



ENVIRONMENTAL
PROTECTION
96 AUG 20 PM 1:43

August 16, 1996

Ms. Susan Hugo
Alameda County Health Services
1131 Harbor Bay Parkway
Alameda, California 94502-6700

Alton Project No. 41-0063

RE: FORMER MOBIL STATION 99-105
6301 SAN PABLO AVE.
OAKLAND, CALIFORNIA

Dear Ms. Hugo:

Please find enclosed the Second Quarter 1996 Progress Report for the subject location prepared for Mobil Oil Corporation by Alton Geoscience. The contents of this report include:

Quarterly Progress Report Summary Sheet

- Exhibit 1: Sampling Schedule
- Exhibit 2: Groundwater Levels and Chemical Analysis Table
- Exhibit 3: Figures 1 through 3 (Vicinity Map, Groundwater Elevation Contour Map, Dissolved-Phase Benzene Concentrations)
- Exhibit 4: Well Purging and Groundwater Sampling Protocol
- Exhibit 5: Monitoring Well Sampling Forms
- Exhibit 6: Analytical Laboratory Data Sheets

If you have any questions regarding this report, please call Ms. Cherine Foutch, Mobil Engineer, at (510) 625-1173, or Mr. Thomas Seeliger, Alton Geoscience Geologist, at (510) 606-9150.

Sincerely,

ALTON GEOSCIENCE

Thomas E. Seeliger
Geologist

Kevin M. Keenan, RG
Senior Geologist

cc: Ms. Cherine Foutch, Mobil Oil Corporation
Mr. Kevin Graves, California Regional Water Quality Control Board, San Francisco Bay Region
Mr. Ken Simas, Alisto Engineering Group

M:\...99-105.QMS

ALTON GEOSCIENCE

**Quarterly Progress Report Summary Report
Second Quarter 1996**

**Former Mobil Statio 99-105
6301 San Pablo Avenue
Oakland, California**

Alameda County Health Services

Number of water zones:	1	This Page	1
FIELD ACTIVITY:		Date Sampled:	21-May-96
Number of ground water wells on-site:	4	Ground Water Wells monitored:	4
Number of ground water wells off-site:	0	Ground Water Wells sampled:	4
		Ground Water Wells with Free Product:	0
Phase of Investigation: Vadose Zone:	N/A	Ground Water Phase:	Monitor & Sample
SITE HYDROGEOLOGY:			
Approximate depth to ground water below ground surface:			5.6-10.1 feet
Approximate elevation of potentiometric surface above Mean Sea Level:			22.7-27.2 feet
Average Increase/Decrease in ground water elevations since last sampling episode:			1.63 foot decrease
Approximate flow direction and hydraulic gradient:			South-southwest at 0.096
GROUND WATER CONTAMINATION (BENZENE MCL=1.0 ppb):			
Wells containing free product:	None	Range in Thickness of Free Product:	N/A
Number of wells with concentrations below MCL:	1	Volume of Free Product Recovered This Period:	N/A
Number of wells with concentrations at or above MCL:	3	Volume of Free Product Recovered To Date:	N/A
Nature of contamination:	gasoline and diesel	Range in Concentrations:	Benzene: ND to 1,700 ppb TPH-G: ND to 11,000 ppb TPH-D: ND to 4,200 ppb
ADDITIONAL INFORMATION:			

Prepared by: Thomas E. Seeliger Thomas E. Seeliger

Alton Project No: 41-0063-25

Approved by: Kevin M. Keenan Kevin M. Keenan
California RG# 6513

Submittal date: August 16, 1996

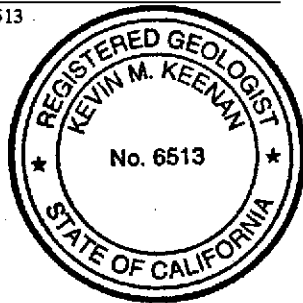


EXHIBIT 1
SAMPLING SCHEDULE

MONITORING WELL SAMPLING SCHEDULE 1996
Former Mobil Station 99-105

Well Number	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
MW-1	X	X	X	X
MW-2	X	X	X	X
MW-3	X	X	X	X
MW-4	X	X	X	X

NOTES: X = well scheduled for sampling

EXHIBIT 2

GROUNDWATER LEVELS AND CHEMICAL ANALYSES

Groundwater Levels and Chemical Analysis

Former Mobil Station 99-105

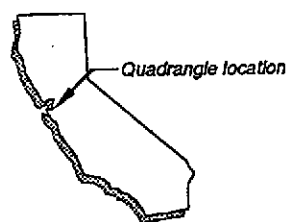
Well ID	Date	Top of Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	TPH-G (ppb)	TPH-D (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	TOG (ppb)	Lead (ppb)
TW-1	1/4/96	—	6.00	—	ND	700	ND	ND	ND	ND	—	—
WW-1	1/4/96	—	3.00	—	ND	—	ND	ND	ND	ND	ND	—
MW-1	3/14/96	32.79	4.50	28.29	610	450	0.75	0.54	1.5	59	—	ND
	5/21/96		5.64	27.15	ND	ND	ND	ND	ND	ND	—	—
MW-2	3/14/96	32.80	4.51	28.29	560	250	2.0	0.96	4.3	11	—	ND
	5/21/96		5.65	27.15	730	560	5.1	1.4	6.7	5.9	—	—
MW-3	3/14/96	32.80	9.55	23.25	4,200	1,200	220	30	140	520	ND	ND
	5/21/96		10.16	22.64	8,500	2,800	710	110	440	1,700	—	—
MW-4	3/14/96	31.50	4.92	26.58	12,000	3,500	2,200	140	880	2,000	—	ND
	5/21/96		8.60	22.90	11,000	4,200	1,700	ND	930	470	—	—

NOTES:

- ppb = parts per billion
- TPH-G = total petroleum hydrocarbons as gasoline
- TPH-D = total petroleum hydrocarbons as diesel
- TOG = total oil and grease
- = not measured/not analyzed
- ND = not detected at or above method detection limit



SCALE 1:24,000



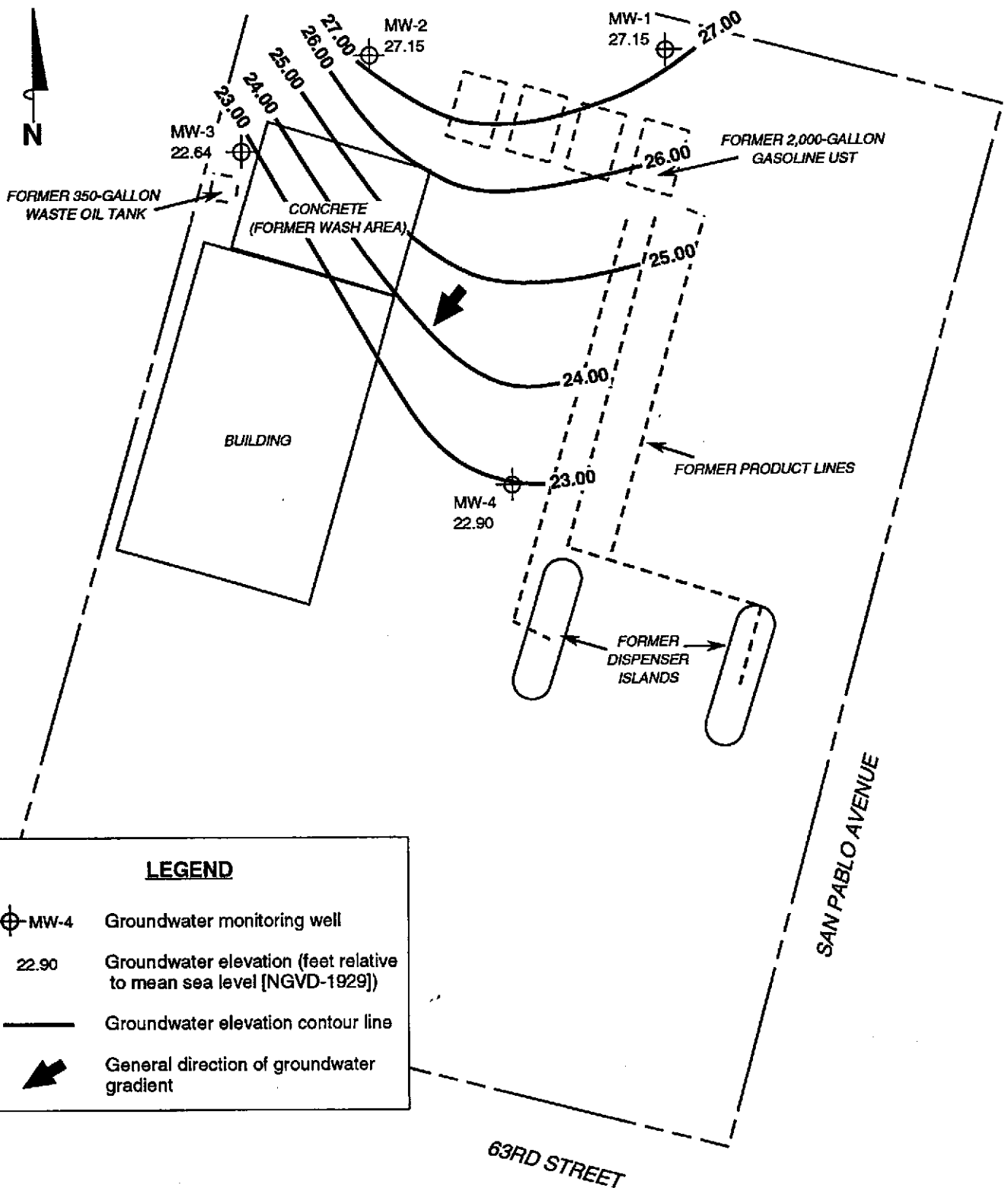
Source: U.S.G.S. Map
Oakland West Quadrangle
California
7.5 Minute Series

VICINITY MAP




Former Mobil Station 99-105
6301 San Pablo Avenue
Oakland, California

FIGURE 1

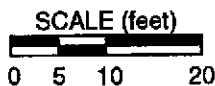
**ALTON
GEOSCIENCE**
Livermore, California



LEGEND

-  MW-4 Groundwater monitoring well
- 22.90 Groundwater elevation (feet relative to mean sea level [NGVD-1929])
-  Groundwater elevation contour line
-  General direction of groundwater gradient

NOTES:
 Contour lines are interpretive based on fluid level measurements collected May 21, 1996. Contour interval = 1.0 foot.



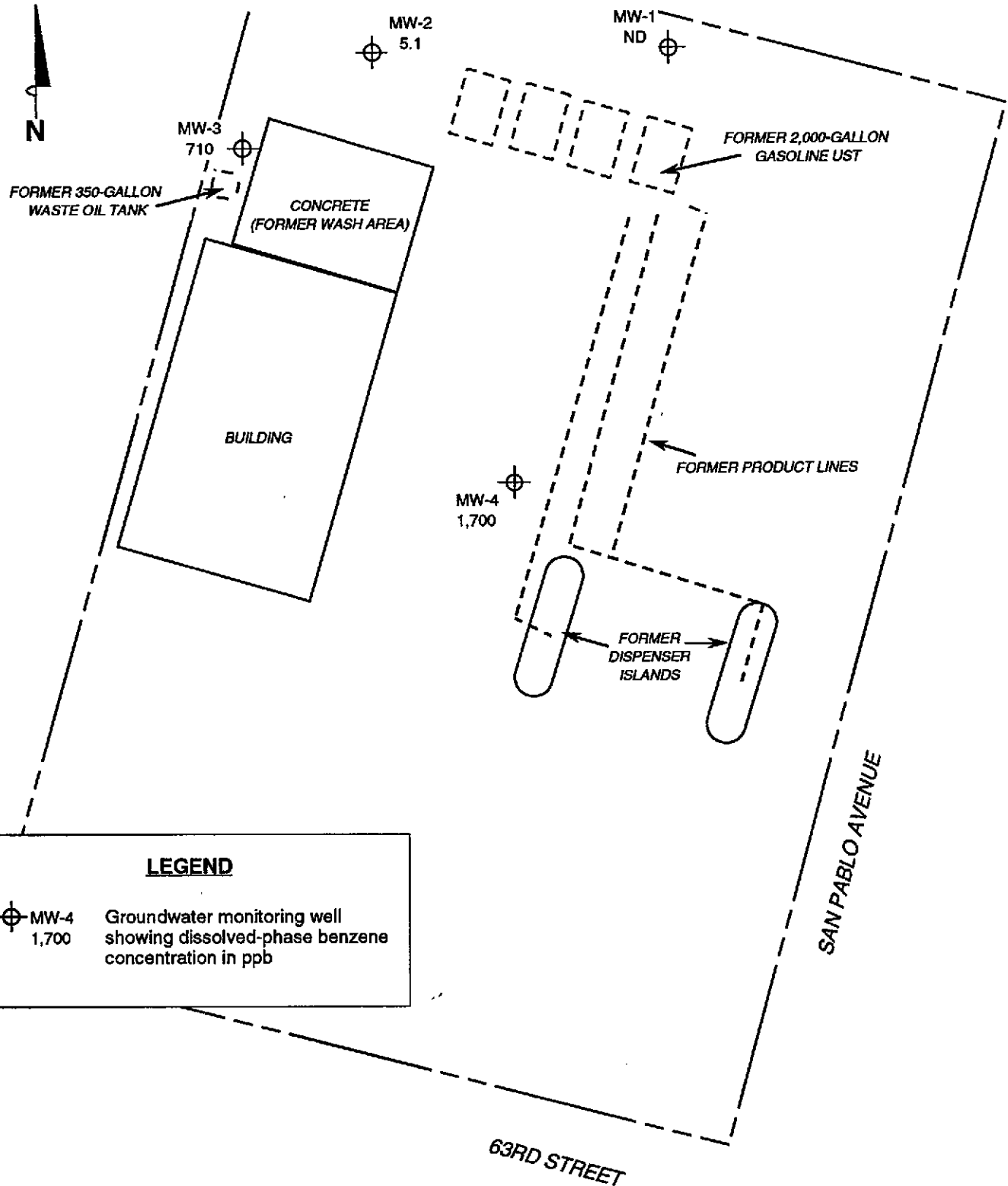
**GROUNDWATER ELEVATION
 CONTOUR MAP
 May 21, 1996**

Former Mobil Station 99-105
 6301 San Pablo Avenue
 Oakland, California


FIGURE 2



Source: ALISTO Engineering



LEGEND

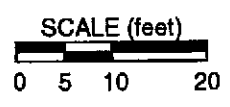
 MW-4
 1,700 Groundwater monitoring well showing dissolved-phase benzene concentration in ppb

NOTES:
 Results are based on analysis of groundwater samples collected May 21, 1996. ppb = parts per billion; ND = not detected at or above method detection limit.

**DISSOLVED-PHASE BENZENE CONCENTRATIONS
 May 21, 1996**

Former Mobil Station 99-105
 6301 San Pablo Avenue
 Oakland, California

FIGURE 3



Source: ALISTO Engineering

EXHIBIT 4

WELL PURGING AND GROUNDWATER SAMPLING PROTOCOL

APPENDIX A

GENERAL FIELD PROCEDURES

General field procedures used during fluid level monitoring and ground water sampling activities are described below.

FLUID LEVEL MONITORING

Fluid levels are monitored in the wells using an electronic interface probe with conductance sensors. The presence of liquid-phase hydrocarbons is verified using a hydrocarbon-reactive paste. The depth to liquid-phase hydrocarbons and water is measured relative to the well box top or top of casing. Well box or casing elevations are surveyed to within 0.02 foot relative to a county or city bench mark.

GROUND WATER SAMPLING

Ground water monitoring wells are purged and sampled in accordance with standard regulatory protocol. Typically, monitoring wells that contain no liquid-phase hydrocarbons are purged of ground water prior to sampling so that fluids sampled are representative of fluids within the formation. Temperature, pH, and specific conductance are typically measured after each well casing volume has been removed. Purging is considered complete when these parameters vary less than 10% from the previous readings, or when four casing volumes of fluid have been removed. Samples are collected without further purging if the well does not recharge within 2 hours to 80% of its volume before purging.

The purged water is either pumped directly into a licensed vacuum truck or temporarily stored in labeled drums prior to transport to an appropriate treatment or recycling facility. If an automatic recovery system (ARS) is operating at the site, purged water may be pumped into the ARS for treatment.

Ground water samples are collected by lowering a 1.5-inch-diameter, bottom-fill, disposable polyethylene bailer just below the static water level in the well. The samples are carefully transferred from the check-valve-equipped bailer to 1-liter and 40-milliliter glass containers. The sample containers are filled to zero headspace and fitted with Teflon-sealed caps. Each sample is labeled with the project number, well number, sample date, and sampler's initials. Samples remain chilled at approximately 4°C prior to analysis by a state-certified laboratory.

EXHIBIT 5
MONITORING WELL SAMPLING FORMS

GROUND WATER SAMPLING FIELD NOTES

Site: 99-105

Project No.: 4-0063

Sampled By: JM

Date: 5-21-96

Well No. MW-1
 Total Depth (feet) 19.84
 Depth to Water (feet): 5.64
 Water Column (feet): 14.2
 80% Recharge Depth (feet): 8.48

Purge Method: Sub
 Depth to Product (feet): 0
 Product Recovered (gallons): 0
 Casing Diameter (Inches): 4
 1 Well Volume (gallons): 9.37

Well No. MW-2
 Total Depth (feet) 19.47
 Depth to Water (feet): 5.65
 Water Column (feet): 13.82
 80% Recharge Depth (feet): 8.41

Purge Method: Sub
 Depth to Product (feet): 0
 Product Recovered (gallons): 0
 Casing Diameter (Inches): 4
 1 Well Volume (gallons): 9.37

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH
14:15			10	1.32	69.9	7.02
			20	1.05	70.2	7.00
			29	1.05	70.2	7.02
Total Purged			29	Time Sampled		17:39

Comments:
Turbidity =

28.1

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH
14:40			10	1.30	67.9	6.97
			20	1.30	69.0	6.97
Pumped dry @ 20						
Total Purged			20	Time Sampled		15:00

Comments:
Turbidity =

27.3

Well No. MW-3
 Total Depth (feet) 20.04
 Depth to Water (feet): 10.16
 Water Column (feet): 9.88
 80% Recharge Depth (feet): 12.13

Purge Method: Sub
 Depth to Product (feet): 0
 Product Recovered (gallons): 0
 Casing Diameter (Inches): 4
 1 Well Volume (gallons): 6.52

Well No. MW-4
 Total Depth (feet) 24.85
 Depth to Water (feet): 8.60
 Water Column (feet): 16.25
 80% Recharge Depth (feet): 11.85

Purge Method: Sub
 Depth to Product (feet): 0
 Product Recovered (gallons): 0
 Casing Diameter (Inches): 4"
 1 Well Volume (gallons): 10.72

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH
15:10			10	1.99	66.2	6.96
			14	2.00	65.9	6.97
			20	3.07	65.9	6.96
Total Purged			20	Time Sampled		15:40

Comments:
Turbidity =

17.5

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH
15:45			10	1.34	68.2	7.04
			20	1.77	69.4	7.12
Pumped dry @ 25						
Total Purged			25	Time Sampled		16:15

Comments:
Turbidity =

32.1

Well No. _____
 Total Depth (feet) _____
 Depth to Water (feet): _____
 Water Column (feet): _____
 80% Recharge Depth (feet): _____

Purge Method: _____
 Depth to Product (feet): _____
 Product Recovered (gallons): _____
 Casing Diameter (Inches): _____
 1 Well Volume (gallons): _____

Well No. _____
 Total Depth (feet) _____
 Depth to Water (feet): _____
 Water Column (feet): _____
 80% Recharge Depth (feet): _____

Purge Method: _____
 Depth to Product (feet): _____
 Product Recovered (gallons): _____
 Casing Diameter (Inches): _____
 1 Well Volume (gallons): _____

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH
Total Purged				Time Sampled		

Comments:
Turbidity =

Time Start	Time Stop	Depth To Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH
Total Purged				Time Sampled		

Comments:
Turbidity =

EXHIBIT 6
ANALYTICAL LABORATORY DATA SHEETS



Sequoia Analytical

680 Chesapeake Drive Redwood City, CA 94063 (415) 364-9600 FAX (415) 364-9233
 404 N. Wiget Lane Walnut Creek, CA 94598 (510) 988-9600 FAX (510) 988-9673
 819 Striker Avenue, Suite 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100

Alton Geoscience 30-A Lindbergh Ave. Livermore, CA 94550 Attention: Alysa Keller	Client Project ID: Mobil #99-105 Sample Matrix: Water Analysis Method: EPA 5030/8015 Mod./8020 First Sample #: 605-1707	Sampled: May 21, 1996 Received: May 22, 1996 Reported: May 30, 1996
---	--	---

QC Batch Number: GC052396 GC052396 GC052396 GC052396

802009A 802009A 802009A 802009A

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 605-1707 MW-1	Sample I.D. 605-1708 MW-2	Sample I.D. 605-1709 MW-3	Sample I.D. 605-1710 MW-4
Purgeable Hydrocarbons	50	N.D.	730	8,500	11,000
Benzene	0.50	N.D.	5.1	710	1,700
Toluene	0.50	N.D.	1.4	110	N.D.
Ethyl Benzene	0.50	N.D.	6.7	440	930
Total Xylenes	0.50	N.D.	5.9	1,700	470
Chromatogram Pattern:		--	Gasoline	Gasoline	Gasoline

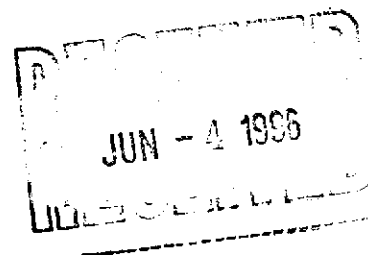
Quality Control Data

Report Limit Multiplication Factor:	1.0	2.0	100	100
Date Analyzed:	5/23/96	5/23/96	5/23/96	5/23/96
Instrument Identification:	HP-9	HP-9	HP-9	HP-9
Surrogate Recovery, %: (QC Limits = 70-130%)	109	70	91	87

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
 Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Kevin Van Slambrook
Project Manager





Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834

(415) 364-9600
(510) 988-9600
(916) 921-9600

FAX (415) 364-9233
FAX (510) 988-9673
FAX (916) 921-0100

Alton Geoscience
30-A Lindbergh Ave.
Livermore, CA 94550
Attention: Alysa Keller

Client Project ID: Mobil #99-105
Sample Matrix: Water
Analysis Method: EPA 3510/8015 Mod.
First Sample #: 605-1707

Sampled: May 21, 1996
Received: May 22, 1996
Reported: May 30, 1996

QC Batch Number: SP052496 SP052496 SP052496 SP052496
8015EXA 8015EXA 8015EXA 8015EXA

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 605-1707 MW-1	Sample I.D. 605-1708 MW-2	Sample I.D. 605-1709 MW-3	Sample I.D. 605-1710 MW-4
Extractable Hydrocarbons	50	N.D.	560	2,800	4,200

Chromatogram Pattern: -- Unidentified Hydrocarbons <C15 Diesel & Unidentified Hydrocarbons <C15 Diesel & Unidentified Hydrocarbons <C15

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0
Date Extracted:	5/24/96	5/24/96	5/24/96	5/24/96
Date Analyzed:	5/28/96	5/28/96	5/28/96	5/28/96
Instrument Identification:	HP-3B	HP-3B	HP-3B	HP-3B

Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Kevin Van Slambrook
Project Manager





Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834

(415) 364-9600
(510) 988-9600
(916) 921-9600

FAX (415) 364-9233
FAX (510) 988-9673
FAX (916) 921-0100

Alton Geoscience
30-A Lindbergh Ave.
Livermore, CA 94550
Attention: Alysa Keller

Client Project ID: Mobil #99-105
Matrix: Liquid

QC Sample Group: 6051707-710

Reported: May 30, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Diesel
QC Batch#:	GC052396 802009A	GC052396 802009A	GC052396 802009A	GC052396 802009A	SP052496 8015EXA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 3510
Analyst:	S. Chullakorn	S. Chullakorn	S. Chullakorn	S. Chullakorn	J. Dinsay
MS/MSD #:	6051488	6051488	6051488	6051488	BLK052496
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	5/23/96	5/23/96	5/23/96	5/23/96	5/24/96
Analyzed Date:	5/23/96	5/23/96	5/23/96	5/23/96	5/28/96
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9	HP-3B
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	300 µg/L
Result:	19	21	21	64	240
MS % Recovery:	95	105	105	107	80
Dup. Result:	21	23	24	70	250
MSD % Recov.:	105	115	120	117	83
RPD:	10	9.1	13	9.0	4.1
RPD Limit:	0-25	0-25	0-25	0-25	0-50

LCS #:	9LCS052396	9LCS052396	9LCS052396	9LCS052396	LCS052496
Prepared Date:	5/23/96	5/23/96	5/23/96	5/23/96	5/24/96
Analyzed Date:	5/23/96	5/23/96	5/23/96	5/23/96	5/28/96
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9	HP-3B
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	300 µg/L
LCS Result:	23	25	26	75	260
LCS % Recov.:	115	125	130	125	87

MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130	11-148
---------------------------	--------	--------	--------	--------	--------

SEQUOIA ANALYTICAL, #1271


Kevin Van Slambrook
Project Manager

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.

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



