

3315 Almaden Expressway, Suite 34 San Jose, CA 95118 Phone: (408) 264-7723 FAX: (408) 264-2435

LETTER REPORT QUARTERLY GROUNDWATER MONITORING Second Quarter 1993 at

Exxon Station 7-0210
7840 Amador Valley Boulevard
Dublin, California

130001.01



3315 Almaden Expressway, Suite 34 San Jose, CA 95118 Phone: (408) 264-7723 FAX: (408) 264-2435

> July 28, 1993 0609MGUE 130001.01

Ms. Marla Guensler Exxon Company, U.S.A. P.O. Box 4032 2300 Clayton Road Concord, California 94520

Subject:

Letter Report on Second Quarter 1993 Groundwater Monitoring at Exxon Station 7-0210, 7840 Amador Valley Boulevard, Dublin, California

Station / 0210, 7070 Innador 7 and 3 Double and 3

Ms. Guensler:

As requested by Exxon Company U.S.A. (Exxon), this letter report summarizes the methods and results of the second quarter 1993 groundwater monitoring performed by RESNA Industries Inc. (RESNA) at the above-referenced site. The site is located on the eastern corner of the intersection of Amador Valley Boulevard and Regional Street in Dublin, California, as shown on the Site Vicinity Map (Plate 1). Exxon has contracted with RESNA to perform quarterly groundwater monitoring, sampling, and analyses to evaluate the groundwater gradient, flow direction, and gasoline hydrocarbon concentrations in the groundwater.

The site was owned and operated by Texaco until 1988 when it was purchased by Exxon. In February 1990, Exxon replaced product dispensers and installed a vapor recovery system. In October 1992, Exxon replaced three 8,000-gallon single-walled steel underground storage tanks (USTs) with 12,000-gallon double-walled fiberglass-reinforced plastic (FRP) USTs. The piping was also upgraded to double-walled FRP. The locations of the USTs, groundwater monitoring wells, and pertinent site features are shown on Plate 2, Generalized Site Plan.



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Groundwater Sampling and Gradient Evaluation

RESNA personnel performed the latest quarterly groundwater monitoring and sampling on May 20. The wells were monitored and resampled on June 23, 1993 because the May 20th groundwater samples from wells MW-2 and MW-4 had been analyzed after the recommended Environmental Protection Agency (EPA) holding time had been exceeded. Field work during this monitoring consisted of measuring depth-to-water (DTW) levels, subjectively analyzing water from the wells for the presence of floating product, and purging and sampling the groundwater from monitoring wells MW-1 through MW-4 for laboratory analysis. The results of the subjective analyses are summarized in Table 1, Cumulative Groundwater Monitoring Data. Field methods are described in Appendix A, Groundwater Sampling Protocol.

RESNA calculated groundwater elevations for each well by subtracting the measured DTW from the elevation of the wellhead. The measured DTW levels, wellhead elevations, and groundwater elevations for this and the previous monitorings at the site are summarized in Table 1. Based on the May 20, 1993 groundwater elevation data, a nearly flat local groundwater gradient of 0.005 with a flow direction toward the east-southeast was interpreted for the site. Based on the June 23, 1993, a nearly flat local groundwater gradient of 0.004 toward the southeast was interpreted for the site. This groundwater gradient and flow direction are shown on Plates 3 and 4, Groundwater Gradient Map.

Monitoring wells MW-1 through MW-4 were purged and sampled in accordance with the attached protocol (Appendix A). Well purge data sheets for the parameters monitored on May 20 and June 23, 1993 are also included in Appendix A.

Results of Laboratory Analysis

Groundwater samples collected from monitoring wells MW-1 through MW-4 were analyzed for gasoline constituents benzene, toluene, ethylbenzene, and total xylenes (BTEX), and total petroleum hydrocarbons as gasoline (TPHg) using modified EPA Methods 5030/8015/8020. Groundwater samples were analyzed by PACE Incorporated Laboratories (California Hazardous Waste Testing Laboratory Certification No. 1282) in Novato, California. The laboratory analyses and chain of custody record sheets are included in Appendix B. The results of these and previous groundwater analyses are summarized in Table 2, Cumulative Results of Laboratory Analyses of Groundwater Samples. Graphic interpretations of the lateral extent of TPHg and benzene in the groundwater, based on the May 20, 1993 laboratory analyses, are shown on Plate 5, TPHg Concentrations in Groundwater, and Plate 6, Benzene Concentrations in Groundwater, Graphic interpretations of the lateral extent of TPHg and benzene in the groundwater, based on the



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June 23, 1993 laboratory analyses, are shown on Plate 7, TPHg Concentrations in Groundwater, and Plate 8, Benzene Concentrations in Groundwater.

Results of the May 20, 1993 laboratory analyses of groundwater samples from monitoring wells MW-1 through MW-4 indicate:

- o TPHg and BTEX were not detected in the groundwater sample from well MW-3;
- o TPHg was detected in the groundwater samples from wells MW-1 and MW-2 at a concentration of 1,000 parts per billion (ppb) and 10 ppb, respectively. TPHg was not detected in the sample from MW-4;
- benzene was detected in the groundwater samples from wells MW-1 and MW-4 at concentrations of 1.9 ppb and 1.4 ppb, respectively, which are greater than the State of California Department of Health Services (DHS) Maximum Contaminant Level (MCL) of 1.0 ppb benzene for drinking water. Benzene was not detected in the sample from MW-2;
- toluene, ethylbenzene, and total xylenes in wells MW-1 and MW-4 were either nondetectable or below the DHS Maximum Contaminant Levels (MCLs) and Drinking Water Action Level (DWAL) of 100 ppb, 680 ppb, and, 1,750 ppb, respectively. TEX were not detected in the sample from MW-2;

Results of the June 23, 1993 laboratory analyses of groundwater samples from monitoring wells MW-1 through MW-4 indicate:

- o TPHg and BTEX were not detected in the groundwater samples from wells MW-3 and MW-4;
- o TPHg was detected in the groundwater sample from wells MW-1 and Was at a concentration of 1,300 parts per billion (ppb) and Was berrespectively;
- o benzene was detected in the groundwater samples from well MW-1 at a concentration of 1.0 ppb, which is equal to the DHS



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MCL of 1.0 ppb benzene for drinking water. Benzene was not detected in the sample from MW-2;

o toluene, ethylbenzene, and total xylenes in well MW-1 were either nondetectable or below the DHS MCLs and DWAL of 100 ppb, 680 ppb, and, 1,750 ppb, respectively. TEX were not detected in the sample from MW-2;

Limitations

This report was prepared in accordance with generally accepted standards of environmental geological practice in California at the time this investigation was performed. This report has been prepared for Exxon Company U.S.A. and any reliance on this report by third parties shall be at such party's sole risk.

Copies of this report should be forwarded to:

Mr. Sum Arigalia
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

Ravi Arulanantham Division of Hazardous Materials Alameda County Health Agency 80 Swan Way, Room 200 Oakland, California 94621

Mr. Jerry Killingstad Alameda County Flood Control and Water Conservation District (Zone 7) 5997 Parkside Drive Pleasanton, California 94566



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If you have any questions or comments regarding this letter report, please call (408) 264-7723.

Sincerely,

RESNA Industries Inc.

Marc A. Briggs Project Geologist

Marc A Buggs

GEOLOG FWIS

JAMES LEWIS

STERED

NELSON No. 1463

CERTIFIED ENGINEERING

GEOLOGIST CALIFORNIA

James L. Nelson

Certified Engineering

Geologist No. 1463

Enclosures: References

Plate 1, Site Vicinity Map

Plate 2, Generalized Site Plan

Plate 3, Groundwater Gradient Map (May 20, 1993)

Plate 4, Groundwater Gradient Map (June 23, 1993)

Plate 5, TPHg Concentrations in Groundwater (May 20, 1993)

Plate 6, Benzene Concentrations in Groundwater (May 20, 1993)

Plate 7, TPHg Concentrations in Groundwater (June 23, 1993)

Plate 8, Benzene Concentrations in Groundwater (June 23, 1993)

Table 1, Cumulative Groundwater Monitoring Data

Table 2, Cumulative Results of Laboratory Analyses of Groundwater Samples

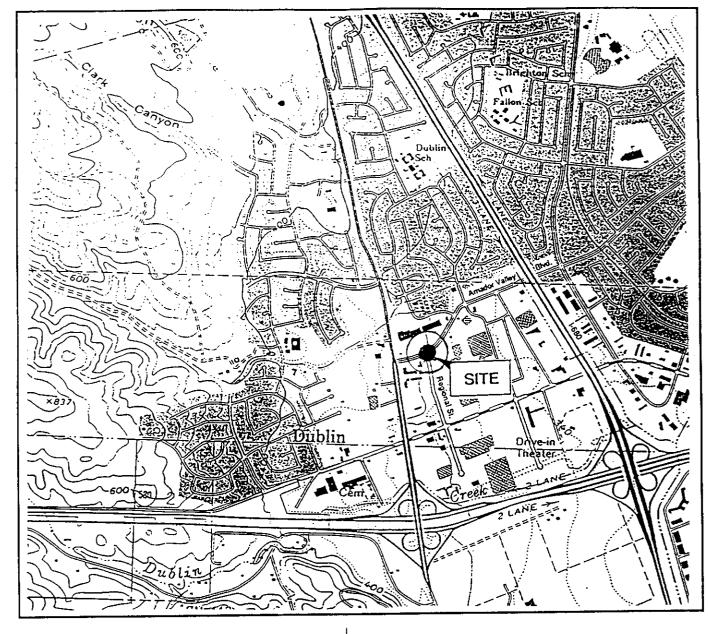
Appendix A: Groundwater Sampling Protocol and Well Purge Data Appendix B: Laboratory Analysis Reports and Chain of Custody Record



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REFERENCES

- Alton Geoscience. 1991. Preliminary Soil Assessment Report at Exxon RS 7-0210.
- Department of Health Services, State of California. October 24, 1990. <u>Summary of California Drinking Water Standards.</u>
- EA Engineering, Science, and Technology. 1992. Report of Closure Sampling, Exxon Retail Site 7-0210, 7840 Amador Valley Boulevard, Dublin, California.
- EA Engineering, Science, and Technology. October 28, 1992. Report of Well Installation, Exxon Retail Site 7-0210, 7840 Amador Valley Boulevard, Dublin, California. 81002.23.0000.
- RESNA Industries Inc. March 9, 1993. <u>Letter Report on Quarterly Groundwater Monitoring, First Quarter 1993 at Exxon Station 7-0210, 7840 Amador Valley Boulevard, Dublin, California.</u> 130001.01.



Base: U.S. Geological Survey 7.5—Minute Quadrangles Dublin, California Photorevised 1980

LEGEND

 (\bullet) = Site Location

Approximate Scale 2000 4000 1000 2000 feet

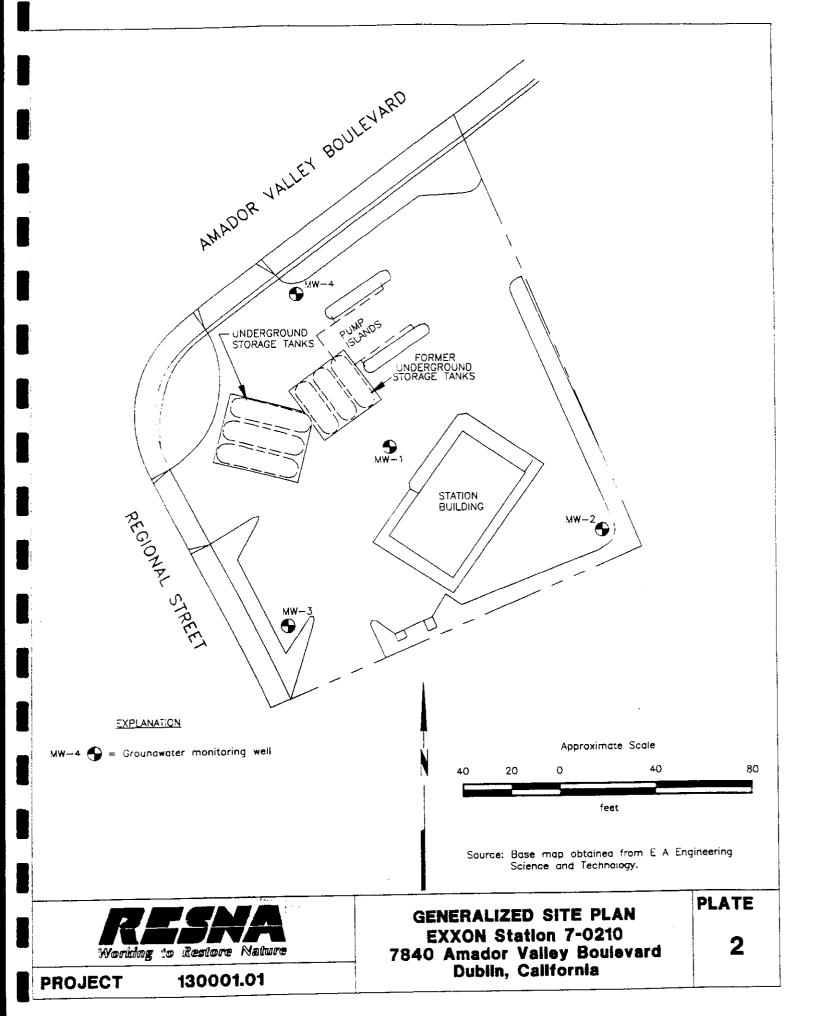
Working to Restore Nature

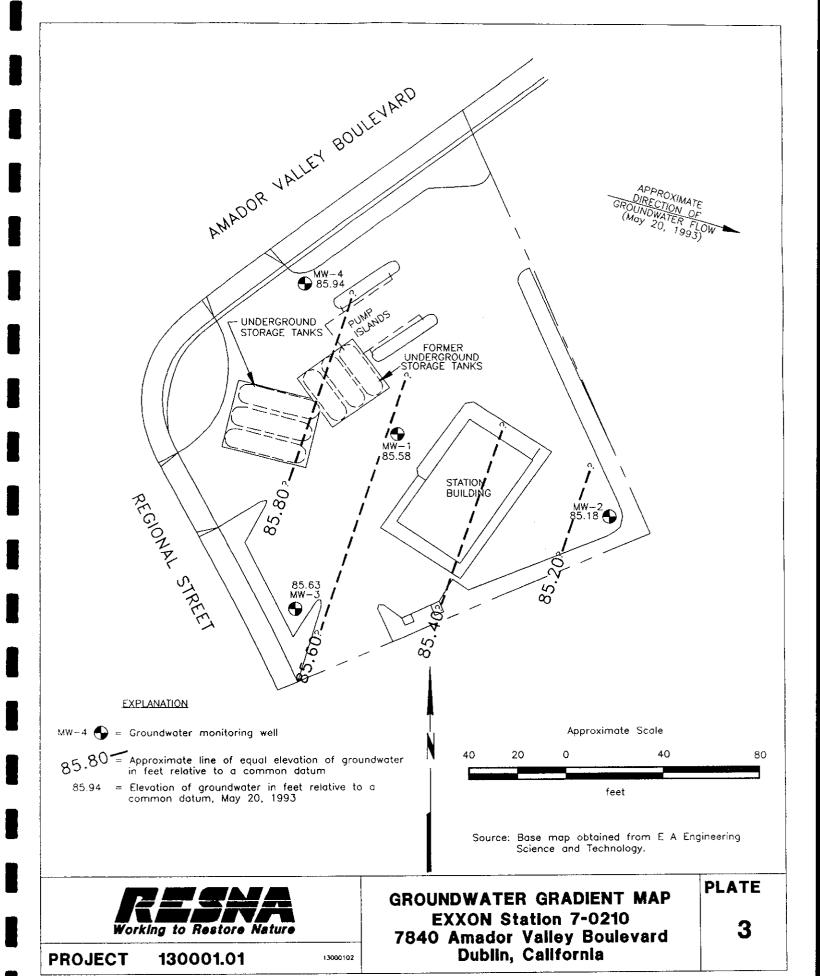
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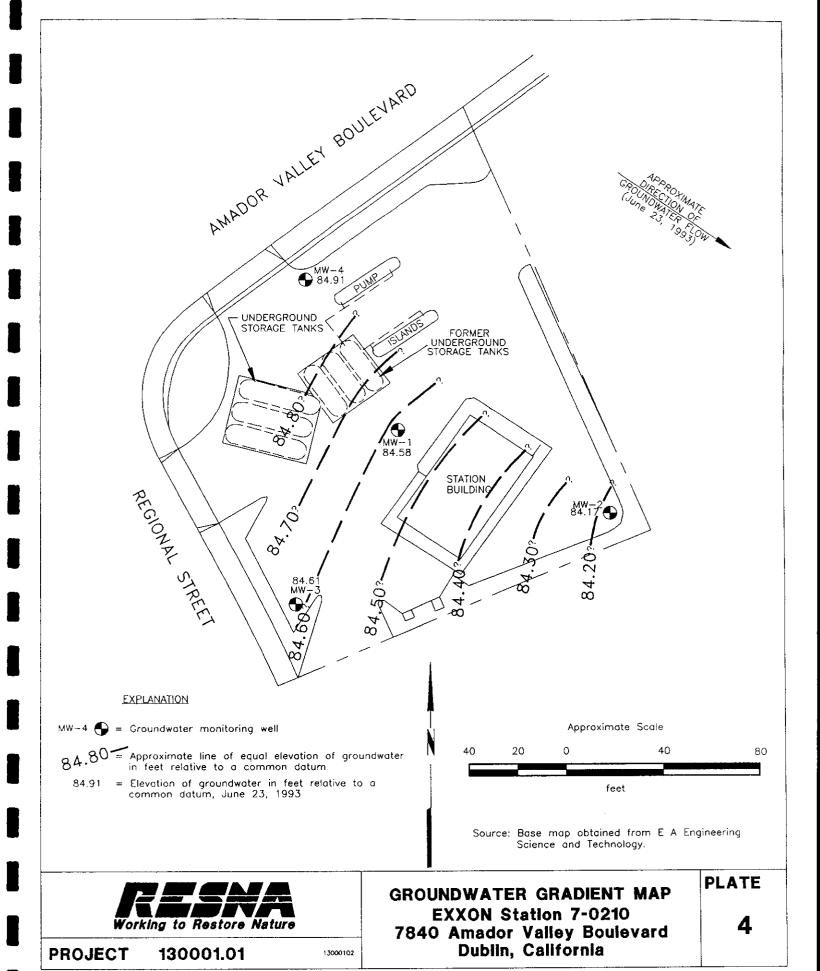
130001.01

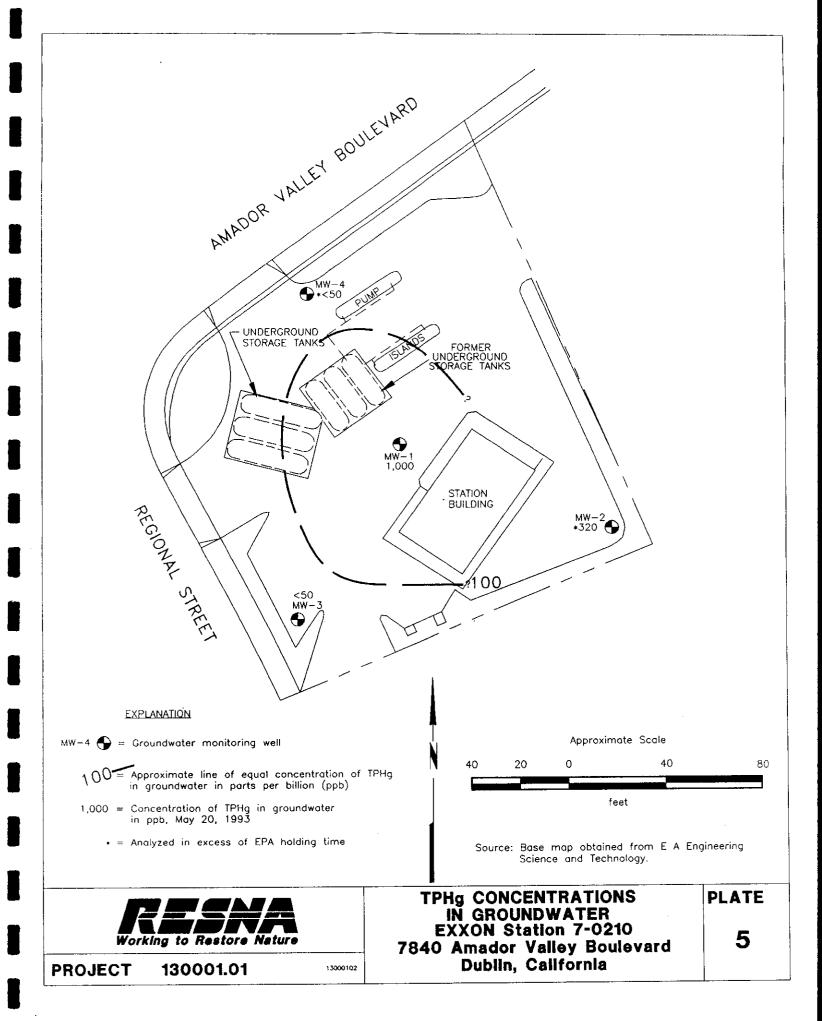
SITE VICINITY MAP Exxon Station 7-0210 7840 Amador Valley Boulevard Dublin, California

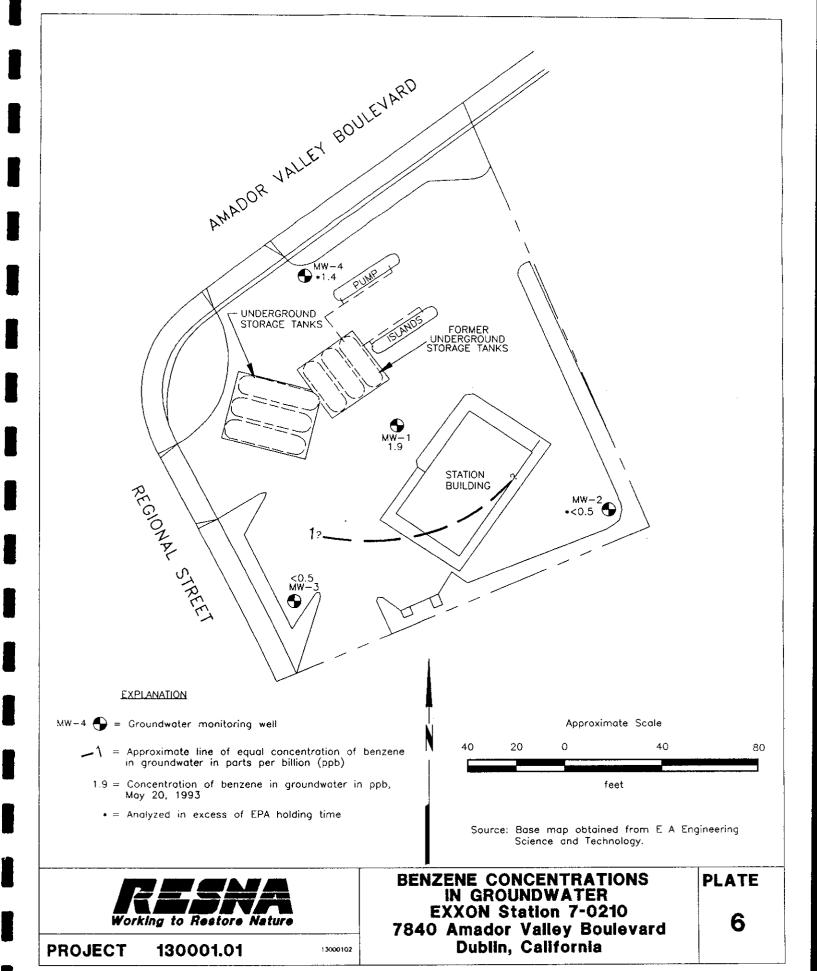
PLATE

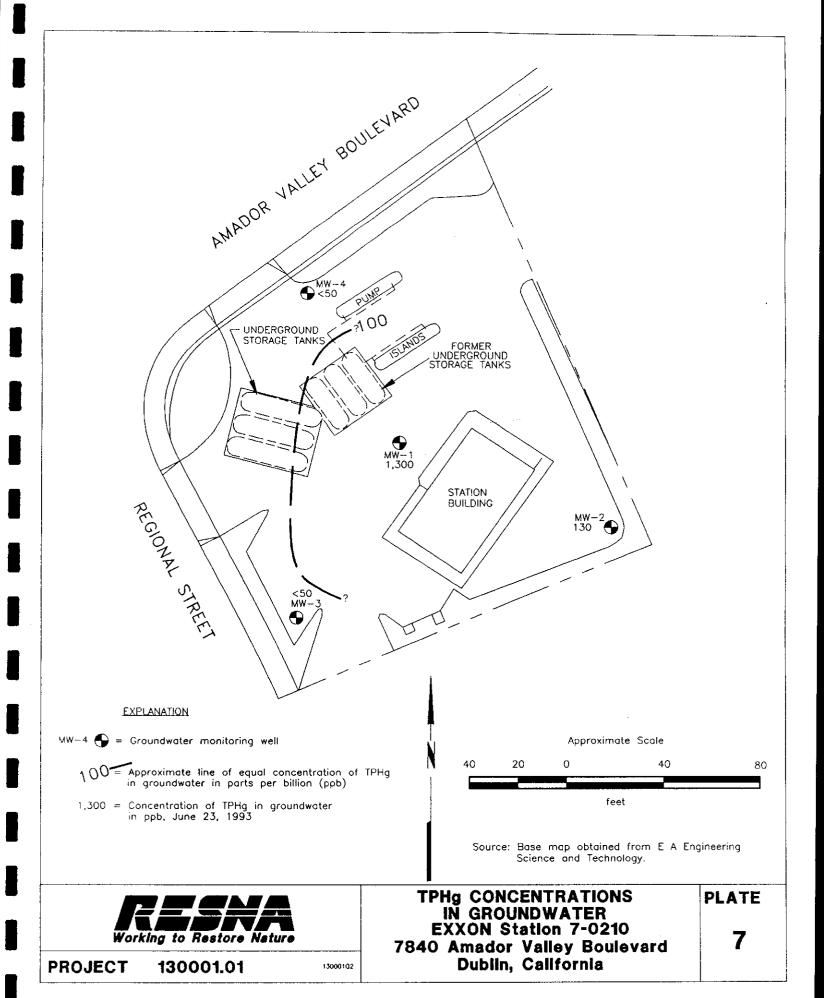


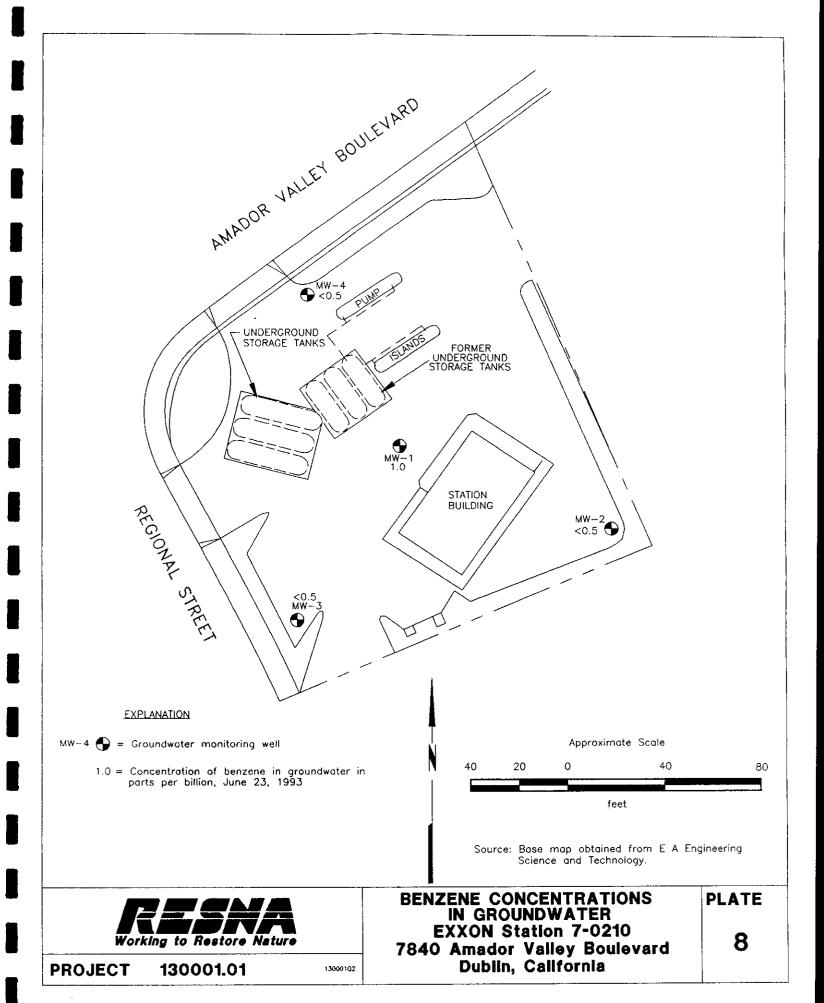














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TABLE 1 CUMULATIVE GROUNDWATER MONITORING DATA

Exxon Station 7-0210 Dublin, California

WELL	DATE	WELL ELEVATION*	DEPTH TO WATER	GROUNDWATER ELEVATION	FLOATING PRODUCT
MW-1					
EA	05/21/92	96.32	14.45	81.87	None
RESNA	02/10/93		12.22	84.10	None
	05/20/93		10.74	85.58	None
	06/23/93		11.74	84.58	None
MW-2					
EA	05/21/92	95.91	14.30	81.61	None
RESNA	02/10/93		12.34	83.57	None
	05/20/93		10.73	85.18	None
	06/23/93		11.74	84.17	None
MW-3					
EA	05/21/92	97.95	16.05	81.90	None
RESNA	02/10/93		13.77	84.18	None
	05/20/93		12.32	85.63	None
	06/23/93		13.34	84.61	None
MW-4					
EA	05/21/92	96.69	14.59	82.10	None
RESNA	02/10/93		12.30	84.39	None
	05/20/93		10.75	85.94	None
	06/23/93		11.78	84.91	None

Measurements in feet

: Well elevation relative to a common datum: fire hydrant at northwest corner of the site assumed elevation of 100.00

feet.

EA : Monitoring by EA Engineering, Science, and Technology

RESNA : RESNA Industries Inc. began monitoring

RESNA assumes all wells are screened in the same hydrostratigraphic unit.



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TABLE 2 CUMULATIVE RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES

Exxon Station 7-0210
Dublin, California
Page 1 of 2
See notes on page 2

PPb

WELL	DATE	TPHg	BENZENE	TOLUENE	ETHYL- BENZENE	TOTAL XYLENES
MW-1						
EA	05/21/92	< 50	<0.5	< 0.5	<0.5	< 0.5
RESNA	02/10/93	2,600	3.1	<0.5	1.8	0.6
	05/20/93	1,000	1.9	<0.5	1.8	<1.0
	06/23/93	1,300	1.0	<0.5	1.2	< 0.5
MW-2						
EA	05/21/92	< 50	<0.5	< 0.5	<0.5	< 0.5
RESNA	02/10/93	< 50	<0.5	<0.5	<0.5	< 0.5
	05/20/93*	320	<0.5	<0.5	<0.5	< 1.0
	06/23/93	130	<0.5	<0.5	<0.5	< 0.5
MW-3					,	
EA	05/21/92	< 50	<0.5	<0.5	<0.5	< 0.5
RESNA	02/10/93	< 50	<0.5	<0.5	<0.5	0.7
	05/20/93	< 50	<0.5	<0.5	< 0.5	<1.0
	06/23/93	< 50	<0.5	<0.5	< 0.5	< 0.5
MW-4						
EA	05/21/93	< 50	<0.5	<0.5	<0.5	< 0.5
RESNA	02/10/93	< 50	<0.5	< 0.5	< 0.5	< 0.5
	05/20/93*	< 50	1.4	1.0	< 0.5	1.8
	06/23/93	< 50	<0.5	<0.5	< 0.5	< 0.5
	MCLs	•••	1.0		680	1,750
	DWAL			100		



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TABLE 2 CUMULATIVE RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES

Exxon Station 7-0210 Dublin, California Page 2 of 2

Results in parts per billion (ppb).

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Less than the laboratory detection limit.

NA

Not Analyzed

Not applicable

TPHg

Total Petroleum Hydrocarbons as gasoline analyzed using modified EPA method

5030/8015.

втех

Analyzed using modified EPA method 5030/8020.

MCLs

Maximum Contaminant Levels, DHS (October 1990).

DWAL

Drinking Water Action Level, DHS (October 1990).

+

Groundwater samples analyzed in excess od recommended EPA holding time

EA

Sampling by EA Engineering, Science, and Technology

RESNA

RESNA Industries Inc. began sampling

APPENDIX A

GROUNDWATER SAMPLING PROTOCOL AND WELL PURGE DATA SHEETS



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GROUNDWATER SAMPLING PROTOCOL

The static water level and floating product level, if present, in each well that contained water and/or floating product are measured with an ORS Interphase Probe Model No. 106801, which is accurate to the nearest 0.01 foot. To calculate groundwater elevations and evaluate groundwater gradient, depth to water (DTW) levels are subtracted from wellhead elevations and corrected for product thickness, when necessary, by multiplying product thickness (PT) by a correction factor 0.8 and subtracting from the DTW level (Adjusted DTW = DTW - [PT x 0.8]).

Groundwater samples collected for subjective evaluation are collected by gently lowering approximately half the length of a clean Teflon® bailer past the air-water interface (if possible) and collecting a sample from near the surface of the water in the well. The samples are checked for measurable floating hydrocarbon product or sheen. Any floating product is removed from the well.

Before water samples are collected from the groundwater monitoring wells, the wells are purged until stabilization of the temperature, pH, and conductivity is obtained. Approximately four well casing volumes are purged before those characteristics stabilize. Water samples from the wells that do not obtain stability of the temperature, pH, and conductivity are considered to be "grab samples". Turbidity measurements are also collected from the purged well water. The quantity of water purged from each well is calculated as follows:

1 well casing volume = $\pi r^2 h(7.48)$ where:

r = radius of the well casing in feet.

h = column of water in the well in feet (depth to bottom - depth to water).

7.48 = conversion constant from cubic feet to

gallons

Gallons of water purged/gallons in 1 well casing volume = well casing volumes removed.

After purging, each well is allowed to recharge to at least 80% of the initial water level. Water samples from wells that do not recover at least 80% (due to slow recharging of the well) between purging and sampling are considered to be "grab samples". Water samples were collected with an Environmental Protection Agency (EPA) approved Teflon® sampler which has been cleaned with Alconox® and deionized water. The groundwater was carefully poured into 40-milliliter (ml) glass vials, which are filled so as to produce a positive meniscus. Each vial is preserved with hydrochloric acid, sealed with a cap containing a Teflon® septum, and subsequently examined for air bubbles to avoid headspace which would allow volatilization to occur. The samples are promptly transported in iced storage in a thermally-insulated ice chest, accompanied by a Chain of Custody form, to a California-certified laboratory.



Project Name: Exxon 7-0210

Job No. <u>130001.01</u>

Date: May 20, 1993

Page <u>1</u> of <u>1</u>

Well No. MW-1

Time Started 1:42

TIME (hr)	GALLONS (cum.)	TEMP.	Нф	CONDUCT.	TURBIDITY (NTU)
1:42	Start pu	rging MW-1			
1:42	0	71.2	7.04	1.53	54.4
1:52	8	69.6	7.04	1.51	10.2
2:05	16	69.1	7.05	1.49	5.9
2:25	24	71.7	7.17	1.48	4.9
2:41	32	73.8	7.14	1.49	7.5
2:44	Stop pu	rging MW-1			

Notes:

Well Diameter (inches): 4

Depth to Bottom (feet): 23.72 Depth to Water - initial (feet): 10.74

Depth to Water - final (feet) : 11.68

% recovery : 93

Time Sampled: 3:35

Gallons per Well Casing Volume: 8.48

Gallons Purged: 34

Well Casing Volume Purged: 4.0



Project Name: Exxon 7-0210

Job No. <u>130001.01</u>

Date: <u>May 20, 1993</u>

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Well No. MW-2

Time Started 10:50

TIME (hr)	GALLONS (cum.)	TEMP. (F)	рН	CONDUCT.	TURBIDITY (NTU)			
10:50	Start pu	Start purging MW-2						
10:50	0	67.0	7.15	1.41	11.8			
11:05	9	67.5	7.09	1.43	3.3			
11:23	18	68.4	7.35	1.44	3.7			
11:38	27	69.2	7.23	1.44	1.5			
11:54	36	69.9	7.24	1.45	0.7			
11:56	Stop purging MW-2							

Notes:

Well Diameter (inches): 4

Depth to Bottom (feet): 25.25

Depth to Water - initial (feet): 10.73

Depth to Water - final (feet): 10.75

% recovery : 99

Time Sampled: 12:50

Gallons per Well Casing Volume: 9.48

Gallons Purged: 38

Well Casing Volume Purged: 4.0



Project Name: Exxon 7-0210

Job No. <u>130001.01</u>

Date: <u>May 20, 1993</u>

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Well No. MW-3

Time Started 12:13

TIME (hr)	GALLONS (cum.)	TEMP.	рн	CONDUCT. (micromho)	TURBIDITY (NTU)	
12:13	Start purging MW-3					
12:13	0	69.7	7.24	1.34	9.8	
12:31	10	68.8	7.16	1.32	1.5	
12:55	20	69.9	7.20	1.33	1.1	
1:10	30	70.6	7.08	1.34	0.7	
1:25	40	72.9	7.11	1.35	0.8	
1:25	Stop purging MW-3					

Notes:

Well Diameter (inches): 4

Depth to Bottom (feet): 27.75

Depth to Water - initial (feet): 12.32 Depth to Water - final (feet): 12.36

% recovery : 99

Time Sampled: 1:55

Gallons per Well Casing Volume : 10.07

Gallons Purged: 40

Well Casing Volume Purged: 4.0



Project Name: Exxon 7-0210

Job No. <u>130001.01</u>

Date: <u>May 20, 1993</u>

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Well No. MW-4

Time Started 9:00

TIME (hr)	GALLONS (cum.)	TEMP.	рн	CONDUCT. (micromho)	TURBIDITY (NTU)	
9:00	Start pu	rging MW-4				
9:00	0	65.4	6.89	1.44	14.8	
9:17	9	65.2	7.21	1.44	3.3	
9:45	18	65.4	7.20	1.44	1.9	
10:09	27	66.1	7.28	1.46	1.2	
10:25	36	66.1	7.27	1.46	0.9	
10:27	Stop purging MW-4					

Notes:

Well Diameter (inches): 4

Depth to Bottom (feet): 25.05

Depth to Water - initial (feet): 10.75

Depth to Water - final (feet): 10.77

% recovery : 99

Time Sampled: 11:25

Gallons per Well Casing Volume: 9.34

Gallons Purged: 38

Well Casing Volume Purged: 4.1



Project Name: <u>Exxon 7-0210</u>

Job No. <u>130001.01</u>

Date: <u>June 23, 1993</u>

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Well No. MW-1

Time Started 4:00

TIME (hr)	GALLONS (cum.)	TEMP.	рн	CONDUCT. (micromho)	TURBIDITY (NTU)
4:00	Start pu	rging MW-1			
4:00	0	65.4	6.74	2070	NM
4:09	8	66.2	6.73	1840	NM
4:13	9	DRY			
	Dewatered	Second	Time		
	Stop pur	rging MW-1		<u> </u>	

Notes:

NM : Not Measured

Well Diameter (inches): 4

Depth to Bottom (feet): 23.50

Depth to Water - initial (feet): 11.74

Depth to Water - final (feet) : 13.20

% recovery : 87

Time Sampled: 5:15

Gallons per Well Casing Volume: 7.7

Gallons Purged: 8

Well Casing Volume Purged: 1.0 Approximate Pumping Rate (gpm): 1.0



Project Name: Exxon 7-0210

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Date: <u>June 23, 1993</u>

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Well No. MW-2

Time Started 2:00

TIME (hr)	GALLONS (cum.)	TEMP. (F)	рн	CONDUCT. (micromho)	TURBIDITY (NTU)
2:00	Start pu	rging MW-2			
2:00	0	65.4	6.69	2490	NM
2:07	9	65.1	6.70	2330	NM
2:16	18	65.3	6.72	2400	NM
2:24	26	65.3	6.70	2390	NM
2:31	35	65.2	6.71	2310	NM
2:31	Stop pu	rging MW-2			

Notes:

NM : Not Measured

Well Diameter (inches): 4

Depth to Bottom (feet): 25.00

Depth to Water - initial (feet) : 11.74

Depth to Water - final (feet): 13.20

% recovery : 91

Time Sampled: 2:35

Gallons per Well Casing Volume: 8.7

Gallons Purged: 35

Well Casing Volume Purged: 4.0



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Page <u>1</u> of <u>1</u>

Well No. MW-3

Time Started 3:00

TIME (hr)	GALLONS (cum.)	TEMP. (F)	рн	CONDUCT. (micromho)	TURBIDITY (NTU)	
3:00	Start purging MW-3					
3:00	0	64.5	6.74	2130	NM	
3:08	9.2	64.2	6.73	2040	NM	
3:17	18.4	63.9	6.73	1910	NM	
3:27	27.6	64.1	6.74	1850	NM	
3:33	36.8	63.7	6.76	1830	NM	
3:33	Stop purging MW-3					

Notes:

NM : Not Measured

Well Diameter (inches): 4

Depth to Bottom (feet): 27.5

Depth to Water - initial (feet) : 13.34

Depth to Water - final (feet): 14.9

% recovery : 88

Time Sampled: 3:40

Gallons per Well Casing Volume: 9.2

Gallons Purged: 36.8

Well Casing Volume Purged: 4.0



Project Name: <u>Exxon 7-0210</u>

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Well No. MW-4

Time Started 1:05

TIME (hr)	GALLONS (cum.)	TEMP. (F)	рн	CONDUCT. (micromho)	TURBIDITY (NTU)		
1:05	Start purging MW-4						
1:05	0	68.2	6.34	4440	NM		
1:15	9	66.7	6.68	2700	NM		
1:24	18	66.4	6.67	2040	NM		
1:34	27	66.5	6.67	2090	NM		
1:42	36	65.9	6.67	2130	NM		
1:42	Stop purging MW-4						

Notes:

NM : Not Measured

Well Diameter (inches): 4

Depth to Bottom (feet): 25.00

Depth to Water - initial (feet): 11.78

Depth to Water - final (feet): 13.9

% recovery : 84

Time Sampled: 1:45

Gallons per Well Casing Volume: 8.6

Gallons Purged: 36

Well Casing Volume Purged: 4

APPENDIX B

LABORATORY ANALYSIS REPORTS AND CHAIN OF CUSTODY RECORD



June 09, 1993

Mr. Marc Briggs RESNA 3315 Almaden Expressway Suite 34 San Jose, CA 95118

RE: PACE Project No. 430526.510

Client Reference: Exxon 7-0210 (EE)

Dear Mr. Briggs:

Enclosed is the report of laboratory analyses for samples received May 26, 1993.

A peak eluting earlier than Benzene and suspected to be methyl tert butyl ether was present in samples W-10-MW2 (70 0079900) and W-11-MW1 (70 0079926).

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

asul Keid on Stephanie Matzo Project Manager CH3-0- e-cH3
CH3

Enclosures

4/22/93 Staight Pare sury product is recent to gosoline. She will try to find article on chemical + 6 ax to me - le.



RESNA

3315 Almaden Expressway Suite 34

San Jose, CA 95118

June 09, 1993

PACE Project Number: 430526510

Attn: Mr. Marc Briggs

Client Reference: Exxon 7-0210 (EE)

PACE Sample Number:

Date Collected:

Date Received:

70 0079888 05/20/93

05/26/93 W-10-MW4R

<u>Parameter</u>

<u>Units</u>

ug/L

ug/L

MDL

DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS TOTAL FUEL HYDROCARBONS, (LIGHT):

Purgeable Fuels, as Gasoline (EPA 8015M) ug/L PURGEABLE AROMATICS (BTXE BY EPA 8020M):

Benzene Toluene Ethylbenzene

Xylenes, Total

ug/L 0.5 ug/L 0.5

0.5 0.5

1.0

50

ND 1.3 ND

(1)

ND

06/05/93 06/05/93 06/05/93

06/05/93

06/05/93

06/05/93

1.8

06/05/93

Los Angeles, California



Mr. Marc Briggs

Page

June 09, 1993

PACE Project Number: 430526510

06/05/93

Client Reference: Exxon 7-0210 (EE)

PACE Sample Number: Date Collected:

Date Received:

Client Sample ID:

70 0079896 05/20/93

05/26/93 W-10-MW4

<u>Parameter</u> Units MDL DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS (1)TOTAL FUEL HYDROCARBONS, (LIGHT): 06/05/93 Purgeable Fuels, as Gasoline (EPA 8015M) ug/L 50 ND 06/05/93 PURGEABLE AROMATICS (BTXE BY EPA 8020M): 06/05/93 Benzene 0.5 ug/L 1.4 06/05/93 Toluene ug/L 0.5 1.0 06/05/93 Ethylbenzene ug/L 0.5 ND 06/05/93 Xylenes, Total

ug/L

1.0

1.8



Mr. Marc Briggs

Page 3

June 09, 1993

PACE Project Number: 430526510

Client Reference: Exxon 7-0210 (EE)

PACE	Sample	Number:
	C-114	

Date Collected: Date Received: Client Sample ID: 70 0079900 05/20/93

05/26/93 W-10-MW2

<u>Parameter</u>

W-Units MDL

DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS TOTAL FUEL HYDROCARBONS, (LIGHT): Purgeable Fuels, as Gasoline (EPA 8015M) PURGEABLE AROMATICS (BTXE BY EPA 8020M): Benzene Toluene Ethylbenzene	ug/L ug/L ug/L ug/L	50 0.5 0.5 0.5	(1) - 320 - ND ND ND	06/05/93 06/05/93 06/05/93 06/05/93 06/05/93 06/05/93
Xylenes, Total	ug/L	1.0	ND	06/05/93



Mr. Marc Briggs

Page

June 09, 1993

PACE Project Number: 430526510

Client Reference: Exxon 7-0210 (EE)

PACE Sample Number:

Date Collected: Date Received:

Client Sample ID:

Parameter

70 0079918

05/20/93

05/26/93

W-12-MW3 DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):

Purgeable Fuels, as Gasoline (EPA 8015M) ug/L PURGEABLE AROMATICS (BTXE BY EPA 8020M):

Benzene Toluene

Ethylbenzene

Units

ug/L ug/L ug/L

0.5 0.5 0.5

50

MDL

ND ND ND

ND

ND

06/02/93 06/02/93 06/02/93

06/02/93

06/02/93

06/02/93



Mr. Marc Briggs

Page 5

June 09, 1993

PACE Project Number: 430526510

Client Reference: Exxon 7-0210 (EE)

PACE Sample Number: Date Collected:

Date Received: Client Sample ID: 70 0079926 05/20/93

05/26/93 W-11-MW1

<u>Parameter</u>

<u>Units</u> <u>MDL</u>

DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS TOTAL FUEL HYDROCARBONS, (LIGHT): Purgeable Fuels, as Gasoline (EPA 8015M) PURGEABLE AROMATICS (BTXE BY EPA 8020M): Benzene Toluene Ethylbenzene	ug/L ug/L ug/L ug/L	50 0.5 0.5 0.5	1000 - 1.9 ND 1.8	06/02/93 06/02/93 06/02/93 06/02/93 06/02/93 06/02/93
Xylenes, Total	ug/L	1.0	ND	06/02/93

These data have been reviewed and are approved for release.

Darrell C. Caeri

Darrell C. Cain Regional Director



Mr. Marc Briggs

FOOTNOTES

for pages 1 through

June 09, 1993 PACE Project Number: 430526510

Client Reference: Exxon 7-0210 (EE)

MDL

Method Detection Limit

ND

Not detected at or above the MDL.

(1)

Analysis conducted in excess of EPA recommended holding time.



Mr. Marc Briggs Page 7 QUALITY CONTROL DATA

June 09, 1993

PACE Project Number: 430526510

Client Reference: Exxon 7-0210 (EE)

PURGEABLE FUELS AND AROMATICS

Batch: 70 21648

Samples: 70 0079918, 70 0079926

METHOD BLANK:

Parameter TOTAL FUEL HYDROCARBONS, (LIGHT): Purgeable Fuels, as Gasoline (EPA 8015M PURGEABLE AROMATICS (BTXE BY EPA 8020M)	<u>Units</u> ug/L	<u>MDL</u> 50	Method Blank - ND
Benzene Toluene Ethylbenzene	ug/L ug/L ug/L	0.5 0.5 0.5	ND ND ND
Xylenes, Total	ug/L	1.0	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

n						Reference		Dupl	
	<u>arameter</u>			<u>Units</u>	· <u>MDL</u>	<u> </u>	Recv	<u>Recv</u>	RPD
	urgeable Fuels,	as Gasoline	(EPA 8015M	ug/L	50	1000	93%	99%	6%
	enzene			ug/L	0.5	100	101%	104%	2%
	oluene			ug/L	0.5	100	105%	106%	0%
	chylbenzene			ug/L	0.5	100	104%	106%	1%
Χį	/lenes, Total			ug/L	1.0	300	107%	108%	0%



Mr. Marc Briggs Page 8

gs QUALITY CONTROL DATA

June 09, 1993

PACE Project Number: 430526510

Client Reference: Exxon 7-0210 (EE)

PURGEABLE FUELS AND AROMATICS

Batch: 70 21726

Samples: 70 0079888, 70 0079896, 70 0079900

METHOD BLANK:

<u>Parameter</u> TOTAL FUEL HYDROCARBONS, (LIGHT):	<u>Units</u>	MDL	Method Blank
Purgeable Fuels, as Gasoline (EPA 8015M PURGEABLE AROMATICS (BTXE BY EPA 8020M)	ug/L	50	ND -
Benzene Toluene Ethylbenzene	ug/L ug/L ug/L	0.5 0.5 0.5	ND ND ND
Xylenes, Total	ug/L	1.0	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

			Reference		Dupl	
<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	Value	<u>Recv</u>	Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	106%	99%	6%
Benzene	ug/L	0.5	40.0	98%	100%	2%
Toluene	ug/L	0.5	40.0	92%	96%	4%
Ethylbenzene	ug/L	0.5	40.0	90%	94%	4%
Xylenes, Total	ug/L	1.0	120	88%	92%	4%



Mr. Marc Briggs

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FOOTNOTES

for pages 7 through

June 09, 1993

PACE Project Number: 430526510

Client Reference: Exxon 7-0210 (EE)

MDL

Method Detection Limit

ND

Not detected at or above the MDL.

RPD Relative Percent Difference



June 09, 1993

Mr. Marc Briggs RESNA 3315 Almaden Expressway Suite 34 San Jose, CA 95118

RE: PACE Project No. 430526.510

Client Reference: Exxon 7-0210 (EE)

Dear Mr. Briggs:

Enclosed is the report of laboratory analyses for samples received May 26, 1993.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Stephanie Matzo Project Manager

Enclosures

 \boxtimes

EXXON COMPANY, U.S.A.

P.O. Box 4415, Houston, TX 77210-4415 CHAIN OF CUSTODY

430526.510

Novato, CA, 11 Digital Drive, 94949

THE ASSURANCE	OF GUALITY	<u> </u>	Novate (415)	o, CA, 1 883-610	H Digital E 00_	Orive, 9	94949					Į		Huntin 714)	gton I 892-2	Beach, 565	CA, 5	702 Bolsa Avenue, 92649
Consultant's Name	RESI	AL											· · · · · · · · · · · · · · · · · · ·		<u> </u>	-		Page of
Address: 331	S ALAH	IADEN	1 0	LPY_	SUITE	- 34	1	Sw	NJ	0SE	CA	90	5118		Site Lo	cation:	7843	O ALIADOR VALLEY BU
Project #:	V-"						ultant P			•	_						rk Rele	V
Project Contact	EANNE	Buckg	144	June	C BEIGH	Phone	: 140	8)24	4-	172	3 Fa	x #:Z	A-26	35 I	_abora	tory W	ork Rele	ease #: 09300250
EXXON Contact: MARLA GUENSLER EE C&M Phone #(510) ZA6-877 (Fax #: EXXON RAS #: 7 - 0210										• ' -								
Sampled by (print): TEFFREY D. SALA Sampler's Signature: Jeffrey D. Sala																		
Shipment Method:						Air B			U.		7			s	hipme	nt Date	: 4	5 21 93
TAT: 24 hr	48 hr	72 hr	X.	Standard	(5 day)					ANA	ALYSIS	REQU	IRED			_		Sample Condition as Received Temperature ° C:
Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	PACE Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	TRPH EPA 418.1	HOLD						·			Cooler #: CONFIER Inbound Seal Yes No Outbound Seal Yes No COMMENTS
W-10-MW4R	5/20/13	Madel	HCI	Z	7988.8													
W- 10 - MW4	5/20/93			3	89.6	X												
W-10-MWZR				Z	43.4				×									
W-10-MN2	12:50			3	90.0	χ												
W-12-4W3R	5120193			Z	94.2				χ									
W-12-MW3				3	91.8	X												
W-11-HWIR				2	95.0				X									
W- // -MWI	5/20/93 3:75	_ ₩	•	3	92.6	X												
Relinqu	ished by/Affili	ation		Date	Time		Α	ccepted	1 by/A	ffiliation	1		Date	Т	ime	Addit	ional Co	omments:
Inmo) Marsh	ele pace			1530	Dari		I A · · · · ·	ish.	UPA	ace LE	,	5/24g		36 3()			



July 06, 1993

Mr. Marc Briggs RESNA 3315 Almaden Expressway Suite 34 San Jose, CA 95118

RE: PACE Project No. 430625.510

Client Reference: Exxon 7-0210 (EE)

Dear Mr. Briggs:

Enclosed is the report of laboratory analyses for samples received June 25, 1993.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Stacy P. Hoch Project Manager

Enclosures



RESNA

3315 Almaden Expressway Suite 34

San Jose, CA 95118

July 06, 1993

PACE Project Number: 430625510

Attn: Mr. Marc Briggs

Client Reference: Exxon 7-0210 (EE)

PACE Sample Number:

Date Collected:

Date Received:

Client Sample ID:

Parameter

70 0101239 06/23/93 06/25/93

MW-1MDL DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT): Purgeable Fuels, as Gasoline (EPA 8015M) ug/L PURGEABLE AROMATICS (BTXE BY EPA 8020M):

Benzene Toluene Ethylbenzene

Xylenes, Total

50 1300 0.5 ug/L 1.0

uq/L 0.5 ug/L 0.5

Units

ug/L

0.5

1.2 ND

ND

07/02/93 07/02/93

07/02/93

07/02/93

07/02/93

07/02/93

07/02/93



Mr. Marc Briggs Page

July 06, 1993

PACE Project Number: 430625510

Client Reference: Exxon 7-0210 (EE)

PACE Sample Number: Date Collected:

70 0101247 06/23/93 06/25/93

Date Received:

MW-2

Client Sample ID: Parameter

Units MDL DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT): Purgeable Fuels, as Gasoline (EPA 8015M) ug/L

PURGEABLE AROMATICS (BTXE BY EPA 8020M): Benzene

Toluene Ethylbenzene

Xylenes, Total

50 130 0.5 ug/L ND ug/L ND

0.5 0.5

0.5

ug/L

ug/L

ND

ND

07/02/93 07/02/93

07/02/93

07/02/93

07/02/93

07/02/93

07/02/93

11 Digital Drive Novato, CA 94949 TEL: 415-883-6100 FAX: 415-883-2673



Mr. Marc Briggs

Page

July 06, 1993

PACE Project Number: 430625510

Client Reference: Exxon 7-0210 (EE)

PACE Sample Number:

Date Collected: Date Received:

Client Sample ID:

70 0101255

06/23/93

06/25/93 MW-3

Parameter

Units MDL DATE ANALYZED

07/02/93

07/02/93

07/02/93

07/02/93

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):

Purgeable Fuels, as Gasóline (EPA 8015M) ug/L PURGEABLE AROMATICS (BTXE BY EPA 8020M):

Benzene Toluene Ethylbenzene

50 ND ug/L 0.5 ND

ND

ND

ND

ug/L 0.5 ug/L 0.5

07/02/93 07/02/93

Xylenes, Total

ug/L

0.5

07/02/93



Mr. Marc Briggs Page

July 06, 1993

PACE Project Number: 430625510

Client Reference: Exxon 7-0210 (EE)

PACE Sample Number:

Date Collected:

Date Received: Client Sample ID:

Parameter

70 0101263 06/23/93 06/25/93

MW-4

Units MDL DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):

Purgeable Fuels, as Gasoline (EPA 8015M) ug/L PURGEABLE AROMATICS (BTXE BY EPA 8020M): Benzene

Toluene Ethylbenzene

Xylenes, Total

50 ND ug/L 0.5 ND

0.5

ug/L 0.5 ug/L 0.5

ug/L

ND

ND

ND

07/02/93 07/02/93

07/02/93

07/02/93

07/02/93

07/02/93

07/02/93



Mr. Marc Briggs

Page

July 06, 1993

PACE Project Number: 430625510

Client Reference: Exxon 7-0210 (EE)

PACE Sample Number: Date Collected:

Date Received:

Client Sample ID:

Parameter

70 0101271 06/23/93 06/25/93

MW-4

Rinsate

DATE ANALYZED

07/02/93

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT): 07/02/93 Purgeable Fuels, as Gasoline (EPA 8015M) ug/L 50 ND 07/02/93 PURGEABLE AROMATICS (BTXE BY EPA 8020M): 07/02/93 Benzene ug/L 0.5 ND 07/02/93 Toluene ug/L 0.5 ND 07/02/93 Ethylbenzene ug/L 0.5 ND 07/02/93

Xylenes, Total

ug/L

Units

0.5

ND

 MDL

These data have been reviewed and are approved for release.

Dárrell C. Cain

Regional Director



Mr. Marc Briggs

FOOTNOTES

July 06, 1993

Page 6

for pages 1 through

PACE Project Number: 430625510

Client Reference: Exxon 7-0210 (EE)

MDL

Method Detection Limit

ND

Not detected at or above the MDL.



Mr. Marc Briggs

QUALITY CONTROL DATA

July 06, 1993

Page 7

PACE Project Number: 430625510

Client Reference: Exxon 7-0210 (EE)

PURGEABLE FUELS AND AROMATICS

Batch: 70 22444

Samples: 70 0101239, 70 0101247, 70 0101255, 70 0101263, 70 0101271

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT): Purgeable Fuels, as Gasoline (EPA 8015M PURGEABLE AROMATICS (BTXE BY EPA 8020M)	ug/L	50	ND
Benzene Toluene Ethylbenzene	ug/L ug/L ug/L	0.5 0.5 0.5	ND ND ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

			Reference		Dupl	
Parameter	Units	MDL	Value	Recv	Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	104%	103%	0%
Benzene	ug/L	0.5	100	90%	90%	0%
Toluene	ug/L	0.5	100	92%	93%	1%
Ethylbenzene	ug/L	0.5	100	93%	95%	2%
Xylenes, Total	ug/L	0.5	300	92%	97%	5%



Mr. Marc Briggs

FOOTNOTES

July 06, 1993

for page 7

PACE Project Number: 430625510

Client Reference: Exxon 7-0210 (EE)

MDL

Method Detection Limit

ND

Not detected at or above the MDL.

RPD

Relative Percent Difference

THE ASSURANCE OF QUALITY

EXXON COMPANY, U.S.A.

P.O. Box 4415, Houston, TX 77210-4415

430625.510

Huntington Beach, CA, 5702 Bolsa Avenue, 92649

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Novato, CA, II Digital Drive,	, 94949		

			(415)	883-610	0								(7	714 <u>)</u>	892-25	65		
Consultant's Name	: RE	SNA	V	dus	thes													Page of
Address:	73		5, to	ر آ	Dr.	<u>,</u>								s	ite Loc	ation:	DJ	blin, CA
Project #: Consultant Project #: 130001.07									22									
Project Contact: Mark Briggs Resna San Jose Phone #: Fax #: Laboratory Work Release #:										ease #:								
EXXON Contact: Maria Gersens EE C&M Phone #: Fax #: EXXON RAS #: 7-0210										7-0210								
Sampled by (print):) (hase Sampler's Signature:) Chase																		
Shipment Method: Air Bill #: Shipment Date:																		
TAT: 24 hr	48 hr	72 hr	U s	Standard	(5 day)					ANA	LYSIS I	REQUI	RED					Sample Condition as Received Temperature ° C: LIENT
						TPH/GAS/BTEX EPA 8015/8020	esel 15	۲ 418.1										Cooler #: COURICE Inbound Seal Yes No Outbound Seal Yes No
Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	PACE Sample #	TPH/G/ EPA 80	TPH/Diesel EPA 8015	TRPH EPA 41										COMMENTS
MW-1	6/23/13	W	HCl	3	101239	X												
Mw-2-	Pelal		<u> </u>		10124.7	X											<u></u>	
MW-3	Mens				10125.5	Γx												
MW-4		j		4	101263	Х												
MW-4 R.W	ease	-	1	2	10127.1	X												
MW-3Rig	S -			ì	16128.D			_						J				Hold
MW-2 RM			:		10/29.	8												Hold
MW-1 PA	- V	/	Ÿ		10130.1													140/d
			<u>.</u>															
Relinqu	ished by/Affili	ation		Date	Time					filiation			Date		Time	Addi	tional C	Comments:
Jenno	for CF	ase	j	125/9	3 10:3	Th	W	M.	410	vu	PAC	E	0/25	* <i>(10.</i>	35			
								_										