RESNA
Working To Restore Nature

3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Phone: (408) 264-7723
Fax: (408) 264-2345

exxon1292

EXXON COMPANY, U.S.A.
QUARTERLY STATUS REPORT
October - December 1992
December 31, 1992

RAS #7-3399
2991 Hopyard Road
Pleasenton, California
Job No: 18034

Work Performed During This Quarter

October through December 1992

- Performed monthly monitoring on October 7, November 9, and December 10, 1992.
- Submitted final report for third quarter 1992 Quarterly Monitoring on December 1, 1992.
- Performed quarterly monitoring fourth quarter 1992 on December 10, 1992.
- Started up onsite vapor phase carbon adsorption system on October 12, 1992.
- Submitted a letter to the Bay Area Air Quality Management District (BAAQMD) to change the air monitoring schedule while still maintaining compliance with the permit conditions.
- Received response from BAAQMD affirming a change in air monitoring schedule from daily to weekly.

Groundwater Sampling (sampled 12/10/92) Results: (ug/L)

Well	TPHg	B	T	E	X	Historical Trends
MW-1		Well Dry				
MW-2		Well Destroyed				
MW-3		Well Destroyed				
MW-4		Well Dry				
MW-5d		Well Dry				
MW-5s		Well Dry				
MW-6		Well Destroyed				
MW-7		Well Dry				
MW-8	<50	<0.5	0.6	<0.5	<50	Unchanged
MW-9		Well Dry				
MW-10		Well Dry				
MW-11		Well Dry				

Free Phase Product Recovery

Not Applicable

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EXXON COMPANY, U.S.A.
QUARTERLY STATUS REPORT
October - December 1992
December 31, 1992
(Page 2 of 2)

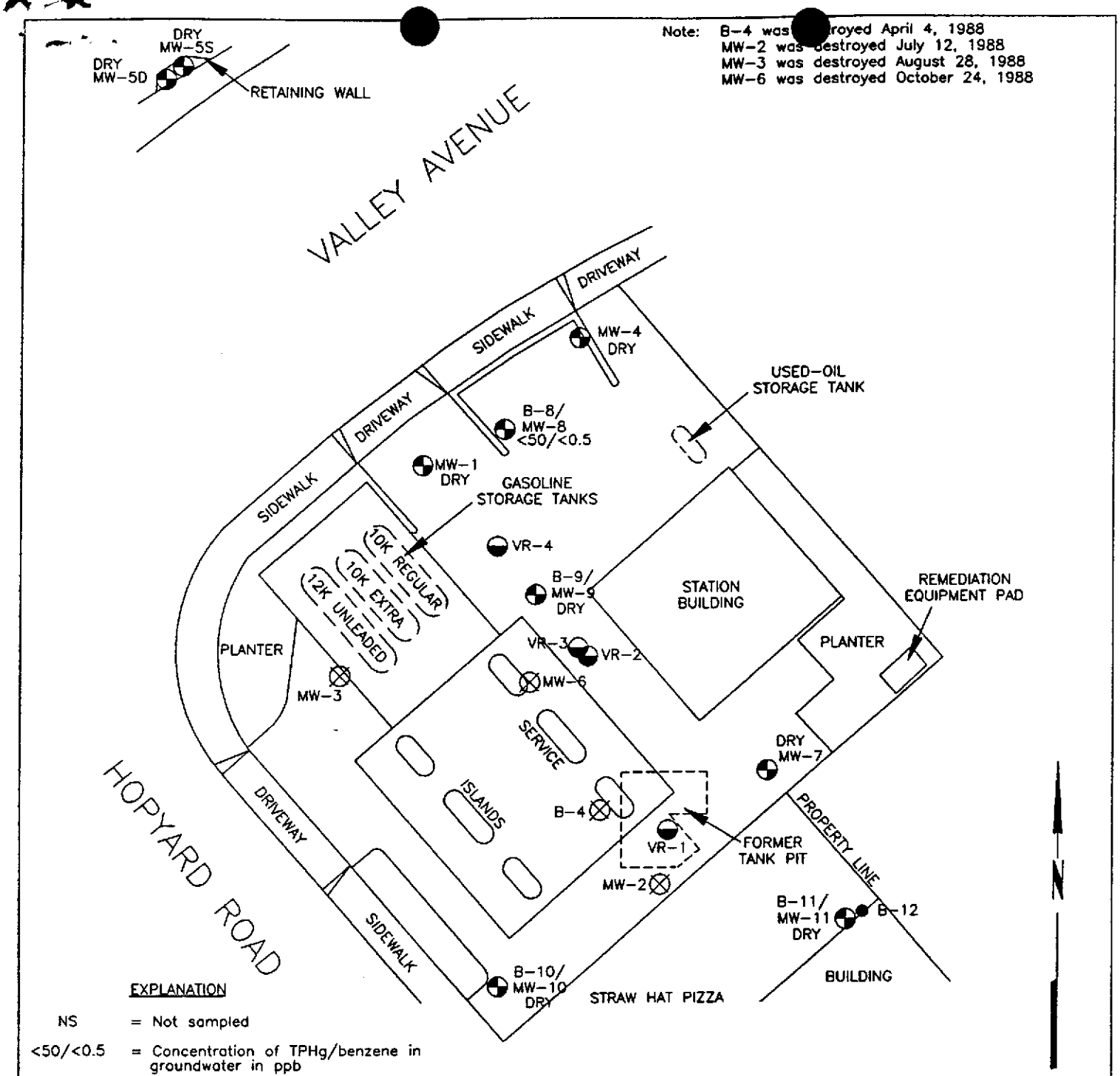
RAS #7-3399
2991 Hopyard Road
Pleasenton, California
Job No: 18034

Work to be Performed Next Quarter — Estimated Completion Date 03/31/93

- Submit draft report for fourth quarter 1992 Quarterly Monitoring to Exxon for review and approval.
- Continue with weekly monitoring of the carbon system until it is determined that bi-weekly monitoring is sufficient.
- Perform Quarterly Monitoring for the first quarter 1993.

Work to be Performed Next 12 Months — Estimated Completion Date 12/31/93

- Continue quarterly groundwater monitoring and sampling program to evaluate the trends of gasoline hydrocarbons and groundwater gradient in first encountered groundwater below the site.



Source: Surveyed by Ron Archer, Civil Engineer, July 27, 1989. Revised January 22, 1990.

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PROJECT 18034.15

GENERALIZED SITE PLAN
Exxon Station 7-3399
2991 Hopyard Road
Pleasanton, California

PLATE 2

EXXON COMPANY, U.S.A.

POST OFFICE BOX 4032 . CONCORD, CA 94524-2032

ENVIRONMENTAL ENGINEERING

MARLA D. GUENSLER
ENVIRONMENTAL ENGINEER
(510) 246-8776

July 13, 1992

Exxon RAS #7-3399
2991 Hopyard Road
Pleasanton, California

Ms. Linda Spencer
San Francisco Regional Water Quality Control Board
1800 Harrison Street, Suite 700
Oakland, California 94612

Dear Ms. Spencer:

Attached for your review and comment is the **Letter Report First Quarter 1992 Groundwater Monitoring and Remediation Activities** for the above referenced site. This report, prepared by RESNA Industries, of Fremont, California, presents the results of the quarterly sampling event which occurred in the first quarter, 1992.

Please note that the existing vapor treatment system was modified to a vapor scrub carbon system.

Should you have any questions, comments, or require additional information, please contact me at the above listed number.

Sincerely,

Marla D. Guensler

Marla D. Guensler

Attachment

c-w/attachment:
Mr. Steve Cusenga - City of Pleasanton, Public Works Department
Mr. Jerry Killingstad - Alameda County Flood Control District Zone 7
Mr. Rick Mueller - Pleasanton Fire Department

w/o attachment:
Mr. Mark Detterman - RESNA Fremont

MDG:sad
2668E

LETTER REPORT
FIRST QUARTER 1992
GROUNDWATER MONITORING
AND
REMEDIATION ACTIVITIES
AT
EXXON STATION NO. 7-3399
2991 HOPYWARD ROAD
PLEASANTON, CALIFORNIA

Project No. 18034-15
June 1992

RESNA
42501 Albrae Street
Fremont, California 94538
(510) 440-3300

2991 HOPYARD

FIRST QUARTER 1992 SUMMARY REPORT

EXXON COMPANY U. S. A.

Prepared for

Mr. Thomas J. Callaghan
California Regional Water Quality Board
San Francisco Bay Region
1800 Harrison Street, Suite 700
Oakland, California 94612

Submitted by

Exxon Company, U.S.A.
2300 Clayton Road, Suite 1250
Concord, California 94520

April 1992

2376E

Alameda County

7-0104	1725 Park Street, Alameda
7-0105	193 Winton Avenue, Hayward
7-0234	3450 35th Avenue, Oakland, CA **(NEW)**
7-0236	6630 East 14th Street, Oakland
7-0793	37635 Blacow Road, Fremont
7-2555	650 Tennyson Road, Hayward
7-3006	720 High Street, Oakland
7-3141	4995 Mowry Avenue, Fremont
7-3399	2991 Hopyard Road, Pleasanton
7-3567	3192 Santa Rita Road, Pleasanton
7-3599	39990 Fremont Blvd., Fremont
7-3633	39707 Paseo Padre Parkway, Fremont
7-3983	46494 Mission Blvd., Fremont
7-4237	215 West Jackson Street, Hayward
7-7003	349 Main Street, Pleasanton
7-7116	5835 Thornton Avenue, Newark
7-7141	42350 Grimmer Blvd., Fremont
7-8907	8008 Mountain Blvd., Oakland
7-8924	26115 Hesperian Blvd., Hayward

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EXXON COMPANY, U.S.A.
QUARTERLY SUMMARY REPORT
January - March 1992

EXXON SERVICE STATION #7-3399
2991 Hopyard Road
Pleasanton, California

RESNA Job No. 18034-13

WORK PERFORMED THIS QUARTER:

- Performed monthly groundwater gauging on January 30 and March 2, 1992.
- Modified vapor-extraction system on March 10, 1992.
- Submitted final fourth quarter monitoring report (RESNA Report No. 18034-9, March 31, 1992) on March 31, 1992.
- Collected first quarter 1992 groundwater samples from groundwater monitoring wells with sufficient water on March 24, 1992.

QUARTERLY GROUNDWATER SAMPLING (3/24/92) RESULTS: (ug/l)

Well	B	T	E	X	TPHg	Historical Trend
MW-4	<0.5	<0.5	<0.5	<0.5	<50	Decreased
MW-7	<0.5	<0.5	<0.5	<0.5	<50	Decreased
MW-8	<0.5	<0.5	<0.5	<0.5	<50	Unchanged

B = benzene, T = toluene, E = ethylbenzene, X = total xylenes
TPHg = Total petroleum hydrocarbons as gasoline

FREE PHASE PRODUCT RECOVERY SUMMARY:

Product recovered this quarter:	0 gallons
Cumulative total product recovered:	58 gallons

RESNA

EXXON COMPANY, U.S.A.
QUARTERLY SUMMARY REPORT
January - March 1992

EXXON SERVICE STATION #7-3399
2991 Hopyard Road
Pleasanton, California

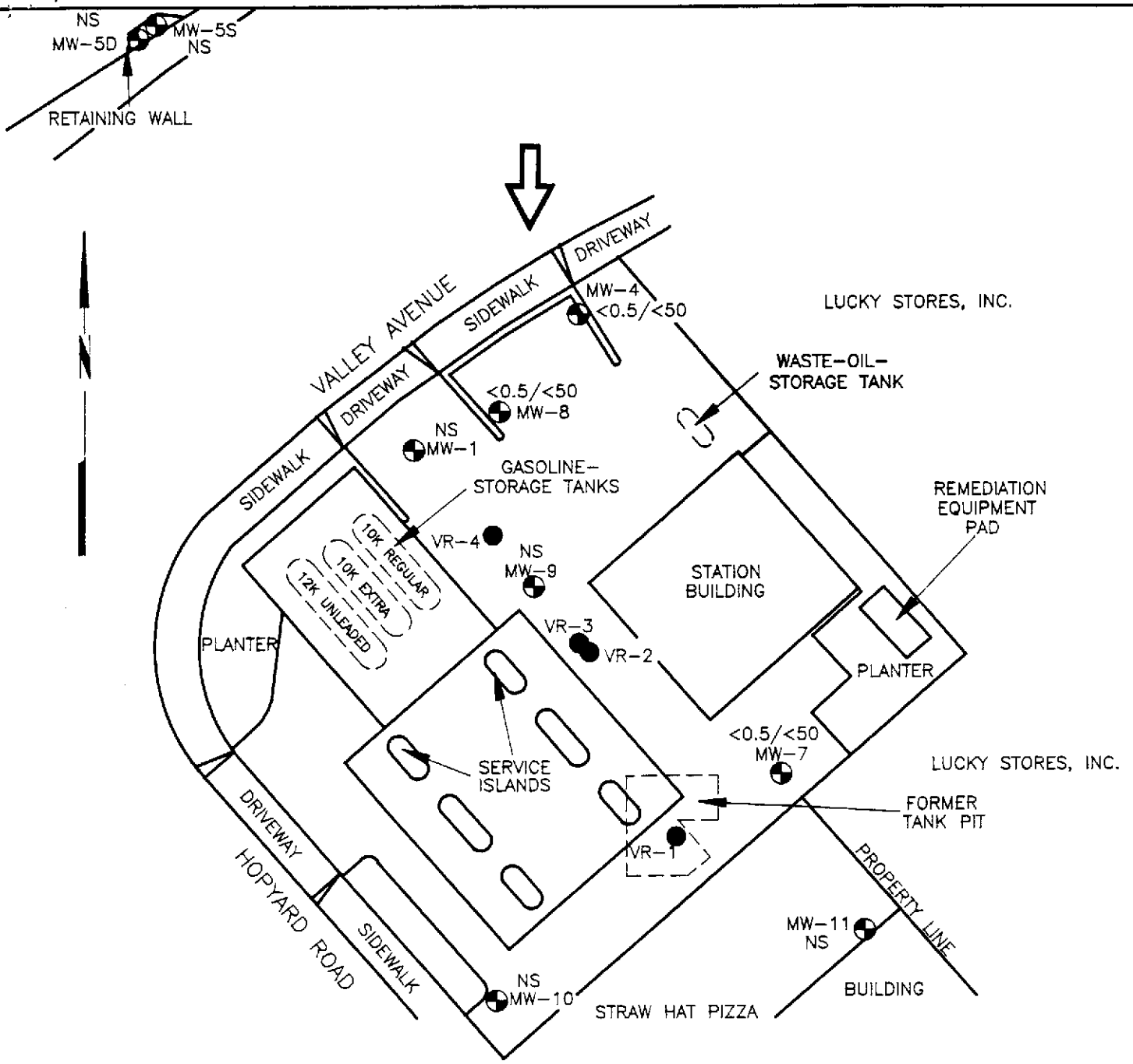
RESNA Job No. 18034-13

WORK TO BE COMPLETED NEXT QUARTER: Estimated Completion Date 6/30/92

- Begin operation of the modified abatement system.
- Perform monthly groundwater gauging
- Resume groundwater recovery if the water level rises.
- Submit draft and final report on groundwater monitoring and sampling for first quarter 1992.
- Continue groundwater monitoring and sampling.
- Report on site status.

WORK TO BE PERFORMED NEXT 12 MONTHS: Estimated Completion Date 3/31/93

- Conduct influent vapor readings daily for the first week, then weekly until carbon breakthrough.
- Perform monthly influent vapor sampling.
- Perform monthly groundwater gauging.
- Perform quarterly groundwater sampling.
- Complete quarterly status reports.



First Quarter 1992

<0.5/<50 = Concentration of Benzene/TPHg in groundwater in parts per billion

NS = Not sampled

= Approximate direction of groundwater flow

MW-11 = Groundwater monitoring well

VR-4 = Vapor recovery well

Approximate Scale

40 20 0 40 80

feet

RESNA	SITE PLAN FOR QUARTERLY SUMMARY REPORT Exxon Station No. 7-3399 2991 Hopyard Road Pleasanton, California	PLATE 1
PROJECT NO. 18034-13		

RESNA
Working to Restore Nature

42501 Albrae Street
Fremont, California 94538
Phone: (510) 440-3300
FAX: (510) 651-2233

June 18, 1992
RESNA 18034-15

Ms. Marla D. Guensler
Exxon Company, U.S.A.
2300 Clayton Road, Suite 250
P.O. Box 4032
Concord, California 94520

Subject: Letter Report on First Quarter 1992 Groundwater Monitoring and Remediation Activities, at Exxon Station No. 7-3399, 2991 Hopyard Road, Pleasanton, California.

Dear Ms. Guensler:

This report presents the results of the first quarter 1992 groundwater monitoring and sampling and an update of remediation activities, at Exxon Service Station No. 7-3399. The Exxon station is located at the intersection of Hopyard Road and Valley Avenue in Pleasanton, California (Plate 1). The monitoring program included measuring depth to groundwater, subjectively evaluating water from each of the wells for evidence of hydrocarbons, and purging the wells and collecting water samples for laboratory analysis.

Site Setting and Background

The original service station on the site was demolished in September 1988, and new station facilities were constructed between September 1988 and February 1989. The fuel underground storage tanks (USTs) in the southeastern part of the site were removed in July 1988, prior to station demolition. The current station facilities include four USTs containing premium unleaded, super-regular unleaded, and regular unleaded gasoline, and waste oil (Plate 2).

Nine groundwater monitoring wells currently are used to monitor groundwater at the site (Plate 2). Seven of the nine wells, designated MW-1, MW-4, MW-5s, MW-7, MW-9, MW-10, and MW-11, are screened in the uppermost aquifer beneath the site. The remaining two wells, MW-5d and MW-8, are screened in the underlying second and third aquifers, respectively.

A groundwater recovery system was in operation between 1988 and 1990. Groundwater was pumped from well MW-7, then the water passed through an oil-water separator, and into the sanitary sewer under a permit from the Dublin-San Ramon Services District. Continued groundwater recovery from well MW-7 is pending sufficient water in the shallow aquifer.

Because of the drop in water level since 1988, the sand and gravel zone has been mostly unsaturated. A vapor extraction and treatment system consisting of a 100-cubic-feet-per-minute vacuum pump and catalytic oxidizer was installed at the site in November 1990. The vacuum system is connected to six wells; shallow well VR-1, installed in the backfill material of the former UST pit; shallow wells VR-3 and VR-4, installed in the unsaturated silty clay overlying the uppermost aquifer; and deeper wells VR-2, MW-1, and MW-9, installed in sand and gravel in the uppermost aquifer. Hydrocarbon vapors were recovered until low vapor concentrations precluded use of the catalytic oxidizer in June 1990.

The vapor system was permitted by the Bay Area Air Quality Management District under Authority to Construct No. 5125, dated August 2, 1990, and under permit to operate, dated January 4, 1991. After start up testing in late November, the system began operating on December 7, 1990. During December 1990 and January 1991, influent vapor samples were collected on a weekly and a biweekly basis, and after January were collected on a monthly basis. On March 10, 1992, the existing vapor treatment system was modified to a vapor scrub carbon system.

MONITORING

Field Activities

The monitoring program conducted by RESNA included measuring depth to water, subjectively evaluating initial groundwater samples from wells MW-4, MW-5d, MW-5s, MW-8, MW-11, and VR-1, and purging and sampling groundwater from monitoring wells MW-4, MW-8, and VR-1 for laboratory analysis. Wells MW-1, MW-9, and MW-10 are coupled to the vapor extraction system and were inaccessible on this sampling event. Wells MW-5d, MW-5s and MW-11 contained insufficient water for sampling. Vapor well VR-1 was inadvertently sampled this quarter, due to a misunderstanding in the field when water was encountered in this well. Site visits are made monthly to measure the water level in wells and quarterly to sample groundwater for laboratory analysis. Monthly monitoring was performed on January 30 and March 2, 1992, and quarterly sampling was performed on March 24, 1992, using the field procedures described in the Attachments. Accumulation, storage, and disposal of purged groundwater are also described in the Attachments.

Results of Groundwater Monitoring

Between December 1991 and March 1992, depth to water measurements from wells in the uppermost aquifer indicated essentially no change since the previous monitoring event. The water level in MW-5d (second aquifer) rose just above the total depth of the well; while, the water level in MW-8 (third aquifer) rose approximately 7.6 feet. No floating product or sheen was observed in the water samples from the wells. Cumulative results of depth to water measurements and subjective evaluations are presented in Table 1. The field activities were performed using the procedures described in the Attachments.

Due to insufficient water levels in the uppermost aquifer on March 24, 1992, a groundwater elevation map was not constructed. Previous water level data suggest the groundwater flow is generally southward and the hydraulic gradient beneath much of the site is essentially flat.

Laboratory Methods and Results of Groundwater Sampling

Groundwater samples from MW-4, MW-8, and VR-1 were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by Environmental Protection Agency (EPA) modified Method 8015, and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 602. The analyses were performed by PACE Incorporated (Hazardous Waste Testing Laboratory Certification No. 147), Novato, California.

Results of laboratory analyses of water samples from wells MW-4, MW-8, and VR-1 indicate no detectable concentrations of TPHg and BTEX, except for 1.7 parts per billion benzene in the water samples from VR-1. These analytical results indicate that BTEX compounds previously detected in groundwater were not present in the water samples from this sampling event (Table 2). Chain of Custody Records and certified analysis reports are enclosed in Attachments.

REMEDIATION

Groundwater Recovery

During this monitoring period, groundwater recovery from the upper aquifer was not undertaken due to insufficient water. Recovery activities will resume when the groundwater rises to a sufficient level for pumping.

RESNA

Water Storage and Disposal

Purged ground water was temporarily stored onsite in 17E, 55-gallon liquid-waste drums approved for this purpose by the Department of Transportation. The purged water was discharged through the oil-water separator onsite and into the sanitary sewer under a permit from the Dublin-San Ramon Services District.

Soil-Vapor Extraction System

Influent and effluent vapors samples have previously been collected at the catalytic oxidizer's inlet port using evacuated aerosol containers (280 cubic centimeter Vacuum Samplers). These Vacuum Samplers were fitted with a septum port and needle guide, through which the containers were filled for subsequent laboratory analysis.

Since November 1990, the existing catalytic oxidizer has effectively reduced vapor concentrations to levels below 0.5 ppm TPHg (Table 3). To continue vapor extraction of low hydrocarbon concentrations, the current cat-ox unit was shut off on July 24, 1991, and the existing system underwent modification to an activated carbon abatement system on March 10, 1992. System start-up is pending.

Please call if you have questions.

Sincerely,
RESNA Industries

Keith M. McVicker
Project Geologist

Mark E. Detterman
Project Manager, R.G. 4799

Enclosures: Table 1, Cumulative Results of Subjective Evaluation of Water Samples
Table 2, Cumulative Results of Groundwater Analyses
Table 3, Cumulative Results of Influent and Effluent Vapor Samples
Plate 1, Site Vicinity Map
Plate 2, Generalized Site Plan

Attachments: Groundwater Sampling Protocal
Subjective Evaluation of Groundwater and Well Purge Data Sheets
Chain of Custody Records and Laboratory Analysis Reports

Draft: May 4, 1992
Final: June 18, 1992

RESNA

TABLE 1
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
(page 1 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-1 (Wellhead Elevation = 321.44 ft)				
04/06/88	36.34	285.00	None	None
04/08/88	36.29	285.15	None	None
04/19/88	36.36	285.08	None	None
06/06/88	38.16	283.28	None	None
06/23/88	38.71	282.73	None	None
06/28/88	39.16	282.28	--	--
07/06/88	39.73	281.71	None	None
07/13/88	40.22	281.22	None	None
08/12/88		Well buried under excavated soil		
08/26/88	41.90	279.54	--	--
09/07/88	42.27	279.17	None	None
12/07/88	43.94	277.50	None	None
12/19/88	43.70	277.74	None	None
02/09/89	42.53	278.91	--	--
03/08/89	41.96	279.48	None	None
04/03/89	41.59	279.85	--	--
04/26/89	41.67	279.77	--	--
06/30/89	43.79	277.65	None	None
07/17/89	44.74	276.70	None	None
07/18/89	44.76	276.68	--	--
07/19/89	44.82	276.62	--	--
07/20/89	44.85	276.59	None	None
07/21/89	44.95	276.49	--	--
07/26/89	45.42	276.02	None	None
08/02/89	--	NA	NA	NA
08/03/89	46.18	275.26	--	--
08/17/89	47.12	274.32	--	--
09/13/89	49.08	272.36	None	None
11/28/89	50.21	271.23	None	None
01/09/90	49.31	272.13	None	None
01/26/90	49.29	272.15	None	None
02/23/90	49.02#	272.42	None	None
02/23/90	49.02	272.42	None	None
03/26/90	48.71#	272.73	None	None
03/26/90	48.70	272.74	None	None
04/18/90	48.79	272.65	None	None
05/17/90	49.40	272.04	None	None
06/11/90	50.83	270.61	None	None
07/30/90	52.17	269.27	None	None
08/27/90	53.44	268.00	None	None
09/28/90	53.40	268.04	None	None
12/27/90	--	NA	NA	NA
03/20/91	53.35	268.08	--	--
06/20/91	53.55	267.89	None	None
09/12/91	--	NA	None	None
12/30/91	--	NA	NA	NA
01/30/92	--	NA	NA	NA
03/02/92	--	NA	NA	NA
03/24/92	--	NA	NA	NA

See notes on page 8 of 8.

TABLE 1
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
(page 2 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-2				
04/02/88	--	--	3.0	Heavy
04/04/88	--	--	18.0	Heavy
04/05/88	--	--	18.0	Heavy
04/06/88	39.31	--	38.4	Heavy
04/08/88	--*	--	--*	--*
04/19/88	38.90	--	29.76**	Heavy
06/06/88	38.78	--	3.12	Heavy
06/23/88	39.23	--	1.50	Heavy
06/28/88	39.72	--	--	--
07/06/88	40.31	--	None	Slight
07/12/88	Well destroyed due to excavation (old pit)			
MW-3				
04/06/88	37.19	--	None	None
04/08/88	37.14	--	None	None
04/19/88	37.22	--	None	None
06/06/88	39.02	--	None	None
06/23/88	39.58	--	None	None
06/28/88	40.04	--	--	--
07/06/88	40.60	--	None	None
07/13/88	41.09	--	None	None
08/12/88	Well buried under excavated soil			
08/26/88	42.77	--	--	--
08/29/88	Well destroyed due to excavation (new pit)			
MW-4 (Wellhead elevation = 321.56 ft)				
04/08/88	36.41	285.15	None	None
04/19/88	36.51	285.05	None	None
06/06/88	38.26	283.30	None	None
06/23/88	38.83	282.73	None	None
06/28/88	39.28	282.28	--	--
07/06/88	39.85	281.71	None	None
07/13/88	40.31	281.25	None	None
08/12/88	Well buried under excavated soil			
08/26/88	42.01	279.55	--	--
09/07/88	Not accessible due to construction			
12/07/88	Not accessible due to construction			
12/19/88	43.83	277.73	None	None
02/09/89	42.67	278.89	--	--
03/08/89	42.11	279.45	None	None
04/03/89	41.73	279.83	--	--
04/26/89	41.79	279.77	--	--
06/30/89	43.88	277.68	None	None
07/17/89	44.85	276.71	None	None
07/18/89	44.88	276.68	--	--
07/19/89	44.92	276.64	--	--

See notes on page 8 of 8.

RESNA

TABLE 1
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
(page 3 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-4 (continued)				
07/20/89	44.98	276.58	None	None
07/21/89	45.04	276.52	--	--
07/26/89	45.50	276.06	None	None
08/02/89	--	NA	NA	NA
08/03/89	46.28	275.28	--	--
08/17/89	47.22	274.34	--	--
09/13/89	49.19	272.37	None	None
11/28/89	50.34	271.22	None	None
01/09/90	49.47	272.09	None	None
01/26/90	49.36	272.20	None	None
02/23/90	49.18#	272.38	None	None
02/23/90	49.15	272.41	None	None
03/26/90	48.84#	272.72	None	None
03/26/90	48.83	272.73	None	None
04/18/90	48.90	272.66	None	None
05/17/90	50.03	271.53	None	None
06/11/90	50.98	270.58	None	None
07/30/90	53.57	267.99	None	None
08/27/90	53.61	267.95	None	None
09/28/90	53.57	267.99	None	None
12/27/90	53.68	267.88	None	None
03/20/91	53.56	268.00	None	None
06/20/91	53.75	267.81	None	None
09/12/91	53.70	267.86	None	None
12/30/91	Dry	NA	NA	NA
01/30/92	Dry	NA	NA	NA
03/02/92	53.83	267.73	None	None
03/24/92	53.73	267.83	None	None
B-4				
04/02/88	--	NA	None	None
MW-5d (Wellhead Elevation = 321.79 ft)				
05/25/88	38.55	283.24	None	None
06/06/88	38.90	282.89	None	None
06/23/88	39.56	282.23	None	None
06/28/88	40.23	281.33	--	--
07/06/88	40.69	281.10	None	None
07/13/88	41.22	280.57	None	None
08/12/88	42.34	279.45	--	--
08/26/88	42.60	279.19	--	--
09/07/88	42.99	278.80	--	--
12/07/88	44.58	277.21	None	None
02/09/89		Casing head damaged by construction		
03/08/89		Casing head cut to lower elevation		
	42.49	279.30	None	None
04/03/89	42.21	279.58	--	--
04/26/89	42.36	279.43	--	--
06/30/89	44.79	277.00	None	None
07/17/89	45.73	276.06	None	None
07/18/89	45.75	276.04	--	--

See notes on page 8 of 8.

TABLE 1
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
(page 4 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-5d				
07/19/89	44.89	276.90	--	--
07/20/89	46.02	275.77	None	None
07/21/89	46.18	275.38	--	--
07/26/89	46.83	274.96	None	None
08/02/89	--	NA	NA	NA
08/03/89	47.67	274.12	--	--
08/17/89	48.27	273.52	--	--
09/13/89	50.60	271.19	None	None
11/28/89	51.16	270.63	None	None
01/09/90	50.42	271.37	None	None
01/26/90	50.10	271.66	None	None
02/23/90	50.08	271.77	None	None
03/26/90	49.80#	271.99	None	None
03/26/90	49.77	272.02	None	None
04/18/90	49.80	271.99	None	None
05/17/90	51.32	270.47	None	None
06/11/90	52.10	269.69	None	None
07/30/90	53.47	268.32	None	None
08/27/90	58.24	263.55	None	None
09/28/90	60.70	261.09	None	None
12/27/90	62.52	259.27	None	None
03/20/91	59.18	262.61	None	None
06/20/91	65.02	256.77	None	None
09/12/91	DRY	NA	NA	NA
12/30/91	DRY	NA	NA	NA
01/30/92	DRY	NA	NA	NA
03/02/92	DRY	NA	NA	NA
03/24/92	76.45	245.34	None	None
MW-5s (Wellhead Elevation = 321.64 ft)				
05/25/88	38.46	283.18	None	None
06/06/88	38.86	282.78	None	None
06/23/88	39.52	282.12	None	None
06/28/88	39.84	281.80	--	--
07/06/88	40.45	281.19	None	None
07/13/88	40.90	280.74	None	None
07/22/88	41.30	280.34	None	None
08/05/88	23.84▾	297.80	None	None
08/12/88	42.21	279.43	--	--
08/26/88	42.55	279.09	--	--
09/07/88	42.94	278.70	None	None
12/07/88	44.67	276.97	None	None
02/09/89	43.19	278.45	--	--
03/08/89	Casing head cut to lower elevation			
	42.11	279.53	None	None
04/26/89	41.84	279.80	--	--
06/30/89	43.95	277.69	None	None
07/17/89	44.91	276.73	None	None
07/18/89	44.93	276.71	--	--
07/19/89	44.98	276.66	--	--
07/20/89	45.02	276.62	None	None

See notes on page 8 of 8.

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TABLE 1
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
(page 5 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-5s (continued)				
07/21/89	45.10	276.54	--	--
07/26/89	45.57	276.07	None	None
08/02/89	--	--	NA	NA
08/03/89	46.31	275.33	--	--
08/17/89	47.25	274.39	--	--
09/13/89	49.22	272.42	None	None
11/28/89	50.39	271.25	None	None
01/09/90	49.51	272.13	None	None
01/26/90	49.40	272.24	None	None
02/23/90	49.20#	272.44	None	None
02/23/90	49.20	272.44	None	None
03/26/90	48.89#	272.75	None	None
03/26/90	48.88	272.76	None	None
04/18/90	48.95	272.69	None	None
05/17/90	50.06	271.58	None	None
06/11/90	50.98	270.66	None	None
07/30/90	53.40	268.24	None	None
08/27/90	53.60	268.04	None	None
09/28/90	53.55	268.09	None	None
12/27/90	53.61	268.03	None	None
03/20/91	53.56	268.08	None	None
06/20/91	53.73	267.91	None	None
09/12/91	53.78	267.86	None	None
12/30/91	53.80	267.84	None	None
01/24/92	53.82	267.82	None	None
03/02/92	53.82	267.82	None	None
03/24/92	53.77	267.87	None	None
MW-6				
05/11/88	37.71	--	None	None
06/06/88	38.70	--	None	None
06/23/88	39.23	--	None	None
06/28/88	39.74	--	None	None
07/13/88	40.78	--	None	None
08/05/88	41.72	--	None	None
08/12/88	42.14		--	--
08/17/88		Well buried under excavated soil		
08/26/88	42.51	--	--	--
09/07/88	42.85	--	None	None
10/24/88		Well destroyed for station construction		
MW-7 (Wellhead Elevation = 321.27 ft)				
07/13/88	40.50	280.77	None	None
07/22/88	41.85#	279.42	None##	None##
08/05/88	41.45#	279.82	None##	None##
08/12/88	42.69	278.58	--	--
09/07/88	42.60	278.67	--	--
12/07/88		Not accessible		
01/17/89	43.20	278.07	--	--
02/09/89		Not accessible, pump equipment in well		
10/12/89	49.93	271.34	None	None
11/28/89	57.61#	264.03	--	--

See notes on page 8 of 8.

TABLE 1
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
(page 6 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-7 (continued)				
01/09/90	57.57#	263.70	--	--
01/26/90	57.54#	263.73	None	None
01/26/90	49.08	272.19	None	None
02/23/90	55.26#	266.01	None	None
02/23/90	48.93	272.34	None	None
03/26/90	57.52#	263.73	None	None
03/26/90	48.60	272.67	None	None
04/18/90	57.55#	263.72	None	None
05/17/90	57.40#	263.87	None	None
06/11/90	50.68	270.59	None	None
07/30/90	--	NA	None	None
08/27/90	53.05	268.22	None	None
09/28/90	--	NA	NA	NA
12/27/90	--	NA	NA	NA
03/20/91	54.11	267.16	--	--
06/20/91	55.14	266.13	None	None
09/12/91	55.84	265.43	None	None
12/30/91	55.21	266.06	None	None
01/30/92	54.88	266.39	None	None
03/02/92	NA	--	--	--
03/24/92	NA	--	--	--
MW-8 (Wellhead Elevation = 321.86 ft)				
10/01/89	53.88	267.98	None	None
11/28/89	53.74	268.12	None	None
01/09/90	57.90	263.96	None	None
01/26/90	53.57	268.29	None	None
02/23/90	52.16	269.70	None	None
03/26/90	52.80#	269.06	None	None
04/18/90	51.60	270.26	None	None
05/17/90	58.21	263.65	None	None
06/11/90	58.65	263.21	None	None
07/30/90	64.33	257.53	None	None
08/27/90	70.41	251.45	None	None
09/28/90	71.93	249.93	None	None
12/27/90	66.60	255.26	None	None
03/20/91	60.75	261.11	None	None
06/20/91	88.77	233.09	None	None
09/12/91	103.17	218.69	None	None
12/30/91	81.15	240.71	None	None
01/30/92	81.69	240.17	None	None
03/02/92	78.45	243.41	None	None
03/24/92	76.55	245.31	None	None
MW-9 (Wellhead elevation = 321.44 ft)				
10/12/89	50.24	271.20	None	None
11/28/89	50.59	270.85	1.0	Heavy
12/01/89	50.32	271.12	0.25	Heavy
12/07/89	50.13	271.31	1.92	Heavy
12/13/89	49.91	271.53	None	Slight
12/20/89	49.78	271.66	None	Slight
01/02/90	--	NA	None	Slight
01/09/90	49.39	272.05	None	Slight
01/26/90	49.30	272.14	None	None
02/23/90	49.06#	272.38	None	None
02/23/90	49.05	272.39	None	None
03/26/90	48.75#	272.69	None	None

See notes on page 8 of 8.

TABLE 1
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
(page 7 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-9 (continued)				
03/26/90	48.73	272.71	None	Very Slight
04/18/90	48.81	272.63	None	Slight
05/17/90	49.96	271.48	None	Slight
06/11/90	51.58	269.86	4.5	NA
07/30/90	Dry	NA	NA	NA
08/27/90	Dry	NA	NA	NA
09/28/90	Dry	NA	NA	NA
12/27/90	--	NA	NA	NA
03/20/91	Dry	NA	None	Very Slight
06/20/91	49.63	271.81	None	None
09/12/91	--	NA	NA	NA
12/30/91	--	NA	NA	NA
01/30/92	--	NA	NA	NA
03/02/92	--	NA	NA	NA
03/24/92	--	NA	NA	NA
MW-10 (Wellhead Elevation = 322.99 ft)				
10/12/89	51.93	271.06	None	None
11/28/89	51.88	271.11	None	None
12/20/89	51.47	271.52	None	None
01/09/90	50.98	272.01	None	None
01/26/90	50.87	272.12	None	None
02/23/90	50.67#	272.32	None	None
02/23/90	50.65	272.34	None	None
03/26/90	50.36#	272.63	None	None
03/26/90	50.35	272.64	None	None
04/18/90	50.45	272.54	None	None
06/11/90	51.16	271.83	None	None
07/30/90	55.72	267.27	None	None
08/27/90	57.75	265.24	None	None
09/28/90	--	NA	NA	NA
12/27/90	58.08	264.91	None	None
03/20/91	57.80	265.19	None	None
06/20/91	58.00	264.99	None	None
09/12/91	DRY	NA	NA	NA
12/30/91	--	NA	NA	NA
01/30/92	DRY	NA	NA	NA
03/02/92	DRY	NA	NA	NA
03/24/92	58.53	264.46	None	None
MW-11 (Wellhead Elevation = 321.77 ft)				
11/10/89	50.64	271.13	None	None
11/28/89	50.51	271.26	None	Very Slight
12/20/89	51.47	270.30	None	None
01/09/90	49.68	272.09	None	None
01/26/90	49.55	272.22	None	None
02/23/90	49.37#	272.40	None	None
02/23/90	49.35	272.42	None	None
03/26/90	49.03#	272.74	None	None
03/26/90	49.03	272.74	None	None
04/18/90	49.12	272.65	None	None
05/17/90	50.30	271.47	None	None
06/11/90	51.16	270.61	None	None
07/30/90	53.50	268.27	None	None
08/27/90	53.65	268.12	None	None
09/28/90	53.62	268.15	None	None

See notes on page 8 of 8.

TABLE 1
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
(page 8 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-11 (continued)				
12/27/90	53.63	268.14	None	None
03/20/91	53.26	268.51	None	None
06/20/91	53.60	268.17	None	None
09/12/91	53.60	268.17	None	None
12/30/91	53.95	267.82	None	None
01/30/92	53.65	268.13	None	None
03/02/92	53.68	268.09	None	None
03/24/92	53.70	268.07	None	None
VR-1				
03/24/92	24.77	--	None	None

Depth to groundwater is in feet below top of casing.
Elevation is in feet above mean sea level.
-- = Not measured
NA = Not applicable
* = Not measured because of installed product-skimmer pump.
** = Thickness of floating product after the well was allowed to recharge for approximately 3 hours.
v = Anomalous water level possibly due to recharge from a perched water zone.
# = Water level during pumping of MW-7.
= Water inspected in oil-water separator tank.

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TABLE 2
CUMULATIVE RESULTS OF GROUNDWATER ANALYSES
(page 1 of 4)

Date	Sample No.	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Total Xylenes (ppb)	TPHg (ppb)	EPA 502.2 (ppb)	EPA 524.2 (ppb)
MW-1								
4/02/88	W-38-MW1	<0.5	1.7	<0.5	<0.5	<20	--	--
7/06/88	W-40-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/13/88	W-42-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
9/07/88	W-43-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
3/08/89	W-43-MW1	1.6	<0.5	<0.5	<0.5	<20	--	--
6/30/89	W-44-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/17/89	W-45-MW1	<0.5	<0.5	<0.5	<0.5	23	--	--
7/20/89	W-45-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/26/89	W-46-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/02/89	W-46-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
9/13/89	W-50-MW1	39	0.60	<0.50	5.1	220	--	--
12/20/89	W-50-MW1	56	0.72	<0.50	0.71	220	--	--
1/25/90	W-50-MW1	18	1.6	<0.50	1.8	57	--	--
2/27/90	W-50-MW1	3.2	2.3	<0.50	3.2	55	--	--
3/26/90	W-49-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
4/18/90	W-49-MW1	1.1	1.6	<0.50	3.1	25	--	--
5/17/90	W-49-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
6/11/90	W-52-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/30/90	W-53-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/27/90	W-53-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
9/28/90	W-53-MW1	<0.5	<0.5	<0.5	<0.5	<50	--	--
MW-2								
7/06/88	W-41-MW	25,700	18,500	2,900	21,400	62,000	--	--
7/12/88				Well destroyed				
MW-3								
4/06/88	W-39-MW3	<0.5	<0.5	<0.5	<0.5	20	--	--
7/06/88	W-41-MW3	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/13/88	W-43-MW3	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/26/88	W-44-MW3	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/29/88				Well destroyed				
MW-4								
4/11/88	W-37-MW4	1.8	16.3	0.6	7.1	80	--	--
7/06/88	W-41-MW4	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/13/88	W-42-MW4	<0.5	0.9	<0.5	<0.5	<20	--	--
3/08/89	W-43-MW4	3.8	1.0	<0.5	<0.5	440	--	--
6/30/89	W-44-MW4	<0.5	<0.5	<0.5	<0.5	100	--	--
7/17/89	W-45-MW4	<0.5	<0.5	<0.5	<0.5	390	--	--
7/20/89	W-45-MW4	<0.5	<0.5	<0.5	<0.5	200	ND*	--
7/26/89	W-46-MW4	<0.5	<0.5	<0.5	<0.5	66	--	--
8/02/89	W-46-MW4	--	--	--	--	--	--	ND*
9/13/89	W-50-MW4	<0.5	<0.5	<0.5	<0.5	<20	--	--
12/20/89	W-50-MW-4	<0.5	<0.5	<0.5	<0.5	<20	--	--
3/26/90	W-49-MW-4	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/01/90	W-54-MW-4	<0.5	<0.5	<0.5	<0.5	<20	--	--
12/27/90	W-54-MW-4	<0.5	<0.5	<0.5	<0.5	<50	--	--
03/20/91	W-53-MW-4	<0.5	<0.5	<0.5	<0.5	<50	--	--
03/24/92	W-55-MW-4	<0.5	<0.5	<0.5	<0.5	<50	--	--

See notes on page 4 of 4.

TABLE 2
CUMULATIVE RESULTS OF GROUNDWATER ANALYSES
(page 2 of 4)

Date	Sample No.	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Total Xylenes (ppm)	TPHg (ppm)	EPA 502.2 (ppm)	EPA 524.2 (ppm)
MW-5d								
5/25/88	W-9-MW5a	<0.5	3.1	<0.5	<0.5	<20	--	--
7/06/88	W-41-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/13/88	W-43-MW5d	<0.5	<0.5	<0.5	<0.5	40	--	--
3/08/89	W-43-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
6/30/80	W-45-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/17/89	W-46-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/20/89	W-47-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/26/89	W-47-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/02/89	W-48-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
9/13/89	W-51-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
12/20/89	W-51-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
3/26/90	W-50-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/01/90	W-56-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
12/27/90	W-63-MW5d	<0.5	<0.5	<0.5	<0.5	<50	--	--
03/20/91	W-59-MW5d	<0.5	<0.5	<0.5	<0.5	<50	--	--
06/20/91	W-65-MW5d	<0.5	<0.5	<0.5	<0.5	<50	--	--
MW-5s								
5/25/88	W-41-MW5b	<0.5	0.9	<0.5	<0.5	<20	--	--
7/06/88	W-41-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/13/88	W-44-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/22/88	W-42-MW5s	0.9	4.1	1.3	8.7	50	--	--
8/05/88	W-25-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
9/07/88	W-43-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
3/08/89	W-43-MW5s	<0.5	<0.5	<0.5	<1.0	<20	--	--
6/30/89	W-45-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/17/89	W-46-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/20/89	W-46-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/26/89	W-46-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/02/89	W-47-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
9/13/89	W-50-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
12/20/89	W-50-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
3/26/90	W-49-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/01/90	W-55-MW5s	<0.5	<0.5	<0.5	<0.5	<50	--	--
12/27/90	W-54-MW5s	<0.5	<0.5	<0.5	<0.5	<50	--	--
MW-6								
5/17/88	W-40-MW6	<0.5	<0.5	<0.5	<0.5	<20	--	--
6/28/88	W-38-MW6	31.8	7.5	5.4	6.7	440	--	--
7/13/88	W-42-MW6	162.3	7.7	22.5	14.1	290	--	--
8/05/88	W-42-MW6	245	5.2	47.1	23.7	1,180	--	--
9/07/88	W-43-MW6	474	16	262	136	2,920	--	--
10/24/88				Well destroyed				

See notes on page 4 of 4.

TABLE 2
CUMULATIVE RESULTS OF GROUNDWATER ANALYSES
(page 3 of 4)

Date	Sample No.	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Total Xylenes (ppb)	TPHg (ppb)	EPA 502.2 (ppb)	EPA 524.2 (ppb)
MW-7 (recovery well)								
7/13/88	W-34-MW7	860	1,910	710	4,420	16,700	--	--
7/22/88	W-50-MW7	136	85	5	58	460	--	--
8/05/88	W-45-MW7	73.3	52.8	2.3	28.1	270	--	--
2/09/89	W-50-MW7	600	688	10	448	6,700	--	--
6/30/89	W-Pump-MW7	180	50	13	40	1,100	--	--
8/02/89	W-TAP-MW7	1.6	<0.5	<0.5	0.60	31	--	--
9/13/89	W-Influent	<0.5	2.6	<0.5	12	87	--	--
12/20/89	W-TAP-MW7	<0.5	<0.5	<0.5	<0.5	<20	--	--
6/20/91	W-55-MW7	<0.5	1.8	0.6	4.1	74	--	--
9/12/91	W-56-MW7	3.5	<0.5	1.7	6.8	<50	--	--
12/30/91	W-55-MW7	<0.5	<0.5	<0.5	<0.5	<50	--	--
Well No. 7 (City of Pleasanton)								
7/20/89	Well 7	--	--	--	--	--	ND*	--
8/02/89	W-TAP-CW7	--	--	--	--	--	--	ND*
3/26/90	W-TAP-MW7	<0.50	<0.50	<0.50	<0.50	<20	--	--
MW-8								
10/03/89	W-53-MW8	<0.5	<0.5	<0.5	<0.5	<20	--	--
12/20/89	W-52-MW8	<0.50	<0.50	<0.50	0.61	<20	--	--
1/31/90	W-55-MW8	<0.50	<0.50	<0.50	0.87	<20	--	--
2/09/90	W-52-MW8	<0.5	<0.5	<0.5	1.1	<20	--	--
	(Blank)	<0.5	<0.5	<0.5	<0.5	<20	--	--
3/26/90	W-55-MW8	<0.5	<0.5	<0.5	<0.5	<20	--	--
	(Blank)	<0.5	<0.5	<0.5	<0.5	<20	--	--
4/18/90	W-52-MW8	<0.50	0.58	<0.50	1.1	<20	--	--
5/17/90	W-60-MW8	<0.5	<0.5	<0.5	<0.5	<20	--	--
6/11/90	W-62-MW8	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/01/90	W-61-MW8	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/27/90	W-70-MW8	<0.5	<0.5	0.5	0.5	<20	--	--
9/28/90	W-71-MW8	<0.5	<0.5	<0.5	0.5	<50	--	--
12/27/90	W-67-MW8	<0.5	<0.5	<0.5	0.6	<50	--	--
03/20/91	W-60-MW8	<0.5	<0.5	<0.5	<0.5	<50	--	--
06/20/91	W-88-MW8	<0.5	<0.5	<0.5	0.6	<50	--	--
10/14/91	W-99-MW8	<0.5	<0.5	<0.5	<0.5	<50	--	--
12/30/91	W-81-MW8	<0.5	<0.5	<0.5	<0.5	<50	--	--
03/24/92	W-76-MW8	<0.5	<0.5	<0.5	<0.5	<50	--	--
MW-9								
10/13/89	W-50-MW9	1,000	9,200	3,000	13,000	89,000	--	--
12/20/89	W-50-MW9	6,300	31,000	9,500	55,000	190,000	--	--
1/25/90	W-50-MW9	2,400	9,400	2,700	15,000	77,000	--	--
2/27/90	W-50-MW9	1,200	7,100	2,300	14,000	97,000	--	--
3/26/90	W-49-MW9	1,800	7,700	2,000	11,000	89,000	--	--
4/18/90	W-49-MW9	2,000	7,500	2,500	16,000	110,000	--	--
5/17/90	W-50-MW9	1,500	5,700	2,300	14,000	81,000	--	--
6/20/91	W-19-MW9	<0.5	<0.5	<0.5	<0.5	430	--	--
MW-10								
10/12/89	W-52-MW10	<0.5	<0.5	<0.5	1.5	20	--	--
12/20/89	W-52-MW10	<0.5	<0.5	<0.5	1.8	<20	--	--
3/26/90	W-51-MW10	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/01/90	W-57-MW10	<0.5	<0.5	<0.5	<0.5	<20	--	--
VR-1								
3/24/92	W-25-VR1	1.7	<0.5	<0.5	<0.5	<50	--	--

See notes on page 4 of 4.

TABLE 2
CUMULATIVE RESULTS OF GROUNDWATER ANALYSES
(page 4 of 4)

Date	Sample No.	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Total Xylenes (ppb)	TPHg (ppb)	EPA 502.2 (ppb)	EPA 524.2 (ppb)
MW-11								
11/16/89	W-51-MW11	4.1	9.4	0.74	20	150	--	--
12/20/89	W-50-MW11	7.2	7.5	2.9	13	150	--	--
3/26/90	W-50-MW11	<0.5	<0.5	<0.5	2.7	32	--	--
7/30/90	W-54-MW11	<0.5	<0.5	<0.5	3.8	26	--	--

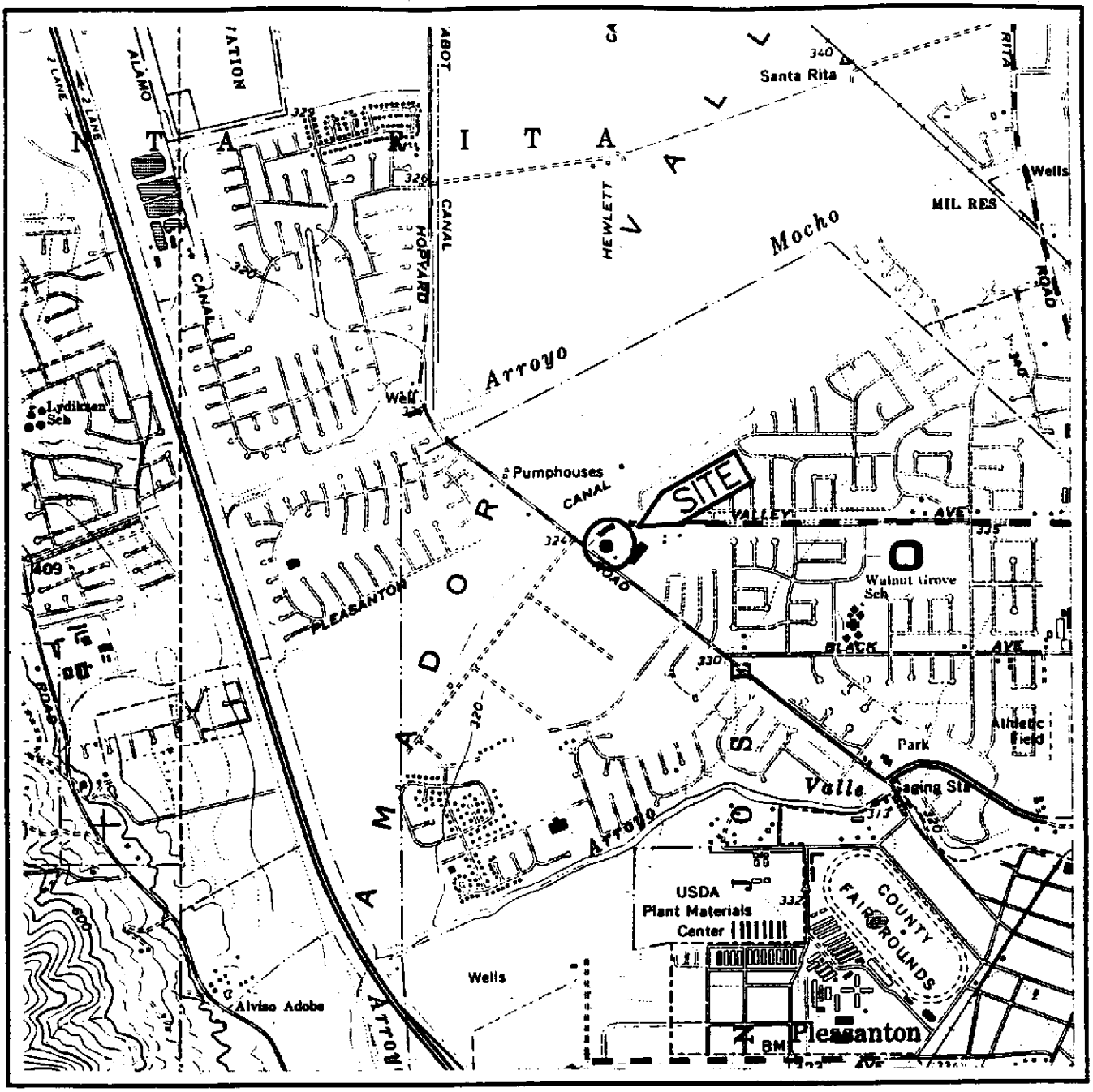
TPHg = total petroleum hydrocarbons as gasoline by EPA modified Method 8015
EPA 502.2 = EPA Method 502.2 (volatile organic compounds)
EPA 524.2 = EPA Method 524.2 (volatile organic compound)
< = Less than the method detection limits of the laboratory
-- = Not analyzed or not applicable
ND = Nondetectable or below the method detection limit(s) of the laboratory
* = Nondetectable concentrations for 58 volatile organic compounds

Sample designation: W-54-MW11
- W = water
- 54 = depth of sample to the nearest foot
- MW11 = monitoring well number

TABLE 3
CUMULATIVE RESULTS OF INFLUENT AND EFFLUENT VAPOR SAMPLES

Date	Sample No.	TPHg	Benzene	Toluene	Ethyl-benzene	Total xylenes
11/30/90	influent	1800*	19*	21*	15*	52*
12/11/90	influent	1.4	<0.0001	0.0005	0.0003	0.0008
12/14/90	influent	0.94	<0.0005	0.011	0.0083	0.025
	effluent	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
12/17/90	influent	0.20	0.0024	0.0016	0.0010	0.0026
	effluent	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
12/28/90	influent	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
	effluent	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
1/4/91	influent	0.94	0.013	0.0005	0.0006	0.0015
1/14/91	influent	1.2	0.0023	0.0013	0.0009	0.0039
1/28/91	influent	0.96	0.028	0.0008	0.0005	0.0005
2/28/91		System inoperative				
3/18/91	influent	0.91	0.0037	0.0015	0.0018	0.0091
4/22/91		System inoperative				
5/3/91	influent	0.62	<0.0005	<0.0005	<0.0005	0.0009
6/20/91	influent	0.49	0.026	0.041	0.0089	0.050

Results are in parts per million (ppm).
* = Results in milligrams per cubic meter (mg/m3).
TPHg = Total petroleum hydrocarbons as gasoline.
< = Less than the method detection limit of the laboratory.



Source: U.S. Geological Survey
7.5–Minute Quadrangle
Dublin, California
Photorevised 1980

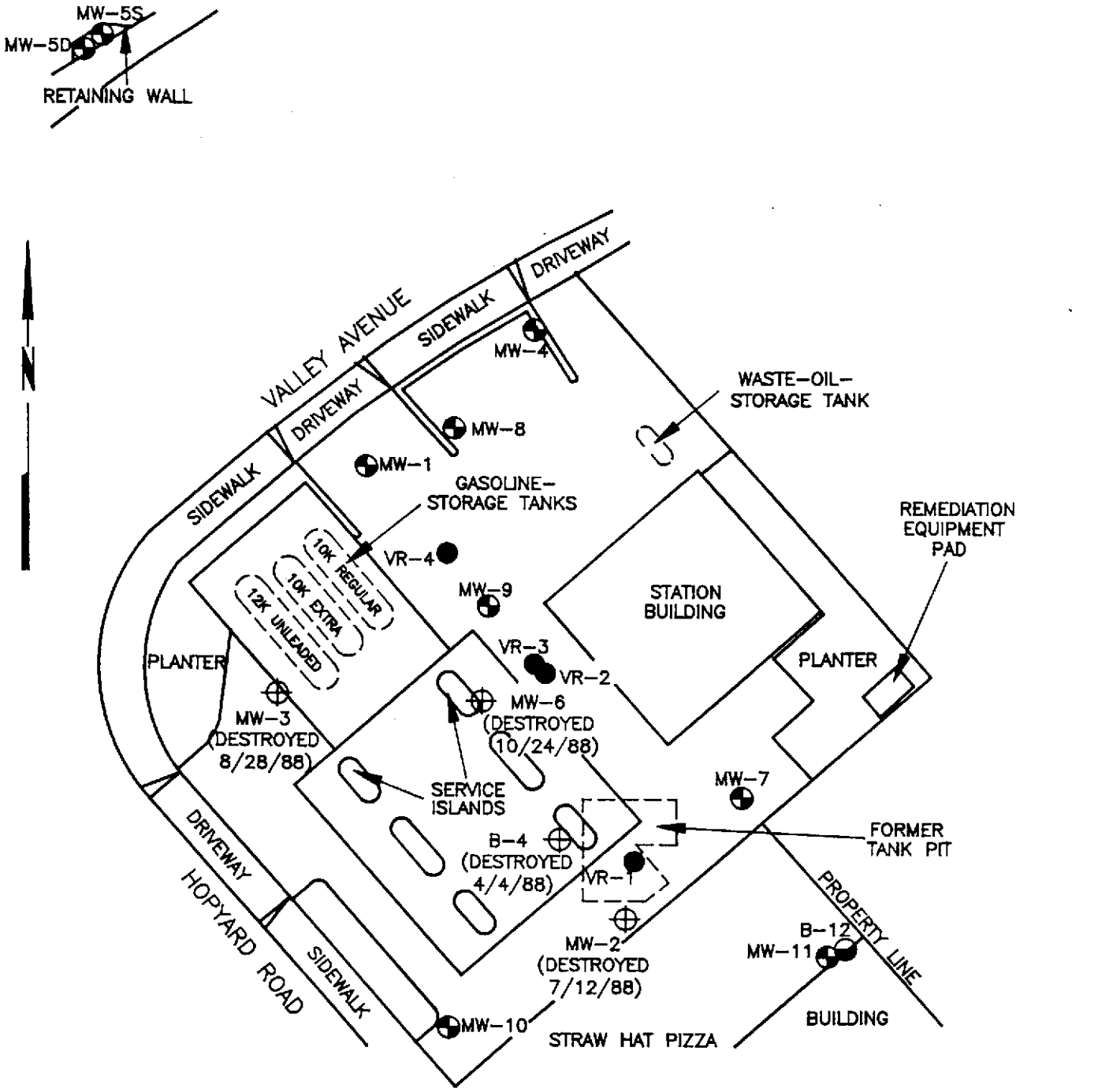
N

Approximate Scale

2000 1000 0 2000 4000

feet

RESNA	**SITE VICINITY MAP** **Exxon Station No. 7-3399** **2991 Hopyard Road** **Pleasanton, California**	**PLATE** **1**
PROJECT NO. 18034-15		



MW-7 = Monitoring well
VR-1 = Vapor recovery well
B-12 = Soil boring
MW-6 = Former well or boring

Approximate Scale

40 20 0 40 80

feet

RESNA

PROJECT NO. 18034-15

GENERALIZED SITE PLAN
Exxon Station No. 7-3399
2991 Hopyard Road
Pleasanton, California

PLATE
2

RESNA

GROUNDWATER SAMPLING PROTOCOL

Sampling of groundwater is performed by RESNA Industries, Inc., sampling technicians. Monitoring well sampling procedures are summarized as follows:

1. Wells are sampled in approximate order of increasing contamination.

2. Proceed to first well with clean and decontaminated equipment.

3. Measurements depths to liquid surface(s) in the well, and total depth of monitoring well. Note presence of sediment.

4. Field check for presence of floating product; measure apparent thickness.

5. Calculate minimum purge volume (well volumes) then purge well.

6. Monitor groundwater for temperature, pH, and specific conductance during purging. Following stabilization of parameters and removal of minimum volume, allow well to recover adequately.

7. Collect samples using Environmental Protection Agency (EPA) approved sample collection devices, i.e., teflon or stainless steel bailers or pumps.

8. Transfer samples into laboratory-supplied EPA-approved containers.

9. Label samples and log onto chain-of-custody form.

10. Store samples in a chilled ice chest for shipment to state-certified analytical laboratory.

11. Secure wellhead.

12. Decontaminate equipment prior to sampling next well.

Equipment Cleaning and Decontamination

All water samples are placed in precleaned laboratory-supplied bottles. Sample bottles and caps remain sealed until actual usage at the site. All equipment which comes in contact with interior of the well or groundwater is thoroughly cleaned with either a steam cleaner, a trisodium phosphate (TSP) solution or an Alconox™ solution and rinsed with deionized or distilled water before use at the site. This cleaning procedure is followed between each well sampled. If a teflon cord is used, the cord is cleaned. If a nylon or cotton cord is used, a new cord is used in each well.

All equipment blanks are collected prior to sampling. The blanks are analyzed periodically to ensure proper cleaning procedures are used.

Water Level Measurements

Depth to groundwater is measured in each well using a sealed sampling tape or scaled electric sounder prior to purging or sampling. If the well is known or suspected of containing free-phase petroleum hydrocarbons, either an optical interface probe or a bailer is used to measure the hydrocarbon thickness. Measurements are collected and recorded to the nearest 0.01 foot. Each monitoring well's total depth will be measured; this will allow a relative judgement of well sedimentation and need for redevelopment to be made.

Bailer Sheen Check

If no measurable free-phase petroleum hydrocarbons are detected, a clear acrylic bailer is used to determine the presence of a sheen. The color of the water and any film or obvious odor are recorded.

Groundwater Sampling

Prior to groundwater sampling, each well is purged of "standing" groundwater. Either a bailer, hand pump, or submersible pump is used to purge the well. The amount of purging is dependent on the well hydraulics. Samples will be collected when temperature, pH, and specific conductance stabilize and a minimum of three well-casing volumes of water have been removed. Field measurements will be taken after purging each well volume. Physical parameter measurements (temperature, pH, and specific conductance) are closely monitored throughout the well purging process and are used as indicators for assessing sufficient purging. The purging parameters are measured to observe stabilization to a range of values typical for that aquifer and well. Stable field parameters are recognized as indicative of groundwater aquifer chemistry entering the well. Specific conductance (conductivity) meters are read to the nearest ± 10 umbos/cm and are calibrated daily. pH meters are read to the nearest ± 0.1 pH units and are calibrated daily. Temperature is read to the nearest $\pm$ °F. Calibration of physical parameter meters will follow manufacturer's specifications. Collected field data during purging activities will be entered on the Well Sampling Field Data Sheet.

Following purging, the well is allowed to recharge prior to sampling. When recovery to 80% of the static water level is estimated or observed to exceed two hours, a sample will be collected when sufficient volume is available to fill all sample containers. The well will be purged slowly enough to minimize the volatilization of organic contaminants during well recharge.

In wells where free-phase hydrocarbons are detected, the free-phase portion will be bailed from the well and its volume recorded. If free-phase hydrocarbons persist through bailing, a groundwater sample will not be collected.

Volatile organic groundwater samples are collected so that air passage through the sample does not occur or is minimal (to prevent volatiles from being stripped from the samples). Sample bottles are filled by slowly running the sample down the side of the bottle until there is a positive convex meniscus over the mouth of the bottle. The teflon side of the septum (in cap) is then positioned against the meniscus, the cap is screwed on tightly, the sample is inverted, and the bottle is lightly tapped. If a bubble is evident, the cap is removed, more sample is added, and the bottle is resealed.

Chain-of-Custody

Groundwater sample containers are labeled with a unique sample number, location, and date of collection. All samples are logged into a chain-of-custody form and placed in a secure, chilled ice chest for shipment to a laboratory certified by the State of California.

Sample Storage

Groundwater samples collected in the field are stored in an ice chest cooled to approximately 4 °C while in transit to the office or analytical laboratory. Sample are stored in a refrigerator overnight and during weekends and holidays. The refrigerator is set to 4 °C and is locked with access controlled by a designated sample custodian.

Quality Assurance/Quality Control Objectives

The sampling and analysis procedures employed by RESNA for groundwater sampling and monitoring follow regulatory guidance for quality assurance/quality control (QA/QC). Quality assurance objectives have been established to develop and implement procedures for obtaining and evaluating water quality and field data in an accurate, precise, and complete manner. In this way, sampling procedures and field measurements provide information that is comparable and representative of actual field conditions. Quality control (QC) is maintained by site-specific field protocols and by requiring the analytical laboratory to perform internal and external QC checks. The goal is to provide data that are accurate, precise, complete, comparable, and representative. The definitions as developed by overseeing federal, state, and local agency guidance documents for accuracy, precision, completeness, comparability, and representativeness are:

- **Accuracy** - the degree of agreement of a measurement with an accepted reference or true value.

- **Precision** - a measure of agreement among individual measurements under similar conditions. Usually expressed in terms of the standard deviation.

- **Completeness** - the amount of valid data obtained from a measurement system compared to the amount that was expected to meet the project data goals.

- **Comparability** - express the confidence with which one data set can be compared to another.

- **Representativeness** - a sample or group of samples that reflect the characteristics of the media at the sampling point.

Laboratory and field handling procedures of samples may be monitored by including QC samples for analysis. QC samples may include any combination of the following:

- **Trip Blanks:** Trip blanks are sent to the project site, and travel with project site samples. Trip blanks are **not** opened, and are returned from a project site with the project site samples for analysis.

- **Duplicates:** Duplicated samples are collected "second samples" from a selected well and project site. They are collected as either split samples or second-run samples collected from the same well.

- **Equipment Blank:** Periodic QC samples collected from field equipment rinseate to verify decontamination procedures.

The number and types of QC samples are determined and analyzed on a project-specific basis.

SHEET 1 OF 1

JOB NAME: Exxon
JOB NO.: 18034.9
PHASE:
TASK: Water Levels
SUBTASK:

DATE: 1-30-92
SAMPLED BY: Joe NIXA
LABORATORY:
P.O. #

WELL NO.	DEPTH TO WATER (FT.)	WELL DEPTH (FT.)	TIME (W*L)	PURGE VOLUME (GAL.)	TEMP (°C)	COND. (UMHO/CM)	D.O. (MG/L)	pH	OBSERVATIONS
MW1	~		✓						No to Do. K. Mc. on site
MW4	53.83		10:30						No odor No Sheen clear
5d	~~88.35~~ 83.±		10:10						Dry @ 83'±
5s	53.82		10:15						No odor No Sheen Silty
7	54.88		10:50						No odor No Sheen clear
8	81.69		10:05						
9									No to Do per K. Mc.
10	58.35		10:40						Dry
11	53.65		10:55			Silty No odor or Sheen ~~filter~~ sand in bottom of well			~~Not~~ Christy box full of water Bad well casing.

SHEET ___ OF ___

JOB NAME: Exxon

JOB NO.: 18034.9

PHASE:

TASK: ck. Ground W. Wells

SUBTASK:

DATE: 3-2-92

SAMPLED BY: R Adair

LABORATORY:

DRUMS AT SITE: FULL 1

EMPTY

WELL NO.	DEPTH TO WATER (FT.)	WELL DEPTH (FT.)	TIME (W*L)	PURGE VOLUME (GAL.)	TEMP. (°C)	COND. (UMHO/CM)	D.O. (MG/L)	pH	OBSERVATIONS
MW8	78.45'	100.0+					well casing & cap ok.		No odor, No Sheen clear cap under pressure
MW 5d	77.55'	DRY							well casing and cap ok.
MW53	53.82'	58.95'							No odor, No Sheen clear well casing & cap ok
MW4	54.65'	66.75'					well casing & cap ok.		No odor, No Sheen clear, Filter sand at well bottom
MW1	Do not tag.								
MW 7	25.85'	31.05'							No odor, No Sheen clear well casing & cap ok
MW 9	Do not tag								
MW 10	58.50'	DRY							well casing & cap ok.
MW 11	53.68'	59.00'							No odor, No Sheen clear well casing & cap ok.
									Filter sand in well bottom Christie box

underwater it is in a depression of asphalt Box or casing could be [illegible]

Applied GeoSystems [illegible]255 Mission Boulevard, Fremont, CA 94539 [illegible]

● FREMONT ● COSTA MESA ● SACRAMENTO ● HOUSTON

GROUND-WATER SAMPLING

EXXON

Project No. 18034-9

Date 3-24-92

Page 1 of 1

SUBJECTIVE ANALYSIS

WELL NO.	INITIAL DEPTH TO WATER	DEPTH TO PRODUCT	PRODUCT THICKNESS	TOTAL DEPTH	SHEEN	EMULSION	PRODUCT COLOR/ CONSISTENCY
MW8	76.55'			134.0'	NO		
5d	76.45'			77.55'			
5S	53.77'			54.57'			
MW4	53.73'			56.65'	NO		
MW1	Rec well						
MW7	24.95'			31.05'	NO		
MW10	58.53' ←	→	→	DRY			
MW11	53.70'			54.55'			
MW9	Rec well						

RECOVERY

WELL	DISCHARGE PER CYCLE PRODUCT	WATER	TOTAL	DATE	TIME	CYCLES CONTROL BOX 1	CONTROL BOX 2

WELL PURGE DATA SHEET

Project Name: Exxon
Job Number: 18034-9 Date: 3-24 92
Sampler: R. Adair Page 1 of 3

Wellhead Type 4" locking cap Locked? Yes ID #? 4" Casing Size 4"
Comments: Wellhead Condition Good

WELL NUMBER MW4

SUBJECTIVE DATA

TIME	DEPTH TO WATER (ft)	DEPTH TO PRODUCT (ft)	PRODUCT THICKNESS (ft)	SHEEN	COMMENTS
10:25	53.73'	N/A	N/A	NO	

PURGE VOLUME COMPUTATION

TOTAL DEPTH (ft)	WATER COLUMN (ft)	CONVERSION FACTOR	CASING VOLUME (gal)	NUMBER OF VOLUMES	GALLONS TO BE PURGED
56.65'	2.82'	0.66	2.0	3	6.0

PURGE DATA

TIME	CUMULATIVE GALLONS PURGED	PUMP ON/OFF	TEMPERATURE °F / °C	pH	CONDUCTIVITY	SUBJECTIVE TURBIDITY
12:30	2.0	on	68.7'	7.85'	1357	cloudy - silty
12:34	4.0	on	68.3'	7.62'	1316	No Odor
12:35		off	well went dry at 4.0 gallons			
3:20			67.5	7.83	1715	silty

Pump type/# GeoSquz #1 Total gallons purged 4.0 Method of measurement Control Box GPM 1 – 2
225 ft2

RECOVERY/SAMPLE DATA

DATE	TIME	DEPTH TO WATER (ft)	PERCENT RECOVERY	SAMPLED YES/NO	COMMENTS
3-24-92	12:35	56.0			
	1:15	55.92			
	3:05	55.42		YES	

NA = Data not available or not applicable.

WELL PURGE DATA SHEET

Project Name: EXXON
Job Number: 18034-9 Date: 3-24-92
Sampler: R. Adair Page 3 of 3

Wellhead Type: 4" Slip On Cap Locked? NO ID #? 4" Casing Size 4"
Comments: Wellhead Condition Good, Slip on 4" CAP.

WELL NUMBER MW7

SUBJECTIVE DATA

TIME	DEPTH TO WATER (ft)	DEPTH TO PRODUCT (ft)	PRODUCT THICKNESS (ft)	SHEEN	COMMENTS
10:35	24.95	N/A	N/A	NONE	

PURGE VOLUME COMPUTATION

TOTAL DEPTH (ft)	WATER COLUMN (ft)	CONVERSION FACTOR	CASING VOLUME (gal)	NUMBER OF VOLUMES	GALLONS TO BE PURGED
31.05	6.10'	0.66	4.0	3	12.0

PURGE DATA

TIME	CUMULATIVE GALLONS PURGED	PUMP ON/OFF	TEMPERATURE °F ✓ °C__	pH	CONDUCTIVITY	SUBJECTIVE TURBIDITY
2:30		ON	72.6	7.71	1502	clear-cloudy no odor
2:34		ON	72.0	7.56	1569	
2:38		ON	71.7	7.51	1535	
2:39		OFF				
3:50			65.2	7.81	1477	

Pump type/# Grundfos #1 Total gallons purged____ Method of measurement Control BOX 250Hz GPM 1-2

RECOVERY/SAMPLE DATA

DATE	TIME	DEPTH TO WATER (ft)	PERCENT RECOVERY	SAMPLED YES/NO	COMMENTS
3-24-92	3:50	29.62	30%	YES	

NA = Data not available or not applicable.

WELL PURGE DATA SHEET

Project Name: Exxon
Job Number: 18034.9 **Date:** 3-24-92
Sampler: R. Adair **Page** 2 **of** 3

Wellhead Type 4" Locking Cap Locked? Yes ID #? 4" Casing Size 4"
Comments: Wellhead Condition Good

WELL NUMBER MW8

SUBJECTIVE DATA

TIME	DEPTH TO WATER (ft)	DEPTH TO PRODUCT (ft)	PRODUCT THICKNESS (ft)	SHEEN	COMMENTS
1:20	76.55'	N/A	N/A	None	

PURGE VOLUME COMPUTATION

TOTAL DEPTH (ft)	WATER COLUMN (ft)	CONVERSION FACTOR	CASING VOLUME (gal)	NUMBER OF VOLUMES	GALLONS TO BE PURGED
134.0'	57.45'	0.66	38.0	3	114

PURGE DATA

TIME	CUMULATIVE GALLONS PURGED	PUMP ON/OFF	TEMPERATURE °F / °C	pH	CONDUCTIVITY	SUBJECTIVE TURBIDITY
1:45	38	ON	68.8	8.43	893	Clear
2:00	76	ON	71.0	8.21	850	No Odor
2:12	114	ON	69.0	7.80'	826	
2:13		OFF				
3:35			65.0	9.50	709	

Pump type/# Grundfos #1 Total gallons purged 114 Method of measurement Control Box GPM 2.3

375 ft2

RECOVERY/SAMPLE DATA

DATE	TIME	DEPTH TO WATER (ft)	PERCENT RECOVERY	SAMPLED YES/NO	COMMENTS
3-24-92	3:10	76.60'	99%	Yes	

NA = Data not available or not applicable.

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THE ASSURANCE OF QUALITY

☒ Novato, CA
11 Digital Drive, 94949
(415) 883-6100

☐ Irvine, CA
Alton Business Park
30 Hughes St., Suite 206, 92718
(714) 380-9559

EXXON COMPANY, U.S.A.
P.O. Box 4415, Houston, TX 77210-4415
CHAIN OF CUSTODY

Consultant Name: Resna
Address: 42501 Albrae st Fremont CA.
Project Contact: Keith McVicker Project #: 18034-9
Phone #: 510 - 659-0404 Fax #: 440 - 3459
Consultant Work Release #: ~~90041962~~ 90041962

Exxon Contact: Mada Guensler Phone #: 7-3399
Site RAS #:
Site Location: 2991 Hopyard, Pleasanton
Laboratory Work Release #:

Sampled by (please print): Robn A. Adair
Sampler Signature: Robin A. Adair
Date Sampled: 3-24-92

Sample Description	Collection Date/Time	Matrix	Prsv.	# of Cont.	SOIL: TPH/GAS/BTEX EPA 8015/8020	SOIL: TPH/Diesel EPA 8015	SOIL: Organic Lead DHS Method	WATER: TPH/GAS/BTEX EPA 8015/602	WATER: TPH/Diesel EPA 8015	WATER: Organic Lead DHS Method	TRPH EPA 418.1	Total Oil & Grease SM 5520					Remarks
BB1	3-24-92 3:10		HCl	3	5730.2			X									Hold
MW4	3:15		|	3		31.0		X									
MW7	3:45		|	3		32.9		X									
MW8	3:30		|	3		33.7		X									

Cooler No. 1012

Relinquished by/Affiliation	Accepted by/Affiliation	Date	Time
Robin A. Adair Resna	Anita Resna	3-25-92	7:30
Mark Dotson RESNA	Ed Natty - Pace	3/26/92	1330
Ed Natty - Pace	Tina Meyers / Pace	3/26	1540

Cooler Seal Intact
☐ Yes
☐ No

Turnaround Time (circle choice)
24 hr.
48 hr.
72 hr.
96 hr.
(circled) 5 workday (standard)

Shipment Method

Shipment Date

Additional Comments:

Distribution: White - Original Yellow - Exxon Pink - Lab Goldenrod - Consultant Field Staff

010.95ZC774

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REPORT OF LABORATORY ANALYSIS

Resna/Applied Geosystems
42501 Albrae St.,Suite 100
Fremont, CA 94538

April 06, 1992
PACE Project Number: 420326518

Attn: Mr. Keith McVicker

Client Reference: Exxon 7-3399

PACE Sample Number:			70 0057310	
Date Collected:			03/24/92	
Date Received:			03/26/92	
Client Sample ID:			MW4	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	03/31/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND	03/31/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	03/31/92
Benzene	ug/L	0.5	ND	03/31/92
Toluene	ug/L	0.5	ND	03/31/92
Ethylbenzene	ug/L	0.5	ND	03/31/92
Xylenes, Total	ug/L	0.5	ND	03/31/92

MDL Method Detection Limit
ND Not detected at or above the MDL.

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

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REPORT OF LABORATORY ANALYSIS

Mr. Keith McVicker
Page 2

April 06, 1992
PACE Project Number: 420326518

Client Reference: Exxon 7-3399

PACE Sample Number:			70 0057329	
Date Collected:			03/24/92	
Date Received:			03/26/92	
Client Sample ID:			MW7	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/01/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND	04/01/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	04/01/92
Benzene	ug/L	0.5	1.7	04/01/92
Toluene	ug/L	0.5	ND	04/01/92
Ethylbenzene	ug/L	0.5	ND	04/01/92
Xylenes, Total	ug/L	0.5	ND	04/01/92

MDL Method Detection Limit
ND Not detected at or above the MDL.

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FAX: 415-883-2673

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Mr. Keith McVicker
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April 06, 1992
PACE Project Number: 420326518

Client Reference: Exxon 7-3399

PACE Sample Number:			70 0057337	
Date Collected:			03/24/92	
Date Received:			03/26/92	
Client Sample ID:			MW8	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	03/31/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND	03/31/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	03/31/92
Benzene	ug/L	0.5	ND	03/31/92
Toluene	ug/L	0.5	ND	03/31/92
Ethylbenzene	ug/L	0.5	ND	03/31/92
Xylenes, Total	ug/L	0.5	ND	03/31/92

MDL Method Detection Limit
ND Not detected at or above the MDL.

These data have been reviewed and are approved for release.

Mark A. Valentini

Mark A. Valentini, Ph.D.
Regional Director

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

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QUALITY CONTROL DATA

April 06, 1992
PACE Project Number: 420326518

Client Reference: Exxon 7-3399

TPH GASOLINE/BTEX
Batch: 70 11198
Samples: 70 0057310, 70 0057329, 70 0057337

METHOD BLANK:

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

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	354	104%	103%	0%
Benzene	ug/L	0.5	40.0	101%	101%	0%
Toluene	ug/L	0.5	40.0	98%	100%	2%
Ethylbenzene	ug/L	0.5	40.0	98%	99%	1%
Xylenes, Total	ug/L	0.5	80.0	98%	100%	2%

MDL Method Detection Limit
RPD Relative Percent Difference

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