RESNA
Working To Restore Nature

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

TRANSMITTAL

94 JAN 14 AM 11:44 ALCO HAZMAT

TO: Ms. Eva Chu
Alameda County Health
Care Services Agency
80 Swan Way, Room 200
Oakland, California 94612

DATE: December 30, 1993
PROJECT NUMBER: 60006.06
SUBJECT: ARCO Station 6041

Dec 1993

FROM: Erin D. Krueger

WE ARE SENDING YOU:

COPIES	DATED	DESCRIPTION
1	12/30/93	Letter Report, Quarterly Groundwater Monitoring, Third Quarter 1993, ARCO Station 6041, 7249 Village Parkway, Dublin, California.

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REMARKS:
Copies: 1 to RESNA project file no. 60006.06

Erin D. Krueger
Erin D. Krueger, Staff Geologist

cc: Mr. Michael Whelan, ARCO
Mr. Richard Hiett, CRWQCB

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

LETTER REPORT
QUARTERLY GROUNDWATER MONITORING
Third Quarter 1993
at
ARCO Station 6041
7249 Village Parkway
Dublin, California

60006.06

Air sparge test to be done this quarter. (by end of March)

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

December 30, 1993
60006.06

Mr. Michael Whelan
ARCO Products Company
P.O. Box 5811
San Mateo, California 94402

Subject: Letter Report, Quarterly Groundwater Monitoring, Third Quarter 1993, ARCO Station 6041, 7249 Village Parkway, Dublin, California.

Mr. Whelan:

As requested by ARCO Products Company (ARCO), RESNA Industries Inc. (RESNA) has prepared this letter report which summarizes the results of the third quarter 1993 groundwater monitoring performed by ARCO's contractor, EMCON Associates (EMCON) of San Jose, California, at the above-referenced site. The purpose of quarterly groundwater monitoring is to evaluate changes in the groundwater flow direction and gradient and changes in concentrations of petroleum hydrocarbons in the local groundwater previously detected at the site. Field work and laboratory analyses of groundwater samples during this quarter were performed under the direction of EMCON. This work included measuring depth-to-water (DTW) levels, subjectively evaluating groundwater for the presence of petroleum hydrocarbons, and collecting and submitting groundwater samples from the wells to a State-certified laboratory for analyses. Field procedures and acquisition of field data were performed under direction of EMCON; evaluation and warrant of their field data and field protocols is beyond RESNA's scope of work. RESNA's scope of work was limited to interpretation of field and laboratory analyses data, which included evaluating trends in reported hydrocarbon concentrations in the local groundwater, the groundwater gradient, and flow direction beneath the site.

The operating ARCO Station 6041 is located at the northern corner of the intersection of Village Parkway and Amador Valley Boulevard in a commercial and residential area at 7249 Village Parkway, in Dublin, California. The site location is shown on the Site Vicinity Map, Plate 1. The location of the groundwater monitoring wells, borings, and pertinent site features are shown on the Generalized Site Plan, Plate 2. Results of previous environmental investigations at the site are summarized in the reports listed in the References section.

Quarterly Groundwater Monitoring
ARCO Station 6041, Dublin, CA

December 30, 1993
60006.06

Groundwater Sampling and Gradient Evaluation

Depth to water (DTW) levels were measured in groundwater monitoring wells MW-1 through MW-6 by EMCON field personnel on July 28, August 30, and September 28, 1993. Quarterly sampling was performed by EMCON field personnel on August 30, 1993. Joint monitoring was not performed during this quarter, but will be resumed in 4th quarter 1993. The results of EMCON's field work on the site, including DTW levels and subjective analyses are presented on EMCON's Field Reports, and EMCON's Summary of Groundwater Monitoring Data in Appendix A.

The DTW levels, wellhead elevations, groundwater elevations, and subjective evaluation of groundwater from wells at the subject site for this and previous quarters are summarized in Table 1, Cumulative Groundwater Monitoring Data. DTW levels, wellhead elevations and groundwater elevations for groundwater monitoring wells at BP, former Shell, and Unocal Stations, also located at the intersection of Village Parkway and Amador Valley Boulevard, are reported in Table 2, Groundwater Monitoring Data - BP, Former Shell, and Unocal Stations. Evidence of product or sheen was not observed during this quarter in any of the wells at the ARCO site (see EMCON's Field Reports, Appendix A). The local groundwater gradient interpreted from EMCON's DTW levels for July, August, and September 1993, was between 0.001 and 0.003 ft/ft. Groundwater flow direction was toward the south-southwest in July, toward the west-northwest in August, and toward the south in September. Plates 3 through 5, Groundwater Gradient Maps, are graphic interpretations of the groundwater elevations measured on July 28, August 30, and September 28, 1993.

DTW measurements obtained on August 12, 1993, from wells located at the former Shell, Unocal, and BP Stations were used to evaluate the gradient in the vicinity of ARCO Station 6041. The average gradient in the vicinity of ARCO Station on August 12, 1993, was approximately 0.01 ft/ft with a flow direction toward the east-southeast. This interpreted flow direction is consistent with the regional flow direction, but not with the local flow direction at the ARCO station which appears more west to southwest. Plate 8 depicts the groundwater gradient and flow direction in the vicinity of the ARCO site.

Groundwater monitoring wells MW-1 through MW-6 were purged and sampled by EMCON field personnel on August 30, 1993. EMCON's water sample field data sheets are included in Appendix A. Purge water generated during purging and sampling of the monitoring wells was transported to Gibson Environmental in Redwood City, California for recycling.

Laboratory Methods and Analyses

Water samples collected from the wells MW-1 through MW-6 were analyzed by Columbia Analytical Services, Inc., located in San Jose, California (Hazardous Waste Testing Laboratory Certification No. 1426), and analyzed for total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) using modified Environmental Protection Agency (EPA) Methods 5030/California DHS LUFT/8020 Methods. Concentrations of TPHg and benzene in the groundwater are shown on Plate 6, TPHg Concentrations in Groundwater; and Plate 7, Benzene Concentrations in Groundwater. The Chain of Custody Records and Laboratory Analyses Reports are included in Appendix A. Groundwater analytical results from this and previous quarters are summarized in Table 3, Cumulative Results of Laboratory Analyses of Groundwater Samples.

Compared to analytical results from the last quarter, concentrations of TPHg and BTEX decreased in wells MW-1, MW-2 and MW-3, and remained below detection limits in wells MW-4 through MW-6.

It is recommended that copies of this report be forwarded to:

Ms. Eva Chu
Alameda County Health Care Services Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

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

RESNA
Working to Restore Nature

Quarterly Groundwater Monitoring
ARCO Station 6041, Dublin, CA

December 30, 1993
60006.06

If you have any questions or comments, please call us at (408) 264-7723.

Sincerely,
RESNA Industries Inc.

Erin D. Krueger
Staff Geologist

REGISTERED GEOLOGIST
JAMES LEWIS NELSON
No. 1463
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

James L. Nelson
Certified Engineering Geologist 1463

Enclosures: References

Plate 1, Site Vicinity Map
Plate 2, Generalized Site Plan
Plate 3, Groundwater Gradient Map, July 28, 1993
Plate 4, Groundwater Gradient Map, August 30, 1993
Plate 5, Groundwater Gradient Map, September 28, 1993
Plate 6, TPHg Concentrations in Groundwater, August 30, 1993
Plate 7, Benzene Concentrations in Groundwater, August 30, 1993
Plate 8, Areal Groundwater Gradient Map, August 12, 1993

Table 1, Cumulative Groundwater Monitoring Data
Table 2, Cumulative Groundwater Monitoring Data; BP, Former Shell, and Unocal Stations
Table 3, Cumulative Results of Laboratory Analyses of Groundwater Samples

Appendix A: EMCON's Field Reports, Summary of Groundwater Monitoring Data, Certified Analytical Reports with Chain of Custody, Water Sample Field Data Sheets

REFERENCES

Alameda County Flood Control and Water Conservation District, Zone 7. January 16, 1991. Fall 1990 groundwater Level Report.

Applied GeoSystems. September 19, 1990. Letter Report Limited Environmental Investigation Related to the Removal of Waste-Oil Tank at ARCO Station 6041, 7249 Village Parkway, Dublin, California. 60006-1.

California Department of Water Resources, 1974. Evaluation of Ground-Water Resources Engineering Livermore and Sunol Valleys; Bulletin No. 118-2, Appendix A.

Department of Health Services, State of California. October 24, 1990. Summary of California Drinking Water Standards.

RESNA. August 22, 1991. Work Plan for Subsurface Investigation and Remediation at ARCO Station 6041, 7249 Village Parkway, Dublin, California. 60006.02.

RESNA. August 22, 1991. Addendum One to Work Plan for Subsurface Investigation and Remediation at ARCO Station 6041, 7249 Village Parkway, Dublin, California. 60006.02.

RESNA. August 30, 1991. Site Safety Plan. 60006.02S.

RESNA. February 12, 1992. Subsurface Environmental Investigation at ARCO Station 6041, 7249 Village Parkway, Dublin, California. 60006.02

RESNA. March 7, 1992. Letter Report, Quarterly Groundwater Monitoring, Fourth Quarter 1992 at ARCO Station, 6041, 7249 Village Parkway, Dublin, California. 60006.03

RESNA. May 1, 1992. Letter Report, Quarterly Groundwater Monitoring, First Quarter 1992 at ARCO Station, 6041, 7249 Village Parkway, Dublin, California. 60006.03

RESNA. September 25, 1992. Letter Report, Quarterly Groundwater Monitoring, Second Quarter 1992 at ARCO Station, 6041, 7249 Village Parkway, Dublin, California. 60006.03

REFERENCES

RESNA. September 29, 1992. Work Plan for Initial Offsite and Additional Onsite Subsurface Investigations at ARCO Station 6041, 7249 Village Parkway, Dublin, California. 60006.04

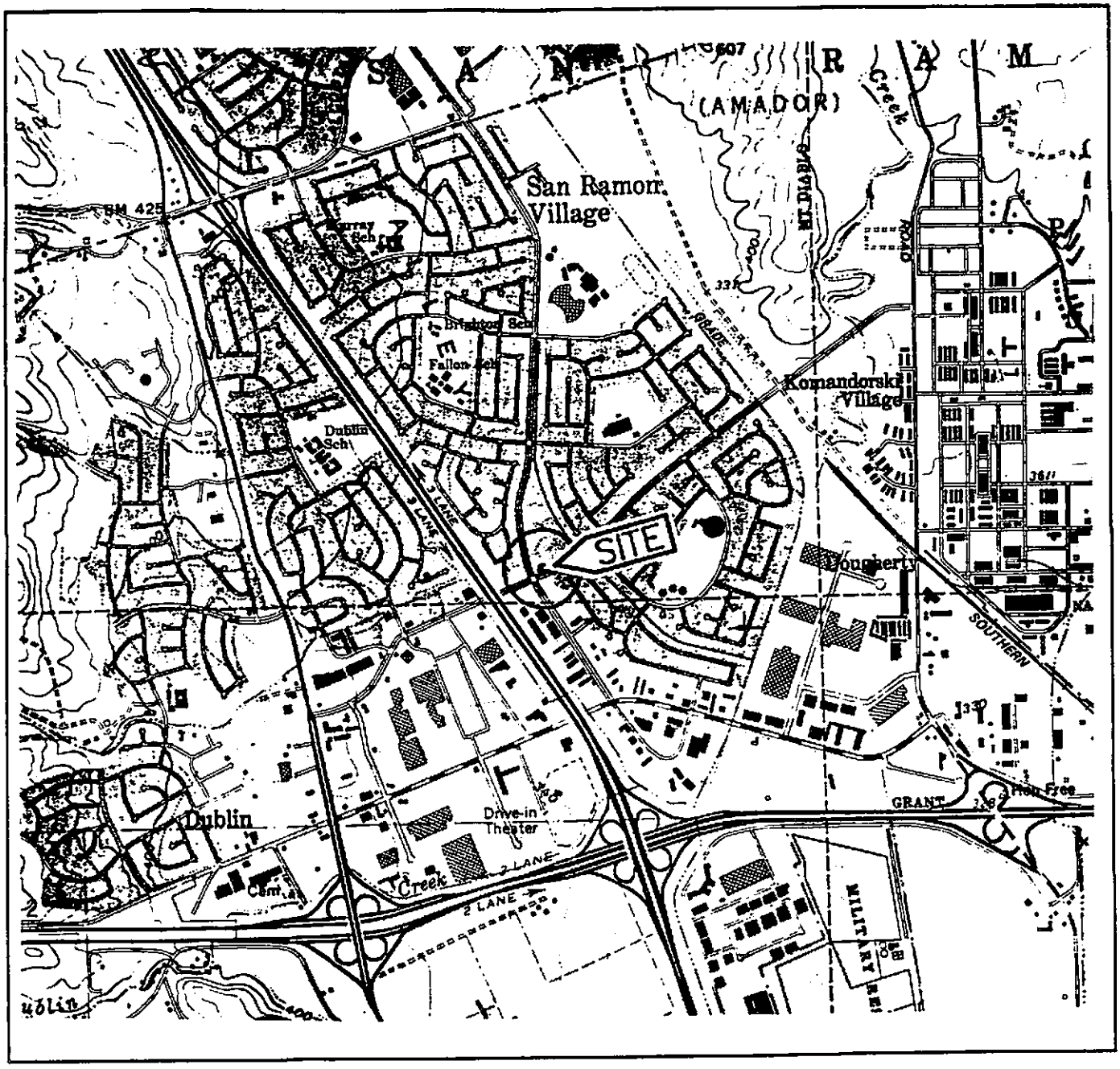
RESNA. December 29, 1992. Letter Report, Quarterly Groundwater Monitoring, Third Quarter 1992 at ARCO Station, 6041, 7249 Village Parkway, Dublin, California. 60006.03

RESNA. January 29, 1993. Additional Onsite Subsurface Investigation and Vapor Extraction Test at ARCO Station 6041, 7249 Village Parkway, Dublin, California. 60006.04

RESNA. March 31, 1993. Letter Report, Quarterly Groundwater Monitoring, Fourth Quarter 1992 at ARCO Station, 6041, 7249 Village Parkway, Dublin, California. 60006.05

RESNA. April 29, 1993. Letter Report, Quarterly Groundwater Monitoring, First Quarter 1993 at ARCO Station, 6041, 7249 Village Parkway, Dublin, California. 60006.05

RESNA. September 8, 1993. Letter Report, Quarterly Groundwater Monitoring, Second Quarter 1993 at ARCO Station, 6041, 7249 Village Parkway, Dublin, California. 60006.06

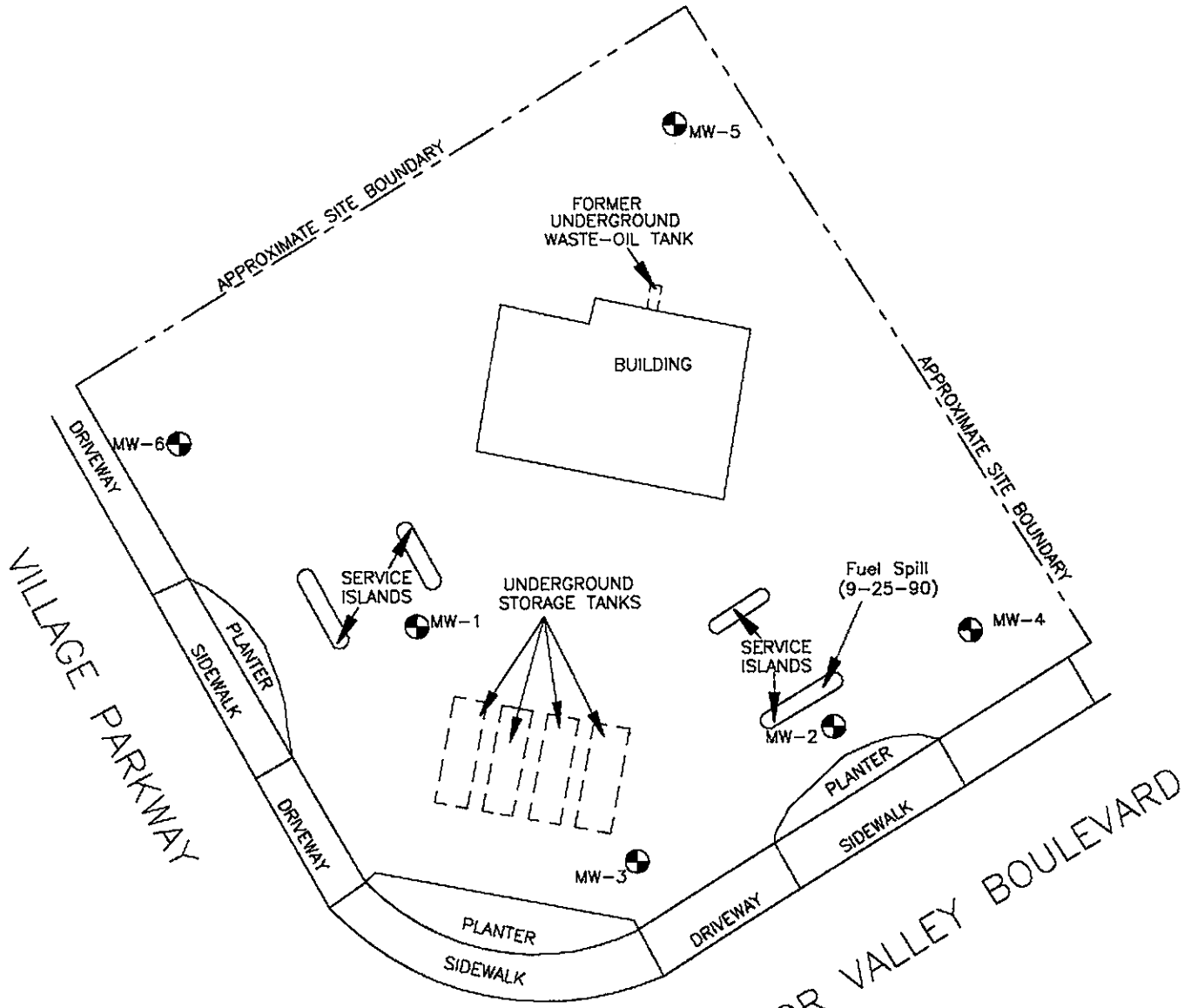


Source: U.S. Geological Survey
7.5-Minute Quadrangle
Dublin, California
Photorevised 1980

N

Approximate Scale
2000 1000 0 2000
feet

RESNA Working to Restore Nature	SITE VICINITY MAP ARCO Station 6041 365 Jackson Street Dublin, California	PLATE 1
PROJECT 60006.06		



EXPLANATION

MW-6 = Groundwater monitoring well (RESNA, September 1991 and October 1992)

N

Approximate Scale

40 20 0 40 80

feet

Source: Modified from plan supplied by ARCO.

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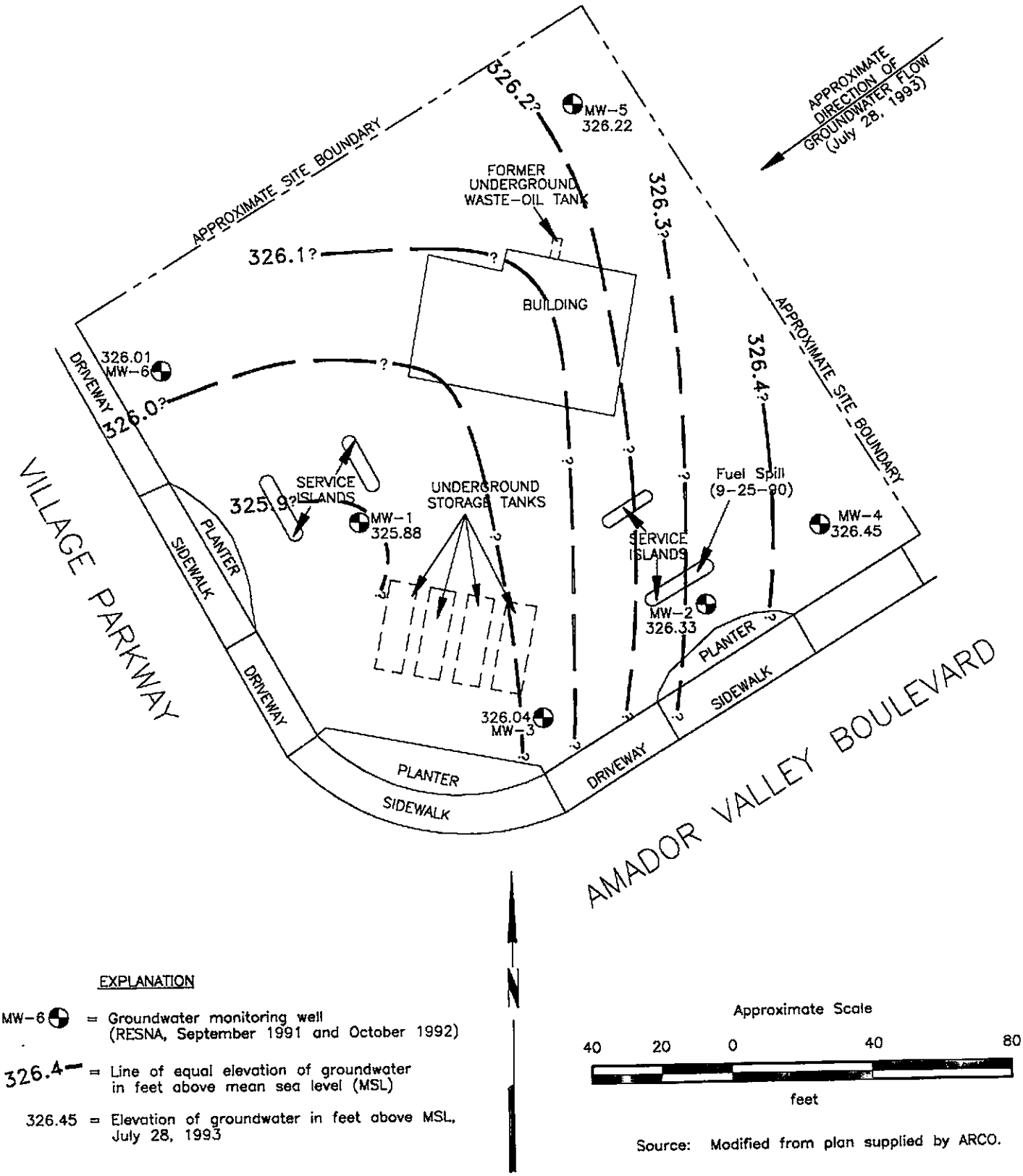
GENERALIZED SITE PLAN
ARCO Service Station 6041
7249 Village Parkway
Dublin, California

PLATE 2



EXPLANATION

MW-6 = Groundwater monitoring well (RESNA, September 1991 and October 1992)

326.4 = Line of equal elevation of groundwater in feet above mean sea level (MSL)

326.45 = Elevation of groundwater in feet above MSL, July 28, 1993

Source: Modified from plan supplied by ARCO.

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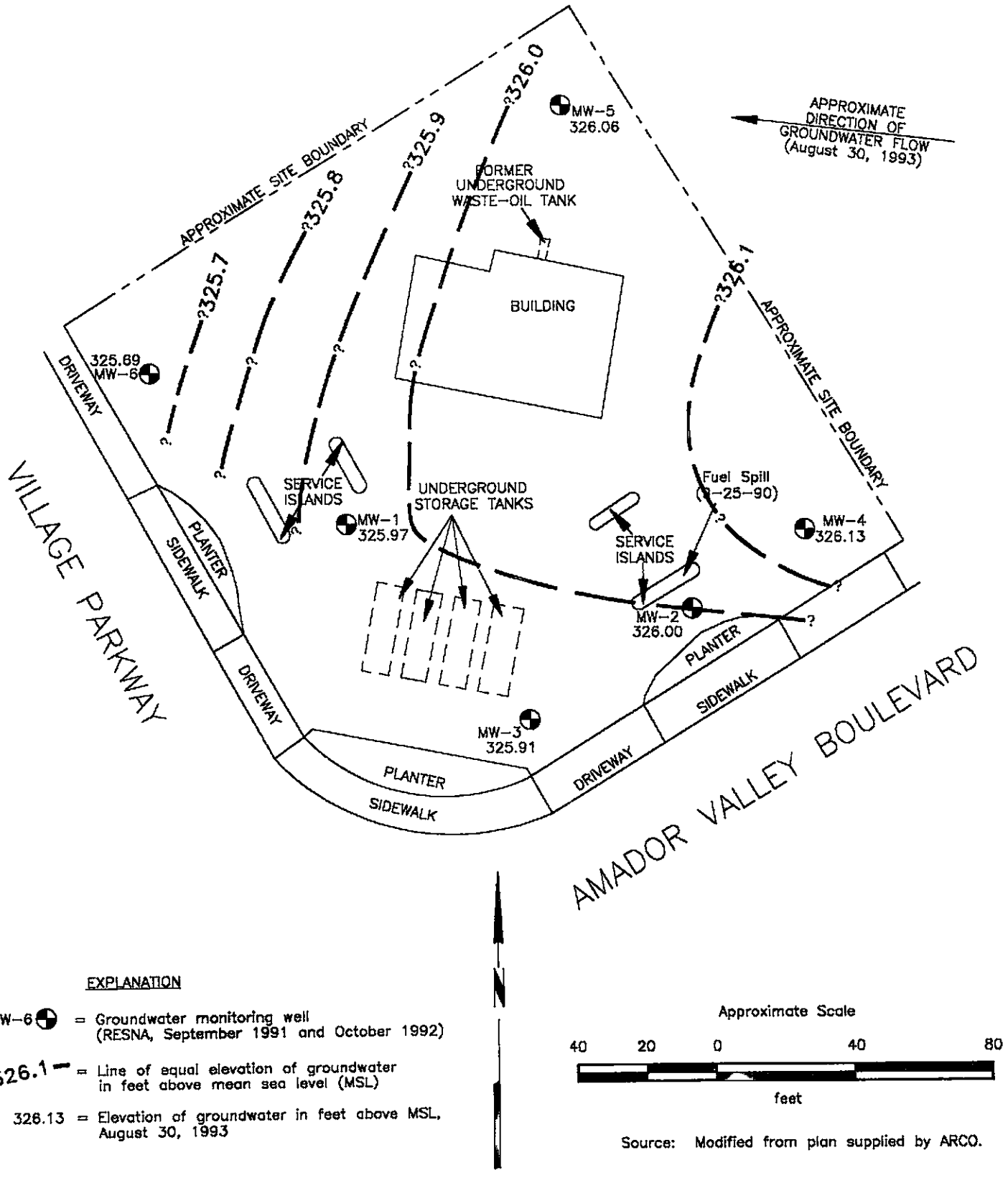
GROUNDWATER GRADIENT MAP
ARCO Service Station 6041
7249 Village Parkway
Dublin, California

PLATE 3



EXPLANATION

MW-6 ⊕ = Groundwater monitoring well (RESNA, September 1991 and October 1992)

326.1 — = Line of equal elevation of groundwater in feet above mean sea level (MSL)

326.13 = Elevation of groundwater in feet above MSL, August 30, 1993

Approximate Scale

40 20 0 40 80

feet

Source: Modified from plan supplied by ARCO.

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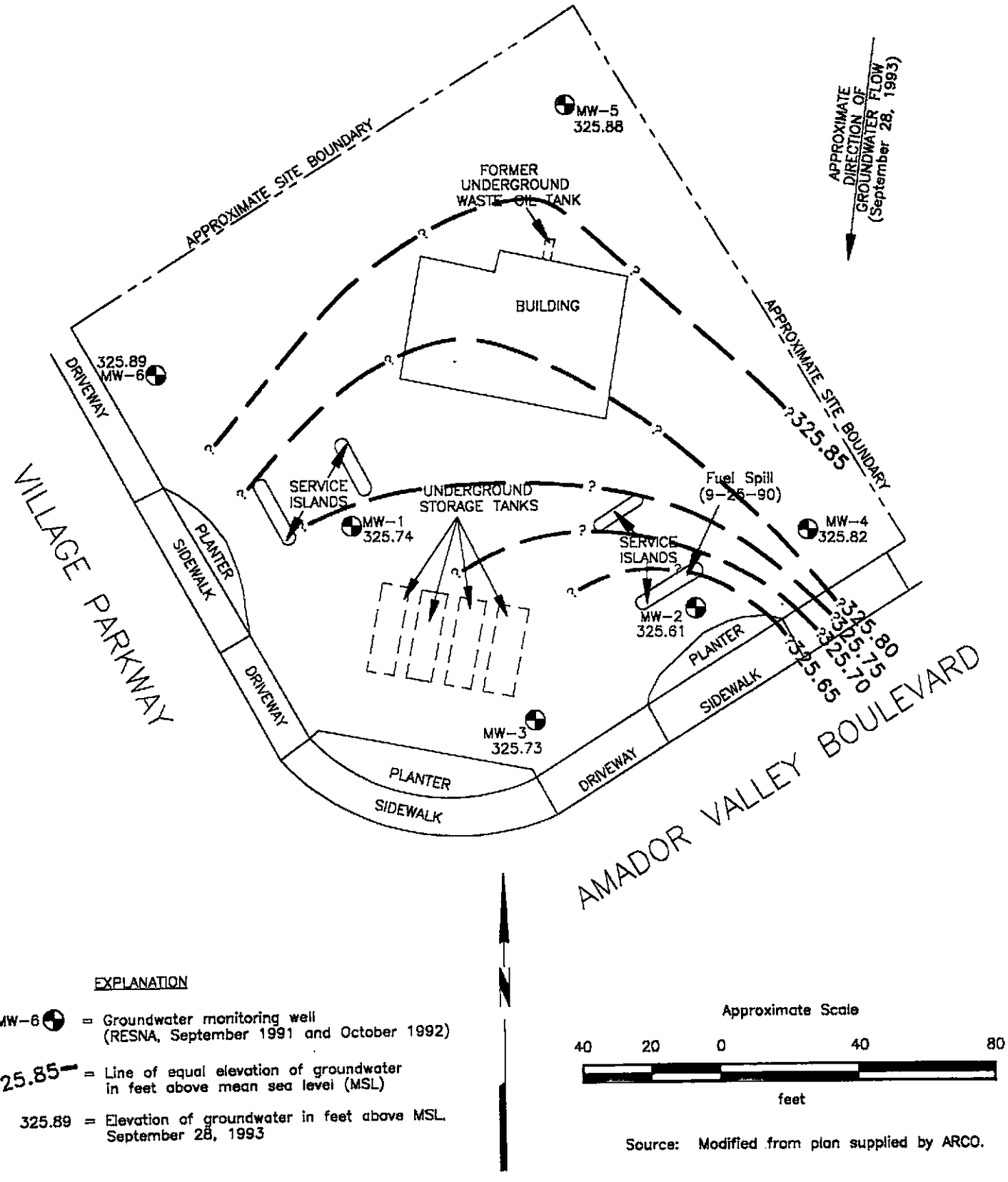
GROUNDWATER GRADIENT MAP
ARCO Service Station 6041
7249 Village Parkway
Dublin, California

PLATE 4



EXPLANATION

MW-6 = Groundwater monitoring well (RESNA, September 1991 and October 1992)

325.85 = Line of equal elevation of groundwater in feet above mean sea level (MSL)

325.89 = Elevation of groundwater in feet above MSL, September 28, 1993

Source: Modified from plan supplied by ARCO.

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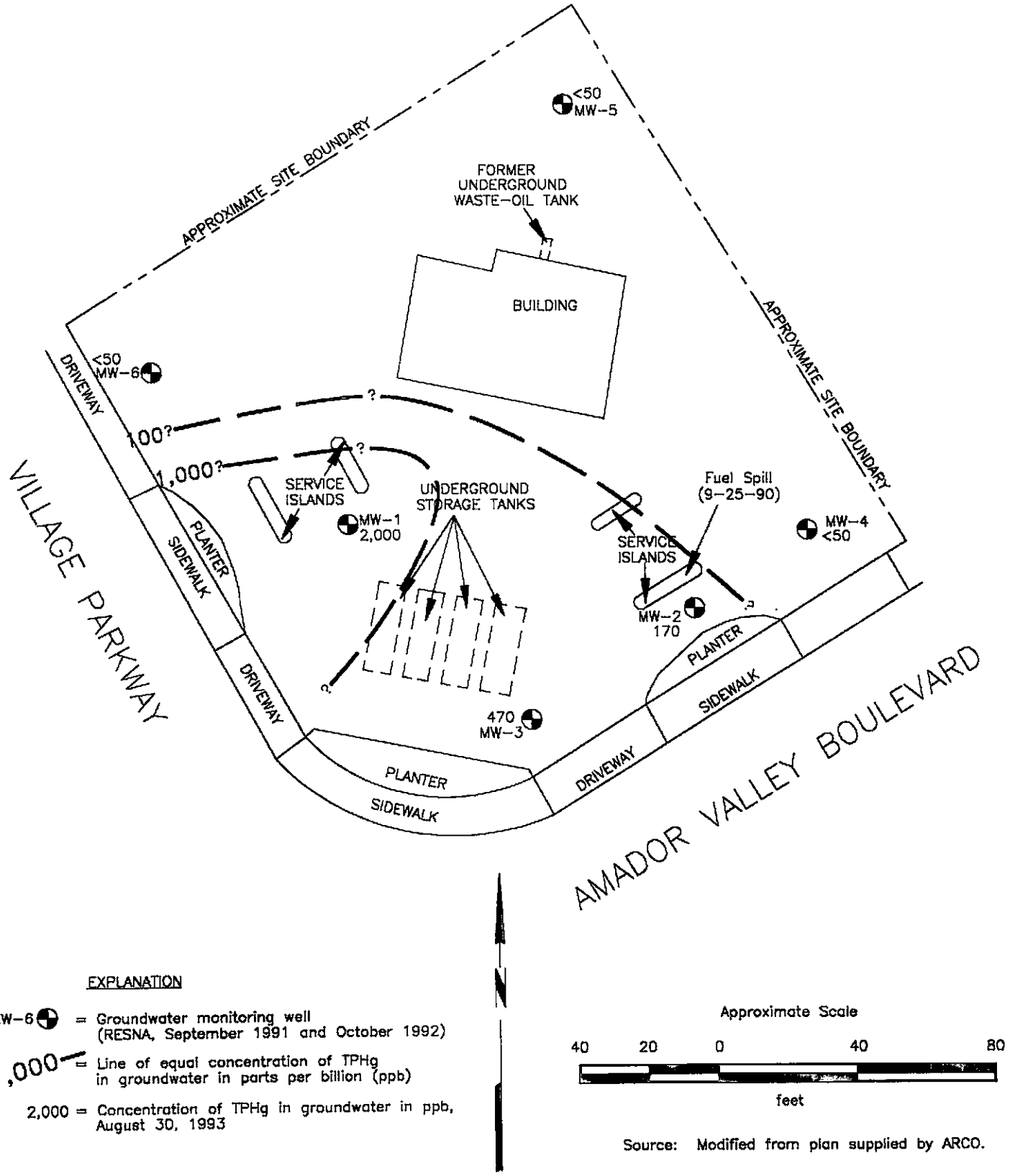
GROUNDWATER GRADIENT MAP
ARCO Service Station 6041
7249 Village Parkway
Dublin, California

PLATE 5



EXPLANATION

MW-6 = Groundwater monitoring well (RESNA, September 1991 and October 1992)

1,000 = Line of equal concentration of TPHg in groundwater in parts per billion (ppb)

2,000 = Concentration of TPHg in groundwater in ppb, August 30, 1993

Source: Modified from plan supplied by ARCO.

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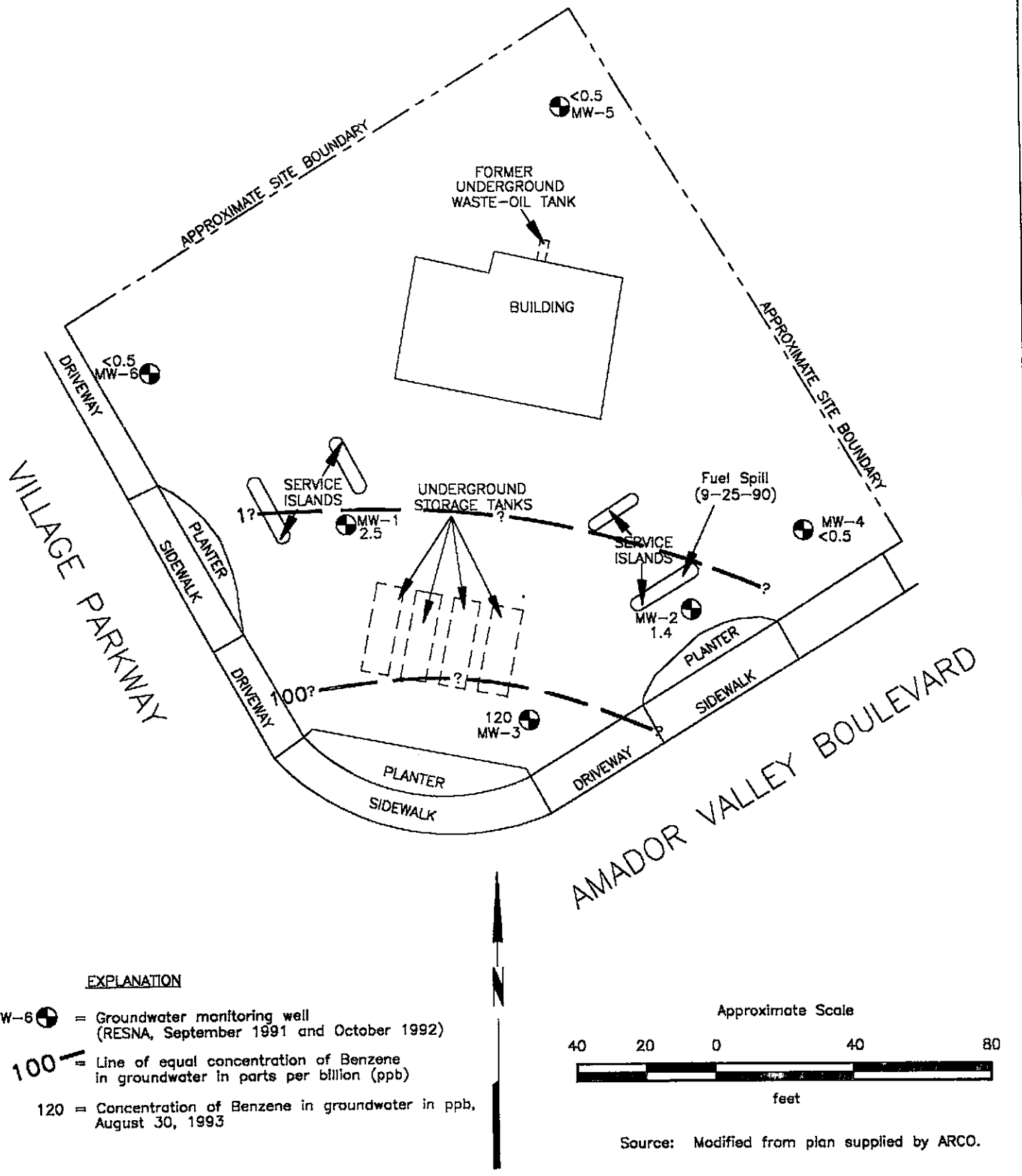
TPHg CONCENTRATIONS IN GROUNDWATER
ARCO Service Station 6041
7249 Village Parkway
Dublin, California

PLATE 6



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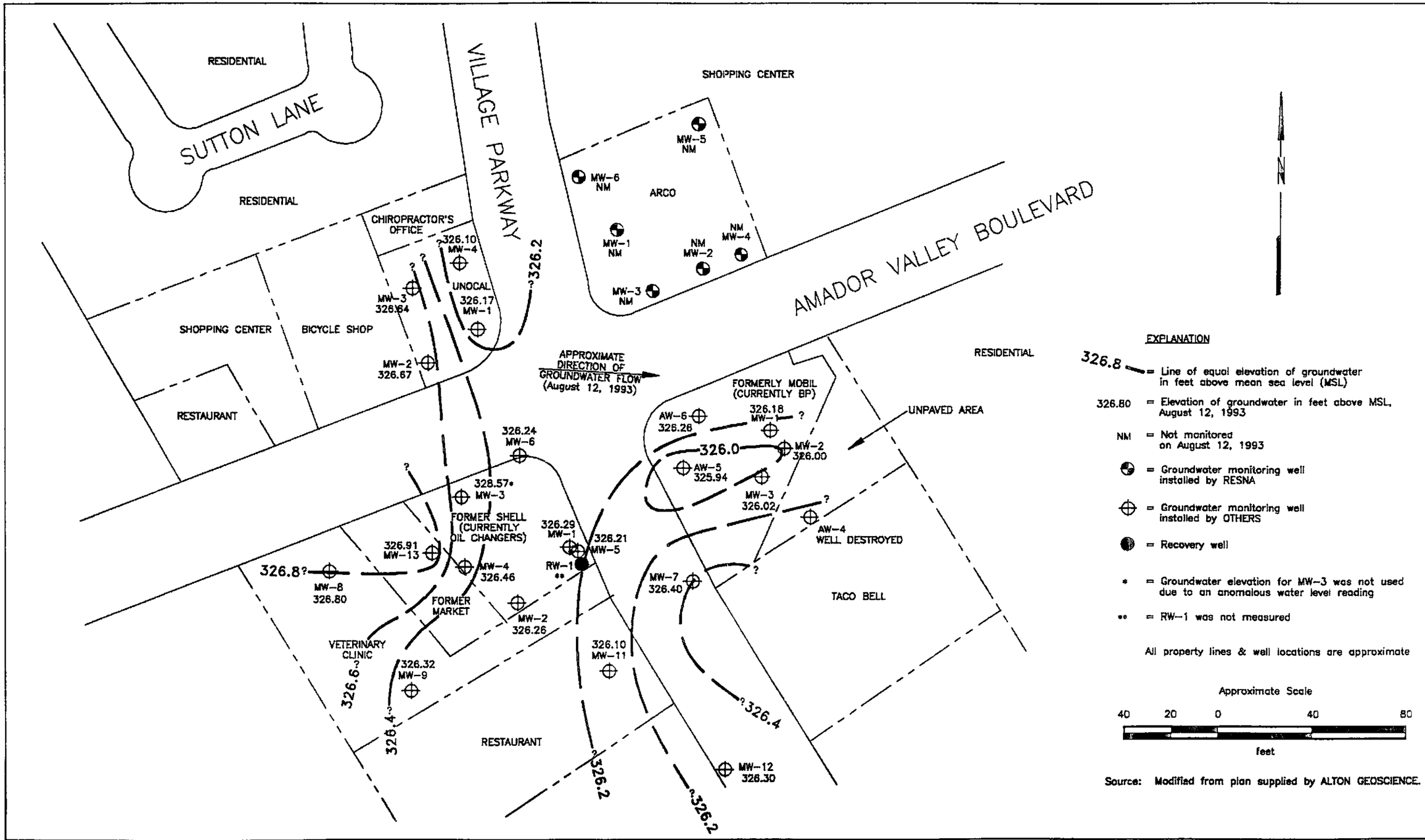
BENZENE CONCENTRATIONS IN GROUNDWATER
ARCO Service Station 6041
7249 Village Parkway
Dublin, California

PLATE 7



EXPLANATION

326.8 = Line of equal elevation of groundwater in feet above mean sea level (MSL)

326.80 = Elevation of groundwater in feet above MSL, August 12, 1993

NM = Not monitored on August 12, 1993

= Groundwater monitoring well installed by RESNA

= Groundwater monitoring well installed by OTHERS

= Recovery well

* = Groundwater elevation for MW-3 was not used due to an anomalous water level reading

** = RW-1 was not measured

All property lines & well locations are approximate

Approximate Scale

40 20 0 40 80

feet

Source: Modified from plan supplied by ALTON GEOSCIENCE.

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AREAL GROUNDWATER GRADIENT MAP
ARCO Service Station 6041
7249 Village Parkway
Dublin, California

PLATE
8

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 6041
Dublin, California
(Page 1 of 3)

Date Measured	Well Elevation	Depth to Water	Water Elevation	Floating Product
MW-1				
09-20-91	336.56	11.20	325.36	None
10-22-91		11.48	325.08	None
11-27-91		11.27	325.29	None
12-16-91		11.55	325.01	None
01-18-92		11.37	325.19	None
02-21-92		9.13	327.43	None
03-16-92		9.70	326.86	None
04-24-92		10.20	326.36	None
05-15-92		10.46	326.10	None
06-09-92		10.73	325.83	None
07-28-92		11.04	325.52	None
08-24-92		11.32	325.24	None
09-09-92		11.54	325.02	None
10-26-92		11.80	324.76	None
11-10-92		11.74	324.84	None
12-14-92		10.77	325.79	None
01-15-93		8.88	327.68	None
02-10-93		9.66	326.90	None
03-29-93		8.31	328.25	None
04-27-93		9.03	328.25	None
05-10-93		9.50	327.06	None
06-18-93		10.16	326.40	None
07-28-93		10.68	325.88	None
08-30-93		10.59	325.97	None
09-28-93		10.82	325.74	None
MW-2				
09-20-91	334.80	9.22	325.58	None
10-22-91		9.66	325.14	None
11-27-91		9.48	325.32	None
12-16-91		9.76	325.04	None
01-18-92		9.47	325.33	None
02-21-92		7.62	327.18	None
03-16-92		7.84	326.96	None
04-24-92		8.34	326.46	None
05-15-92		8.62	326.18	None
06-09-92		8.88	325.92	None
07-28-92		9.38	325.42	None
08-24-92		9.81	324.99	None

See notes on Page 3 of 3

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 6041
Dublin, California
(Page 2 of 3)

Date Measured	Well Elevation	Depth to Water	Water Elevation	Floating Product
MW-2	334.80 (Cont.)			
09-09-92		9.92	324.88	None
10-26-92		10.13	324.67	None
11-10-92		10.12	324.68	None
12-14-92		8.99	325.81	None
01-15-93		7.20	327.60	None
02-10-93		7.30	327.50	None
03-29-93		6.60	328.20	None
04-27-93		7.10	327.70	None
05-10-93		7.40	327.40	None
06-18-93		8.02	326.78	None
07-28-93		8.47	326.33	None
08-30-93		8.80	326.00	None
09-28-93		9.19	325.61	None
MW-3				
09-20-91	335.53	10.16	325.37	None
10-22-91		10.48	325.05	None
11-27-91		10.17	325.36	None
12-16-91		10.25	325.28	None
01-18-92		10.71	324.82	None
02-21-92		8.68	326.85	None
03-16-92		8.91	326.62	None
04-24-92		9.14	326.39	None
05-15-92		9.54	325.99	None
06-09-92		9.72	325.81	None
07-28-92		10.15	325.38	None
08-24-92		10.42	325.11	None
09-09-92		10.53	325.00	None
10-26-92		10.92	324.61	None
11-10-92		10.72	324.81	None
12-14-92		9.78	325.75	None
01-15-93		7.66	327.87	None
02-10-93		7.87	327.66	None
03-29-93		7.35	328.18	None
04-27-93		7.70	327.83	None
05-10-93		8.46	327.07	None
06-18-93		9.13	326.40	None
07-28-93		9.49	326.04	None
08-30-93		9.62	325.91	None
09-28-93		9.80	325.73	None

See notes on Page 3 of 3

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 6041
Dublin, California
(Page 3 of 3)

Date Measured	Well Elevation	Depth to Water	Water Elevation	Floating Product
MW-4				
11-10-92	334.22	9.58	324.64	None
12-14-92		8.72	325.50	None
01-15-93		7.27	326.95	None
02-10-93		6.80	327.42	None
03-29-93		6.29	327.93	None
04-27-93		6.33	327.59	None
05-10-93		6.68	327.54	None
06-18-93		7.05	327.17	None
07-28-93		7.77	326.45	None
08-30-93		8.09	326.13	None
09-28-93		8.40	325.82	None
MW-5				
11-10-92	335.87	11.02	324.85	None
12-14-92		10.17	325.70	None
01-15-93		8.14	327.73	None
02-10-93		8.00	327.87	None
03-29-93		7.52	328.35	None
04-27-93		8.26	327.61	None
05-10-93		8.64	327.23	None
06-18-93		9.26	326.61	None
07-28-93		9.65	326.22	None
08-30-93		9.81	326.06	None
09-28-93		9.99	325.88	None
MW-6				
11-10-92	335.84	11.03	324.81	None
12-14-92		10.03	325.81	None
01-15-93		7.64	328.20	None
02-10-93		8.22	327.62	None
03-29-93		7.59	328.25	None
04-27-93		8.20	327.64	None
05-10-93		8.85	326.99	None
06-18-93		9.26	326.14	None
07-28-93		9.83	326.01	None
08-30-93		10.15	325.69	None
09-28-93		9.95	325.89	None

Measurements in feet.
Wells MW-1 through MW-3 surveyed on October 11, 1991. Wells MW-4 through MW-6 surveyed on November 12, 1992. Datum is City of Dublin = (USGS)

TABLE 2
CUMULATIVE GROUNDWATER MONITORING DATA
BP Station 1116, 7197 Village Parkway,
Former Shell Station, 7194 Amador Valley Boulevard,
and Unocal Station, 7375 Amador Valley Boulevard,
Dublin, California
(Page 1 of 4)

Date Measured	Well Elevation	Depth-to -Water	Water Elevation
BP Station 1116			
MW-1			
11-10-92	335.17	10.67	324.50
02-10-93		5.25	329.92
05-21-93		5.73	329.44
08-12-93		8.99	326.18
MW-2			
11-10-92	334.58	10.27	324.31
02-10-93		6.46	328.12
05-21-93		6.96	328.12
08-12-93		8.58	326.00
MW-3			
11-10-92	335.13	10.78	324.35
02-10-93		7.16	327.97
05-21-93		7.69	327.44
08-12-93		9.11	326.02
AW-4			
11-10-92	333.41	9.10	324.31
02-10-93		Well destroyed	
AW-5			
11-10-92	334.81	10.27	324.54
02-10-93		7.29	327.52
05-21-93		7.77	327.04
08-12-93		8.87	325.94
AW-6			
11-10-92	334.90	10.10	324.80
02-10-93		7.13	327.77
05-21-93		7.64	327.26
08-12-93		8.64	326.26
Former Shell Station			
MW-1			
11-10-92	334.83	10.04	324.79
02-10-93		7.24	327.59
05-10-93		7.78	327.05
08-12-93		8.54	326.29

See Notes on Page 4 of 4.

TABLE 2
GROUNDWATER MONITORING DATA
BP Station 1116, 7197 Village Parkway,
Former Shell Station, 7194 Amador Valley Boulevard,
and UNOCAL Station, 7375 Amador Valley Boulevard,
Dublin, California
(Page 2 of 4)

Date Measured	Well Elevation	Depth-to -Water	Water Elevation
Former Shell Station cont.			
MW-2			
11-10-92	336.96	12.05	324.91
02-10-93		9.28	327.68
05-10-93		9.65	327.31
08-12-93		10.70	326.26
MW-3			
11-10-92	338.93	11.84	327.09
02-10-93		8.82	330.11
05-10-93		10.88	328.05
08-12-93		10.36	328.57
MW-4			
11-10-92	337.14	12.12	325.02
02-10-93		9.40	327.74
05-10-93		9.54	327.60
08-12-93		10.68	326.46
MW-5			
11-10-92	334.96	9.65	325.31
02-10-93		7.97	326.99
05-10-93		---	---
08-12-93		8.75	326.21
MW-6			
11-10-92	335.42	10.56	324.86
02-10-93		7.65	327.77
05-10-93		8.10	327.32
08-12-93		9.18	326.24
MW-7			
11-10-92	333.23	8.82	324.41
02-10-93		6.06	327.17
05-10-93		6.68	326.55
08-12-93		6.83	326.40

See Notes on Page 4 of 4.

TABLE 2
GROUNDWATER MONITORING DATA
BP Station 1116, 7197 Village Parkway,
Former Shell Station, 7194 Amador Valley Boulevard,
and UNOCAL Station, 7375 Amador Valley Boulevard,
Dublin, California
(Page 3 of 4)

Date Measured	Well Elevation	Depth-to -Water	Water Elevation
Former Shell Station cont.			
MW-8			
11-10-92	335.80	10.41	325.39
02-10-93		7.35	328.45
05-10-93		8.00	327.80
08-12-93		9.00	326.80
MW-9			
11-10-92	334.57	9.61	324.96
02-10-93		7.20	327.37
05-10-93		7.56	327.01
08-12-93		8.25	326.32
MW-11			
11-10-92	334.20	9.47	324.73
02-10-93		6.79	327.41
05-10-93		7.18	327.02
08-12-93		8.10	326.10
MW-12			
11-10-92	332.53	8.32	324.31
02-10-93		6.75	325.78
05-10-93		---	---
08-12-93		6.23	326.30
MW-13			
11-10-92	335.64	10.69	324.95
02-10-93		7.49	328.15
05-10-93		8.06	327.58
08-12-93		8.73	326.91
UNOCAL Station			
MW-1			
11-10-92	336.72	11.97	324.75
02-10-93		8.63	328.09
05-10-93		9.57	327.15
08-12-93	336.08*	9.91	326.17

See Notes on Page 4 of 4.

TABLE 2
GROUNDWATER MONITORING DATA
BP Station 1116, 7197 Village Parkway,
Former Shell Station, 7194 Amador Valley Boulevard,
and UNOCAL Station, 7375 Amador Valley Boulevard,
Dublin, California
(Page 4 of 4)

Date Measured	Well Elevation	Depth-to -Water	Water Elevation
UNOCAL Station cont.			
MW-2			
11-10-92	337.36	12.15	325.21
02-10-93		8.81	328.55
05-10-93		9.75	327.61
08-12-93	336.78*	10.11	326.67
MW-3			
11-10-92	337.53	12.33	325.20
02-10-93		8.95	328.58
05-10-93		9.91	327.62
08-12-93	336.98*	10.34	326.64
MW-4			
11-10-92	337.00	12.32	324.68
02-10-93		8.94	328.06
05-10-93		9.90	327.10
08-12-93	336.42*	10.32	326.10

Measurements in feet.
Depth-to-water and wellhead elevation data obtained from Alisto Engineering Group.
Datum is City of Dublin = (USGS)
* = Elevations of the tops of the well casing have been surveyed relative to Mean Sea Level as of August 1993. Previously the elevations of the well covers were used as datums.
--- = No data available.

TABLE 3
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
ARCO Station 6041
Dublin, California
(Page 1 of 2)

ppb

Well Date	TPHg	Benzene	Toluene	Ethyl- Benzene	Total Xylenes
MW-1					
09-20-91	410	28	36	4.3	89
12-16-91	840	50	50	3.9	12
03-16-92	780	22	12	45	22
06-09-92	700	8.8	15	16	18
09-09-92	400	5.4	8.4	4.6	6.7
11-10-92	2,800	93	56	190	390
02-10-93	9,700	180	100	450	740
05-10-93	6,400	120	12	410	300
08-30-93	**2,000**	**2.5**	<2.5*	110	61
MW-2					
09-20-91	130	6.6	0.96	1.4	1.5
12-16-91	83	0.96	<0.30	<0.30	<0.30
03-16-92	430	130	<2.5*	37	5.0
06-09-92	120	3.7	<0.5	5.7	<0.5
09-09-92	<50	<0.5	<0.5	<0.5	<0.5
11-10-92	<50	<0.5	<0.5	<0.5	<0.5
02-10-93	740	110	<5*	35	<5*
05-10-93	2,000	650	14	86	28
08-30-93	**170**	**1.4**	7.9	1.6	15
MW-3					
09-20-91	990	50	100	11	200
12-16-91	1,000	180	5.1	23	4.3
03-16-92	430	86	<1.0*	22	3.4
06-09-92	1,800	290	2.4	49	17
09-09-92	2,600	550	<5*	120	12
11-10-92	1,100	280	<5*	100	<5*
02-10-93	980	190	<5*	52	<5*
05-10-93	1,100	280	<2.5*	70	<2.5*
08-30-93	**470**	**120**	<1*	22	<1*
MW-4					
11-10-92	<50	<0.5	<0.5	<0.5	<0.5
02-10-93	<50	<0.5	<0.5	<0.5	<0.5
05-10-93	<50	<0.5	<0.5	<0.5	<0.5
08-30-93	<50	<0.5	<0.5	<0.5	<0.5

See notes on Page 2 of 2

TABLE 3
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
ARCO Station 6041
Dublin, California
(Page 2 of 2)

Well Date	TPHg	Benzene	Toluene	Ethyl- Benzene	Total Xylenes
MW-5					
11-10-92	<50	<0.5	<0.5	<0.5	<0.5
02-10-93	<50	<0.5	<0.5	<0.5	<0.5
05-10-93	<50	<0.5	<0.5	<0.5	<0.5
08-30-93	<50	<0.5	<0.5	<0.5	<0.5
MW-6					
11-10-92	<50	<0.5	<0.5	<0.5	<0.5
02-10-93	<50	<0.5	<0.5	<0.5	<0.5
05-10-93	<50	<0.5	<0.5	<0.5	<0.5
08-30-93	<50	<0.5	<0.5	<0.5	<0.5
MCL	---	1	---	680	1,750
DWAL	---	---	100	---	---

Results in parts per billion (ppb)
Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 5030/8020/DHS LUFT Methods.
TPHg: Total petroleum hydrocarbons as gasoline (analyzed by EPA Method 5030/8020/DHS LUFT Methods).
MCL: Maximum contaminant level in drinking water (DHS, October 1990)
DWAL: Department of Health Services Recommended Drinking Water Action Level (DHS, October 1990).
*: Raised method reporting limit due to high analyte concentration requiring sample dilution, as reported by Columbia Analytical Services, Inc.

RESNA
Working to Restore Nature

APPENDIX A

EMCON'S FIELD REPORTS, SUMMARY OF GROUNDWATER MONITORING DATA, CERTIFIED ANALYTICAL REPORTS WITH CHAIN OF CUSTODY, WATER SAMPLE FIELD DATA SHEETS

EMCON Associates
1938 Junction Avenue • San Jose, California 95131-2102 • **(408) 453-0719** • Fax (408) 453-0452

Date August 5, 1993
Project 0G70-035.01

To:
Mr. John Young
RESNA
3315 Almaden Expressway, Suite 34
San Jose, California 95118

We are enclosing:

Copies	Description
1	Depth To Water/Floating Product Survey Results
	July 1993 monthly water level survey, ARCO
	station 6041, 7249 Village Parkway, Dublin, CA

For your: X Information Sent by: X Mail

Comments:
Monthly water level data for the above mentioned site are attached. Please call if you have any questions: (408) 453-2266.

Reviewed by:

REGISTERED ... ROBERT ... No: 4054 Exp 6/30/96 INDUSTRIAL STATE OF CALIFORNIA

Jim Butera

Robert Porter, Senior Project Engineer.

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : 0G70-035.01 STATION ADDRESS : 7249 Village Parkway, Dublin, CA DATE : 7-28-93

ARCO STATION # : 6041 FIELD TECHNICIAN : Stephens DAY : WED.

DTW Order	WELL ID	Well Box Seal	Well Lid Secure	Gasket	Lock	Locking Well Cap	FIRST DEPTH TO WATER (feet)	SECOND DEPTH TO WATER (feet)	DEPTH TO FLOATING PRODUCT (feet)	FLOATING PRODUCT THICKNESS (feet)	WELL TOTAL DEPTH (feet)	COMMENTS
1	**MW-4**	OK	YES	OK	3259	OK	7.77	7.77	ND	ND	14.5	—
2	**MW-5**	OK	YES	OK	3259	OK	9.65	9.65	ND	ND	17.5	—
3	**MW-6**	BAD	YES	BAD	3259	OK	9.83	9.83	ND	ND	15.8	Seal bad, no lock
4	**MW-3**	OK	YES	OK	3259	OK	9.49	9.49	ND	ND	14.7	—
5	**MW-2**	BAD	YES	BAD	3616	OK	8.47	8.47	ND	ND	14.1	—
6	**MW-1**	OK	YES	OK	3259	OK	10.68	10.68	ND	ND	17.6	—

SURVEY POINTS ARE TOP OF WELL CASINGS

EMCON Associates
1921 Ringwood Avenue • San Jose, California 95131-1721 • (408) 453-7300 • Fax (408) 437-9526

Date September 16, 1993
Project 0G70-035.01

To:
Mr. John Young
RESNA
3315 Almaden Expressway, Suite 34
San Jose, California 95118

We are enclosing:

Copies	Description
1	Depth To Water / Floating Product Survey Results
1	Summary of Groundwater Monitoring Data
1	Certified Analytical Reports with Chain-of-Custody
6	Water Sample Field Data Sheets

For your: X Information Sent by: X Mail

Comments:
Enclosed are the data from the third quarter 1993 monitoring event at ARCO service station 6041, 7249 Village Parkway, Dublin, California. Groundwater monitoring is conducted consistent with applicable regulatory guidelines. Please call if you have any questions: (408) 453-2266.

Jim Butera JB

Reviewed by

REGISTERED PROFESSIONAL ENGINEER
ROBERT CURTIS PORTER
No: 4084
Exp. 6/30/96
INDUSTRIAL
STATE OF CALIFORNIA

Robert Porter, Senior Project Engineer.

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : 0G70-035.01 STATION ADDRESS : 7249 Village Parkway, Dublin, CA DATE : 8-30-93

ARCO STATION # : 6041 FIELD TECHNICIAN : K REICHELDERFER DAY : MONDAY

DTW Order	WELL ID	Well Box Seal	Well Lid Secure	Gasket	Lock	Locking Well Cap	FIRST DEPTH TO WATER (feet)	SECOND DEPTH TO WATER (feet)	DEPTH TO FLOATING PRODUCT (feet)	FLOATING PRODUCT THICKNESS (feet)	WELL TOTAL DEPTH (feet)	COMMENTS
1	MW-4	OK	Y 15/16	OK	BAD 3259	OK	8.09	8.09	ND	NA	14.5	NEEDS NEW LOCK (BRING BOLT CUTTERS)
2	MW-5	OK	Y 15/16	OK	3259	OK	9.81	9.81	ND	NA	17.4	—
3	MW-6	OK	Y 15/16	OK	3259	OK	10.15	10.15	ND	NA	15.8	—
4	MW-3	OK	Y 15/16	OK	BAD 3259	OK	9.62	9.62	ND	NA	14.7	NEEDS NEW LOCK (BRING BOLT CUTTERS)
5	MW-2	OK	Y 15/16	OK	3616	OK	8.80	8.80	ND	NA	14.1	—
6	MW-1	OK	Y 15/16	OK	3259	OK	10.59	10.59	ND	NA	17.5	—

SURVEY POINTS ARE TOP OF WELL CASINGS

Summary of Groundwater Monitoring Data
Third Quarter 1993
ARCO Service Station 6041
7249 Village Parkway, Dublin, California
micrograms per liter (µg/l) or parts per billion (ppb)

Well ID and Sample Depth	Sampling Date	Depth To Water (feet)	Floating Product Thickness (feet)	TPH[1] as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)
MW-1(17)	08/30/93	10.59	ND.[2]	2,000.	2.5	<2.5	110.	61.
MW-2(14)	08/30/93	8.80	ND.	170.	1.4	7.9	1.6	15.
MW-3(14)	08/30/93	9.62	ND.	470.	120.	<1.	22.	<1.
MW-4(14)	08/30/93	8.09	ND.	<50.	<0.5	<0.5	<0.5	<0.5
MW-5(17)	08/30/93	9.81	ND.	<50.	<0.5	<0.5	<0.5	<0.5
MW-6(15)	08/30/93	10.15	ND.	<50.	<0.5	<0.5	<0.5	<0.5
FB-1[3]	08/30/93	NA.[4]	NA.	<50.	<0.5	<0.5	<0.5	<0.5

1. TPH. = Total petroleum hydrocarbons
2. ND. = Not detected
3. FB. = Field blank
4. NA. = Not applicable

Columbia Analytical Services inc.

September 13, 1993

Service Request No. SJ93-1073

Jim Butera
EMCON Associates
1921 Ringwood Avenue
San Jose, CA 95131

Re: **EMCON Project No. 0G70-035.01**
ARCO Facility No. 6041

Dear Mr. Butera:

Attached are the results of the water samples submitted to our lab on August 30, 1993. For your reference, these analyses have been assigned our service request number SJ93-1073.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and CAS is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions.

Respectfully submitted:

COLUMBIA ANALYTICAL SERVICES, INC.

Keoni A. Murphy
Laboratory Manager

Annelise J. Bazar
Regional QA Coordinator

KAM/drf

1921 Ringwood Avenue • San Jose, California 95131 • Telephone 408/437-2400 • Fax 408/437-9356

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

ASTM	American Society for Testing and Materials
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NR	Not Requested
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	08/30/93
Project:	EMCON Project No. 0G70-035.01	**Service Request No.:**	SJ93-1073
	ARCO Facility No. 6041	**Sample Matrix:**	Water

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
µg/L (ppb)

Sample Name:		MW-1 (17)	MW-2 (14)	MW-3 (14)
Date Analyzed:		09/09/93	09/09/93	09/09/93
Analyte	**MRL**			
Benzene	0.5	2.5	1.4	120.
Toluene	0.5	<2.5 *	7.9	<1. *
Ethylbenzene	0.5	110.	1.6	22.
Total Xylenes	0.5	61.	15.	<1. *
TPH as Gasoline	50	2,000.	170.	470.

Sample Name:		MW-4 (14)	MW-5 (17)	MW-6 (15)
Date Analyzed:		09/08/93 **	09/08/93 **	09/09/93
Analyte	**MRL**			
Benzene	0.5	ND	ND	ND
Toluene	0.5	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND
TPH as Gasoline	50	ND	ND	ND

* Raised MRL due to high analyte concentration requiring sample dilution.
** This sample was part of the analytical batch started on September 8, 1993. However, it was analyzed after midnight so the actual date analyzed is September 9, 1993.

Approved by: Kevin Murphy Date: September 13, 1993

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	08/30/93
Project:	EMCON Project No. 0G70-035.01	**Service Request No.:**	SJ93-1073
	ARCO Facility No. 6041	**Sample Matrix:**	Water

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
µg/L (ppb)

Sample Name:		FB-1	Method Blank	Method Blank
Date Analyzed:		09/09/93	09/08/93	09/09/93
Analyte	**MRL**			
Benzene	0.5	ND	ND	ND
Toluene	0.5	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND
TPH as Gasoline	50	ND	ND	ND

Approved by: Keenan Murphy Date: September 13, 1993

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: EMCON Project No. 0G70-035.01
ARCO Facility No. 6041

Date Received: 08/30/93
Service Request No.: SJ93-1073
Sample Matrix: Water

Surrogate Recovery Summary
BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

Sample Name	Date Analyzed	Percent Recovery α,α,α-Trifluorotoluene
MW-1 (17)	09/09/93	97.
MW-2 (14)	09/09/93	89.
MW-3 (14)	09/09/93	91.
MW-4 (14)	09/08/93	89.
MW-5 (17)	09/08/93	79.
MW-6 (15)	09/09/93	91.
FB-1	09/09/93	89.
MS	09/08/93	92.
DMS	09/08/93	92.
Method Blank	09/08/93	80.
Method Blank	09/09/93	82.
CAS Acceptance Criteria		70-130

Approved by: Kevin Murphy Date: September 13, 1993

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: EMCON Project No. 0G70-035.01
ARCO Facility No. 6041

Date Received: 08/30/93
Service Request No.: SJ93-1073

Initial Calibration Verification
BTEX and TPH as Gasoline
EPA Methods 5030/8020/DHS LUFT Method
µg/L (ppb)

Date Analyzed: 09/08/93

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Criteria
Benzene	25.	27.2	109.	85-115
Toluene	25.	27.3	109.	85-115
Ethylbenzene	25.	27.1	108.	85-115
Total Xylenes	75.	81.6	109.	85-115
TPH as Gasoline	250.	237.	95.	90-110

Approved by: Keown Murphy Date: September 13, 1993

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: EMCON Project No. 0G70-035.01
ARCO Facility No. 6041

Date Received: 08/30/93
Service Request No.: SJ93-1073
Sample Matrix: Water

Matrix Spike/Duplicate Matrix Spike Summary
TPH as Gasoline
EPA Methods 5030/California DHS LUFT Method
µg/L (ppb)

Date Analyzed: 09/08/93

Analyte	Spike Level	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Criteria
TPH as Gasoline	250.	ND	231.	229.	92.	92.	76-130

Approved by: Kevin Murphy Date: September 13, 1993

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ARCO Products Company
Division of AtlanticRichfieldCompany

Chain of Custody

Task Order No. EMC-93-5

ARCO Facility no. 6041	City (Facility) Dublin	Project manager (Consultant) Jim Butera	Laboratory name CAS
ARCO engineer Kyle Christie	Telephone no. (ARCO) 571-2434	Telephone no. (Consultant) 453-0719	Fax no. (Consultant) 453-0452
Consultant name EMCON Associates	Address (Consultant) 1938 Junction Avenue San Jose		Contract number 07077

Method of shipment: Sampler will deliver

Special detection Limit/reporting: Lowest Possible

Special QA/QC: As Normal

Remarks: 2-40 ml HCl VOA's

Lab number: 5093-1073

Turnaround time
- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Expedited 5 Business Days ☐
- Standard 10 Business Days ☒

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA 8020/8015 GAS	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
MW-1 (17)	1-2	2		X		X	HCl	8-30-93	1132		X											
MW-2 (14)	3-4	2		X		X			1043		X											
MW-3 (14)	5-6	2		X		X			1015		X											
MW-4 (14)	7-8	2		X		X			0844		X											
MW-5 (17)	9-10	2		X		X			0925		X											
MW-6 (15)	11-12	2		X		X			1001		X											
FB-1	13-14	2		X		X			0848		X											

Condition of sample: OKAY

Temperature received: cool

Relinquished by sampler: Ben Pendleton	Date 8-30-93	Time 1310	Received by
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by (laboratory) CAS/SJ — Date 8-30-93 — Time 1310

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant

APPC-3292 (2-91)

Rev. 2, 5/91

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 0670-035.01
PURGED BY: K REICHELDERFER
SAMPLED BY: ↓

SAMPLE ID: MW-1 (17)
CLIENT NAME: ARCO 6041
LOCATION: 7249 VILLAGE PKWY. DUBLIN, CA.

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): NR
DEPTH TO WATER (feet): 10.62
DEPTH OF WELL (feet): 17.5

VOLUME IN CASING (gal.): 4.49
CALCULATED PURGE (gal.): 13.48
ACTUAL PURGE VOL. (gal.): 8.00

DATE PURGED: 8-30-93 Start (2400 Hr) 1110 End (2400 Hr) 1123
DATE SAMPLED: 8-30-93 Start (2400 Hr) 1132 End (2400 Hr) 1134

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1115	4.50	6.69	3010	69.9	LT GREY	LIGHT
1123	WELL DRIED @ 8.00 GALLONS					
1135	RECHARGE	6.60	2970	69.6	LT GREY	LIGHT

D. O. (ppm): NR ODOR: MODERATE COLOR: NR (COBALT 0 - 100) TURBIDITY: NR (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NR

PURGING EQUIPMENT

___ 2" Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Well Wizard™
___ Bailer (Teflon®)
X Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated
Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump
___ DDL Sampler
___ Dipper
___ Well Wizard™
X Bailer (Teflon®)
___ Bailer (Stainless Steel)
___ Submersible Pump
___ Dedicated
Other: ___

WELL INTEGRITY: OK LOCK #: 3259

REMARKS: ___

Meter Calibration: Date: 8-30-93 Time: 0745 Meter Serial #: 9203 Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: MW-3

Signature: Kevin Reichelderfer Reviewed By: JB Page 1 of 6

Rev. 2, 5/91

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 0670-035.01 | SAMPLE ID: MW-2 (14)

PURGED BY: K REICHELDERFER | CLIENT NAME: ARCO 6041

SAMPLED BY: ↓ | LOCATION: 7249 VILLAGE PKWY. DUBLIN, CA.

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL):	NR	VOLUME IN CASING (gal.):	3.43
DEPTH TO WATER (feet):	8.85	CALCULATED PURGE (gal.):	10.29
DEPTH OF WELL (feet):	14.1	ACTUAL PURGE VOL (gal.):	10.50

DATE PURGED: 8-30-93 Start (2400 Hr) 1037 End (2400 Hr) 1048

DATE SAMPLED: 8-30-93 Start (2400 Hr) 1053 End (2400 Hr) 1055

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmh·os/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1040	3.50	6.65	3340	69.1	LT GREY	HEAVY
1044	7.00	6.65	3330	68.8	↓	↓
1048	10.50	6.62	3380	68.2		

D. O. (ppm): NR ODOR: SLIGHT COLOR: NR (COBALT 0 - 100) TURBIDITY: NR (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NR

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	X Bailer (Teflon®)
___ Centrifugal Pump	X Bailer (PVC)	___ DDL Sampler	___ Bailer (Stainless Steel)
___ Submersible Pump	___ Bailer (Stainless Steel)	___ Dipper	___ Submersible Pump
___ Well Wizard™	___ Dedicated	___ Well Wizard™	___ Dedicated
Other: ___		Other: ___	

WELL INTEGRITY: OK LOCK #: 3616

REMARKS: ___

Meter Calibration: Date: 8-30-93 Time: 0745 Meter Serial #: 9203 Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: MW-3

Signature: Kevin Reichelderfer Reviewed By: JB

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 0670-035.01 | SAMPLE ID: MW-3 (14)

PURGED BY: K REICHELDERFER | CLIENT NAME: ARCO 6041

SAMPLED BY: ↓ | LOCATION: 7249 VILLAGE PKWY, DUBLIN, CA.

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL):	NR	VOLUME IN CASING (gal.):	3.32
DEPTH TO WATER (feet):	9.62	CALCULATED PURGE (gal.):	9.96
DEPTH OF WELL (feet):	14.7	ACTUAL PURGE VOL. (gal.):	5.50

DATE PURGED: 8-30-93 Start (2400 Hr) 0804 End (2400 Hr) 0812

DATE SAMPLED: 8-30-93 Start (2400 Hr) 1015 End (2400 Hr) 1017

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
0807	3.50	6.47	2470	70.8	CLOUDY	LIGHT
0812	WELL DRIED @		5.50 GALLONS			
1019	RECHARGE	6.52	2790	69.3	LT GREY	MODERATE

D. O. (ppm): NR ODOR: MILD

COLOR: NR (COBALT 0 - 100) TURBIDITY: NR (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NR

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	X Bailer (Teflon®)
___ Centrifugal Pump	X Bailer (PVC)	___ DDL Sampler	___ Bailer (Stainless Steel)
___ Submersible Pump	___ Bailer (Stainless Steel)	___ Dipper	___ Submersible Pump
___ Well Wizard™	___ Dedicated	___ Well Wizard™	___ Dedicated
Other: ___		Other: ___	

WELL INTEGRITY: OK LOCK #: 3259

REMARKS: ~~1009 DTW 12.60~~ 0812 WELL DRIED @ 5.50 GALLONS
1009 DTW 12.60
NEEDS NEW LOCK (BRING BOLT CUTTERS)

Meter Calibration: Date: 8-30-93 Time: 0745 Meter Serial #: 9203 Temperature °F: 72.1

(EC 1000 992/1000) (DI 11.94) (pH 7 7.09/7.00) (pH 10 10.02/10.00) (pH 4 3.92/—)

Location of previous calibration: ___

Signature: Kevin Reichelderfer Reviewed By: JB Page 3 of 6

Rev. 2, 5/91

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 0670-035.01 SAMPLE ID: MW-4(14)

PURGED BY: K REICHELDERFER CLIENT NAME: ARCO 6041

SAMPLED BY: ↓ LOCATION: 7249 VILLAGE PKWY, DUBLIN, CA.

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL):	NR	VOLUME IN CASING (gal.):	4.19
DEPTH TO WATER (feet):	8.09	CALCULATED PURGE (gal.):	12.56
DEPTH OF WELL (feet):	14.5	ACTUAL PURGE VOL. (gal.):	13.00

DATE PURGED: 8-30-93 Start (2400 Hr) 0825 End (2400 Hr) 0840

DATE SAMPLED: 8-30-93 Start (2400 Hr) 0844 End (2400 Hr) 0846

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
0829	4.50	6.66	5860	69.1	LT GREY	MODERATE
0835	9.00	6.71	5840	67.4	↓	↓
0840	13.00	6.70	5670	66.9		

D. O. (ppm): NR ODOR: NONE

COLOR (COBALT 0 - 100): NR

TURBIDITY (NTU 0 - 200): NR

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): FB-1 @ 0848

PURGING EQUIPMENT

___ 2" Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Well Wizard™
___ Bailer (Teflon®)
X Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated
Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump
___ DDL Sampler
___ Dipper
___ Well Wizard™
X Bailer (Teflon®)
___ Bailer (Stainless Steel)
___ Submersible Pump
___ Dedicated
Other: ___

WELL INTEGRITY: OK LOCK #: 3259

REMARKS: WELL NEARLY DRIED OUT
NEEDS NEW 3259 LOCK (BRING BOLT CUTTERS)

Meter Calibration: Date: 8-30-93 Time: 0745 Meter Serial #: 9203 Temperature °F: ___

(EC 1000 ___ / 1000) (DI ___) (pH 7 ___ / 7.00) (pH 10 ___ / 10.00) (pH 4 ___ / ~)

Location of previous calibration: MW-3

Signature: Kevin Reichelderfer Reviewed By: JB Page 4 of 9

Rev. 2, 5/91

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 0670-035.01 | SAMPLE ID: MW-5 (17)

PURGED BY: K REICHELDERFER | CLIENT NAME: ARCO 6041

SAMPLED BY: ↓ | LOCATION: 7249 VILLAGE PKWY, DUBLIN, CA.

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL):	NR	VOLUME IN CASING (gal.):	4.95
DEPTH TO WATER (feet):	4.83	CALCULATED PURGE (gal.):	14.84
DEPTH OF WELL (feet):	17.4	ACTUAL PURGE VOL. (gal.):	15.00

DATE PURGED: 8-30-93 Start (2400 Hr) 0904 End (2400 Hr) 0919

DATE SAMPLED: 8-30-93 Start (2400 Hr) 0925 End (2400 Hr) 0927

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
0907	5.00	7.01	4270	68.1	LT GREY	MODERATE
0912	10.00	6.98	4290	67.1	↓	↓
0919	15.00	7.02	4290	66.2	↓	HEAVY

D. O. (ppm): NR ODOR: NONE

COLOR (COBALT 0 - 100): NR

TURBIDITY (NTU 0 - 200): NR

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NR

PURGING EQUIPMENT

___ 2" Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Well Wizard™
___ Bailer (Teflon®)
X Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated
Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump
___ DDL Sampler
___ Dipper
___ Well Wizard™
X Bailer (Teflon®)
___ Bailer (Stainless Steel)
___ Submersible Pump
___ Dedicated
Other: ___

WELL INTEGRITY: OK LOCK #: 3259

REMARKS: WELL NEARLY DRIES

Meter Calibration: Date: 8-30-93 Time: 0745 Meter Serial #: 9203 Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: MW-3

Signature: Kevin Reichelderfer Reviewed By: JB Page 5 of 6

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 0670-035.01 | SAMPLE ID: MW-6 (15)

PURGED BY: K REICHELDERFER | CLIENT NAME: ARCO 6041

SAMPLED BY: ↓ | LOCATION: 7249 VILLAGE PKWY. DUBLIN, CA.

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL):	NR	VOLUME IN CASING (gal.):	3.80
DEPTH TO WATER (feet):	9.98	CALCULATED PURGE (gal.):	11.41
DEPTH OF WELL (feet):	15.8	ACTUAL PURGE VOL. (gal.):	11.50

DATE PURGED: 8-30-93 Start (2400 Hr) 0945 End (2400 Hr) 0957

DATE SAMPLED: 8-30-93 Start (2400 Hr) 1001 End (2400 Hr) 1003

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
0949	4.00	6.95	6500	70.1	GREY	HEAVY
0953	8.00	6.88	6480	69.8	↓	↓
0957	11.50	6.90	6510	69.3		

D. O. (ppm): NR ODOR: NONE

COLOR (COBALT 0 - 100): NR

TURBIDITY (NTU 0 - 200): NR

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NR

PURGING EQUIPMENT

___ 2" Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Well Wizard™
___ Bailer (Teflon®)
X Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated
Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump
___ DDL Sampler
___ Dipper
___ Well Wizard™
X Bailer (Teflon®)
___ Bailer (Stainless Steel)
___ Submersible Pump
___ Dedicated
Other: ___

WELL INTEGRITY: OK LOCK #: 3259

REMARKS: ___

Meter Calibration: Date: 8-30-93 Time: 0745 Meter Serial #: 9203 Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: MW-3

Signature: Kevin Reichelderfer Reviewed By: ___ Page 6 of 6

EMCON Associates
1921 Ringwood Avenue • San Jose, California 95131-1721 • **(408) 453-7300** • Fax (408) 437-9526

Date September 30, 1993
Project 0G70-035.01

To:
Mr. John Young
RESNA
3315 Almaden Expressway, Suite 34
San Jose, California 95118

We are enclosing:

Copies	Description
1	Depth To Water/Floating Product Survey Results
	September 1993 monthly water level survey, ARCO
	station 6041, 7249 Village Parkway, Dublin, CA

For your: X Information Sent by: X Mail

Comments:
Monthly water level data for the above mentioned site are attached. Please call if you have any questions: (408) 453-2266.

Reviewed by:

REGISTERED PROFESSIONAL ENGINEER
ROBERT CURTIS PORTER
No: 4094
Exp. 6/30/94
INDUSTRIAL
STATE OF CALIFORNIA

Jim Butera JB

Robert Porter, Senior Project Engineer.

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : 0G70-035.01 STATION ADDRESS : 7249 Village Parkway, Dublin, CA DATE : 9-28-93

ARCO STATION # : 6041 FIELD TECHNICIAN : Ian Graham DAY : Tuesday

DTW Order	WELL ID	Well Box Seal	Well Lid Secure	Gasket	Lock	Locking Well Cap	FIRST DEPTH TO WATER (feet)	SECOND DEPTH TO WATER (feet)	DEPTH TO FLOATING PRODUCT (feet)	FLOATING PRODUCT THICKNESS (feet)	WELL TOTAL DEPTH (feet)	COMMENTS
1	MW-4	SLIGHT CRACKS	15/16	OK	3259	OK	8.40	8.40	ND	NR	14.5	—
2	MW-5	OK	15/16	OK	3259	OK	9.99	9.99	ND	NR	17.5	—
3	MW-6	SLIGHT CRACKS	15/16	OK	3259	OK	9.95	9.95	ND	NR	15.8	BOX IS SINKING BELOW GROUND LEVEL
4	MW-3	OK	15/16	OK	3259	OK	9.80	9.80	ND	NR	14.7	—
5	MW-2	SLIGHT CRACKS	15/16	OK	3616	OK	9.19	9.19	ND	NR	14.1	BOX IS SINKING BELOW GROUND LEVEL
6	MW-1	SLIGHT CRACKS	15/16	OK	3259	OK	10.82	10.82	ND	NR	17.6	—

SURVEY POINTS ARE TOP OF WELL CASINGS