STID 3644

DP

Chevron

October 30, 1998

Chevron Products Company
6001 Bollinger Canyon Road
Building L, Room 1110
PO Box 6004
San Ramon, CA 94583-0904

Philip R. Briggs
Project Manager
Site Assessment & Remediation
Phone 925 842-9136
Fax 925 842-8370

Mr. Thomas Peacock
Alameda County Health Care Services
Division of Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Chevron Service Station #9-4800
1700 Castro Street
Oakland, California

Dear Mr. Peacock:

Enclosed is the Third Quarter Groundwater Monitoring and Sampling Report for 1998 that was prepared by our consultant Gettler-Ryan Inc. for the above noted facility. The groundwater samples were analyzed for the presence of TPH-g, TPH-d, BTEX and MtBE. All wells are sampled quarterly.

Monitoring wells MW-1 and MW-2 showed an increase in the benzene constituent while well MW-3 showed a decrease from the previous sampling event. The TPH-d constituent detected in wells MW1 and MW-2 indicated the presence of an unidentified hydrocarbon. To confirm the presence of MtBE, EPA Method 8260 was used to analyze for MtBE only in monitoring well MW-2, since this well has the highest concentration of the three wells onsite. MtBE was confirmed by this method.

Depth to ground water varied from 24.22 feet to 25.35 feet below grade with a direction of flow westerly.

A work plan was recently submitted for the installation of an additional groundwater monitoring well to further delineate the lateral extent of MtBE in the groundwater beneath the site. Chevron is awaiting your concurrence to the work plan or if you have any questions, please contact me.

If you have any questions call me at (925) 842-9136.

Sincerely,
CHEVRON PRODUCTS COMPANY

Philip R. Briggs
Site Assessment and Remediation Project Manager

Enclosure

Cc. Mr. Bill Scudder, Chevron

GETTLER-RYAN INC.

October 15, 1998 Job #6383.80

Mr. Phill Briggs
Chevron Products Company
P.O. Box 6004
San Ramon, CA 94583

Re: Third Quarter 1998 Groundwater Monitoring & Sampling Report
Chevron Service Station #9-4800
1700 Castro Street
Oakland, California

Dear Mr. Briggs:

This report documents the quarterly groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On September 7, 1998, field personnel were on-site to monitor and sample three wells (MW-1, MW-2 and MW-3) at the above referenced site.

Static groundwater levels were measured and all wells were checked for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were not present in any of the wells. Static water level data and groundwater elevations are presented in Table 1. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells as specified by G-R Standard Operating Procedure - Groundwater Sampling (attached). The field data sheets for this event are also attached. The samples were analyzed by Sequoia Analytical. Analytical results are presented in Table 1. The chain of custody document and laboratory analytical reports are attached.

Thank you for allowing Gettler-Ryan Inc. to provide environmental services to Chevron. Please call if you have any questions or comments regarding this report.

Sincerely,

Deanna L. Harding
Project Coordinator

Barbara Sieminski
Project Geologist, R.G. No. 6676

REGISTERED GEOLOGIST
BARBARA SIEMINSKI
No. 6676
STATE OF CALIFORNIA

DLH/ba/dlh
6383.QML

Figure 1: Potentiometric Map
Table 1: Water Level Data and Groundwater Analytical Results
Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports

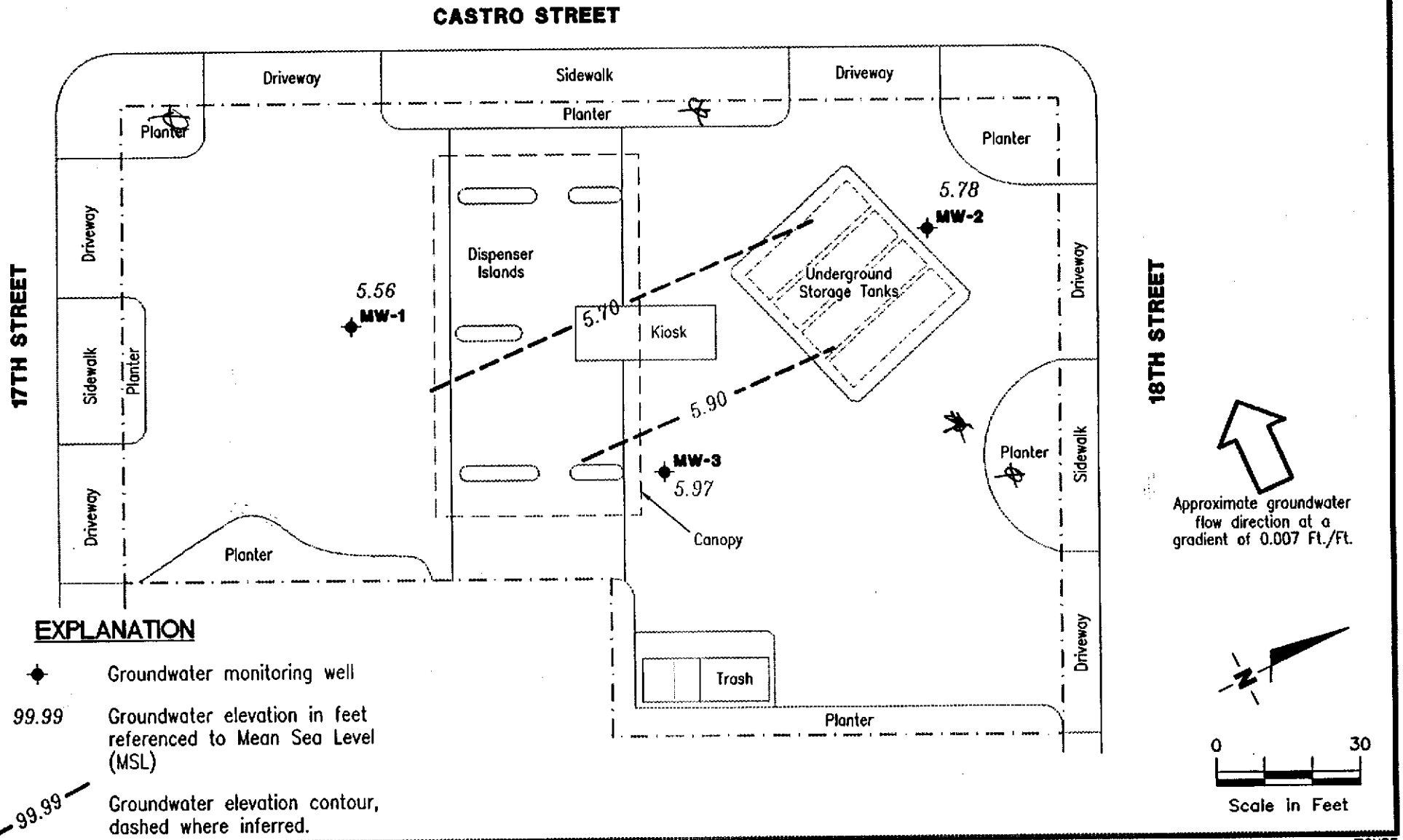

FIGURE 1

Gettler - Ryan Inc.

6747 Sierra Ct., Suite J (925) 551-7555
Dublin, CA 94568

POTENTIOMETRIC MAP
Chevron Service Station No. 9-4800
1700 Castro Street
Oakland, California

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
6383		September 7, 1998	

Table 1. Water Level Data and Groundwater Analytical Results - Chevron Service Station #9-4800, 1700 Castro Street, Oakland, California

Well ID/ TOC(ft)	Date Sampled	Depth to Water (ft)	GWE (msl)	Product Thickness (ft)	TPH(D)	TPH(G)	B	T	E	X	MTBE
					<--------			ppb			-------->
MW-1											
30.75[1]	06/04/97	25.82	4.39	0.00	71[2]	890	100	110	29	150	<10
	09/16/97	25.90	4.85	0.00	75[2]	1,600	210	210	60	250	<10
	12/17/97	25.87	4.88	0.00	65[2]	940	120	100	41	160	<25
	03/18/98	24.85	5.90	0.00	77[2]	530	91	39	22	65	6.8
	06/28/98	24.83	5.92	0.00	140[2]	1,100	220	140	37	120	14
	09/07/98	**25.19**	**5.56**	**0.00**	**280[2]**	**1,700**	**530**	**86**	**84**	**240**	**49**
MW-2											
30.00[1]	06/04/97	24.87	5.13	0.00	4,000[2]	13,000	790	30	420	1,700	4,000
	09/16/97	24.94	5.06	0.00	2,200[2]	4,000	360	9.7	210	460	1,500
	12/17/97	24.82	5.18	0.00	2,100[2]	4,100	380	<10	200	460	2,100
	03/18/98	23.57	6.43	0.00	3,700[2]	8,400	1,800	<50	350	630	13,000
	06/28/98	23.79	6.21	0.00	4,400[2]	9,300	740[4]	340[4]	710[4]	2,300[4]	3,800[3]
	09/07/98	**24.22**	**5.78**	**0.00**	**3,100[2]**	**9,900**	**1000**	**150**	**640**	**1,800**	**4,500/4,100[3]**
MW-3											
31.32[1]	06/04/97	26.05	5.27	0.00	<50	190	26	20	1.5	16	8.2
	09/16/97	26.15	5.17	0.00	<50	270	58	53	6.1	30	21
	12/17/97	26.10	5.22	0.00	<50	290	50	54	8.1	37	21
	03/18/98	24.90	6.42	0.00	<50	390	140	33	4.6	30	94
	06/28/98	24.93	6.39	0.00	<50	290	90	11	1.6	13	150
	09/07/98	**25.35**	**5.97**	**0.00**	**<50**	**170**	**46**	**20**	**4.3**	**19**	**120**
Trip Blank	06/04/97	---	---	---	---	<50	<0.50	<0.50	<0.50	<0.50	<2.5
	09/16/97	---	---	---	---	<50	<0.50	<0.50	<0.50	<0.50	<2.5
	12/17/97	---	---	---	---	<50	<0.50	<0.50	<0.50	<0.50	<2.5
	03/18/98	---	---	---	---	<50	<0.50	<0.50	<0.50	<0.50	<2.5
	06/28/98	---	---	---	---	<50	<0.50	<0.50	<0.50	<0.50	<2.5
	09/07/98	**---**	**---**	**---**	**---**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<2.5**

Table 1. Water Level Data and Groundwater Analytical Results - Chevron Service Station #9-4800, 1700 Castro Street, Oakland, California (continued)

EXPLANATION:

TOC = Top of casing elevation
(ft) = feet
GWE = Groundwater elevation
(msl) = Referenced relative to mean sea level
TPH(D) = Total Petroleum Hydrocarbons as diesel
TPH(G) = Total Petroleum Hydrocarbons as gasoline
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes
MTBE = Methyl tertiary-butyl ether
ppb = Parts per billion
--- = Not analyzed, not measured

ANALYTICAL METHODS:

EPA Method 8015 Modified for TPH as Diesel
EPA Method 8015 for TPH as Gasoline
EPA Method 8020 for BTEX & MTBE

NOTES:

1 MW-1 through MW-3 were surveyed on June 18, 1997, by Virgil Chavez Land Surveying (PLS #6323). Benchmark used for TOC is the back of sidewalk on 18th Street as reference line. Benchmark Elevation = 29.65' (msl).
2 Laboratory report indicates unidentified hydrocarbons C9-C24.
3 MTBE by EPA Method 8260.
4 BTEX by EPA Method 8260.

6383.eqm

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. Prior to sample collection, the type of analysis to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analysis is maintained.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using a MMC flexi-dip interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, static water level measurements are collected with the interface probe and are also recorded in the field notes.

After water levels are collected and prior to sampling, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or polyvinyl chloride bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging. Purging continues until these parameters stabilize.

Groundwater samples are collected using Chevron-designated disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used when possible. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set. For sampling sets greater than 20 samples, 5% trip blanks are included. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

As requested by Chevron Products Company, the purge water and decontamination water generated during sampling activities is transported by IWM to McKittrick Waste Management located in McKittrick, California.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Chevron Facility # 9-4800 Job#: 6383.80

Address: 1700 Castro Street Date: 9-7-95

City: Oakland, CA Sampler: F.Cline

Well ID MW- 1 Well Condition: clay

Well Diameter 2" in. Hydrocarbon Thickness: C in. Amount Bailed (product/water): C (gal.)

Total Depth 30.3 ft.

Depth to Water 25.19 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

5.11 X VF 0.17 = 0.89 X 3 (case volume) = Estimated Purge Volume: 2.6 (gal.)

Purge Equipment: ~~Disposable Bailer~~ Bailer, Stack, Suction, Grundfos, Other: _____

Sampling Equipment: ~~Disposable Bailer~~ Bailer, Pressure Bailer, Grab Sample, Other: _____

Starting Time: ~~1035~~ 1035 Weather Conditions: Clear Hot

Sampling Time: _____ Water Color: Clear Odor: None

Purging Flow Rate: N/A gpm. Sediment Description: None

Did well de-water? N/C If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
1439	1	7.20	969	21.2			
1442	2	7.03	950	21.0			
1445	3	7.02	969	21.1			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW- 1	3 x 40m/VOA	Y	HCL	SEQUOIA	TPH-Gas/BTEX/MTBE
MW- 1	2 X Liter	Y	NONE	SEQUOIA	TPH-Diesel

COMMENTS: _____

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Chevron Facility # 9-4800 Job#: 6383.80

Address: 1700 Castro Street Date: 9-7-95

City: Oakland, CA Sampler: F.Cline

Well ID MW-2 Well Condition: okay

Well Diameter 2" in. Hydrocarbon Thickness: — in. Amount Bailed (product/water): — (gal.)

Total Depth 30.15 ft.

Depth to Water 24.22 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

6.28 X VF 0.17 = 1.1 X 3 (case volume) = Estimated Purge Volume: 3.2 (gal.)

Purge Equipment: (Disposable Bailer) Bailer Stack Suction Grundfos Other: ____

Sampling Equipment: (Disposable Bailer) ~~Bailer~~ Pressure Bailer Grab Sample Other: ____

Starting Time: 1500 Weather Conditions: clear Hot

Sampling Time: 1508 Water Color: Clear Odor: None

Purging Flow Rate: Mist gpm. Sediment Description: None

Did well de-water? NO If yes; Time: ____ Volume: ____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
1502	1.1	7.04	984	21.7			
1505	2.2	7.01	1078	22.4			
1508	3.3	7.06	1070	21.8			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-2	3 x 40m/VOA	Y	HCL	SEQUOIA	TPH-Gas/BTEX/MTBE 8260
MW-2	2 X Liter	Y	NONE	SEQUOIA	TPH-Diesel

COMMENTS: ____

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Chevron Facility # 9-4800 Job#: 6383.80

Address: 1700 Castro Street Date: 9-7-98

City: Oakland, CA Sampler: F.Cline

Well ID MW- 3 Well Condition: clear

Well Diameter 2" in. Hydrocarbon Thickness: C in. Amount Bailed (product/water): C (gal.)

Total Depth 30.23 ft.

Depth to Water 25.35 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

4.88 X VF 0.17 = .08 X 3 (case volume) = Estimated Purge Volume: 2.4 (gal.)

Purge Equipment: (Disposable Bailer) ~~Bailer~~ Stack Suction Grundfos Other:

Sampling Equipment: (Disposable Bailer) Bailer Pressure Bailer Grab Sample Other:

Starting Time: 1429 Weather Conditions: Clear Hot

Sampling Time: 1435 Water Color: clear Odor: N/A

Purging Flow Rate: n/a gpm Sediment Description: N/A

Did well de-water? N/C If yes; Time: Volume: (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
1421	1	7.60	890	22.6			
1423	2	7.39	1062	21.0			
1425	3	7.20	1048	20.8			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW- 3	3 x 40m/VOA	Y	HCL	SEQUOIA	TPH-Gas/BTEX/MTBE
MW- 3	2 X Liter	Y	NONE	SEQUOIA	TPH-Diesel

COMMENTS:

Fax copy of Lab Report and COC to Chevron ... Chain of Custody Record

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

98-09-317

Chevron Facility Number #9-4800
Facility Address 1700 CASTRO STREET, OAKLAND, CA
Consultant Project Number 6383
Consultant Name Gettler-Ryan
Address 6747 Sierra Ct, Ste J, Dublin 94568
Project Contact (Name) Deanna Harding
(Phone) 551-7555 (Fax Number) 551-7888

Chevron Contact (Name) MR. PHIL BRIGGS
(Phone) (510) 842-9136
Laboratory Name SEQUOIA Service Code: ZZ02790
Laboratory Service Order # 9144488
Samples Collected by (Name) G.C./M.C.
Collection Date 9-7-98
Signature

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed: TPH Gas + BTEX w/MTBE (8015) (8260)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)	Remarks
TB-LB		1	W	TB	—	HCl	Y	X								DO NOT BILL TB-LB ANALYSIS
MW-3	DLA	5	S	G	1425			X	X							~~Confirm highest hit by (8260)~~ ~~MTBE by 8260~~
MW-1	DLA	5			1445			X	X							* Remarks
MW-2	DLA	5			1505			X	X							FOR MW-2 RUN TPH-G by 8015, BTEX & MTBE by 8260

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	G-R Inc.	9-8-98		G-R Inc.	9/8/98
D. Harding	G-R	9/8/98 10:25		Sequoia	9-9-98 10:25
	Sequoia	9-9-98	Received For Laboratory By (Signature)		Date/Time 12:30

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100
1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 09/07/98
6747 Sierra Court Suite J	Sample Descript: TB-LB	Received: 09/08/98
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 09/11/98
Attention: Deanna Harding	Lab Number: 9809397-01	Reported: 09/24/98

QC Batch Number: GC091198802002A
Instrument ID: HP2

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	121

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 09/07/98
6747 Sierra Court Suite J	Sample Descript: MW-1	Received: 09/08/98
Dublin, CA 94568	Matrix: LIQUID	Extracted: 09/14/98
	Analysis Method: EPA 8015 Mod	Analyzed: 09/19/98
Attention: Deanna Harding	Lab Number: 9809397-03	Reported: 09/24/98

QC Batch Number: GC0914980HBPEXZ
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	280
Chromatogram Pattern:	C9-C24	Unid.-HC

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	81

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 988-9673
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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 09/07/98
6747 Sierra Court Suite J	Sample Descript: MW-1	Received: 09/08/98
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 09/14/98
Attention: Deanna Harding	Lab Number: 9809397-03	Reported: 09/24/98

QC Batch Number: GC091498802002A
Instrument ID: HP2

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	100	1700
Methyl t-Butyl Ether	5.0	49
Benzene	1.0	530
Toluene	1.0	86
Ethyl Benzene	1.0	84
Xylenes (Total)	1.0	240
Chromatogram Pattern:		GAS

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	131 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 09/07/98
6747 Sierra Court Suite J	Sample Descript: MW-2	Received: 09/08/98
Dublin, CA 94568	Matrix: LIQUID	Extracted: 09/14/98
	Analysis Method: EPA 8015 Mod	Analyzed: 09/21/98
Attention: Deanna Harding	Lab Number: 9809397-04	Reported: 09/24/98

QC Batch Number: GC0914980HBPEXZ
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	100	3100
Chromatogram Pattern:	C9-C24	Unid.-HC

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	112

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 988-9673
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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 09/07/98
6747 Sierra Court Suite J	Sample Descript: MW-2	Received: 09/08/98
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 09/11/98
Attention: Deanna Harding	Lab Number: 9809397-04	Reported: 09/24/98

QC Batch Number: GC091198802002A
Instrument ID: HP2

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	5000	9900
Methyl t-Butyl Ether	250	4500
Benzene	50	1000
Toluene	50	150
Ethyl Benzene	50	640
Xylenes (Total)	50	1800
Chromatogram Pattern:		GAS

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	123

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 09/07/98
6747 Sierra Court Suite J	Sample Descript: MW-2	Received: 09/08/98
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: EPA 8260	Analyzed: 09/19/98
Attention: Deanna Harding	Lab Number: 9809397-04	Reported: 09/24/98

QC Batch Number: MS0919988260S2A

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/L	Sample Results ug/L
Methyl t-Butyl Ether	20	4100

Surrogates	Control Limits %		% Recovery
1,2-Dichloroethane-d4	76	114	Q
Toluene-d8	88	110	Q
4-Bromofluorobenzene	86	115	Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 09/07/98
6747 Sierra Court Suite J	Sample Descript: MW-3	Received: 09/08/98
Dublin, CA 94568	Matrix: LIQUID	Extracted: 09/14/98
	Analysis Method: EPA 8015 Mod	Analyzed: 09/19/98
Attention: Deanna Harding	Lab Number: 9809397-02	Reported: 09/24/98

QC Batch Number: GC0914980HBPEXZ
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	77

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Sampled: 09/07/98
6747 Sierra Court Suite J	Sample Descript: MW-3	Received: 09/08/98
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 09/11/98
Attention: Deanna Harding	Lab Number: 9809397-02	Reported: 09/24/98

QC Batch Number: GC091198802002A
Instrument ID: HP2

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	170
Methyl t-Butyl Ether	2.5	120
Benzene	0.50	46
Toluene	0.50	20
Ethyl Benzene	0.50	4.3
Xylenes (Total)	0.50	19
Chromatogram Pattern:		GAS

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	131 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
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Gettler Ryan/Geostrategies	Client Proj. ID: Chevron 9-4800, Oakland	Received: 09/08/98
6747 Sierra Court Suite J		
Dublin, CA 94568	Lab Proj. ID: 9809397	Reported: 09/24/98
Attention: Deanna Harding		

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 14 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

TPH-GAS/BTEX:
Sample 9809397-03 was diluted 2-fold.
Sample 9809397-04 was diluted 100-fold.

MTBE(8260) Note:
For sample 9809397-04, the surrogate used was Dibromofluoromethane and the recovery was 103% with control limits 50-150.

#Q - Surrogate coelution was confirmed.

SEQUOIA ANALYTICAL

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Gettler Ryan/Geostrategies
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Chevron 9-4800, Oakland

QC Sample Group: 9809397-02-04

Reported: Sep 24, 1998

QUALITY CONTROL DATA REPORT

Matrix:	Liquid
Method:	EPA 8015A
Analyst:	A. PORTER
ANALYTE	Diesel

QC Batch #: GC0914980HBPEXZ

Sample No.:	9809402-2
Date Prepared:	9/14/98
Date Analyzed:	9/18/98
Instrument I.D.#:	GCHP4B
Sample Conc., ug/L:	94
Conc. Spiked, ug/L:	1000
Matrix Spike, ug/L:	770
% Recovery:	68
Matrix Spike Duplicate, ug/L:	780
% Recovery:	69
Relative % Difference:	1.5
RPD Control Limits:	0-50

LCS Batch#: BLK091498ZS

Date Prepared:	9/14/98
Date Analyzed:	9/18/98
Instrument I.D.#:	GCHP4B
Conc. Spiked, ug/L:	1000
Recovery, ug/L:	720
LCS % Recovery:	72

Percent Recovery Control Limits:

MS/MSD	50-150
LCS	60-140

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

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Gettler Ryan/Geostrategies	Client Project ID:	Chevron 9-4800, Oakland	
6747 Sierra Court, Ste J	Matrix:	Liquid	
Dublin, CA 94568			
Attention: Deanna Harding	Work Order #:	9809397 -01, 02, 04	Reported: Sep 25, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	BTEX as TPH
QC Batch#:	GC091198802002A	GC091198802002A	GC091198802002A	GC091198802002A	GC091198802002A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	8090851	8090851	8090851	8090851	8090851
Sample Conc.:	3.9	N.D.	N.D.	N.D.	N.D.
Prepared Date:	9/11/98	9/11/98	9/11/98	9/11/98	9/11/98
Analyzed Date:	9/11/98	9/11/98	9/11/98	9/11/98	9/11/98
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	340 µg/L
Result:	20	17	19	54	300
MS % Recovery:	81	85	95	90	88
Dup. Result:	22	20	20	63	320
MSD % Recov.:	91	100	100	105	94
RPD:	9.52	16.22	5.13	15.38	6.45
RPD Limit:	0-20	0-20	0-20	0-20	0-50
LCS #:	LCS091198	LCS091198	LCS091198	LCS091198	LCS091198
Prepared Date:	9/11/98	9/11/98	9/11/98	9/11/98	9/11/98
Analyzed Date:	9/11/98	9/11/98	9/11/98	9/11/98	9/11/98
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	340 µg/L
LCS Result:	19	20	21	62	300
LCS % Recov.:	95	100	105	103	88
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	

SEQUOIA ANALYTICAL
Elap #1271

Mike Gregory
Project Manager

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** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

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Gettler Ryan/Geostrategies	Client Project ID:	Chevron 9-4800, Oakland	
6747 Sierra Court, Ste J	Matrix:	Liquid	
Dublin, CA 94568			
Attention: Deanna Harding	Work Order #:	9809397-03	Reported: Sep 25, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	BTEX as TPH
QC Batch#:	GC091498802002A	GC091498802002A	GC091498802002A	GC091498802002A	GC091498802002A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	8090862	8090862	8090862	8090862	8090862
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	9/14/98	9/14/98	9/14/98	9/14/98	9/14/98
Analyzed Date:	9/14/98	9/14/98	9/14/98	9/14/98	9/14/98
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	280 µg/L
Result:	24	23	23	68	360
MS % Recovery:	120	115	115	113	129
Dup. Result:	22	22	22	65	340
MSD % Recov.:	110	110	110	108	121
RPD:	8.7	4.4	4.4	4.5	5.7
RPD Limit:	0-20	0-20	0-20	0-20	0-50
LCS #:	LCS091498	LCS091498	LCS091498	LCS091498	LCS091498
Prepared Date:	9/14/98	9/14/98	9/14/98	9/14/98	9/14/98
Analyzed Date:	9/14/98	9/14/98	9/14/98	9/14/98	9/14/98
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	280 µg/L
LCS Result:	24	23	23	69	340
LCS % Recov.:	120	115	115	115	121
MS/MSD Control Limits	60-140	60-140	60-140	60-140	
LCS Control Limits	70-130	70-130	70-130	70-130	60-140

SEQUOIA ANALYTICAL
Elap #1271

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Gettler Ryan/Geostrategies	Client Project ID:	Chevron 9-4800, Oakland	
6747 Sierra Court, Ste J	Matrix:	Liquid	
Dublin, CA 94568			
Attention: Deanna Harding	Work Order #:	9809397-04	Reported: Sep 25, 1998

QUALITY CONTROL DATA REPORT

Analyte:	MTBE
QC Batch#:	MS0919988260S2A
Analy. Method:	EPA 8260
Prep. Method:	EPA 5030
Analyst:	N. Nelson
MS/MSD #:	8091326
Sample Conc.:	N.D.
Prepared Date:	9/20/98
Analyzed Date:	9/20/98
Instrument I.D.#:	GCMS2
Conc. Spiked:	50 µg/L
Result:	53
MS % Recovery:	106
Dup. Result:	53
MSD % Recov.:	106
RPD:	0.0
RPD Limit:	0-25

LCS #:	LCS091998
Prepared Date:	9/19/98
Analyzed Date:	9/19/98
Instrument I.D.#:	GCMS2
Conc. Spiked:	50 µg/L
LCS Result:	49
LCS % Recov.:	98

MS/MSD	60-140
LCS	65-135
Control Limits	

SEQUOIA ANALYTICAL
Elap #1271

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