

EXXON COMPANY, U.S.A.

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ENVIRONMENTAL ENGINEERING

W. Y. WANG
SENIOR ENVIRONMENTAL ENGINEER

10 September, 1991

Exxon RAS 7-3399
2991 Hopyard Road, Pleasanton

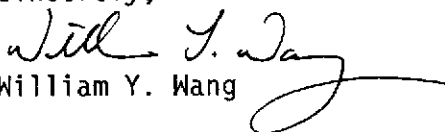
Mr. Lester Feldman
San Francisco Bay Regional Water Quality Control Board
1800 Harrison Street, Suite 700
Oakland, California 94612

Dear Mr. Feldman:

Attached for your review please find Second Quarter 1991 ground water monitoring and remediation activities report. This report, prepared by Applied GeoSystems of Fremont, California, presents the results of the monthly monitoring event conducted in June, 1991 and summarizes the remediation activities during the second quarter of 1991. In addition, attached please find a response letter prepared by Applied GeoSystems addressing concerns raised by Mr. Stephen Cusenza's 25 July, 1991 letter to you regarding remediation activities at the above referenced Exxon station.

Results of laboratory analyses performed this quarter indicate detectable concentrations of TPHg and BTEX (maximum 0.43 ppm TPHg and 0.0041 ppm total xylenes) in samples collected from wells screened in the uppermost aquifer. TPHg and BTEX were below the method detection limit in the well screened in the second aquifer. And in the well screened in the third aquifer, the only constituent found was trace concentrations of total xylenes at 0.0006 ppm, well below listed drinking water standards. The vapor extraction system was operational throughout this period except for a short downtime in April. Laboratory results of the influent vapor sample collected on 20 June, 1991 showed a slight decrease of TPHg concentrations from concentrations detected on 18 March, 1991. Groundwater recovery and treatment will resume when water levels are sufficient for pumping. Should you have any questions, or require additional information, please contact me at (415) 246-8768.

Sincerely,


William Y. Wang

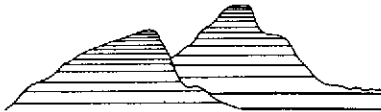
WYW:hs
0553E
Attachment

c - w/attachment:

Mr. S. Cusenza - City of Pleasanton Public Works Department
Mr. J. Killingstad - Alameda County Flood Control District Zone 7
Mr. R. Mueller - City of Pleasanton Fire Department

w/o attachment:

A DIVISION OF EXXON CORPORATION
Mr. D. J. Bertoch
Mr. P. J. Brininstool
Mr. D. Higgins - Applied GeoSystems



Applied GeoSystems

42501 Albrae Street, Suite 100, Fremont, CA 94538 (415) 651-1906

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Exxon Company, U.S.A.

QUARTERLY SUMMARY REPORT

April - June 1991
Date: July 8, 1991

RAS #7-3399
~~2991 Hopyard Road~~
Pleasanton, CA

AGS 18034-9

WORK PERFORMED THIS QUARTER

- Collected influent vapor samples on a monthly basis in April, May, and June 1991.
- Completed quarterly monitoring report (AGS Report No. 18034-9, dated May 7, 1991) for first quarter 1991.
- Collected ground-water samples from ground-water monitoring wells with sufficient water (MW-5d,, MW-2, MW-8, and MW-9) on June 19 and 20, 1991.
- No ground-water recovered from well MW-7 because of insufficient water in the saturated zone to pump.

INFLUENT VAPOR SAMPLING RESULTS: (ug/l)

Date	Sample	B	T	E	X	TPHg	Historical Trend
6/20/91	influent	26	41	8.9	50	490	Unchanged

QUARTERLY GROUNDWATER SAMPLING (6/20/91) RESULTS: (ug/l)

Well	B	T	E	X	TPHg	Historical Trend
MW-5d	<0.5	<0.5	<0.5	<0.5	<50	Unchanged
MW-7	<0.5	1.8	0.6	4.1	74	Increase
MW-8	<0.5	<0.5	<0.5	0.6	<50	Unchanged
MW-9	<0.5	<0.5	<0.5	<0.5	430	Decrease

FREE PHASE PRODUCT RECOVERY SUMMARY:

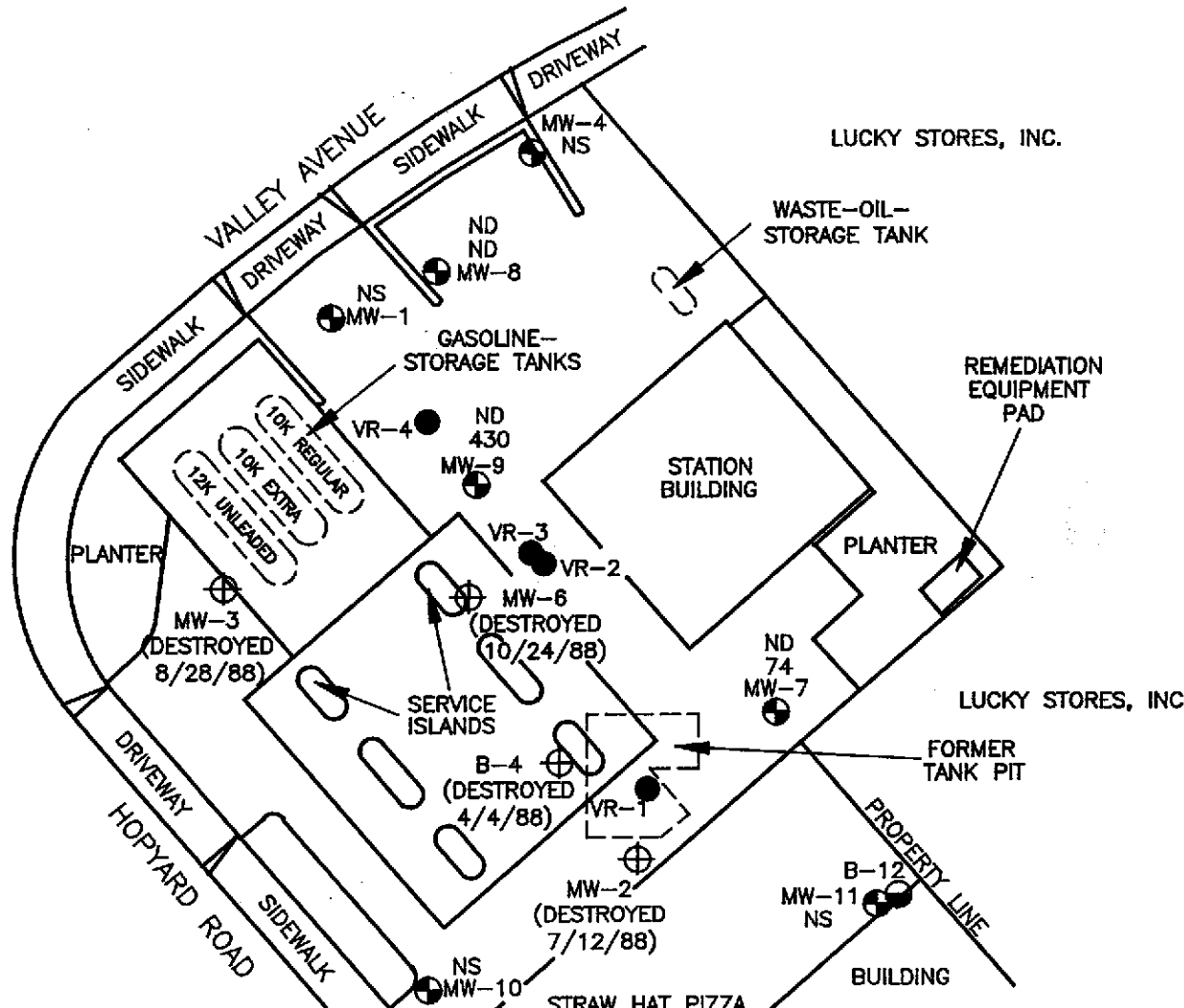
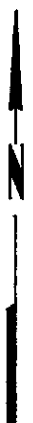
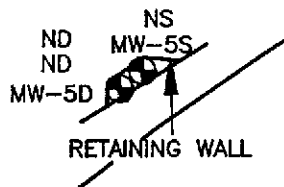
Product recovered this quarter: 0 gallons
 Cumulative total product recovered: 58 gallons

WORK TO BE COMPLETED NEXT QUARTER:

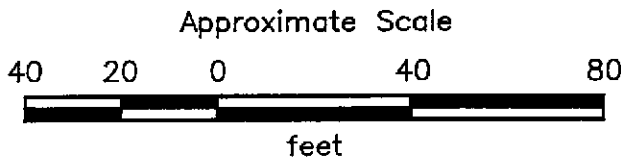
<u>Activity</u>	<u>Estimated Completion Date</u>
Complete status report of site activities for second quarter 1991.	July 1991
Continue soil-vapor extraction program.	Unknown
Resume ground-water recovery if the water level rises.	Unknown
Continue ground-water monitoring and sampling.	September 1991
Report on site status.	October 1991

WORK TO BE PERFORMED NEXT 12 MONTHS:

<u>Activity</u>	<u>Estimated Completion Date</u>
Perform monthly influent vapor sampling	Monthly
Perform quarterly ground-water sampling	December 1991 March 1992 June 1992
Complete quarterly status reports	January 1992 April 1992 July 1992



- ND = Concentration of benzene in ground water in parts per billion
- 430 = Concentration of TPHg in ground water in parts per billion
- ND = Nondetectable
- NS = Not sampled
- MW-11 = Ground-water monitoring well
- VR-4 = Vapor recovery well
- B-12 = Soil boring
- MW-6 = Former well or boring



PROJECT NO. 18034-8

**SITE PLAN FOR
QUARTERLY SUMMARY REPORT**
Exxon Station No. 7-3399
2991 Hopyard Road
Pleasanton, California

PLATE
P-1



Applied GeoSystems

42501 Albrae Street, Suite 100, Fremont, CA 94538 (415) 651-1906

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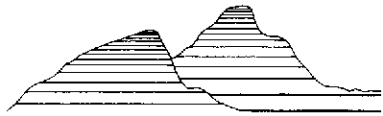
• SAN JOSE

**LETTER PROGRESS REPORT ON
SECOND QUARTER 1991
GROUND-WATER MONITORING
AND
REMEDIAATION ACTIVITIES**

at

**Exxon Station No. 7-3399
2991 Hopyard Road
Pleasanton, California**

AGS Job No. 18034-9



Applied GeoSystems

42501 Albrae Street, Suite 100, Fremont, CA 94538 (415) 651-1906

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August 23, 1991
AGS 18034-9

Mr. Bill Wang
Exxon Company, U.S.A.
P.O. Box 4032
Concord, California 94520

Subject: Letter Progress Report on Second Quarter 1991 Ground-Water Monitoring and Remediation Activities, at Exxon Station No. 7-3399, 2991 Hopyard Road, Pleasanton, California

Mr. Wang:

This report presents the results of the second quarter 1991 ground-water 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 depth-to-water measurements and subjective evaluations of ground water in the monitoring wells at the site.

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. The current station has three USTs containing unleaded, premium unleaded, and regular leaded gasoline; and a waste oil UST (Plate 2).

Nine ground-water monitoring wells currently are used to monitor ground water 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 below the site. The remaining two wells, MW-5d and MW-8, are screened in the underlying second and third aquifers, respectively.

A ground-water recovery system in operation since 1988 pumped from well MW-7, through an oil-water separator, and then into the sanitary sewer under a permit from the Dublin-San Ramon Services District.

MONITORING

Field Activities

On June 20, 1991, AGS personnel measured depth-to-water, subjectively evaluated ground-water in each well, and purged and sampled wells MW-5d, MW-7, MW-8, and MW-9 for laboratory analyses as part of the quarterly ground-water monitoring program. Wells MW-1, MW-4, MW-5s, MW-10, and MW-11, which are included in the quarterly sampling program, were not sampled because these wells contained insufficient water for sampling. The field activities were performed using procedures described in Appendix A.

Results of Ground-Water Monitoring

Between March and June 1991, the ground-water level in the wells in the uppermost aquifer fell an average of 0.2 foot. During the same time, the water level in MW-5d (second aquifer) fell approximately 5.8 feet and the water level in MW-8 (third aquifer) fell approximately 28 feet. No floating product or sheen was observed on water in the wells. Cumulative results of depth to water measurements and subjective evaluations are presented in Table 1.

Due to the low water levels measured in June 1991, resulting in anomalous water levels in the upper aquifer, ground-water elevation maps were not constructed. The water level in wells MW-5s, MW-1, MW-4, MW-7, and MW-10 suggest ground-water flow is generally southward. Previous data have shown that the ground-water flow is generally southward and the hydraulic gradient below much of the site is very shallow.

Laboratory Methods and Results of Ground-Water Sampling

The ground-water samples from MW-5d, MW-7, MW-8, and MW-9 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 Applied Analytical laboratories (Hazardous Waste Testing Laboratory Certification No. 1211), Fremont, California.

Results of laboratory analyses indicate detectable concentrations of TPHg (maximum 0.43 part per million [ppm]) in wells MW-7 and MW-9 (Table 2). Some BTEX compounds occur in wells MW-7 and MW-8, but at trace to low concentrations (maximum 0.0041 ppm total xylenes in MW-7). Benzene was not detected in the water samples from the wells. These results are consistent with previous sampling results (Table 3). Chain of Custody Records and certified analysis reports are enclosed in Appendix A.

REMEDIATION

Ground-Water Recovery

During this monitoring period, ground-water recovery was not undertaken because of insufficient water in the uppermost aquifer to pump. Recovery activities will resume when the ground water rises to a sufficient level for pumping.

Soil-Vapor Extraction System

A 100 cubic feet per minute vacuum pump and catalytic oxidizer were installed at the site in November 1990 to extract and treat soil vapors. The intent of the vapor extraction program is to remove vapors from the sand and gravel of the uppermost aquifer before the water level in this aquifer rises, and reduce potential future impact to the ground water. 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. Because of the drop in water level since 1988, the sand and gravel zone is mostly unsaturated.

The vapor extraction system was permitted by the Bay Area Air Quality Management District under Authority to Construct No. 5125, dated August 2, 1990, and 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.

Removing vapors from the silty clay and the underlying sand and gravel has involved alternating the opening and closing of wells installed in those zones. Except for an interruption in April, extraction from the silty clay was conducted between March 18 and May 3, 1991, and an influent vapor sample was collected on May 3, 1991, for laboratory analysis. On May 3, 1991, vapor wells in the unsaturated silty clay were closed and the vapor wells in the sand and gravel were opened. Extraction from the sand and gravel was performed between May 3 and June 20, 1991, and an influent vapor sample was collected on June 20, 1991, for analysis. No vapor sample was collected in April because the system

was temporarily shut down. Sampling was performed using procedures described in Appendix A. Chain of Custody Records and certified analysis reports are also enclosed in Appendix A.

Laboratory Methods and Results of Vapor Sampling

Influent vapor samples collected in May and June 1991 were analyzed for TPHg and BTEX by Modified Method CA-ADDL004. The samples were analyzed by Chromalab, Inc., (Certification No. E694) of San Ramon, California. Cumulative results of the influent and effluent vapor samples collected since the system began operating are presented in Table 4.

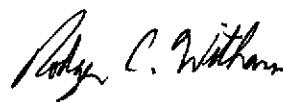
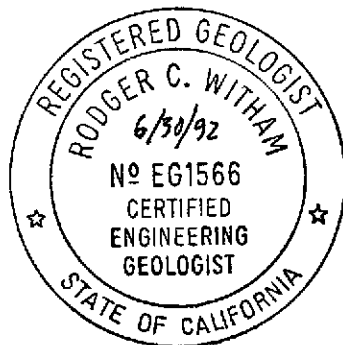
Laboratory results of the influent vapor sample collected on May 3, 1991, show a slight decrease of TPHg and BTEX concentrations from concentrations detected on March 18, 1991. Results from June 20, 1991, show influent TPHg concentrations of 0.49 ppm and BTEX concentrations ranging from 0.0089 to 0.050 ppm, suggesting an increase in BTEX concentrations, but a decrease in the TPHg concentration as compared to previous results in 1991. The decreasing trend in the concentration of TPHg for influent vapor samples is presented on Plate 3.

Please call if you have questions.

Sincerely,
Applied GeoSystems



Keith M. McVicker
Project Geologist



Rodger C. Witham
Project Manager

- Enclosures: Table 1, Cumulative Results of Subjective Evaluations
Table 2, Current Results of Ground-Water Analyses
Table 3, Cumulative Results of Ground-Water Analyses
Table 4, Results of Influent and Effluent Vapor Samples
Plate 1, Site Vicinity Map
Plate 2, Generalized Site Plan
Plate 3, Concentrations of TPHg for Influent Vapor Samples
- Appendix A: Field Procedures
Chain of Custody Records
Laboratory Analysis Reports

TABLE 1
 CUMULATIVE RESULTS OF SUBJECTIVE EVALUATIONS
 (page 1 of 8)

Date	Depth to Water (ft)	Ground-Water 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	--	--	--	--
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	--	--	--	--
03/20/91	53.35	268.08	--	--
06/20/91	53.55	267.89	None	None

See notes on page 8 of 8.

TABLE 1
 CUMULATIVE RESULTS OF SUBJECTIVE EVALUATIONS
 (page 2 of 8)

Date	Depth to Water (ft)	Ground-Water 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.

August 23, 1991/AGS 18034-9

TABLE 1
 CUMULATIVE RESULTS OF SUBJECTIVE EVALUATIONS
 (page 3 of 8)

Date	Depth to Water (ft)	Ground-Water 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	--	--	--	--
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
B-4				
04/02/88	--	--	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 EVALUATIONS
 (page 4 of 8)

Date	Depth to Water (ft)	Ground-Water 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	--	--	--	--
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
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	--	--
		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.

TABLE 1
 CUMULATIVE RESULTS OF SUBJECTIVE EVALUATIONS
 (page 5 of 8)

Date	Depth to Water (ft)	Ground-Water 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	--	--	--	--
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
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.

August 23, 1991/AGS 18034-9

TABLE 1
 CUMULATIVE RESULTS OF SUBJECTIVE EVALUATIONS
 (page 6 of 8)

Date	Depth to Water (ft)	Ground-Water 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	--	--	None	None
08/27/90	53.05	268.22	None	None
09/28/90	--	--	--	--
12/27/90	--	--	--	--
03/20/91	54.11	267.16	--	--
06/20/91	55.14	266.13	None	None
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
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	--	--	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 EVALUATIONS
 (page 7 of 8)

Date	Depth to Water (ft)	Ground-Water 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	--
07/30/90	Dry	--	--	--
08/27/90	Dry	--	--	--
09/28/90	Dry	--	--	--
12/27/90	--	--	--	--
03/20/91	Dry	--	None	Very Slight
06/20/91	49.63	271.81	None	None
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	--	--	--	--
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
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 EVALUATIONS
 (page 8 of 8)

Date	Depth to Water (ft)	Ground-Water 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

Depth to ground water 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.

∇ = 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.

TABLE 2
CURRENT RESULTS OF GROUND-WATER ANALYSES
(June 20, 1991)

Well No.	Sample No.	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	TPHg (ppm)
MW-5d	W-65-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
MW-7	W-55-MW7	<0.0005	0.0018	0.0006	0.0041	0.074
MW-8	W-88-MW8	<0.0005	<0.0005	<0.0005	0.0006	<0.05
MW-9	W-19-MW9	<0.0005	<0.0005	<0.0005	<0.0005	0.43

TPHg = total petroleum hydrocarbons as gasoline by EPA modified Method 8015

< = Less than the method detection limits of the laboratory

Sample designation: W-19-MW9

TABLE 3
 CUMULATIVE RESULTS OF GROUND-WATER ANALYSES
 (page 1 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-1								
4/02/88	W-38-MW1	<0.0005	0.0017	<0.0005	<0.0005	<0.02	--	--
7/06/88	W-40-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/13/88	W-42-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
9/07/88	W-43-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
3/08/89	W-43-MW1	0.0016	<0.0005	<0.0005	<0.0005	<0.02	--	--
6/30/89	W-44-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/17/89	W-45-MW1	<0.0005	<0.0005	<0.0005	<0.0005	0.023	--	--
7/20/89	W-45-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/26/89	W-46-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
8/02/89	W-46-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
9/13/89	W-50-MW1	0.039	0.00060	<0.00050	0.0051	0.22	--	--
12/20/89	W-50-MW1	0.056	0.00072	<0.00050	0.00071	0.22	--	--
1/25/90	W-50-MW1	0.018	0.0016	<0.00050	0.0018	0.057	--	--
2/27/90	W-50-MW1	0.0032	0.0023	<0.00050	0.0032	0.055	--	--
3/26/90	W-49-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
4/18/90	W-49-MW1	0.0011	0.0016	<0.00050	0.0031	0.025	--	--
5/17/90	W-49-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
6/11/90	W-52-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/30/90	W-53-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
8/27/90	W-53-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
9/28/90	W-53-MW1	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	--	--
MW-2								
7/06/88	W-41-MW	25.7	18.5	2.9	21.4	62	--	--
7/12/88				Well destroyed				
MW-3								
4/06/88	W-39-MW3	<0.0005	<0.0005	<0.0005	<0.0005	0.02	--	--
7/06/88	W-41-MW3	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/13/88	W-43-MW3	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
8/26/88	W-44-MW3	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
8/29/88				Well destroyed				
MW-4								
4/11/88	W-37-MW4	0.0018	0.0163	0.0006	0.0071	0.08	--	--
7/06/88	W-41-MW4	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/13/88	W-42-MW4	<0.0005	0.0009	<0.0005	<0.0005	<0.02	--	--
9/07/88				(Well not accessible)				
3/08/89	W-43-MW4	0.0038	0.0010	<0.0005	<0.0005	0.44	--	--
6/30/89	W-44-MW4	<0.0005	<0.0005	<0.0005	<0.0005	0.10	--	--
7/17/89	W-45-MW4	<0.0005	<0.0005	<0.0005	<0.0005	0.39	--	--
7/20/89	W-45-MW4	<0.0005	<0.0005	<0.0005	<0.0005	0.20	ND*	--
7/26/89	W-46-MW4	<0.0005	<0.0005	<0.0005	<0.0005	0.066	--	--
8/02/89	W-46-MW4	--	--	--	--	--	--	ND*
9/13/89	W-50-MW4	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
12/20/89	W-50-MW-4	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
3/26/90	W-49-MW-4	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
8/01/90	W-54-MW-4	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
12/27/90	W-54-MW-4	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	--	--
03/20/91	W-53-MW-4	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	--	--

See notes on page 4 of 4.

TABLE 3
 CUMULATIVE RESULTS OF GROUND-WATER 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	<0.0005	0.0031	<0.0005	<0.0005	<0.02	--	--
7/06/88	W-41-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/13/88	W-43-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	0.04	--	--
3/08/89	W-43-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
6/30/80	W-45-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/17/89	W-46-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/20/89	W-47-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/26/89	W-47-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
8/02/89	W-48-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
9/13/89	W-51-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
12/20/89	W-51-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
3/26/90	W-50-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
8/01/90	W-56-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
12/27/90	W-63-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	--	--
03/20/91	W-59-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	--	--
06/20/91	W-65-MW5d	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	--	--
MW-5s								
5/25/88	W-41-MW5b	<0.0005	0.0009	<0.0005	<0.0005	<0.02	--	--
7/06/88	W-41-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/13/88	W-44-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/22/88	W-42-MW5s	0.0009	0.0041	0.0013	0.0087	0.05	--	--
8/05/88	W-25-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
9/07/88	W-43-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
3/08/89	W-43-MW5s	<0.0005	<0.0005	<0.0005	<0.001	<0.02	--	--
6/30/89	W-45-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/17/89	W-46-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/20/89	W-46-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
7/26/89	W-46-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
8/02/89	W-47-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
9/13/89	W-50-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
12/20/89	W-50-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
3/26/90	W-49-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
8/01/90	W-55-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	--	--
12/27/90	W-54-MW5s	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	--	--
MW-6								
5/17/88	W-40-MW6	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--
6/28/88	W-38-MW6	0.0318	0.0075	0.0054	0.0067	0.44	--	--
7/13/88	W-42-MW6	0.1623	0.0077	0.0225	0.0141	0.29	--	--
8/05/88	W-42-MW6	0.2450	0.0052	0.0471	0.0237	1.18	--	--
9/07/88	W-43-MW6	0.474	0.016	0.262	0.136	2.92	--	--
10/24/88				Well destroyed				

See notes on page 4 of 4.

TABLE 3
 CUMULATIVE RESULTS OF GROUND-WATER ANALYSES
 (page 3 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-7 (recovery well)									
7/13/88	W-34-MW7	0.86	1.91	0.71	4.42	16.7	--	--	
7/22/88	W-50-MW7	0.136	0.085	0.005	0.058	0.46	--	--	
8/05/88	W-45-MW7	0.0733	0.0528	0.0023	0.0281	0.27	--	--	
2/09/89	W-50-MW7	0.600	0.688	0.010	0.448	6.7	--	--	
6/30/89	W-Pump-MW7	0.18	0.050	0.013	0.040	1.1	--	--	
8/02/89	W-TAP-MW7	0.0016	<0.0005	<0.0005	0.00060	0.031	--	--	
9/13/89	W-Influent	<0.0005	0.0026	<0.0005	0.012	0.087	--	--	
12/20/89	W-TAP-MW7	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--	
6/20/91	W-55-MW7	<0.0005	0.0018	0.0006	0.0041	0.074	--	--	
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	<0.00050	<0.00050	<0.00050	<0.00050	<0.020	--	--	
MW-8									
10/03/89	W-53-MW8	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--	
12/20/89	W-52-MW8	<0.00050	<0.00050	<0.00050	0.00061	<0.020	--	--	
1/31/90	W-55-MW8	<0.00050	<0.00050	<0.00050	0.00087	<0.020	--	--	
2/09/90	W-52-MW8	<0.0005	<0.0005	<0.0005	0.0011	<0.02	--	--	
	(Blank)	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--	
3/26/90	W-55-MW8	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--	
	(Blank)	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--	
4/18/90	W-52-MW8	<0.00050	0.00058	<0.00050	0.0011	<0.020	--	--	
5/17/90	W-60-MW8	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--	
6/11/90	W-62-MW8	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--	
8/01/90	W-61-MW8	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--	
8/27/90	W-70-MW8	<0.0005	<0.0005	0.0005	0.0005	<0.02	--	--	
9/28/90	W-71-MW8	<0.0005	<0.0005	<0.0005	0.0005	<0.05	--	--	
12/27/90	W-67-MW8	<0.0005	<0.0005	<0.0005	0.0006	<0.05	--	--	
03/20/91	W-60-MW8	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	--	--	
06/20/91	W-88-MW8	<0.0005	<0.0005	<0.0005	0.0006	<0.05	--	--	
MW-9									
10/13/89	W-50-MW9	1.0	9.2	3.0	13	89	--	--	
12/20/89	W-50-MW9	6.3	31	9.5	55	190	--	--	
1/25/90	W-50-MW9	2.4	9.4	2.7	15	77	--	--	
2/27/90	W-50-MW9	1.2	7.1	2.3	14	97	--	--	
3/26/90	W-49-MW9	1.8	7.7	2.0	11	89	--	--	
4/18/90	W-49-MW9	2.0	7.5	2.5	16	110	--	--	
5/17/90	W-50-MW9	1.5	5.7	2.3	14	81	--	--	
6/11/90		Not sampled because of the presence of floating product							
8/27/90		Not sampled because of dry well							
6/20/91	W-19-MW9	<0.0005	<0.0005	<0.0005	<0.0005	0.43	--	--	
MW-10									
10/12/89	W-52-MW10	<0.0005	<0.0005	<0.0005	0.0015	0.02	--	--	
12/20/89	W-52-MW10	<0.0005	<0.0005	<0.0005	0.0018	<0.02	--	--	
3/26/90	W-51-MW10	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--	
8/01/90	W-57-MW10	<0.0005	<0.0005	<0.0005	<0.0005	<0.02	--	--	

See notes on page 4 of 4.

TABLE 3
 CUMULATIVE RESULTS OF GROUND-WATER ANALYSES
 (page 4 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-11								
11/16/89	W-51-MW11	0.0041	0.0094	0.00074	0.020	0.15	--	--
12/20/89	W-50-MW11	0.0072	0.0075	0.0029	0.013	0.15	--	--
3/26/90	W-50-MW11	<0.0005	<0.0005	<0.0005	0.0027	0.032	--	--
7/30/90	W-54-MW11	<0.0005	<0.0005	<0.0005	0.0038	0.026	--	--

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

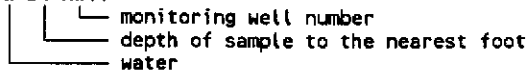


TABLE 4
RESULTS OF INFLUENT AND EFFLUENT VAPOR SAMPLES

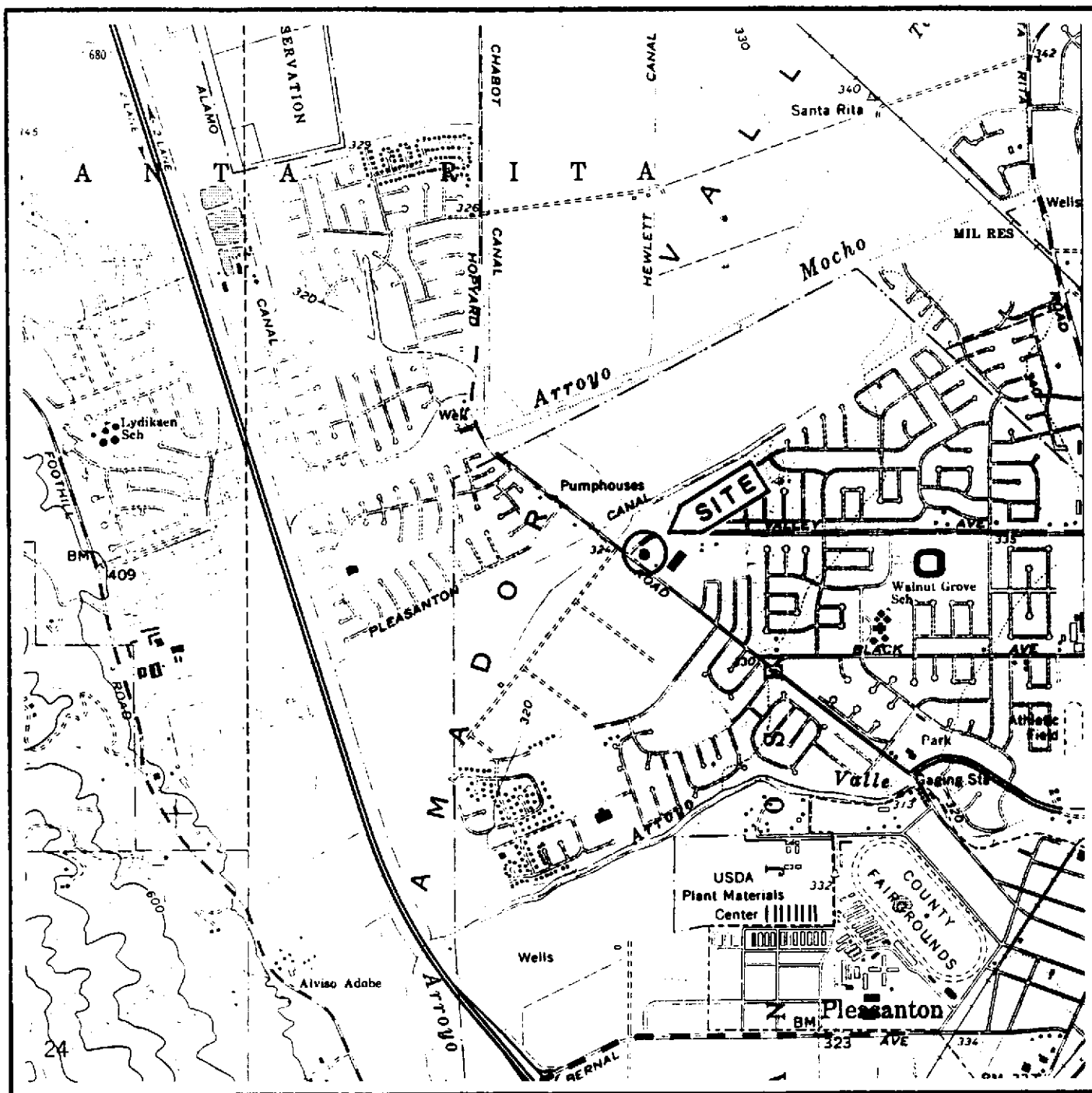
Date	Sample No.	TPHg	Benzene	Toluene	Ethyl- benzene	Total xylenes
11/30/90	influent	1800*	19*	21*	15*	52*
12/11/90	influent	1.4	<0.0001	0.0005	0.0003	0.0008
12/14/90	influent	0.94	<0.0005	0.011	0.0083	0.025
	effluent	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
12/17/90	influent	0.20	0.0024	0.0016	0.0010	0.0026
	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.



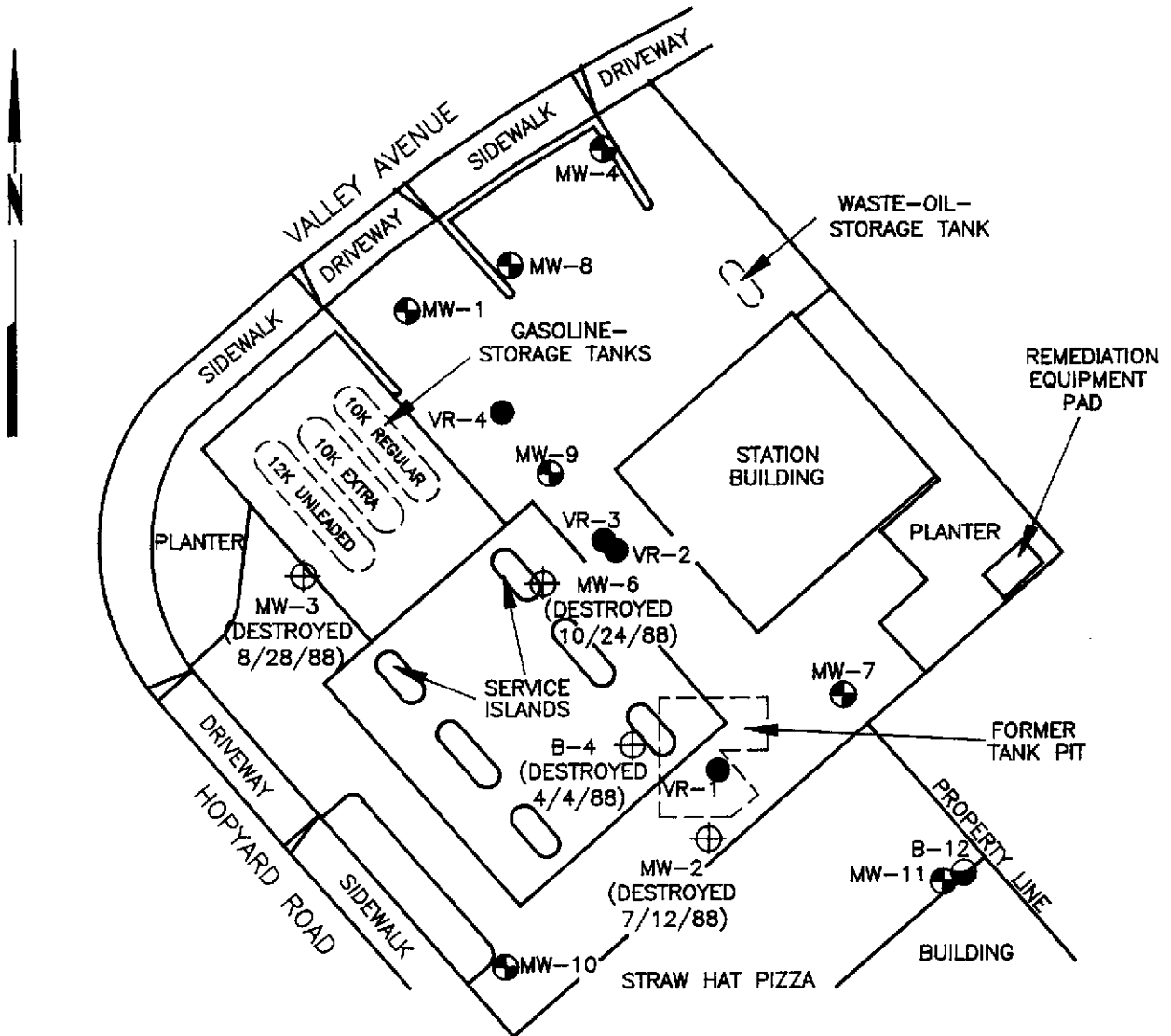
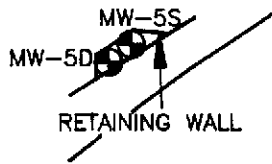
Source: U.S. Geological Survey
 7.5-Minute Quadrangle
 Dublin, California
 Photorevised 1980







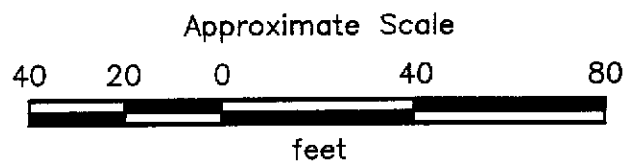
PROJECT NO. 18034-9

SITE VICINITY MAP
Exxon Station No. 7-3399
2991 Hopyard Road
Pleasanton, California

PLATE
 1



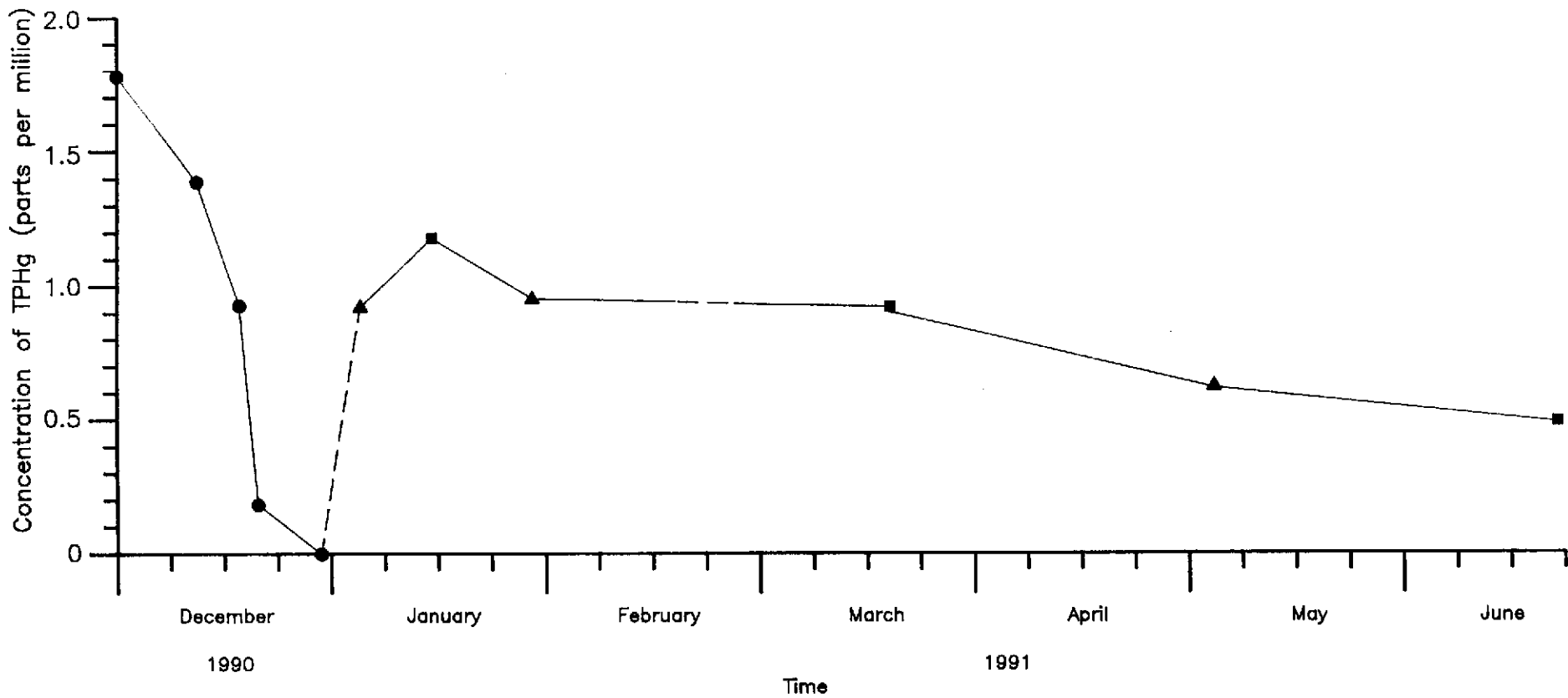
- MW-7  = Monitoring well
- VR-1  = Vapor recovery well
- B-12  = Soil boring
- MW-6  = Former well or boring



PROJECT NO. 18034-9

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

PLATE
2



SABPCO1

- = All vapor wells open
- ▲ = Deep vapor wells open
- = Shallow vapor wells open
- = System not operating

PLATE

3

**CONCENTRATION OF TPHg FOR
INFLUENT VAPOR SAMPLES
Exxon Station No. 7-3399
2991 Hopyard Road
Pleasanton, California**



PROJECT NO. 18034-9

FIELD PROCEDURES

Subjective Evaluations

Before ground-water samples were collected for subjective evaluations, the depth to static water level in each well was measured to the nearest 0.01 foot with a Solinst electronic water-level indicator. Ground-water samples were then collected from each well by gently lowering approximately half the length of a Teflon bailer past the air-water interface. The samples were retrieved and examined for evidence of floating product and sheen. The bailer was washed with Alconox, a commercial biodegradable detergent, and rinsed with deionized water before each use.

Ground-Water Sampling

Wells MW-5d, MW-7, MW-8, and MW-9 were each purged of approximately three well volumes of water. A water sample was collected from each well after the well had recharged to more than 80 percent of the static level. A clean Teflon bailer was used to collect the ground-water samples. Half the length of the bailer was lowered past the air-water interface to retrieve the water sample. The bailer was retrieved and the water was slowly decanted into laboratory cleaned, 40-milliliter, volatile-organic analysis, glass sample vials with Teflon-lined caps. Hydrochloric acid was added to the samples as a preservative. The sample vials were promptly capped, labeled, and placed in iced storage for transport to Applied Analytical Environmental Laboratories. Chain-of-custody protocol was observed throughout the handling of samples.

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.

Influent and Effluent Vapor Sampling

Influent and effluent vapors samples were 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.

CHAIN-OF-CUSTODY RECORD

091691



PROJ. NO. 18034-9		PROJECT NAME EXXON HOPKARD		ANALYSIS								REMARKS	LABORATORY I.D. NUMBER
P.O. NO.		SAMPLERS (Signature) LOUIS RUTHERFORD		TPH Gasoline (8015)	BTEX (802/8020)	TPH Diesel (8015)					Preserved?		
DATE MM/DD/YY	TIME		No. of Containers										
6/20/91	2:30	W-88-MW8	3	✓	✓							Heil	
	2:40	W-65-MW5D	3	✓	✓								
	2:50	W-55-MW7	3	✓	✓								
	4:30	W-19-MW9	3	✓	✓								

RELINQUISHED BY (Signature): <i>LOUIS RUTHERFORD</i>	DATE / TIME 6/20/91 1400	RECEIVED BY (Signature):	Laboratory: <i>APPLIED ANALYTICAL</i>	SEND RESULTS TO: Applied GeoSystems 42501 Albrae Street Fremont, CA 94538 (415) 651-1906
RELINQUISHED BY (Signature):	DATE / TIME	RECEIVED BY (Signature):		
RELINQUISHED BY (Signature):	DATE / TIME 6/20/91 1400	RECEIVED FOR LABORATORY BY (Signature): <i>[Signature]</i>	Turn Around: <i>2WK</i>	

Proj. Mgr.: *KEITH MQUICKER*

APPLIED ANALYTICAL

Environmental Laboratories

42501 Albrae St., Suite 100
Fremont, CA 94538
Bus: (415) 623-0775
Fax: (415) 651-8647

ANALYSIS REPORT

Attention: Mr. Keith McVicker
Applied GeoSystems
42501 Albrae Street
Fremont, CA 94538
Project: AGS 18034-9

Date Sampled: 06-20-91
Date Received: 06-20-91
BTEX Analyzed: 06-27-91
TPHg Analyzed: 06-27-91
TPHd Analyzed: NR
Matrix: Water

1020lab.frm

	Benzene	Toluene	Ethyl- benzene	Total Xylenes	TPHg	TPHd
	ppb	ppb	ppb	ppb	ppb	ppb
Detection Limit:	0.5	0.5	0.5	0.5	50	100

SAMPLE

Laboratory Identification

W-88-MW8 W1106285	ND	ND	ND	0.6	ND	NR
W-65-MW5D W1106286	ND	ND	ND	ND	ND	NR
W-55-MW7 W1106287	ND	1.8	0.6	4.1	74	NR
W-19-MW9 W1106288	ND	ND	ND	ND	430	NR

ppb = parts per billion = $\mu\text{g/L}$ = micrograms per liter.

ND = Not detected. Compound(s) may be present at concentrations below the detection limit.

NR = Analysis not requested.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.


Laboratory Representative

July 3, 1991
Date Reported

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

May 6, 1991

ChromaLab File No.: 0591029

APPLIED GEOSYSTEMS, INC.

Attn: Rasmi

RE: One rush air sample for Gasoline/BTEX analysis

Project Name: EXXON PLEASANTON

Project Number: 18034-8

Date Sampled: May 3, 1991

Date Submitted: May 3, 1991


Date Extracted: May 4, 1991

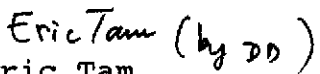
Date Analyzed: May 4, 1991

RESULTS:

Sample No.	Gasoline ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl Benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)
A-in	62	N.D.	N.D.	N.D.	0.9
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	100.4%	104.3%	105.0%	102.0%	103.9%
DETECTION LIMIT	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/ 8015	602	602	602	602

ChromaLab, Inc.


David Duong
Chief Chemist


Eric Tam
Laboratory Director

CHAIN-OF-CUSTODY RECORD

CHROMALAB FILE # 691144

Applied GeoSystems

PROJ. NO. 18034-9	PROJECT NAME EXXON-Pleasanton
P.O. NO.	SAMPLERS (Signature) Rasmi

Order # 2602

DATE <small>MM/DD/YY</small>	TIME	No. of Cont-ainers	ANALYSIS							REMARKS	LABORATORY I.D. NUMBER
			TPH Gasoline (8015)	BTEX (802/8020)	TPH Diesel (8015)						
6/20/91	6:40	1	X	X							

RELINQUISHED BY (Signature): <i>[Signature]</i>	DATE / TIME 6/20/91	RECEIVED BY (Signature):	Laboratory: CHROMALAB	SEND RESULTS TO: Applied GeoSystems 42501 Albrae Street Fremont, CA 94538 (415) 651-1906
RELINQUISHED BY (Signature):	DATE / TIME 	RECEIVED BY (Signature):		
RELINQUISHED BY (Signature):	DATE / TIME 6/20/91 3:05 PM	RECEIVED FOR LABORATORY BY (Signature): <i>[Signature]</i>	Turn Around: 24 HR	Proj. Mgr.: RASMI

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

June 21, 1991

ChromaLab File No.: 0691144

APPLIED GEOSYSTEMS, INC.

Attn: Rasmi

RE: One rush air sample for Gasoline/BTEX analysis

Project Name: EXXON - PLEASANTON

Project Number: 18034-9

Date Sampled: June 20, 1991

Date Submitted: June 20, 1991

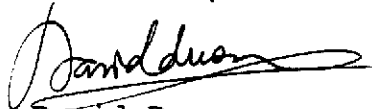
Date Extracted: June 20, 1991

Date Analyzed: June 20, 1991

RESULTS:

Sample No.	Gasoline ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl Benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)
A-IN	490	26	41	8.9	50
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	108.3%	89.3%	93.6%	91.4%	90.1%
DETECTION LIMIT	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/ 8015	602	602	602	602

ChromaLab, Inc.



David Duong
Chief Chemist



Eric Tam
Laboratory Director