	Received By (Signature) <u>B. Brooks</u>	Organization <u>Express-It</u>	Date/Time <u>3/21 9:45</u>	Turn Around Time (Circle Choice) 24 Hrs 48 Hrs 5 Days 10 Days
Relinquished By (Signature) <u>B. Brooks</u>	Organization <u>Express-It</u>	Date/Time <u>3-21 2:00</u>	Received By (Signature)	Organization	Date/Time	
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature) <u>M. J. ...</u>	Date/Time <u>3/21/90 14:00</u>		

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

DHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 11649-17
CLIENT: Western Geo. Resources
JOB NO.: 1-045.51

DATE SAMPLED: 03/20/91
DATE RECEIVED: 03/21/91
DATE ANALYZED: 03/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: 0319-22A

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit
ug/kg = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15
MS/MSD average recovery = 90 % :MS/MSD RPD = < 1 %

Richard Srna, Ph.D.

Cecilia G. Joaquin (for)
Laboratory Director

OUTSTANDING QUALITY AND SERVICE