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RESNA
Working To Restore Nature

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

TRANSMITTAL

TO: Mr. Scott Seery
Alameda County Health
Care Services Agency
80 Swan Way, Room 200
Oakland, California 94621

DATE: December 3, 1993
PROJECT NUMBER: 69034-12
SUBJECT: ARCO Station 601

FROM: Erin D. Krueger

WE ARE SENDING YOU:

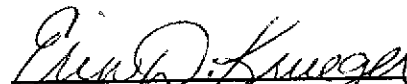
COPIES DATED	DESCRIPTION
1 12/03/93	Letter to Mr. John Sullivan including Laboratory Analytical Results of Third Quarter 1993 Groundwater Samples for ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California.

THESE ARE TRANSMITTED as checked below:

- | | | |
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| ☐ For review and comment | ☐ Approved as submitted | ☐ Resubmit ___ copies for approval |
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REMARKS:

Copies: 1 to RESNA project file no. 69034-12


Erin D. Krueger, Staff Geologist

cc: John Meck, ARCO
Gary Grimm, RWQCB
John Jang, RWQCB
Michael Whelan, ARCO
John Sullivan

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

TRANSMITTAL

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94 JAN -6 PM 2:16

TO: Mr. Scott Seery
Alameda County Health
Care Services Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

DATE: December 30, 1993
PROJECT NUMBER: 69034.12
SUBJECT: ARCO Station 601

FROM: Erin D. Krueger

WE ARE SENDING YOU:

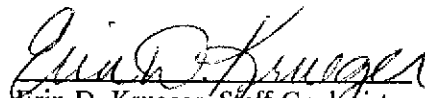
COPIES	DATED	DESCRIPTION
1	12/29/93	Letter Report, Quarterly Groundwater Monitoring, Third Quarter 1993 for ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California.

THESE ARE TRANSMITTED as checked below:

- | | | |
|--|---|---|
| ☐ For review and comment | ☐ Approved as submitted | ☐ Resubmit ___ copies for approval |
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| ☒ For your files | ☐ Regular Mail | ☒ Certified Mail |

REMARKS:

Copies: 1 to RESNA project file no. 69034.12


Erin D. Krueger, Staff Geologist

cc: Mr. Michael Whelan, ARCO
Mr. John Jang, RWQCB
Mr. Mike Bakaldin, SLFD

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

December 3, 1993

Mr. John Sullivan
17760 Sweetbriar Place
Castro Valley, California 94546

Subject: Laboratory Analytical Results of Third Quarter 1993 Groundwater Samples
ARCO Station 601
712 Lewelling Boulevard, San Leandro, California.

Mr. Sullivan:

Enclosed please find copies of laboratory analytical results for groundwater samples collected from wells MW-9 and MW-10, located at Chateau Manor Apartments, 724 Lewelling Boulevard, San Leandro, California. The groundwater samples were collected during quarterly sampling on August 17, 1993. The laboratory analytical results indicate that concentrations of total petroleum hydrocarbons as gasoline, and the gasoline constituents benzene, toluene, ethylbenzene, and total xylenes were not detected.

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

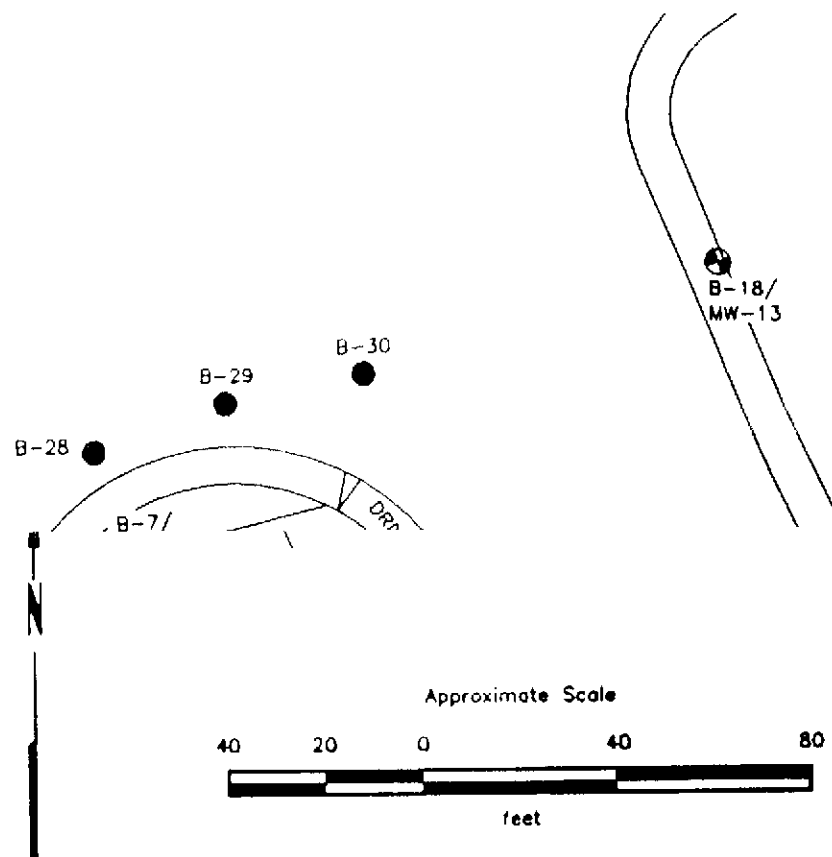
Sincerely,
RESNA Industries Inc.


Erin D. Krueger
Staff Geologist

Enclosures: Plate 1, Generalized Site Plan
Copy of Laboratory Analytical Results of Groundwater Samples
for wells MW-9 and MW-10

LEWELLING BOULEVARD

- B-33/ MW-10  - Groundwater monitoring well
(RESNA/Applied GeoSystems, June 1990 through May 1993)
- B-31  - Soil boring
(RESNA/Applied GeoSystems, August 1989 through May 1993)
-  - Former gasoline underground storage tanks



Source: Surveyed by Ron Archer, Civil Engineer Inc.
modified by John Koch Land Surveyor.

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PROJECT 69034.12

69034-12

GENERALIZED SITE PLAN
ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

PLATE

1



September 1, 1993

Service Request No. SJ93-1020

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

Re: EMCON Project No. 0G70-007.01
ARCO Facility No. 601

Dear Mr. Butera:

Attached are the results of the water samples submitted to our lab on August 17, 1993. For your reference, these analyses have been assigned our service request number SJ93-1020.

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

KAM/kmh


Annelise J. Bazar
Regional QA Coordinator

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

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: EMCON Project No. 0G70-007.01
ARCO Facility No. 601

Date Received: 08/17/93
Service Request No.: SJ93-1020
Sample Matrix: Water

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
 $\mu\text{g/L}$ (ppb)

Sample Name:
Date Analyzed:

<u>Analyte</u>	<u>MRL</u>
Benzene	0.5
Toluene	0.5
Ethylbenzene	0.5
Total Xylenes	0.5
TPH as Gasoline	50

Sample Name:
Date Analyzed:

MW-9 (18)
08/25/93

MW-10 (15)
08/25/93

<u>Analyte</u>	<u>MRL</u>		
Benzene	0.5	ND	ND
Toluene	0.5	ND	ND
Ethylbenzene	0.5	ND	ND
Total Xylenes	0.5	ND	ND
TPH as Gasoline	50	ND	ND

* Raised MRL due to matrix interference.

Approved by:

Keenan Murphy

Date:

September 1, 1993

ARCO Products Company

Division of AtlanticRichfieldCompany

Task Order No. EMC-93-5

Chain of Custody

ARCO Facility no. 601	City (Facility) San Leandro	Project manager (Consultant) JIM BUTERA
ARCO engineer Kyle Christie	Telephone no. (ARCO) 971-2434	Telephone no. (Consultant) 453-0719
Consultant name EMCON Associates	Address (Consultant) 1938 Junction Avenue San Jose	Fax no. (Consultant) 453-0452

Laboratory name **CAS**Contract number **07077**Method of shipment
sample will deliverSpecial detection Limit/reporting
Lowest PossibleSpecial QA/QC
As NormalRemarks
**2-40 ml HCl
Add:
2-40 ml HCl
4-Liter NP
1-500 HNC3
2-Liter HCl**Lab number
SJ93-102

Turnaround time

Priority Rush
1 Business DayRush
2 Business DaysExpedited
5 Business DaysStandard
10 Business Days

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX 502 EPA 8020	GAS BTEX/TPH EPA M602/8020/8015	TPH Modified 8015 Gas Diesel	Oil and Grease 413.1 413.2	TPH EPA 418 1/SM503E	EPA 8010	EPA 824/8240	EPA 821/8210	Sem TCLP Meas VOA VOA	CAM Meas EPA 8010/7000 TLC STLC	Lead Org IDHS Lead EPA 7420/7421	Mercury EPA 8210
			Soil	Water	Other	Ice	Acid														
MW1		NO Sample	X			X	HCl	8/17/93			X										
MW2 (12)	1-2	2							1419		X										
MW3		2	NO Sample								X										
MW4 (7)	3-4	2							1535		X										
MW5 (10)	5-6	2							1534		X										
MW6		2	Dry				No Sample				X										
MW7		2	Dry				No Sample				X										
MW8 (10)	7-8	2							1436		X										
MW9 (18)	9-10	2							1330		X										
MW10 (15)	11-12	2							1255		X										
MW11 (11)	13-14	2							1308		X										
MW12 (11)	15-16	2							1235		X										
MW13 (12)	17-18	2							1405		X										
MW14 (12)	19-20	2							1445		X										
MW15 (9)	21-22	2							1233		X										
FB1	23-24	2							1239		X										

Condition of sample: **OK**

Relinquished by sample:

Relinquished by

Relinquished by

Date

Date

Date

Time

Time

Time

Temperature received: **CO22**

Received by

Received by

Received by laboratory

Date

Time

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

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LETTER REPORT
QUARTERLY GROUNDWATER MONITORING
Third Quarter 1993
at
ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

69034.12

12-29-93

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

December 29, 1993
3rdqtrqm
69034.12

Mr. Michael Whelan
ARCO Products Company
Post Office Box 5811
San Mateo, California 94402

Subject: Letter Report, Quarterly Groundwater Monitoring, Third Quarter 1993,
ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California.

Mr. Whelan:

As requested by ARCO Products Company (ARCO), RESNA Industries Inc. (RESNA) has prepared this letter report which summarizes the results of third quarter 1993 groundwater monitoring performed by ARCO's contractor, EMCON Associates (EMCON) of San Jose, California, at the above-referenced site. The scope of work for quarterly monitoring at this site was reduced from monthly monitoring (depth-to-water measurements and subjective analyses) and quarterly sampling, to quarterly monitoring and sampling as of September 1, 1993. The reduced monitoring is in response to a relatively stable groundwater gradient and flow direction. The objectives of this quarterly groundwater monitoring event were to evaluate changes in the groundwater flow direction and gradient, and changes in concentrations of petroleum hydrocarbons in the local groundwater associated with four former gasoline underground storage tanks (USTs) and a former waste-oil UST at the site. Field work and laboratory analyses of groundwater samples during this quarter were performed under the direction of EMCON and included measuring depths to groundwater, subjectively analyzing groundwater for the presence of petroleum product, collecting groundwater samples from the wells for laboratory analyses, and directing a State-certified laboratory to analyze the groundwater samples. Evaluation and warrant of EMCON's field data and field protocols are beyond RESNA's scope of work. RESNA's scope of work was limited to interpretation of field and laboratory analyses data, including evaluating trends

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

in reported hydrocarbon concentrations in the local groundwater, the groundwater gradient, and direction of groundwater flow beneath the site.

The operating ARCO Station 601 is located on the southwestern corner of the intersection of Lewelling Boulevard and Washington Avenue in San Leandro, California, as shown on the Site Vicinity Map, Plate 1. Results of previous environmental investigations at the site are presented in the reports listed in the references section. Locations of the groundwater monitoring wells and pertinent site features are shown on the Generalized Site Plan, Plate 2.

Groundwater Sampling and Gradient Evaluation

Depth to water levels (DTW) were measured by EMCON field personnel on July 28, and August 17, 1993. Quarterly sampling was performed by EMCON field personnel on August 17, 1993. The results of EMCON's field work at the site, including DTW measurements and subjective analysis for the presence of product in the groundwater in wells MW-1 through MW-15 are presented on EMCON's Field Reports and Water Sample Field Data Sheets. These data are included in Appendix A.

The DTW measurements, depth of wells, wellhead elevations, groundwater elevations, and subjective observations for the presence of product in groundwater monitoring wells MW-1 through MW-15, for previous quarterly groundwater monitoring at the site are summarized in Table 1, Cumulative Groundwater Monitoring Data. According to EMCON's Field Reports, 0.01 foot of floating product was observed in monitoring well MW-1 during both monitoring events, and 0.01 foot of product was present in well MW-3 during the August monitoring event. No evidence of floating product was observed in the other wells during this quarter. Based on EMCON's DTW levels, the groundwater elevations for July and August 1993 are shown on the Groundwater Gradient Maps, Plates 3 and 4. Groundwater gradients and flow directions interpreted from the July and August data indicated an average gradient of about 0.003 ft/ft with a flow direction to the southwest. A local groundwater depression appears to be present in the vicinity of monitoring well MW-4.

Groundwater monitoring wells MW-2, MW-4, MW-5, and MW-8 through MW-15 were purged and sampled by EMCON field personnel on August 17, 1993. Because subjective analysis indicated petroleum product was present in MW-1 and MW-3, groundwater samples were not collected from these wells for laboratory analyses. EMCON's Water Sample Field Data sheets, Field Reports, and Summary of Groundwater Monitoring Data, are included in Appendix A. The purge water was removed from the site by a licensed hazardous waste hauler.

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
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Laboratory Methods and Analyses

Under the direction of EMCON, groundwater samples collected from wells MW-2, MW-4, MW-5, and MW-8 through MW-15 were analyzed by Columbia Analytical Services, Inc. located in San Jose, California (Hazardous Waste Testing Laboratory Certification No. 1426). The water samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and total petroleum hydrocarbons as gasoline (TPHg) using Environmental Protection Agency (EPA) Methods 5030/8020/California DHS LUFT Method. In addition, water samples from MW-8, the well located closest to and roughly downgradient of the former waste-oil UST, were also analyzed for total metals using EPA Method 6010, lead using EPA Method 7421, Halogenated Volatile Organic Compounds (VOCs) using EPA Methods 5030/601, Base Neutral/Acid Semivolatile Organic Compounds (BNAs) using EPA Methods 3510/8270, total petroleum hydrocarbons as diesel (TPHd) using EPA Method 3510/California DHS LUFT Method, and Total Recoverable Petroleum Hydrocarbons (TOG) using EPA Methods 418.1. These analyses of the MW-8 samples were performed at the request of Mr. Scott Seery of the Alameda County Health Care Services Agency. (If during future monitoring events, monitoring well MW-1 does not contain floating product, samples will be collected from MW-1 and analyzed for waste-oil constituents instead of samples from MW-8.) Results of these and previous water analyses are summarized in Table 2, Cumulative Results of Laboratory Analyses of Groundwater. Concentrations of TPHg and benzene in the groundwater are shown on Plate 5, TPHg/Benzene Concentrations in Groundwater. The Chain of Custody Records and Laboratory Analysis Reports are included in Appendix A.

The following general trends were noted in reported hydrocarbon concentrations in groundwater from the monitoring wells since the last quarterly monitoring at the site. Monitoring wells MW-1 and MW-3 continue to contain floating product or product sheen. Concentrations of TPHg and BTEX in monitoring wells MW-2, MW-4, MW-5, MW-8, and MW-11 generally decreased since last quarter, with the exception of total xylenes in well MW-11; monitoring wells MW-6 and MW-7 were dry and therefore not sampled; and monitoring wells MW-12, MW-13, MW-14, and MW-15, continue to have nondetectable TPHg and BTEX. Offsite wells MW-9 and MW-10, located on Mr. John Sullivan's Property at 724 Lewelling Boulevard, continued to have nondetectable concentrations of TPHg and BTEX. The analytical results for MW-8 indicated a decreased concentration of total oil and grease (TOG), concentrations of metals continued to be below the State Maximum Contaminant Levels (MCLs), VOCs remained nondetectable, BNAs remained low, and the hydrocarbons classified as diesel continued to have a nontypical diesel fingerprint, which may be indicative of weathered gasoline.

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
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Product Removal

Floating product is checked monthly in wells MW-1 and MW-3 and removed if present. A Horner EZY Product Skimmer was previously installed in well MW-3 on December 24, 1991, as a means of interim remediation. Quantities of floating product and water removed are presented on Table 3, Approximate Cumulative Product Recovered. The total product recovered at the site is 3.45 gallons.

RESNA also recommends that copies of this report be forwarded to:

Mr. Scott Seery
Alameda County Health Care Services Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

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

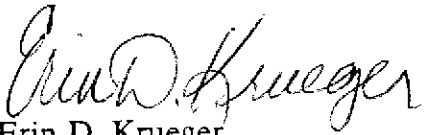
Mr. Mike Bakaldin
San Leandro Fire Department
835 East 14th Street
San Leandro, California 94577

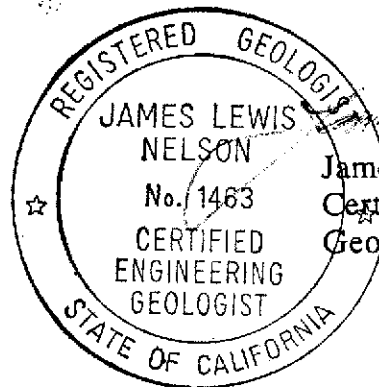
Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

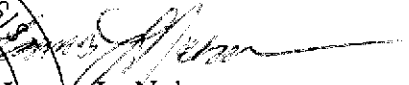
December 29, 1993
69034.12

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

Sincerely,
RESNA Industries Inc.


Erin D. Krueger
Staff Geologist




James L. Nelson
Certified Engineering
Geologist No. 1463

Enclosures:

References

Plate 1, Site Vicinity Map
Plate 2, Generalized Site Plan
Plate 3, Groundwater Gradient Map, July 28, 1993
Plate 4, Groundwater Gradient Map, August 17, 1993
Plate 5, TPHg/Benzene Concentrations in Groundwater, August 17, 1993

Table 1, Cumulative Groundwater Monitoring Data
Table 2, Cumulative Results of Laboratory Analyses of Groundwater
Samples
Table 3, Approximate Cumulative Product Recovered

Appendix A: EMCON's Water Sample Field Data Sheets, Field Reports, Summary
of Groundwater Monitoring Data, and Chain of Custody Records

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

REFERENCES

- Alameda County Health Care Services. December 26, 1991, Letter Regarding CAL-EPA Regional Hydrogeology and Contamination Study, Central San Leandro.
- Applied GeoSystems, November 9, 1989, Limited Environmental Site Assessment at ARCO Service Station No. 601, San Leandro, California. AGS Report 69034-1.
- Applied GeoSystems, November 30, 1990, Letter Report Quarterly Ground-Water Monitoring Fourth Quarter 1990. AGS Report 69034-3.
- Applied GeoSystems, December 14, 1990, Subsurface Environmental Assessment at ARCO Station 601, San Leandro, California. AGS Report 69034-2.
- Applied GeoSystems, March 24, 1991, Letter Report Quarterly Ground-Water Monitoring First Quarter 1991. (Letter Report 0130ccar, AGS 69034-3).
- Applied GeoSystems, July 3, 1991, Letter Report Quarterly Ground-Water Monitoring, Second Quarter 1991. AGS 69034.03.
- California Department of Health Services, Office of Drinking Water, October 18, 1990, Summary of Maximum contaminant Level (MCL) and Action Levels (AL).
- GeoStrategies, Inc., June 29, 1990, Tank Replacement Report, ARCO Service Station #601, San Leandro, California. GSI Report 7918-2.
- GeoStrategies, Inc, November 14, 1989, Proposed Scope of Work, ARCO Service Station #601, San Leandro, California. GSI Report 7918-1.
- RESNA Industries, October 17, 1991, Subsurface Environmental Assessment and Vapor Extraction Test at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.04.
- RESNA Industries, November 22, 1991, Letter Report Quarterly Groundwater Monitoring, Third Quarter 1991 at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.03.

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

REFERENCES
(Continued)

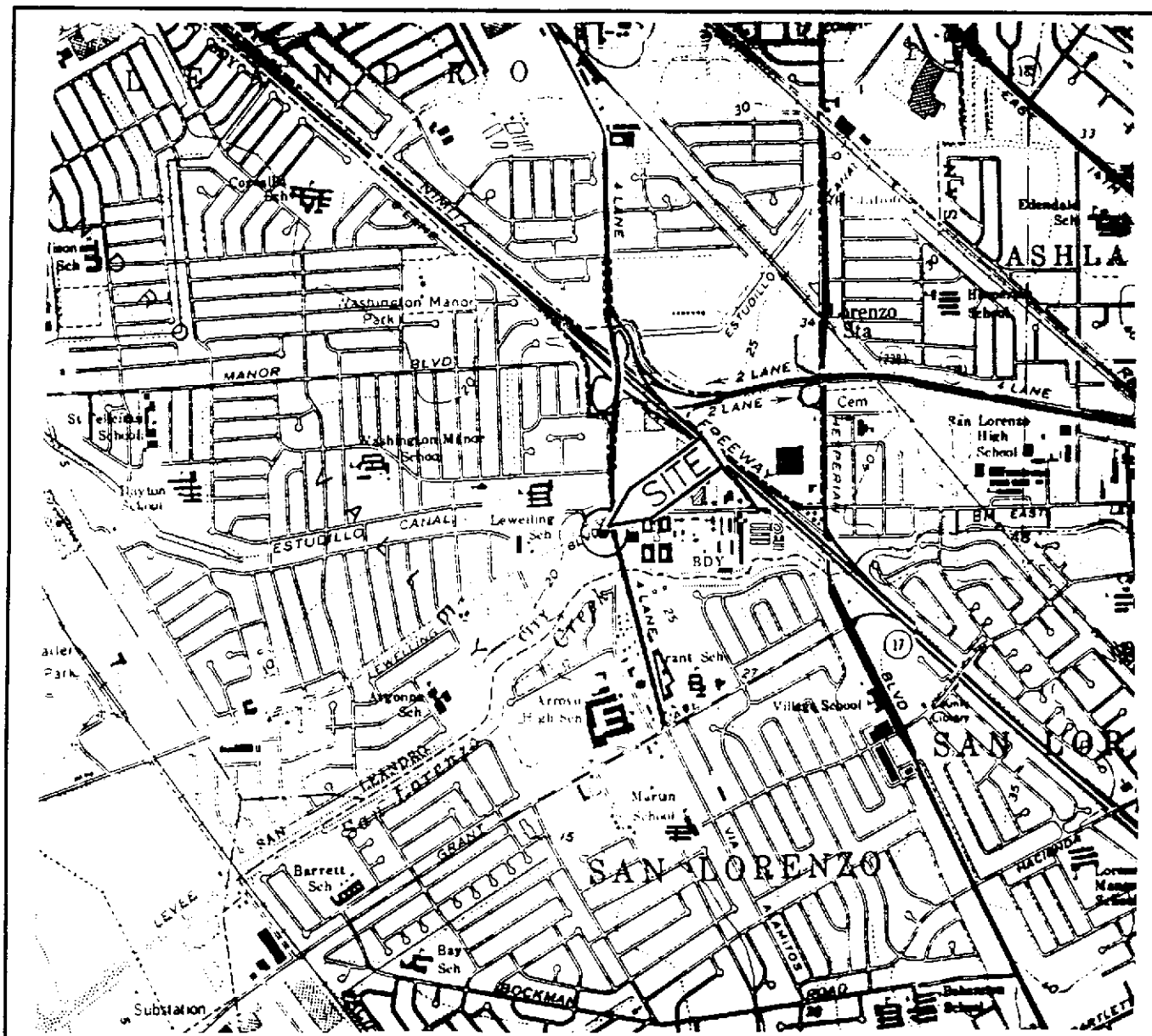
- RESNA Industries, March 21, 1991, Work Plan for Subsurface Investigation and Remediation at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034-4W.
- RESNA Industries, March 21, 1991, Addendum One to Work Plan at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034-4W.
- RESNA Industries, May 15, 1991, Addendum Two to Work Plan for Interim Product Recovery at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034-04.
- RESNA Industries, March 6, 1992, Addendum Three to Work Plan Additional Subsurface Investigation at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.08
- RESNA Industries, March 6, 1992, Addendum Four to Work Plan for Interim Groundwater Remediation at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.07
- RESNA Industries, April 9, 1992, Letter Report Quarterly Groundwater Monitoring, Fourth Quarter 1991, at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.06.
- RESNA Industries, May 5, 1992, Letter Report Quarterly Groundwater Monitoring, First Quarter 1992, at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.06.
- RESNA Industries, September 24, 1992, Letter Report Quarterly Groundwater Monitoring, Second Quarter 1992, at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.06.
- RESNA Industries, September 14, 1992, Addendum Five to Work Plan, at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.10.

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

REFERENCES
(Continued)

- RESNA Industries, October 21, 1992, Work Plan for Offsite Subsurface Investigation at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.11.
- RESNA Industries, December 7, 1992, Letter Report Quarterly Groundwater Monitoring, Third Quarter 1992, at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.06
- RESNA Industries, February 3, 1992, Limited Offsite Subsurface Investigation at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.11
- RESNA Industries, March 1, 1993, Letter Report Quarterly Groundwater Monitoring, Fourth Quarter 1992, at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.12
- RESNA Industries, March 3, 1993, Additional Subsurface Investigation at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.10
- RESNA Industries, March 30, 1993, Addendum Seven to Work Plan to Evaluate Aquifer Test Data and Feasibility of Remediation Alternatives at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.14
- RESNA Industries, June 10, 1993, Letter Report Quarterly Groundwater Monitoring, First Quarter 1993, at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.12
- RESNA Industries, September 19, 1993, Letter Report Quarterly Groundwater Monitoring, Second Quarter 1993, at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.12



Base: U.S. Geological Survey
7.5-Minute Quadrangles
Hayward/San Leandro, California.
Photorevised 1984

LEGEND

● = Site Location

Approximate Scale

2000 1000 0 2000 4000

feet

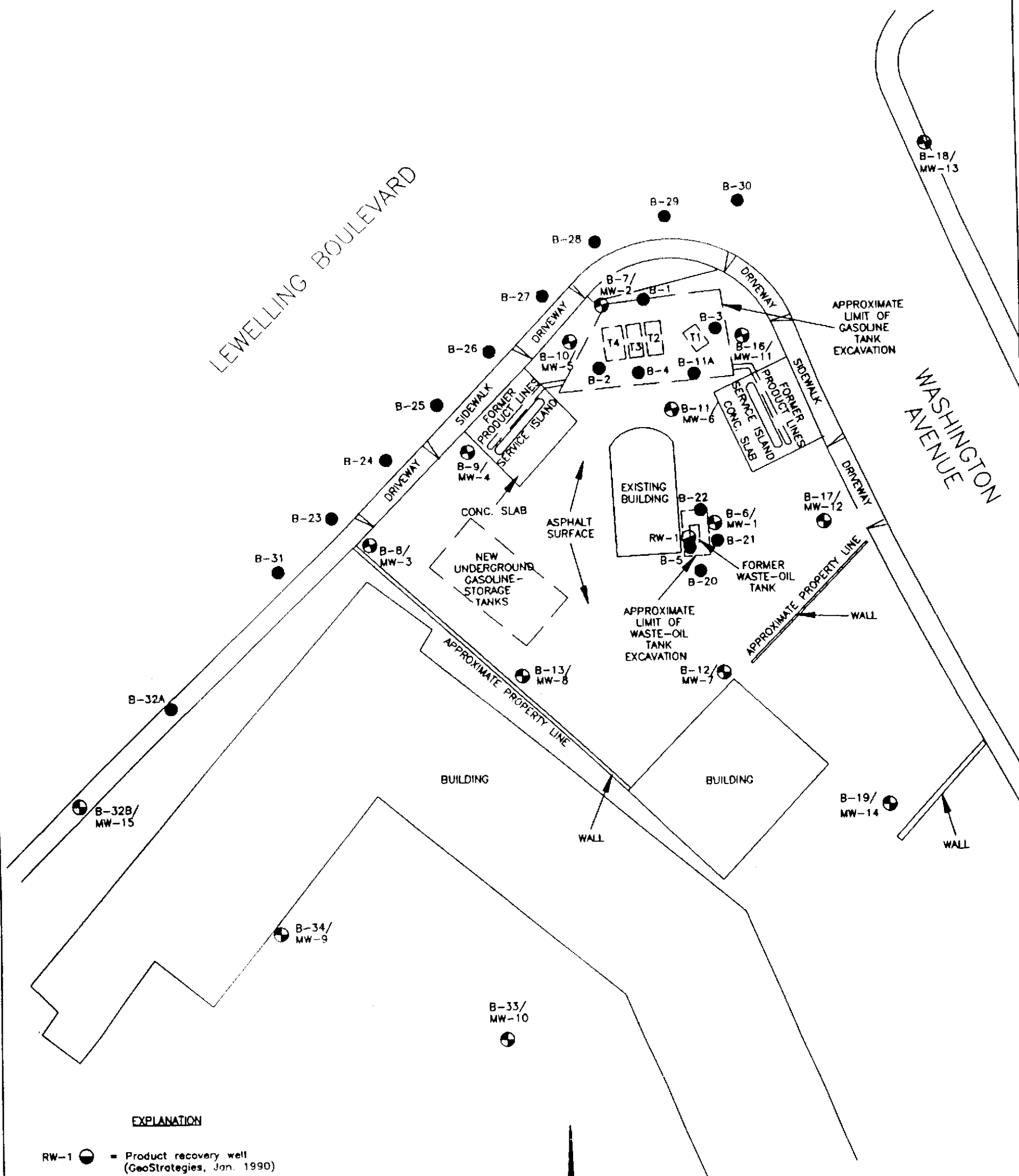
RESNA
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PROJECT 69034.12

SITE VICINITY MAP
ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

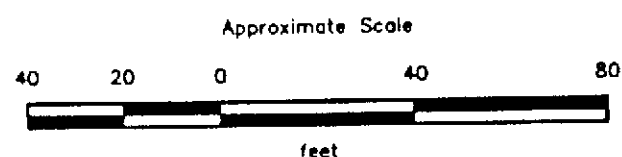
PLATE

1



EXPLANATION

- RW-1 ● = Product recovery well
(GeoStrategies, Jan. 1990)
- B-33/
MW-10 ● = Groundwater monitoring well
(RESNA/Applied GeoSystems, June 1990 through May 1993)
- B-31 ● = Soil boring
(RESNA/Applied GeoSystems, August 1989 through May 1993)
- [T4] = Former gasoline underground storage tanks



Source: Surveyed by Ron Archer, Civil Engineer Inc.
modified by John Koch Land Surveyor.

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Working to Restore Nature

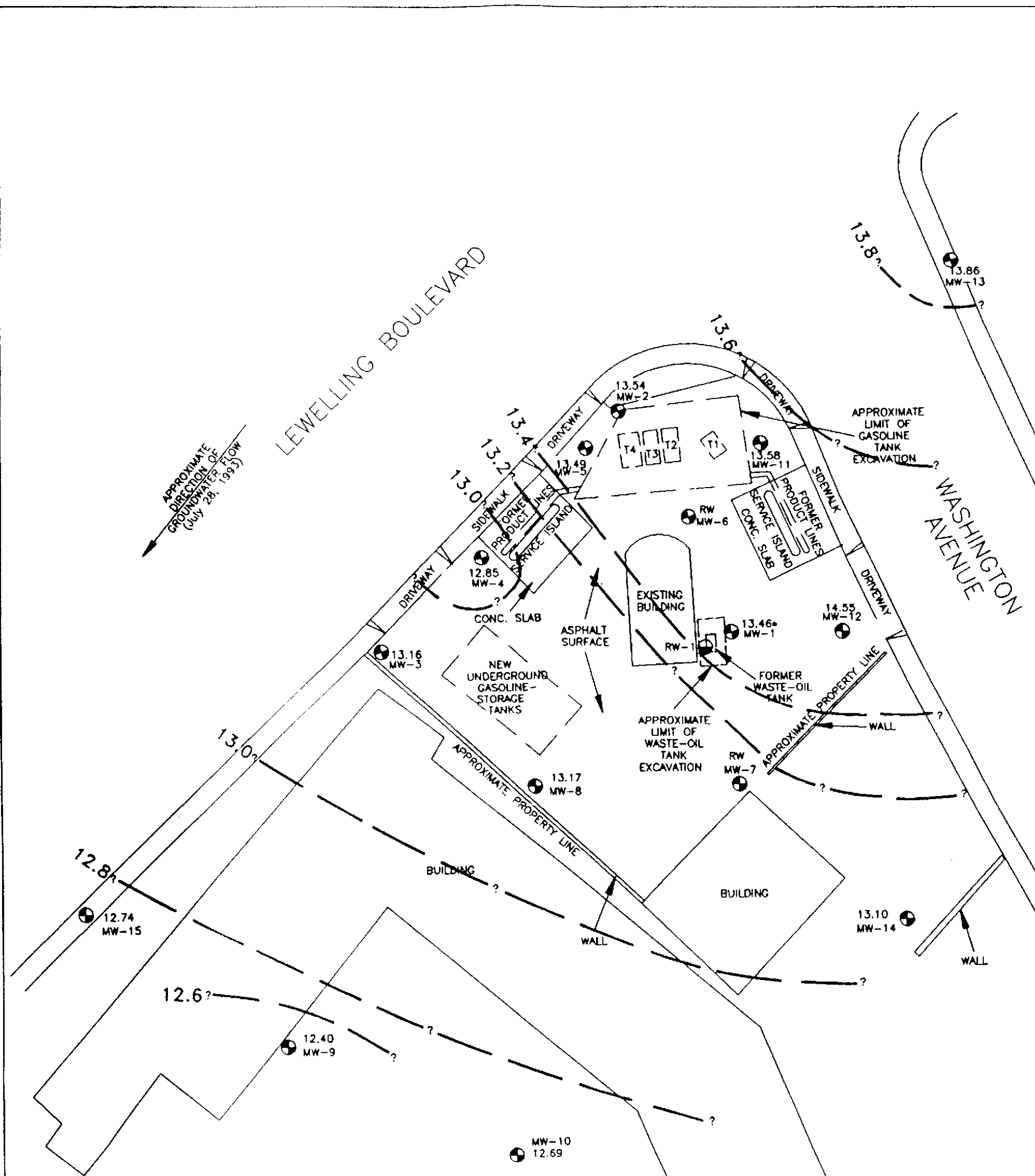
GENERALIZED SITE PLAN
ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

PLATE

2

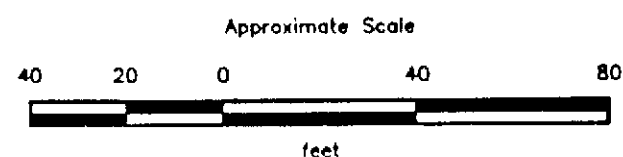
PROJECT 69034.12

69034-12



EXPLANATION

- 13.8 — Line of equal elevation of groundwater in feet above mean sea level (MSL)
- 13.86 = Elevation of groundwater in feet above MSL, July 28, 1993
- RW-1 = Product recovery well (GeoStrategies, Jan. 1990)
- MW-15 = Vapor extraction/groundwater monitoring well (RESNA/Applied GeoSystems, June 1990 through May 1993)
- [T4] = Former gasoline underground storage tanks
- = Elevation corrected for presence of floating product
- RW = Residual water



Source: Surveyed by Ron Archer, Civil Engineer Inc. modified by John Koch Land Surveyor.

RESNA
Working to Restore Nature

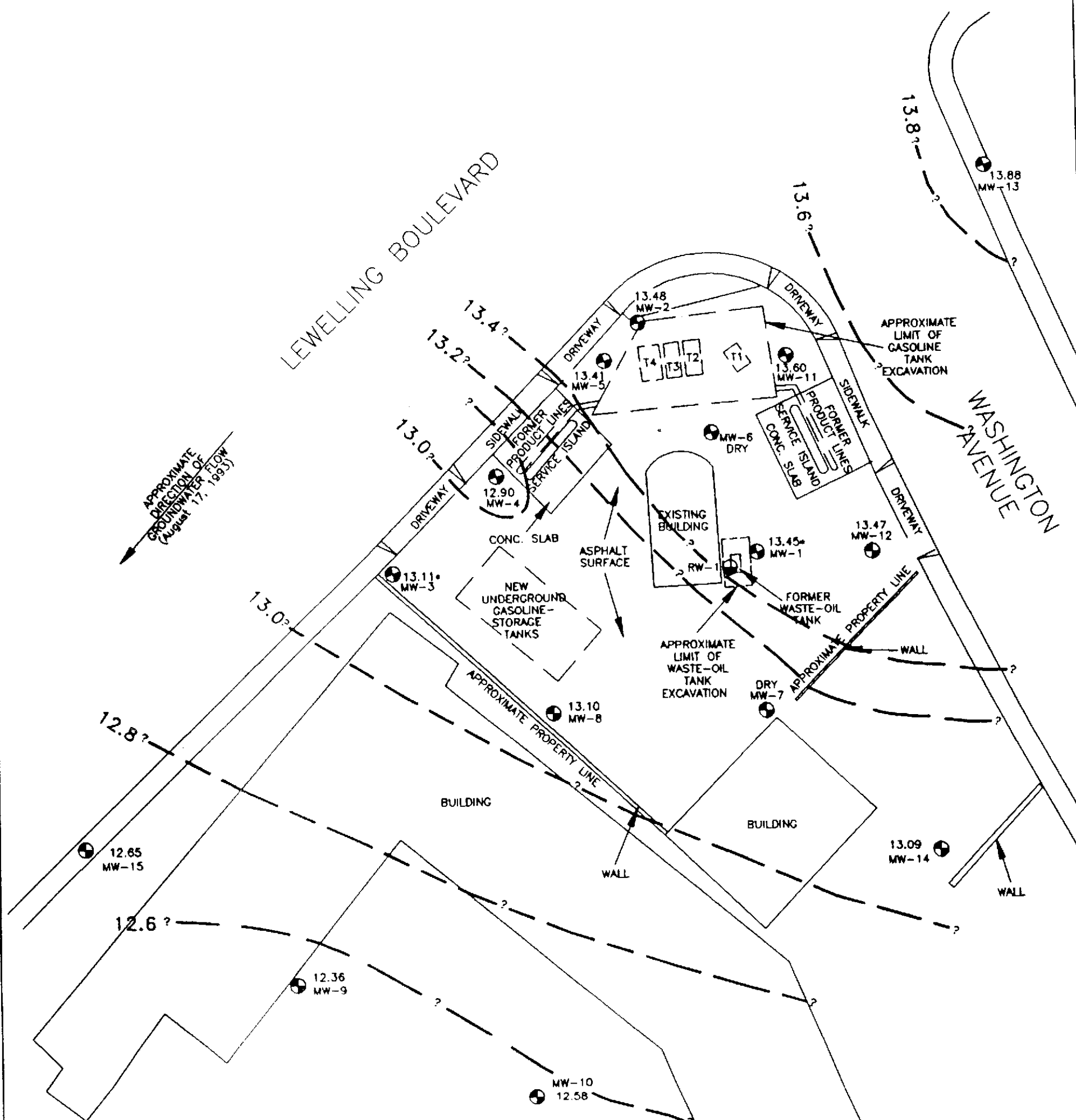
GROUNDWATER GRADIENT MAP
ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

PLATE

3

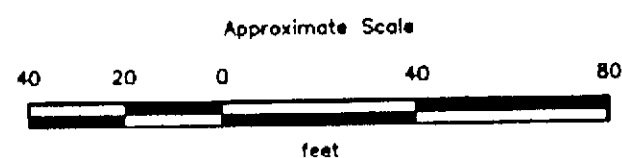
PROJECT 69034.12

90341203



EXPLANATION

- 13.8 — Line of equal elevation of groundwater in feet above mean sea level (MSL)
- 13.88 = Elevation of groundwater in feet above MSL, August 17, 1993
- RW-1 — Product recovery well (GeoStrategies, Jan. 1990)
- MW-15 — Vapor extraction/groundwater monitoring well (RESNA/Applied GeoSystems, June 1990 through May 1993)
- [T4] = Former gasoline underground storage tanks
- = Elevation corrected for floating product



Source: Surveyed by Ron Archer, Civil Engineer Inc. modified by John Koch Land Surveyor.

RESNA
Working to Restore Nature

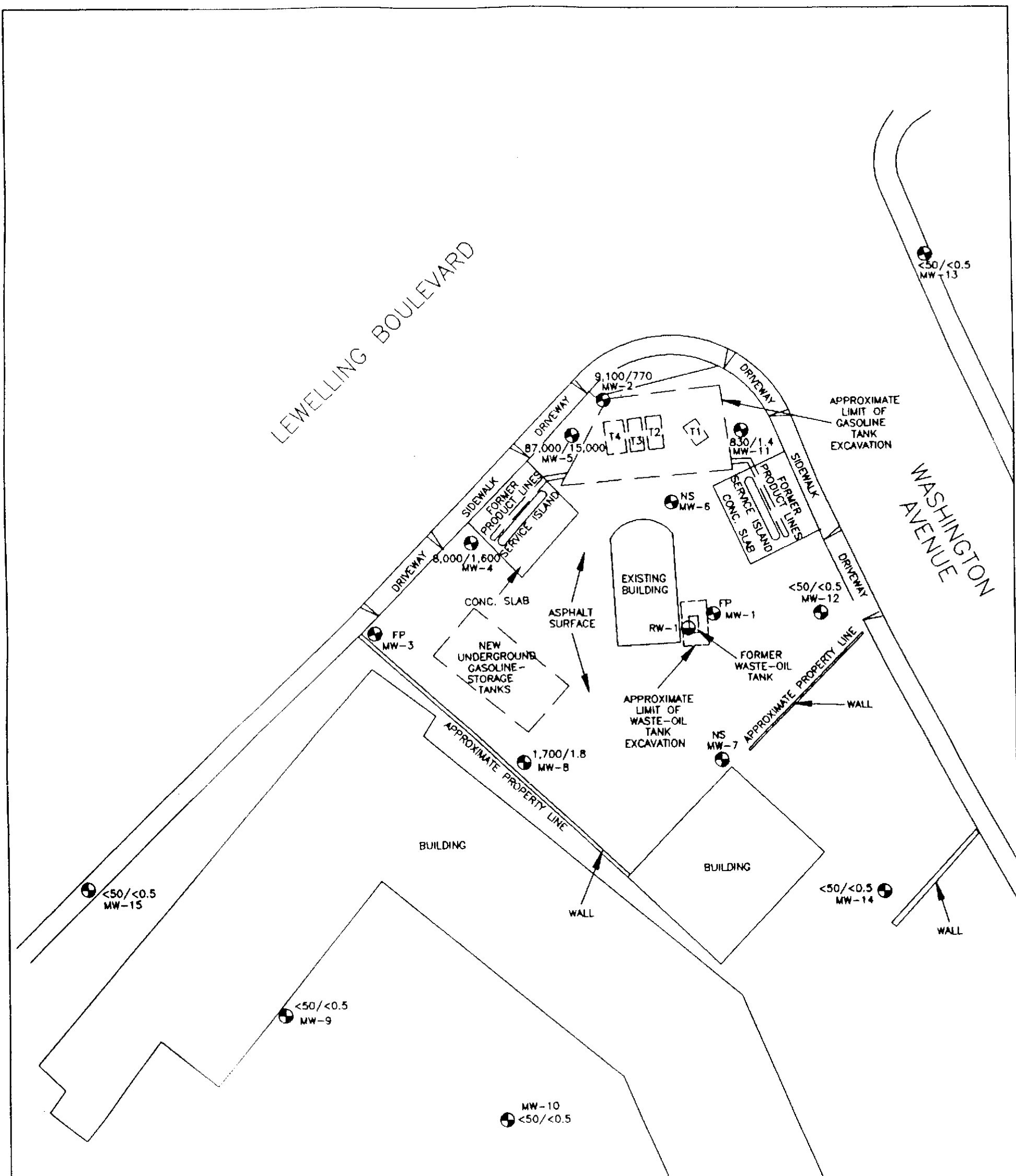
PROJECT 69034.12

90341203

GROUNDWATER GRADIENT MAP
ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

PLATE

4



EXPLANATION

87,000/15,200 = Concentration of TPHg/benzene in groundwater in parts per billion, August 17, 1993

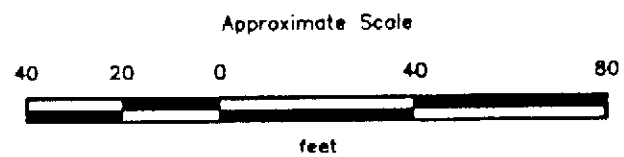
FP = Floating product

RW-1 = Product recovery well (GeoStrategies, Jan. 1990)

MW-15 = Vapor extraction/groundwater monitoring well (RESNA/Applied GeoSystems, June 1990 through May 1993)

T4 = Former gasoline underground storage tanks

NS = Not sampled due to insufficient water



Source: Surveyed by Ron Archer, Civil Engineer Inc. modified by John Koch Land Surveyor.



PROJECT 69034.12

90341203

TPHg/BENZENE CONCENTRATIONS
IN GROUNDWATER
ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

PLATE

5

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 601
San Leandro, California
(Page 1 of 8)

Date Well Measured	Depth of Well	Well Elevation	Depth-to-Water	Water Elevation	Floating Product
<u>MW-1</u>					
07/17/90	11.20	22.98	9.03	13.95	Emulsion
08/07/90			9.19	13.79	None
10/15/90			9.85*	13.13	0.25
11/20/90			9.79*	13.19	0.46
12/21/90			9.18	13.80	Sheen
01/09/91			9.47*	13.51*	0.02
02/27/91			9.31*	13.67*	0.03
03/20/91			7.81**	15.17**	Sheen
04/16/91			6.12	16.86	Sheen
05/16/91			8.60*	13.66*	0.01
06/10/91		22.26	9.00	13.26	Sheen
07/18/91			9.33*	12.93*	0.01
08/22/91			9.49*	12.77*	0.04
09/18/91			9.63*	12.63*	0.04
10/10/91			9.73*	12.53*	0.04
11/21/91			8.40*	13.86*	0.01
12/24/91			9.68*	13.30*	0.13
01/19/92	11.10		8.84	13.42	None
02/20/92			7.22	15.04	None
03/23/92			7.40	14.86	Sheen
04/21/92			8.30	13.96	None
05/15/92			8.77*	13.49*	0.01
06/08/92			9.08*	13.18*	0.02
07/15/92			9.40	12.86	None
08/25/92			8.21	14.05	None
09/15/92			8.18*	14.08*	0.02
10/28/92			8.62	13.64	None
11/16/92		22.26	9.09*	13.17*	0.02
12/16/92			8.10*	14.16*	0.02
01/15/93	11.10		6.53	15.73	None
02/16/93			7.03*	15.23*	0.01
03/30/93			6.86	15.40	None
04/28/93			6.77*	15.49*	0.01
05/13/93			8.08*	14.18*	0.01
06/17/93			8.48*	13.78*	0.01
07/28/93			8.80*	13.46*	0.01
08/17/93			8.81*	13.45*	0.01
<u>MW-2</u>					
07/17/90	12.33	22.06	7.86	14.20	None
08/07/90			8.03	14.03	None
10/15/90			8.61	13.45	None
11/20/90			8.76	13.30	None

See notes on page 8 of 8.

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 601
San Leandro, California
(Page 2 of 8)

Date Well Measured	Depth of Well	Well Elevation	Depth-to-Water	Water Elevation	Floating Product
<u>MW-2</u>					
12/21/90			8.28	13.78	None
01/09/91			8.43	13.63	None
02/27/91			8.28	13.78	None
03/20/91			7.26**	14.80**	None
04/16/91			6.97	15.09	None
05/16/91			7.52	15.27	None
06/10/91		21.33	7.91	14.88	None
07/18/91			8.30	14.49	None
08/22/91			8.50	14.29	None
09/18/91			8.63	14.16	None
10/10/91			8.82	13.97	None
11/21/91			8.46	14.33	None
12/24/91			8.72	14.07	None
01/19/92	12.20		7.96	14.83	None
02/20/92			6.55	16.24	None
03/23/92			6.86	15.93	None
04/21/92			7.15	14.18	None
05/15/92			7.61	13.72	None
06/08/92			7.95	13.38	None
07/15/92			8.45	12.88	None
08/25/92			8.53	12.80	None
09/15/92			8.71	12.62	None
10/28/92			8.89	12.44	None
11/16/92		21.33	7.93	13.40	None
12/16/92			7.44	13.89	None
01/15/93	12.30		6.13	15.20	None
02/16/93			6.02	15.31	None
03/30/93			5.98	15.35	None
04/28/93			6.58	14.75	None
05/13/93			6.99	14.34	None
06/17/93			7.40	13.93	None
07/28/93			7.79	13.54	None
08/17/93			7.85	13.48	None
<u>MW-3</u>					
07/17/90	11.99	20.84	7.03	13.81	Sheen
08/07/90			7.21	13.63	None
10/15/90			8.19*	12.65*	0.75
11/20/90			7.98*	12.85*	1.08
12/21/90			7.22*	13.62*	0.01
01/09/91			7.46*	13.38*	0.30
02/27/91			7.37*	13.47*	0.02
03/20/91			5.79**	15.05**	Sheen
04/16/91			7.95	12.89	Sheen

See notes on page 8 of 8.

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 601
San Leandro, California
(Page 3 of 8)

Date Well Measured	Depth of Well	Well Elevation	Depth-to-Water	Water Elevation	Floating Product
<u>MW-3</u>					
05/16/91		20.11	7.50	12.61	None
06/10/91			7.14	12.97	Sheen
07/18/91			7.55	12.56	None
08/22/91			7.64	12.47	Sheen
09/18/91			7.89*	12.22*	0.12
10/10/91			7.82*	12.29*	0.26
11/21/91			7.59*	12.52*	0.04
12/24/91			8.74*	11.37*	0.01
01/19/92	11.94		6.98	13.13	0.01
02/20/92			5.05	15.06	0.01
03/23/92		5.75	14.36	Sheen	
04/21/92		6.55	13.56	None	
05/15/92		7.11*	13.00*	0.03	
06/08/92		7.52*	12.59*	0.02	
07/15/92		7.92	12.19	None	
08/25/92		8.00	12.11	None	
09/15/92		8.01*	12.10*	0.02	
10/28/92			8.66	11.45	None
11/16/92		20.11	7.11	13.00	Sheen
12/16/92			6.62	13.49	None
01/15/93	11.9		4.44	15.67	None
02/16/93			5.93*	14.18*	0.01
03/30/93	12.0		5.48	14.63	None
04/28/93			6.02*	14.09*	0.01
05/13/93			6.37*	13.74*	0.01
06/17/93			6.52*	13.59*	0.01
07/28/93			6.95	13.16	None
08/17/93			7.00*	13.11*	0.01
<u>MW-4</u>					
06/10/91	8.30	20.75	Dry		None
07/18/91			7.86	12.89	None
08/22/91			7.85	12.90	None
09/18/91			7.84	12.91	None
10/10/91			Dry		None
11/21/91			Dry		None
12/24/91			Dry		None
01/19/92	12.02		8.20	Residual Water	None
02/20/92		8.50	8.13	Residual Water	None
03/23/92			7.94	Residual Water	None
04/21/92			8.20	Residual Water	None
05/15/92			8.16	Residual Water	None
06/08/92			8.12	Residual Water	None

See notes on page 8 of 8.

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 601
San Leandro, California
(Page 4 of 8)

Date Well Measured	Depth of Well	Well Elevation	Depth-to-Water	Water Elevation	Floating Product
<u>MW-4</u>					
07/15/92	8.90		8.81	Residual Water	None
08/25/92			8.39	Residual Water	None
09/15/92			Dry		None
10/28/92	8.4		8.23	Residual Water	None
11/16/92	8.5	20.75	8.29	Residual Water	None
12/16/92	8.5		8.18	Residual Water	None
01/15/93			7.48	13.27	None
02/16/93			7.10	13.65	None
03/30/93			7.51	13.24	None
04/28/93			7.10	13.65	None
05/13/93			7.02	13.73	None
06/17/93			7.98	12.77	None
07/28/93			7.90	12.85	None
08/17/93			7.85	12.90	None
<u>MW-5</u>					
06/10/91	9.88	20.90	7.58	13.32	None
07/18/91			7.97	12.93	None
08/22/91			8.18	12.72	None
09/18/91			8.31	12.59	None
10/10/91			8.51	12.39	Sheen
11/21/91			8.13	12.77	None
12/24/91			8.32	12.58	None
01/19/92	10.10		7.50	13.40	None
02/20/92			5.97	14.93	None
03/23/92			6.06	14.84	None
04/21/92			6.90	14.00	None
05/15/92			7.32	13.58	None
06/08/92			7.66	13.24	None
07/15/92			8.34	12.56	None
08/25/92			8.18	12.72	None
09/15/92			8.40	12.50	0.02 +
10/28/92			8.83	12.07	None
11/16/92		20.90	7.70	13.20	None
12/16/92			6.92	13.98	None
01/15/93	10.1		5.52	15.38	None
02/16/93			5.64	15.26	None
03/30/93			5.56	15.34	None
04/28/93			6.28	14.62	None
05/13/93			6.68	14.22	None
06/17/93			7.07	13.83	None
07/28/93			7.41	13.49	None
08/17/93			7.49	13.41	None

See notes on page 8 of 8.

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 601
San Leandro, California
(Page 5 of 8)

Date Well Measured	Depth of Well	Well Elevation	Depth-to-Water	Water Elevation	Floating Product
<u>MW-6</u>					
06/10/91	8.40	22.08	Dry		None
07/18/91			Dry		None
08/22/91			Dry		None
09/18/91			Dry		None
10/10/91			Dry		None
11/21/91	8.60		Dry		None
12/24/91			Dry		None
01/19/92			8.58	Residual water	None
02/20/92			7.28	14.80	None
03/23/92			7.45	14.63	None
04/21/92			7.74	14.34	None
05/15/92			8.50	Residual Water	None
06/08/92			Dry		None
07/15/92			8.81	Residual Water	None
08/25/92			8.42	Residual Water	None
09/15/92	8.75		Dry		None
10/28/92			8.75	Residual Water	None
11/16/92		22.08	8.57	Residual Water	None
12/16/92			8.10	Residual Water	None
01/15/93			7.22	14.86	None
02/16/93			6.79	15.29	None
03/30/93			6.68	15.40	None
04/28/93			7.28	14.80	None
05/13/93			7.73	14.35	None
06/17/93			8.15	13.93	None
07/28/93			8.55	Residual Water	None
08/17/93			Dry		None
<u>MW-7</u>					
06/10/91	9.36	22.89	Dry		None
07/18/91			Dry		None
08/22/91			Dry		None
09/18/91			Dry		None
10/10/91			Dry		None
11/21/91	9.55		Dry		None
12/24/91			Dry		None
01/19/92			Dry		None
02/20/92			8.74	14.15	None
03/23/92			8.20	14.69	None
04/21/92			8.86	14.03	None
05/15/92			9.29	Residual Water	None
06/08/92			9.52	Residual Water	None
07/15/92			9.78	Residual Water	None

See notes on page 8 of 8.

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 601
San Leandro, California
(Page 6 of 8)

Date Well Measured	Depth of Well	Well Elevation	Depth-to-Water	Water Elevation	Floating Product
<u>MW-7</u>					
08/25/92			9.33	Residual Water	None
09/15/92			Dry		None
10/28/92	11.7**		10.38**	12.51	None
11/16/92	9.6	22.89	9.53	Residual Water	None
12/16/92	9.6		9.21	Residual Water	None
01/15/93			8.37	14.52	None
02/16/93			7.84	15.05	None
03/30/93			8.03	14.86	None
04/28/93			8.33	14.56	None
05/13/93			8.56	14.33	None
06/17/93			9.30	13.59	None
07/28/93			9.57	Residual Water	None
08/17/93			Dry		None
<u>MW-8</u>					
06/10/91	10.00	20.97	7.80	13.17	None
07/18/91			8.36	12.61	None
08/22/91			8.53	12.44	None
09/18/91			8.68	12.29	None
10/10/91			8.87	12.10	None
11/21/91			8.43	12.54	None
12/24/91			8.68	12.29	None
01/19/92	10.15		7.73	13.24	None
02/20/92			5.57	15.40	None
03/23/92			5.81	15.16	None
04/21/92			7.05	13.92	None
05/15/92			7.79	13.18	None
06/08/92			8.01	12.96	None
07/15/92			8.46	12.51	None
08/25/92			8.64	12.33	None
09/15/92			8.80	12.17	None
10/28/92			8.80	12.17	None
11/16/92		20.97	8.19	12.78	None
12/16/92			6.66	14.31	None
01/15/93			5.18	15.79	None
02/16/93			5.84	15.13	None
03/30/93	10.2		4.98	15.99	None
04/28/93			6.17	14.80	None
05/13/93			6.93	14.04	None
06/17/93			7.36	13.61	None
07/28/93			7.80	13.17	None
08/17/93			7.87	13.10	None

See notes on page 8 of 8.

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 601
San Leandro, California
(Page 7 of 8)

Date Well Measured	Depth of Well	Well Elevation	Depth-to-Water	Water Elevation	Floating Product
<u>MW-9</u>					
06/11/93	19.17	20.89	8.15	12.74	None
07/28/93			8.49	12.40	None
08/17/93			8.53	12.36	None
<u>MW-10</u>					
06/11/93	16.08	21.12	8.14	12.98	None
07/28/93			8.43	12.69	None
08/17/93			8.54	12.58	None
<u>MW-11</u>					
11/16/92	11.9	22.38	9.02	13.36	None
12/16/92			8.48	13.90	None
01/15/93			7.14	15.24	None
02/16/93			7.11	15.27	None
03/30/93			7.01	15.37	None
04/28/93			7.62	14.76	None
05/13/93			8.04	14.34	None
06/17/93			8.44	13.94	None
07/28/93			8.80	13.58	None
08/17/93			8.78	13.60	None
<u>MW-12</u>					
11/16/92	11.6	22.77	9.65	13.12	None
12/16/92			8.71	14.06	None
01/15/93			7.19	15.58	None
02/16/93			7.88	14.89	None
03/30/93			7.43	15.34	None
04/28/93			8.22	14.55	None
05/13/93			8.63	14.14	None
06/17/93			8.98	13.79	None
07/28/93			9.32	13.45	None
08/17/93			9.30	13.47	None
<u>MW-13</u>					
11/16/92	13.0	22.45	9.02	13.43	None
12/16/92			8.23	14.22	None
01/15/93			6.89	15.56	None
02/16/93			7.14	15.31	None
03/30/93			7.01	15.44	None
04/28/93			7.57	14.88	None
05/13/93			7.95	14.50	None
06/17/93			8.32	14.13	None
07/28/93			8.59	13.86	None
08/17/93			8.57	13.88	None

See notes on page 8 of 8.

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 601
San Leandro, California
(Page 8 of 8)

Date Well Measured	Depth of Well	Well Elevation	Depth-to-Water	Water Elevation	Floating Product
<u>MW-14</u>					
09/15/92	13.0	22.99	10.66	12.33	None
10/28/92			10.91	12.08	None
11/16/92			10.33	12.66	None
12/16/92			9.20	13.79	None
01/15/93			7.06	15.93	None
02/16/93			8.18	14.81	None
03/30/93			7.97	14.93	None
04/28/93			8.63	14.36	None
05/13/93			9.05	13.94	None
06/17/93			9.55	13.44	None
07/28/93			9.89	13.10	None
08/17/93			9.90	13.09	None
<u>MW-15</u>					
04/28/93	10.1	19.19	5.51	13.68	None
05/13/93			5.91	13.28	None
06/17/93			6.18	13.01	None
07/28/93			6.45	12.74	None
08/17/93			6.54	12.65	None

Measurements in feet.

Datum mean sea level.

Depth-to-Water measured in feet below top of casing.

*The recorded thickness of the floating product was multiplied by 0.80 to obtain an approximate value for the displacement of water by the floating product. This approximate displacement value was then subtracted from the measured depth to water to obtain a calculated depth to water.

** = Anomalous data.

+ Floating Product entered well during purging, therefore DTW was not affected.

Residual Water = less than 4 inches of water trapped within the cap at the base of the well.

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
ARCO Station 601
San Leandro, California
(Page 1 of 4)

Sample	TPHg	TPHd	B	T	E	X	TOG	BNAs	VOCs	Cd	Cr	Pb	Ni	Zn
<u>MW-1</u>														
07/18/90														
10/15/90														
01/09/91														
04/16/91														
06/10/91														
10/10/91														
03/23/92														
06/08/92														
09/15/92														
11/16/92														
02/16/93														
05/13/93														
08/17/93														
<u>MW-2</u>														
07/18/90	35,000	850*	3,800 (3,200)	2,900 (2,400)	690 (270)	3,600 (2,900)	<5,000	340* 170*	39*	<20	50	50	NA	120
10/15/90	6,400	NA	650	290	110	560	NA	NA	18*	NA	NA	NA	NA	NA
01/09/91	13,000	NA	1500 (1700)	970 (1200)	390 (370)	1500 (2400)	NA	NA	6.5*	NA	NA	NA	NA	NA
04/16/91	54,000	NA	5,200	9,000	1,500	7,700	NA	NA	NA	NA	NA	NA	NA	NA
06/10/91	26,000	NA	3,000	2,500	880	4,200	NA	NA	NA	NA	NA	NA	NA	NA
10/10/91	10,000	NA	1,600	910	280	1,400	<5,000	NA	1.7*	<10	<10	11	72	91
03/23/92	33,000	NA	4,100	5,000	1,100	5,300	NA	NA	NA	NA	NA	NA	NA	NA
06/08/92	18,000	NA	1,200	980	330	1,800	NA	NA	NA	NA	NA	NA	NA	NA
09/15/92	13,000	NA	430	500	340	1,800	NA	NA	NA	NA	NA	NA	NA	NA
11/16/92	13,000	NA	900	940	300	1,400	NA	NA	NA	NA	NA	NA	NA	NA
02/16/93	20,000	NA	1,800	1,200	530	2,700	NA	NA	NA	NA	NA	NA	NA	NA
05/13/93	13,000	NA	1,000	470	370	1,900	NA	NA	NA	NA	NA	NA	NA	NA
08/17/93	9,100	NA	770	160	310	1,500	NA	NA	NA	NA	NA	NA	NA	NA
<u>MW-3</u>														
07/18/90	NA	NA	NA	NA	NA	NA	<5,000	NA	NA	NA	NA	NA	NA	NA
10/15/90														
01/09/91														
04/16/91														
06/10/91														
10/10/91														
03/23/92														
06/08/92														
09/15/92														

See notes on page 4 of 4.

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
ARCO Station 601
San Leandro, California
(Page 2 of 4)

Sample	TPHg	TPHd	B	T	E	X	TOG	BNAs	VOCs	Cd	Cr	Pb	Ni	Zn
<u>MW-3cont.</u>														
11/16/92														
02/16/93														
05/13/93														
08/17/93														
<u>MW-4</u>														
06/10/91														
10/10/91	15,000	NA	5,300	1,500	470	1,300	NA	NA	NA	NA	NA	NA	NA	NA
03/23/92	24,000	NA	5,600	4,000	580	3,100	NA	NA	NA	NA	NA	NA	NA	NA
06/08/92	5,700	NA	2,000	170	92	270	NA	NA	NA	NA	NA	NA	NA	NA
09/15/92														
11/16/92														
02/16/93	12,000	NA	920	1,100	130	750	NA	NA	NA	NA	NA	NA	NA	NA
05/13/93	19,000	NA	2,900	2,800	360	1,900	NA	NA	NA	NA	NA	NA	NA	NA
08/17/93	8,100	NA	1,600	1,300	170	730	NA	NA	NA	NA	NA	NA	NA	NA
<u>MW-5</u>														
06/10/91	100,000	NA	25,000	20,000	2,600	12,000	NA	NA	NA	NA	NA	NA	NA	NA
10/10/91														
03/23/92	150,000	NA	24,000	31,000	4,400	23,000	NA	NA	NA	NA	NA	28	NA	NA
06/08/92	120,000	NA	17,000	13,000	2,400	11,000	NA	NA	NA	NA	NA	NA	NA	NA
09/15/92														
11/16/92	110,000	NA	16,000	16,000	3,200	18,000	NA	NA	NA	NA	NA	NA	NA	NA
02/16/93	150,000	NA	12,000	15,000	3,000	17,000	NA	NA	NA	NA	NA	NA	NA	NA
05/13/93														
08/17/93	87,000	NA	15,000	8,500	1,900	11,000	NA	NA	NA	NA	NA	NA	NA	NA
<u>MW-6</u>														
06/10/91														
10/10/91														
03/23/92	75,000	NA	19,000	10,000	1,600	8,600	NA	NA	NA	NA	NA	NA	NA	NA
06/08/93														
09/15/92														
11/16/92														
02/16/93	65,000	NA	14,000	3,500	1,300	6,100	NA	NA	NA	NA	NA	NA	NA	NA
05/13/93	36,000	NA	8,200	870	1,000	5,200	NA	NA	NA	NA	NA	NA	NA	NA
08/17/93														
<u>MW-7</u>														
06/10/91														
10/10/91														
03/23/92	270	NA	10	0.5	3.0	13	NA	NA	NA	NA	NA	NA	NA	NA
06/08/92														

See notes on page 4 of 4.

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
ARCO Station 601
San Leandro, California
(Page 3 of 4)

Sample	TPHg	TPHd	B	T	E	X	TOG	BNAs	VOCs	Cd	Cr	Pb	Ni	Zn
<u>MW-7cont</u>														
09/15/92							Not sampled--dry							
11/16/92							Not sampled--dry							
02/16/93	120	NA	3.6	<0.5	<0.5	1.2	NA	NA	NA	NA	NA	NA	NA	NA
05/13/93	<50	NA	0.8	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
08/17/93							Not sampled--dry							
<u>MW-8</u>														
06/10/91	5,800	NA	73	7.2	150	21	<5,000	NA	NA	NA	NA	NA	NA	NA
10/10/91	2,800	NA	31	6.1	4.5	3.9	NA	NA	NA	NA	NA	NA	NA	NA
03/23/92	8,000	NA	18	<5.0**	320	42	NA	NA	ND	NA	NA	NA	NA	NA
			(23**)	(<5.0**)	(450**)	(23**)								
06/08/92	4,000	NA	<10**	<10**	110	<10**	NA	NA	NA	NA	NA	NA	NA	NA
09/15/92	4,200	460***	6.4	<5*	120	<5*	NA	6*	ND	ND	59	18	78	128
11/16/92	2,600	1,100***	4.0	<2.5**	21	5.2	1,200	32*	ND	7	42	20	69	123
02/16/93	8,700	5,300***	<5**	<5**	200	<5**	150,000	730*	ND	<3	7	4	24	54
								130*						
05/13/93	2,300	2,300***	<5**	<5**	42	<5**	2,000	97*	ND	<3	17	10	31	49
								20*						
08/17/93	1,700	1,000***	1.8	<1.3****	16	1.2	1,200	26*	ND	<5	16	7	<40	180
<u>MW-9</u>														
06/11/93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
08/17/93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
<u>MW-10</u>														
06/11/93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
08/17/93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
<u>MW-11</u>														
11/16/92	7,000	NA	21	<10**	18	230	NA	NA	NA	NA	NA	NA	NA	NA
02/16/93	2,200	NA	<10**	<10**	11	<10**	NA	NA	NA	NA	NA	NA	NA	NA
05/13/93	1,600	NA	<2.5**	<2.5**	41	6.8	NA	NA	NA	NA	NA	NA	NA	NA
08/17/93	830	NA	1.4	<1.0**	25	15	NA	NA	NA	NA	NA	NA	NA	NA
<u>MW-12</u>														
11/16/92	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
02/16/93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
05/13/93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
08/17/93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
DWAL:	—	—	—	100	—	—	—	—	—	—	—	—	—	—
MCLs:	—	—	1	NA	680	1,750	—	—	—	10	50	50	—	5,000

See notes on page 4 of 4.

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, California

December 29, 1993
69034.12

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
ARCO Station 601
San Leandro, California
(Page 4 of 4)

Sample	TPHg	TPHd	B	T	E	X	TOG	BNAs	VOCs	Cd	Cr	Pb	Ni	Zn
<u>MW-13</u>														
11/16/92	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
02/16/93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
05/13/93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
08/17/93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
<u>MW-14</u>														
09/15/92	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
11/16/92	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
02/16/93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
05/13/93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
08/17/93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
<u>MW-15</u>														
05/13/93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
08/17/93	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA

Results in micrograms per liter (ug/L) = parts per billion (ppb).

NA: Not analyzed.

<: Results reported as less than the detection limit.

*: Applied analytical laboratories reports that the chromatograph resembled gasoline not diesel.

**: Laboratory reported raised maximum reporting limit due to high analyte concentration requiring sample dilution.

***: Sample contains a lower boiling point hydrocarbon mixture quantitated as diesel. The chromatogram does not match the typical diesel fingerprint.

****: Laboratory reported raised MRL due to matrix interference.

(): BTEX results analyzed as VOCs.

TPHg: Total petroleum hydrocarbons as gasoline using EPA method 8015.

TPHd: Total petroleum hydrocarbons as diesel using EPA method 3550/3510.

B: Benzene, T: Toluene, E: Ethylbenzene, X: Total Xylene isomers.

BTEX: Measured using EPA method 8020/602.

TOG: Total oil and grease measured using Standard Method 503A/E or EPA Method 418.1.

BNAs: Base neutral and acid extractables including polynuclear aromatics concentrations are below laboratory reporting limits for respective compounds except as indicated. (* = naphthalene, ^b = 2-methylnaphthalene, * = Bis (2-ethylhexyl) Phthalate)

VOCs: volatile organics except for BTEX concentrations are below laboratory reporting limits for respective compounds except as indicated. (^c = methylene chloride, ^d = 1,2-Dichloroethane)

Cd: Cadmium (using EPA Method 6010)

Cr: Chromium (using EPA Method 6010)

Pb: Lead (using EPA Method 7421)

Ni: Nickel (using EPA Method 6010)

Zn: Zinc (using EPA Method 6010)

ND: Below detection limits. Detection limits for VOCs varied according to analyte.

DWAL: California Department of Health Services recommended drinking water action levels (October 1990).

MCLs: Maximum Contaminant Level in ppb (October 1990).

Quarterly Groundwater Monitoring
ARCO Station 601, San Leandro, CaliforniaDecember 29, 1993
69034.12TABLE 3
APPROXIMATE CUMULATIVE PRODUCT RECOVERED
ARCO Station 601
San Leandro, California

Year	Floating Product Recovered (gallons)
1991	TOTAL: 3.43
1992	
<u>MW-1</u>	
01/29/92	None present
02/28/92	None present
03/25/92	None present
06/08/92	0.02
09/15/92	None removed*
<u>MW-3</u>	
01/29/92	None present
02/28/92	None present
03/25/92	None present
06/08/92	None present
09/15/92	None removed*
	TOTAL: 0.02
1993	
<u>MW-1</u>	
02/26/93	None present
06/17/93	None removed (0.01)
07/28/93	None removed (0.01)
08/17/93	None removed (0.01)
<u>MW-3</u>	
02/26/93	None present
06/17/93	None removed (0.01)
07/28/93	None present
08/17/93	None removed (0.01)
	TOTAL: 0
1991 + 1992 + 1993	TOTAL: 3.45

* = No product removed as the storage drum for product had been removed from the site.
(0.01) = 0.01 feet of product present

APPENDIX A

**EMCON'S WATER SAMPLE FIELD DATA SHEETS, FIELD REPORTS,
SUMMARY OF GROUNDWATER MONITORING DATA, AND CHAIN OF
CUSTODY RECORDS**



EMCON Associates

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

Date August 5, 1993
Project 0G70-007.01

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

We are enclosing:

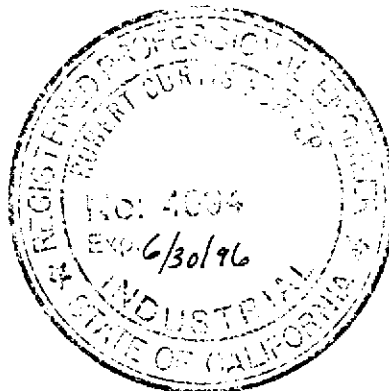
Copies	Description
<u>1</u>	<u>Depth To Water/Floating Product Survey Results</u>
<u> </u>	<u>July 1993 monthly water level survey, ARCO</u>
<u> </u>	<u>station 601, 712 Lewelling Blvd., San Leandro, CA</u>

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:



Jim Butera *JB*

Robert Porter
Robert Porter, Senior Project
Engineer.



FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : 0G70-007.01

STATION ADDRESS : 712 Lewelling Blvd. San Leandro

DATE : July 28, 1993

ARCO STATION # : 601

FIELD TECHNICIAN : Ian Graham / Steve Horton

DAY : Wednesday

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-9	good	15/16 yes	na	dolphin	yes	8.49	8.49	ND	ND	19.3	MW-9 & MW-10 were reversed
2	MW-10	good	15/16 yes	na	dolphin	yes	8.43	8.43	ND	ND	16.2	on the map
3	MW-15	good	15/16 yes	na	3259	yes	6.45	6.45	ND	ND	10.1	—
4	MW-14	bad upside	15/16 yes	na	3259	yes	9.89	9.89	ND	ND	13.0	grout needed around casing
5	MW-13	good	15/16 yes	na	3259	yes	8.59	8.59	ND	ND	13.0	—
6	MW-12	good	15/16 yes	na	3259	yes	9.32	9.32	ND	ND	11.6	—
7	MW-7	good	15/16 yes	na	3259	yes	9.57	9.57	ND	ND	9.6	—
8	MW-11	good	15/16 yes	na	3259	yes	8.80	8.80	ND	ND	11.8	—
9	MW-8	good	15/16 yes	na	3259	yes	7.80	7.80	ND	ND	10.2	strong odor
10	MW-2	good	15/16 yes	na	3259	yes	7.79	7.79	ND	ND	12.3	water in box one bolt hole is broken mod odor
11	MW-4	good	15/16 yes	na	3259	yes	7.90	7.90	ND	ND	8.5	water in box strong odor
12	MW-6	good	15/16 yes	na	3259	yes	8.55	8.55	ND	ND	8.6	moderate odor
13	MW-5	good	15/16 yes	na	3259	yes	7.41	7.41	ND	ND	10.1	strong odor
14	MW-1	good	Hex yes	na	3259	yes	8.81	8.81	8.80	.01	11.1	water in box very strong odor one seam missing checked w/ boiler
15	MW-3	good	Hex yes	na	3259	yes	6.95	6.95	ND	ND	12.0	water in box skimmer very strong odor checked w/ boiler and observed layer of sheen L.O.

SURVEY POINTS ARE TOP OF WELL CASINGS

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : 0G70-007.01

STATION ADDRESS : 712 Lewelling Blvd. San Leandro

DATE : 8-17-93

ARCO STATION # : 601

FIELD TECHNICIAN : REICHELDERFER / STAFFORD

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-9	OK	YES 15/110	OK	DOLPHIN	OK	8.53	8.53	ND	NA	19.3	NEEDS 3259 LOCK
2	MW-10	OK	YES 15/110	OK	DOLPHIN	OK	8.54	8.54	ND	NA	16.2	✓
3	MW-15	OK	YES 15/110	OK	3259	OK	6.54	6.54	ND	NA	10.1	—
4	MW-14	OK	YES 15/110	OK	3259	OK	9.90	9.90	ND	NA	13.0	—
5	MW-13	OK	YES 15/110	OK	3259	OK	8.57	8.57	ND	NA	13.0	—
6	MW-12	OK	YES 15/110	OK	3259	OK	9.30	9.30	ND	NA	11.6	—
7	MW-7	OK	YES 15/110	OK	3259	OK	DRY	DRY	NA	NA	9.5	DRY WELL
8	MW-11	OK	YES 15/110	OK	3259	OK	8.78	8.78	ND	NA	11.8	—
9	MW-8	OK	YES 15/110	OK	3259	OK	7.87	7.87	ND	NA	10.2	—
10	MW-2	CHIPPED ON ONE SIDE	YES 15/110	OK	3259	OK	7.85	7.85	ND	NA	12.3	BOX IS SOLID, BUT SEAL IS CHIPPED ON ONE SIDE - ONLY ONE BOLT ATTACHES TO TAB INSIDE BOX
11	MW-4	OK	YES 15/110	OK	3259	OK	7.85	7.85	ND	NA	8.5	—
12	MW-6	OK	YES 15/110	OK	3259	OK	DRY	DRY	NA	NA	8.6	DRY WELL
13	MW-5	OK	YES 15/110	OK	3259	OK	7.49	7.49	ND	NA	10.1	MILD ODOR
14	MW-1	OK	HEX 1 BOLT	OK	3259	OK	8.82	8.82	8.81	0.01	11.1	1 BOLT (IN LID) IS MISSING 0.01" PRODUCT DETECTED w/ SKIMMER
15	MW-3	OK	HEX YES	OK	3259	OK	7.08	7.08	7.07	0.01	11.9	SKIMMER IS EMPTY 0.01" PRODUCT DETECTED w/ SKIMMER

SURVEY POINTS ARE TOP OF WELL CASINGS

Summary of Groundwater Monitoring Data
Third Quarter 1993
ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, 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)	TRPH ² (ppb)	TPH Diesel (ppb)
MW-1	08/17/93	8.82	0.01	FP. ³	FP.	FP.	FP.	FP.	FP.	FP.
MW-2(12)	08/17/93	7.85	ND. ⁴	9,100.	770.	160.	310.	1,500.	NR. ⁵	NR.
MW-3	08/17/93	7.08	0.01	FP.	FP.	FP.	FP.	FP.	FP.	FP.
MW-4(7)	08/17/93	7.85	ND.	8,100.	1,600.	1,300.	170.	730.	NR.	NR.
MW-5(10)	08/17/93	7.49	ND.	87,000.	15,000.	8,500.	1,900.	11,000.	NR.	NR.
MW-6	08/17/93	Dry	NA. ⁶	NA.	NA.	NA.	NA.	NA.	NA.	NA.
MW-7	08/17/93	Dry	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.
MW-8(10)	08/17/93	7.87	ND.	1,700.	1.8	<1.3	16.	1.2	1,200.*	1,000.
MW-9(18)	08/17/93	8.53	ND.	<50.	<0.5	<0.5	<0.5	<0.5	NR.	NR.
MW-10(15)	08/17/93	8.54	ND.	<50.	<0.5	<0.5	<0.5	<0.5	NR.	NR.
MW-11(11)	08/17/93	8.78	ND.	830.	1.4	<1.	25.	15.	NR.	NR.
MW-12(11)	08/17/93	9.30	ND.	<50.	<0.5	<0.5	<0.5	<0.5	NR.	NR.
MW-13(12)	08/17/93	8.57	ND.	<50.	<0.5	<0.5	<0.5	<0.5	NR.	NR.
MW-14(12)	08/17/93	9.90	ND.	<50.	<0.5	<0.5	<0.5	<0.5	NR.	NR.
MW-15(9)	08/17/93	6.54	ND.	<50.	<0.5	<0.5	<0.5	<0.5	NR.	NR.
FB-1 ⁷	08/17/93	NA.	NA.	<50	<0.5	<0.5	<0.5	<0.5	NR.	NR.

1. TPH = Total petroleum hydrocarbons

2. TRPH = Total recoverable petroleum hydrocarbons

3. FP. = Not sampled; well was not sampled due to detection of floating product

4. ND. = Not detected

5. NR. = Not required, well not sampled for listed parameter

6. NA. = Not applicable

7. FB. = Field blank

* = Reported in CAR as parts per million, converted to ppb in summary.

Summary of Analytical Results
Base Neutral / Acid Semivolatile Organic Compounds by EPA¹ Methods 3510/8270
Third Quarter 1993
ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California
micrograms per liter (µg/l) or parts per billion (ppb)

Well ID and Sample Depth	Sampling Date	Naphthalene (ppb)
MW-8(10)	08/17/93	26.

1. EPA = United States Environmental Protection Agency.

Summary of Analytical Results
Total Metals by EPA¹ Method 6010 and 7421
Third Quarter 1993
ARCO Service Station 601
712 Lewelling Blvd. San Leandro, California
milligrams per liter (mg/l) or parts per million (ppm)

Well ID and Sample Depth	Sampling Date	Cadmium (ppm)	Chromium (ppm)	Lead (ppm)	Nickle (ppm)	Zinc (ppm)
MW-8(10)	08/17/93	<0.005	0.016	0.007	<0.04	0.18

1. EPA = United States Environmental Protection Agency

**Columbia
Analytical
Services^{INC.}**

September 1, 1993

Service Request No. SJ93-1020

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

Re: EMCON Project No. 0G70-007.01
ARCO Facility No. 601

Dear Mr. Butera:

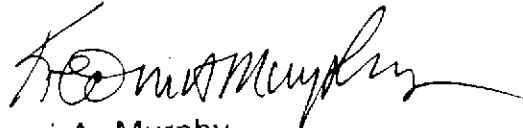
Attached are the results of the water samples submitted to our lab on August 17, 1993. For your reference, these analyses have been assigned our service request number SJ93-1020.

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

KAM/kmh


Annelise J. Bazar
Regional QA Coordinator

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

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: ARCO Project No. 0G70-007.01
ARCO Facility No. 601

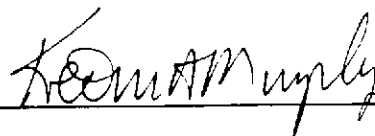
Date Received: 08/17/93
Service Request No.: SJ93-1020
Sample Matrix: Water

Total Recoverable Petroleum Hydrocarbons¹
EPA Method 418.1
mg/L (ppm)

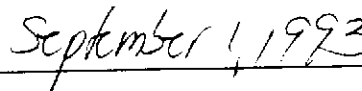
<u>Sample Name</u>	<u>Date Sampled</u>	<u>MRL</u>	<u>Result</u>
MW-8 (10)	08/17/93	0.5	1.2
Method Blank			ND

- 1 Unless otherwise noted, all analyses were performed within EPA recommended maximum holding times specified in *Test Methods for Evaluating Solid Waste*, (SW-846, 3rd Edition) and *Methods for Chemical Analysis of Water and Waste* (EPA-600/4-79-020, Revised March 1983).

Approved by:



Date:



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: EMCON Project No. 0G70-007.01
ARCO Facility No. 601
Sample Matrix: Water

Date Received: 08/17/93
Date Extracted: 08/20/93
Date Analyzed: 08/20/93
Service Request No.: SJ93-1020

Total Petroleum Hydrocarbons as Diesel
EPA Method 3510/California DHS LUFT Method
 $\mu\text{g/L}$ (ppb)

<u>Sample Name</u>	<u>MRL</u>	<u>TPH as Diesel</u>
MW-8 (10)	50	1,000. *
Method Blank	50	ND

* The sample contains a lower boiling point hydrocarbon mixture quantitated as diesel. The chromatogram does not match the typical diesel fingerprint.

Approved by:

Keon Murphy

Date:

September 1, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: EMCON Project No. 0G70-007.01
ARCO Facility No. 601

Date Received: 08/17/93
Service Request No.: SJ93-1020
Sample Matrix: Water

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
 $\mu\text{g/L}$ (ppb)

Sample Name:	<u>MW-2 (12)</u>	<u>MW-4 (7)</u>	<u>MW-5 (10)</u>
Date Analyzed:	08/25/93	08/27/93	08/25/93

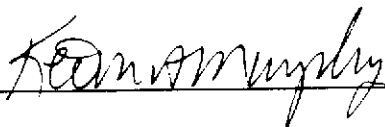
Analyte	MRL			
Benzene	0.5	770.	1,600.	15,000.
Toluene	0.5	160.	1,300.	8,500.
Ethylbenzene	0.5	310.	170.	1,900.
Total Xylenes	0.5	1,500.	730.	11,000.
TPH as Gasoline	50	9,100.	8,100.	87,000.

Sample Name:	<u>MW-8 (10)</u>	<u>MW-9 (18)</u>	<u>MW-10 (15)</u>
Date Analyzed:	08/26/93	08/25/93	08/25/93

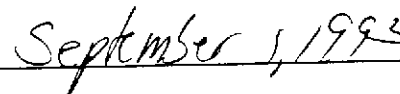
Analyte	MRL			
Benzene	0.5	1.8	ND	ND
Toluene	0.5	<1.3 *	ND	ND
Ethylbenzene	0.5	16.	ND	ND
Total Xylenes	0.5	1.2	ND	ND
TPH as Gasoline	50	1,700.	ND	ND

* Raised MRL due to matrix interference.

Approved by:



Date:



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
 Project: EMCON Project No. 0G70-007.01
 ARCO Facility No. 601

Date Received: 08/17/93
 Service Request No.: SJ93-1020
 Sample Matrix: Water

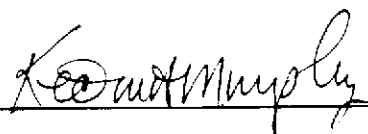
BTEX and TPH as Gasoline
 EPA Methods 5030/8020/California DHS LUFT Method
 $\mu\text{g/L}$ (ppb)

Sample Name: Date Analyzed:		<u>MW-11 (11)</u> 08/26/93	<u>MW-12 (11)</u> 08/25/93	<u>MW-13 (12)</u> 08/25/93
Analyte	MRL			
Benzene	0.5	1.4	ND	ND
Toluene	0.5	<1. *	ND	ND
Ethylbenzene	0.5	25.	ND	ND
Total Xylenes	0.5	15.	ND	ND
TPH as Gasoline	50	830.	ND	ND

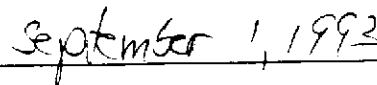
Sample Name: Date Analyzed:		<u>MW-14 (12)</u> 08/25/93	<u>MW-15 (9)</u> 08/25/93	<u>FB-1</u> 08/25/93 **
Analyte	MRL			
Benzene	0.5	ND	ND	ND
Toluene	0.5	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND
TPH as Gasoline	50	ND	ND	ND

- * Raised MRL due to high analyte concentration requiring sample dilution.
 * This sample was part of the analytical batch started on August 25, 1993. However, it was analyzed after midnight so the actual date analyzed is August 26, 1993.

Approved by:



Date:



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: EMCON Project No. 0G70-007.01
ARCO Facility No. 601

Date Received: 08/17/93
Service Request No.: SJ93-1020
Sample Matrix: Water

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
 $\mu\text{g/L}$ (ppb)

Sample Name:	<u>Method Blank</u>	<u>Method Blank</u>	<u>Method Blank</u>
Date Analyzed:	08/25/93	08/26/93	08/27/93

<u>Analyte</u>	<u>MRL</u>			
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:



Date:

September 1, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
 Project: EMCON Project No. 0G70-007.01
 ARCO Facility No. 601

Date Received: 08/17/93
 Service Request No.: SJ93-1020
 Sample Matrix: Water

Halogenated Volatile Organic Compounds
 EPA Methods 5030/601
 $\mu\text{g/L}$ (ppb)

Sample Name:
 Date Analyzed:

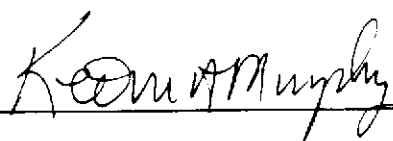
MW-8 (10)
08/24/93

Method Blank
08/24/93

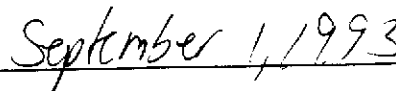
AnalyteMRL

Dichlorodifluoromethane (Freon 12)	1	ND	ND
Chloromethane	1	ND	ND
Vinyl Chloride	0.5	ND	ND
Bromomethane	0.5	ND	ND
Chloroethane	0.5	ND	ND
Trichlorofluoromethane (Freon 11)	0.5	ND	ND
1,1-Dichloroethene	0.5	ND	ND
Trichlorotrifluoroethane (Freon 113)	0.5	ND	ND
Methylene Chloride	0.5	ND	ND
<i>trans</i> -1,2-Dichloroethene	0.5	ND	ND
<i>cis</i> -1,2-Dichloroethene	0.5	ND	ND
1,1-Dichloroethane	0.5	ND	ND
Chloroform	0.5	ND	ND
1,1,1-Trichloroethane (TCA)	0.5	ND	ND
Carbon Tetrachloride	0.5	ND	ND
Benzene	0.5	ND	ND
1,2-Dichloroethane	0.5	ND	ND
Trichloroethene (TCE)	0.5	ND	ND
1,2-Dichloropropane	0.5	ND	ND
Bromodichloromethane	0.5	ND	ND
2-Chloroethyl Vinyl Ether	5	ND	ND
<i>trans</i> -1,3-Dichloropropene	0.5	ND	ND
Toluene	1	ND	ND
<i>cis</i> -1,3-Dichloropropene	0.5	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND
Tetrachloroethene (PCE)	0.5	ND	ND
Dibromochloromethane	0.5	ND	ND
Chlorobenzene	0.5	ND	ND
Ethylbenzene	1	ND	ND
Total Xylenes	1	ND	ND
Bromoform	0.5	ND	ND
1,1,2,2-Tetrachloroethane	0.5	ND	ND
1,3-Dichlorobenzene	1	ND	ND
1,4-Dichlorobenzene	1	ND	ND
1,2-Dichlorobenzene	1	ND	ND

Approved by:



Date:



COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: EMCON Project No. OG70-007.01
ARCO Facility No. 601

Date Received: 08/17/93
Service Request No.: SJ93-1020
Sample Matrix: Water

Continuing Calibration Summary
Inorganics
EPA Method 418.1
mg/L

<u>Analyte</u>	<u>True Value</u>	<u>Result</u>	<u>Percent Recovery</u>	<u>CAS Percent Recovery Acceptance Criteria</u>
Total Recoverable Petroleum Hydrocarbons	40.	41.6	104.	90-110

Approved by:

Keon Murphy

Date:

September 1, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: EMCON Project No. OG70-007.01
ARCO Facility No. 601

Date Received: 08/17/93
Service Request No.: SJ93-1020
Sample Matrix: Water

Mat: < Spike/Duplicate Matrix Spike Summary
Total Recoverable Petroleum Hydrocarbons
EPA Method 418.1
mg/L (ppm)

<u>Spike Level</u>	<u>Sample Result</u>	<u>Spike Result</u>		<u>Percent Recovery</u>		<u>CAS Acceptance Criteria</u>
		<u>MS</u>	<u>DMS</u>	<u>MS</u>	<u>DMS</u>	
8.0	ND	7.52	7.52	94.	94.	56-151.

Approved by:

Keenan Murphy

Date:

September 1, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

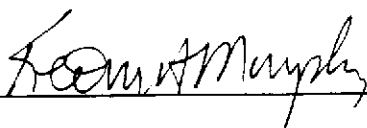
Client: EMCON Associates
Project: EMCON Project No. 0G70-007.01
ARCO Facility No. 601

Date Received: 08/17/93
Service Request No.: SJ93-1020
Sample Matrix: Water

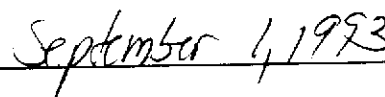
Surrogate Recovery Summary
Total Petroleum Hydrocarbons as Diesel
EPA Methods 3510/California DHS LUFT Method

<u>Sample Name</u>	<u>Date Analyzed</u>	<u>Percent Recovery</u> <i>p</i> -Terphenyl
MW-8 (10)	08/20/93	94.
MS	08/20/93	107.
DMS	08/20/93	98.
Method Blank	08/20/93	108.
	CAS Acceptance Criteria	46-133

Approved by:



Date:



COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: EMCON Project No. 0G70-007.01
ARCO Facility No. 601

Date Received: 08/17/93
Service Request No.: SJ93-1020
Sample Matrix: Water

Initial Calibration Verification
Total Petroleum Hydrocarbons as Diesel
EPA Methods 3510/DHS LUFT Method
mg/L (ppm)

Date Analyzed: 08/20/93

<u>Analyte</u>	<u>True Value</u>	<u>Result</u>	<u>Percent Recovery</u>	<u>CAS Percent Recovery Acceptance Criteria</u>
TPH as Diesel	500.	480.	96.	90-110

Approved by:

Kearna Murphy

Date:

September 1, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: EMCON Project No. 0G70-007.01
ARCO Facility No. 601

Date Received: 08/17/93
Service Request No.: SJ93-1020
Sample Matrix: Water

Matrix Spike/Duplicate Matrix Spike Summary
Total Petroleum Hydrocarbons as Diesel
EPA Method 3510/DHS LUFT Method
 $\mu\text{g/L}$ (ppb)

Date Analyzed: 08/20/93

<u>Analyte</u>	<u>Spike Level</u>	<u>Sample Result</u>	<u>Percent Recovery</u>		<u>Acceptance Criteria</u>
			<u>MS</u>	<u>DMS</u>	
TPH as Diesel	4,000.	ND	5,120.	4,440.	128. 111. 61-121

Approved by: Keenan Murphy

Date: September 1, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: EMCON Project No. OG70-007.01
ARCO Facility No. 601

Date Received: 08/17/93
Service Request No.: SJ93-1020
Sample Matrix: Water

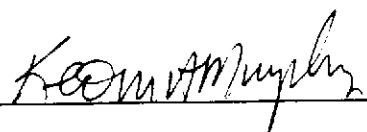
Surrogate Recovery Summary
BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

<u>Sample Name</u>	<u>Date Analyzed</u>	<u>Percent Recovery</u> <i>a,a,a</i> -Trifluorotoluene
MW-2 (12)	08/25/93	85.
MW-4 (7)	08/27/93	86.
MW-5 (10)	08/25/93	85.
MW-8 (10)	08/26/93	105.
MW-9 (18)	08/25/93	91.
MW-10 (15)	08/25/93	85.
MW-11 (11)	08/26/93	93.
MW-12 (11)	08/25/93	92.
MW-13 (12)	08/25/93	85.
MW-14 (12)	08/25/93	92.
MW-15 (9)	08/25/93	90.
FB-1	08/25/93	90.
MW-12 (11) MS	08/25/93	93.
MW-12 (11) DMS	08/25/93	89.
Method Blank	08/25/93	89.
Method Blank	08/26/93	85.
Method Blank	08/27/93	87.

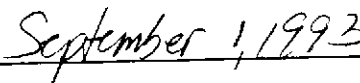
CAS Acceptance Criteria

70-130

Approved by:



Date:



COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: EMCON Project No. 0G70-007.01
ARCO Facility No. 601

Date Received: 08/17/93
Service Request No.: SJ93-1020

Initial Calibration Verification
BTEX and TPH as Gasoline
EPA Methods 5030/8020/DHS LUFT Method
 $\mu\text{g/L}$ (ppb)

Date Analyzed: 08/25/93

<u>Analyte</u>	<u>True Value</u>	<u>Result</u>	<u>Percent Recovery</u>	<u>CAS Percent Recovery Acceptance Criteria</u>
Benzene	25.	24.1	96.	85-115
Toluene	25.	24.6	98.	85-115
Ethylbenzene	25.	23.0	92.	85-115
Total Xylenes	75.	69.1	92.	85-115
TPH as Gasoline	250.	252.	101.	90-110

Approved by:

Keon M. Myrby

Date:

September 1, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: EMCON Project No. OG70-007.01
ARCO Facility No. 601

Date Received: 08/17/93
Service Request No.: SJ93-1020
Sample Matrix: Water

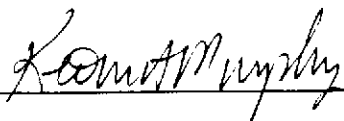
Matrix Spike/Duplicate Matrix Spike Summary
BTE
EPA Methods 5030/8020
 $\mu\text{g/L}$ (ppb)

Sample Name: MW-12 (11)
Date Analyzed: 08/25/93

Percent Recovery

Analyte	Spike Level	Sample Result	Spike Result		CAS Acceptance		Criteria
			MS	DMS	MS	DMS	
Benzene	25.	ND	23.4	24.0	94.	96.	76-122
Toluene	25.	ND	24.0	24.7	96.	99.	75-127
Ethylbenzene	25.	ND	22.6	23.2	90.	93.	70-135

Approved by:



Date:

September 1, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: EMCON Project No. 0G70-007.01
ARCO Facility No. 601

Date Received: 08/17/93
Service Request No.: SJ93-1020
Sample Matrix: Water

Surrogate Recovery Summary
Halogenated Volatile Organic Compounds
EPA Methods 5030/601

<u>Sample Name</u>	<u>Date Analyzed</u>	<u>Percent Recovery</u> 4-Bromofluorobenzene
MW-8 (10)	08/24/93	99.
MW-8 (10) MS	08/24/93	91.
MW-8 (10) DMS	08/24/93	82.
Method Blank	08/24/93	84.
	CAS Acceptance Criteria	70-130

Approved by: Kenneth Murphy

Date: September 1, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
 Project: EMCON Project No. OG70-007.01
 ARCO Facility No. 601

Date Received: 08/17/93
 Service Request No.: SJ93-1020

Initial Calibration Verification
 Halogenated Volatile Organic Compounds
 EPA Methods 5030/601
 Nanograms

Date Analyzed: 08/24/93

Analyte	True Value	Result	Percent Recovery	EPA Percent Recovery Acceptance Criteria
Chloromethane	50	36.6	73.	D-193
Vinyl Chloride	50	51.9	104.	28-163
Bromomethane	50	53.2	106.	D-144
Chloroethane	50	55.3	111.	46-137
Trichlorofluoromethane (Freon 11)	50	41.2	82.	21-156
1,1-Dichloroethene	50	55.1	110.	28-167
Methylene Chloride	50	35.2	70.	25-162
trans-1,2-Dichloroethene	50	41.9	84.	38-155
1,1-Dichloroethane	50	41.9	84.	47-132
Chloroform	50	46.7	93.	49-133
1,1,1-Trichloroethane (TCA)	50	47.5	95.	41-138
Carbon Tetrachloride	50	48.8	98.	43-143
1,2-Dichloroethane	50	51.5	103.	51-147
Trichloroethene (TCE)	50	45.8	92.	35-146
1,2-Dichloropropane	50	45.5	91.	44-156
Bromodichloromethane	50	44.1	88.	42-172
trans-1,3-Dichloropropene	50	69.0	138.	22-178
cis-1,3-Dichloropropene	50	48.1	96.	22-178
1,1,2-Trichloroethane	50	48.6	97.	39-136
Tetrachloroethene (PCE)	50	50.2	100.	26-162
Dibromochloromethane	50	42.3	85.	24-191
Chlorobenzene	50	40.5	81.	38-150
Bromoform	50	40.7	81.	13-159
1,1,2,2-Tetrachloroethane	50	46.4	93.	8-184
1,3-Dichlorobenzene	50	50.6	101.	7-187
1,4-Dichlorobenzene	50	48.4	97.	42-143
1,2-Dichlorobenzene	50	36.1	72.	D-208

D Detected

Approved by: Keom M. Mung

Date: September 1, 1993

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Associates
Project: EMCON Project No. 0G70-007.01
ARCO Facility No. 601

Date Received: 08/17/93
Service Request No.: SJ93-1020
Sample Matrix: Water

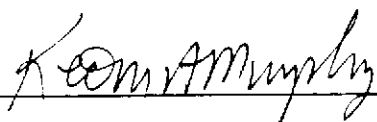
Matrix Spike/Duplicate Matrix Spike Summary
Halogenated Volatile Organic Compounds
EPA Methods 5030/601
 $\mu\text{g/L}$ (ppb)

Sample Name: MW-8 (10)
Date Analyzed: 08/24/93

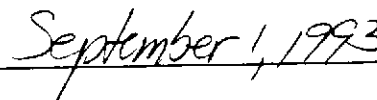
Percent Recovery

Analyte	Spike Level	Sample Result	Spike Result		MS	DMS	EPA Acceptance Criteria
			MS	DMS			
1,1-Dichloroethene	5.0	ND	4.19	4.13	83.	83.	28-167
Trichloroethene	5.0	ND	3.81	3.47	76.	69.	35-146
Tetrachloroethene	5.0	ND	4.60	4.00	92.	80.	26-162

Approved by:



Date:



ARCO Products Company

Division of AtlanticRichfieldCompany

Task Order No. EMC-93-5

Chain of Custody

ARCO Facility no. 601		City (Facility) San Leandro		Project manager (Consultant) JIM BUTERA		Laboratory name C A S																				
ARCO engineer Kyle Christie		Telephone no. (ARCO) 971-2434		Telephone no. (Consultant) 453-0719		Fax no. (Consultant) 453-0452																				
Consultant name EMCON Associates		Address (Consultant) 1935 Junction Avenue San Jose		Contract number 07077		Method of shipment sampler will deliver																				
Sample I.D	Lab no	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX 602/EPA 8020	GAS BTEX/TPH EPA M602/8020/8015	TPH Modified 8015 Gas	Oil and Grease 4131 4132	TPH EPA 418 1/SM503E	EPA 8010	EPA 624/8240	EPA 624/8240	EPA 624/8240	TCUP Metals VOA VOA	Semi Metals VOA VOA	CAN Metals EPA 8010/7000 TLCL STLC	Lead Org DHS 7420/7421	Lead EPA 7420/7421	Mercury EPA 8010/7000	Special detection Limit/reporting	
			Soil	Water	Other	Ice	Acid																			
AW1 ()	No	Sample	X			X	HCl	8/17/93			X															Well contained D.O.I' product
AW2 (12)	1-2	2							1417		X															Lowest Possible
AW3 ()		2	No Sample								X															Well contained D.O.I' product
AW4 (7)	3-4	2							1535		X															
AW5 (10)	5-6	2							1534		X															
AW6 ()		2	Dry				No Sample				X															
AW7 ()		2	Dry				No Sample				X															
AW8 (10)	7-8	2							1436		X															
AW9 (18)	9-10	2							1330		X															
AW10 (15)	11-12	2							1255		X															
AW11 (21)	13-14	2							1308		X															
AW12 (11)	15-16	2							1235		X															
AW13 (12)	17-18	2							1405		X															
AW14 (12)	19-20	2							1445		X															
AW15 (9)	21-22	2							1233		X															
FB1	23-24	2							1239		X															
Condition of sample: OK										Temperature received: CORR																
Relinquished by [Signature]										Received by																
Relinquished by [Signature]										Received by																
Relinquished by										Received by laboratory Kevin Howard																
										Date 8-17-93 Time 1645																
										Standard 10 Business Days X																

65 #13152 6270, copy, Pl, me

RECEIVED AUG 30 1993


GOLDEN STATE/CAS

August 27, 1993

Jim Butera
EMCON Associates
1921 Ringwood Avenue
San Jose, CA 95161-0187

Re: **ARCO Facility #601-San Leandro/Project #OG70-007.01**

Dear Jim:

Enclosed are the results of the samples submitted to our lab on August 19, 1993. For your reference, these analyses have been assigned our service request number LA932608.

All analyses were performed in accordance with our laboratory's quality assurance program. Golden State / CAS is certified for environmental analyses by the California Department of Health Services (Certificate # 1296).

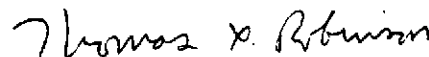
Please call if you have any questions.

Respectfully Submitted,

Golden State / CAS Laboratories Inc.



Dr. B. Gene Bennett
Laboratory Manager



Thomas X. Robinson
Quality Assurance Coordinator

GB/iz

GOLDEN STATE / CAS LABORATORIES, INC.

Analytical Report

Client: EMCON Associates
 Project: ARCO Products Company/#OG70-007.01
 Sample Matrix: Water

Date Collected: 08/17/93
 Date Received: 08/19/93
 Date Extracted: 08/24/93
 Date Analyzed: 08/24/93
 Service Request No.: LA932608

Base Neutral/Acid Semivolatile Organic Compounds
 EPA Methods 3510/8270
 $\mu\text{g/L}$ (ppb)

Sample Name: MW-8(10)
 Lab Code: LA2608-1

Base Neutral Analyte	MRL	Result	Base Neutral Analyte	MRL	Result
N-Nitrosodimethylamine	5	ND	2,6-Dinitrotoluene	5	ND
Bis(2-chloroethyl) Ether	5	ND	Diethyl Phthalate	5	ND
1,2-Dichlorobenzene	5	ND	4-Chlorophenyl Phenyl Ether	5	ND
1,3-Dichlorobenzene	5	ND	Fluorene	5	ND
1,4-Dichlorobenzene	5	ND	4-Nitroaniline	20	ND
Bis(2-chloroisopropyl) Ether	5	ND	N-Nitrosodiphenylamine	5	ND
N-Nitrosodi-n-propylamine	5	ND	4-Bromophenyl Phenyl Ether	5	ND
Hexachloroethane	5	ND	Hexachlorobenzene	5	ND
Nitrobenzene	5	ND	Phenanthrene	5	ND
Isophorone	5	ND	Anthracene	5	ND
Bis(2-chloroethoxy) methane	5	ND	Di-n-butyl Phthalate	5	ND
1,2,4-Trichlorobenzene	5	ND	Fluoranthene	5	ND
Naphthalene	5	26	Pyrene	5	ND
4-Chloroaniline	5	ND	Butylbenzyl Phthalate	5	ND
Hexachlorobutadiene	5	ND	3,3'-Dichlorobenzidine	20	ND
2-Methylnaphthalene	5	ND	Benz(a)anthracene	5	ND
Hexachlorocyclopentadiene	10	ND	Bis(2-ethylhexyl) Phthalate	5	ND
2-Chloronaphthalene	5	ND	Chrysene	5	ND
2-Nitroaniline	20	ND	Di-n-octyl Phthalate	5	ND
Dimethyl Phthalate	5	ND	Benzo(b)fluoranthene	5	ND
Acenaphthylene	5	ND	Benzo(k)fluoranthene	5	ND
3-Nitroaniline	20	ND	Benzo(a)pyrene	5	ND
Acenaphthene	5	ND	Indeno(1,2,3-c,d)pyrene	20	ND
Dibenzofuran	5	ND	Dibenz(a,h)anthracene	5	ND
2,4-Dinitrotoluene	5	ND	Benzo(g,h,i)perylene	5	ND
Acid Analyte	MRL	Result	Acid Analyte	MRL	Result
Phenol	5	ND	2,4-Dichlorophenol	5	ND
2-Chlorophenol	5	ND	4-Chloro-3-methylphenol	5	ND
Benzyl Alcohol	5	ND	2,4,6-Trichlorophenol	5	ND
2-Methylphenol	5	ND	2,4,5-Trichlorophenol	5	ND
3- and 4-Methylphenol*	5	ND	2,4-Dinitrophenol	50	ND
2-Nitrophenol	5	ND	4-Nitrophenol	50	ND
2,4-Dimethylphenol	5	ND	2-Methyl-4,6-dinitrophenol	20	ND
Benzoic Acid	50	ND	Pentachlorophenol	30	ND

MRL Method Reporting Limit

ND None Detected at or above the method reporting limit

* Quantified as 4-methylphenol.

Approved by hplu Lane

Date 8-27-93

GOLDEN STATE / CAS LABORATORIES, INC.

Analytical Report

Client: EMCON Associates
 Project: ARCO Products Company/#OG70-007.01
 Sample Matrix: Water

Date Extracted: 08/24/93
 Date Analyzed: 08/24/93
 Service Request No.: LA932608

Base Neutral/Acid Semivolatile Organic Compounds
 EPA Methods 3510/8270
 $\mu\text{g/L}$ (ppb)

Sample Name: Method Blank
 Lab Code: LA2608-MB

Base Neutral Analyte	MRL	Result	Base Neutral Analyte	MRL	Result
N-Nitrosodimethylamine	5	ND	2,6-Dinitrotoluene	5	ND
Bis(2-chloroethyl) Ether	5	ND	Diethyl Phthalate	5	ND
1,2-Dichlorobenzene	5	ND	4-Chlorophenyl Phenyl Ether	5	ND
1,3-Dichlorobenzene	5	ND	Fluorene	5	ND
1,4-Dichlorobenzene	5	ND	4-Nitroaniline	20	ND
Bis(2-chloroisopropyl) Ether	5	ND	N-Nitrosodiphenylamine	5	ND
N-Nitrosodi-n-propylamine	5	ND	4-Bromophenyl Phenyl Ether	5	ND
Hexachloroethane	5	ND	Hexachlorobenzene	5	ND
Nitrobenzene	5	ND	Phenanthrene	5	ND
Isophorone	5	ND	Anthracene	5	ND
Bis(2-chloroethoxy) methane	5	ND	Di-n-butyl Phthalate	5	ND
1,2,4-Trichlorobenzene	5	ND	Fluoranthene	5	ND
Naphthalene	5	ND	Pyrene	5	ND
4-Chloroaniline	5	ND	Butylbenzyl Phthalate	5	ND
Hexachlorobutadiene	5	ND	3,3'-Dichlorobenzidine	20	ND
2-Methylnaphthalene	5	ND	Benz(a)anthracene	5	ND
Hexachlorocyclopentadiene	10	ND	Bis(2-ethylhexyl) Phthalate	5	ND
2-Chloronaphthalene	5	ND	Chrysene	5	ND
2-Nitroaniline	20	ND	Di-n-octyl Phthalate	5	ND
Dimethyl Phthalate	5	ND	Benzo(b)fluoranthene	5	ND
Acenaphthylene	5	ND	Benzo(k)fluoranthene	5	ND
3-Nitroaniline	20	ND	Benzo(a)pyrene	5	ND
Acenaphthene	5	ND	Indeno(1,2,3-c,d)pyrene	20	ND
Dibenzofuran	5	ND	Dibenz(a,h)anthracene	5	ND
2,4-Dinitrotoluene	5	ND	Benzo(g,h,i)perylene	5	ND
Acid Analyte	MRL	Result	Acid Analyte	MRL	Result
Phenol	5	ND	2,4-Dichlorophenol	5	ND
2-Chlorophenol	5	ND	4-Chloro-3-methylphenol	5	ND
Benzyl Alcohol	5	ND	2,4,6-Trichlorophenol	5	ND
2-Methylphenol	5	ND	2,4,5-Trichlorophenol	5	ND
3- and 4-Methylphenol*	5	ND	2,4-Dinitrophenol	50	ND
2-Nitrophenol	5	ND	4-Nitrophenol	50	ND
2,4-Dimethylphenol	5	ND	2-Methyl-4,6-dinitrophenol	20	ND
Benzoic Acid	50	ND	Pentachlorophenol	30	ND

MRL Method Reporting Limit

ND None Detected at or above the method reporting limit

* Quantified as 4-methylphenol.

Approved by *Bob L. Leno*

Date 8-27-93

GOLDEN STATE / CAS LABORATORIES, INC.

Analytical Report

Client: EMCON Associates
 Project: ARCO Products Company/#OG70-007.01
 Sample Matrix: Water

Date Collected: 08/17/93
 Date Received: 08/19/93
 Date Analyzed: 08/20/93
 Service Request No.: LA932608

Total Metals
 mg/L (ppm)

Sample Name:
 Lab Code:

MW-8(10)
 LA2608-1

Method Blank
 LA2608-MB

Analyte	EPA Method	MRL		
Cadmium	3010/6010	0.005	ND	ND
Chromium	3010/6010	0.005	0.016	ND
Lead	3020/7421	0.002	0.007	ND
Nickel	3010/6010	0.04	ND	ND
Zinc	3010/6010	0.01	0.18	ND

MRL Method Reporting Limit
 ND None Detected at or above the method reporting limit

Approved by *Bob Lema* Date 8-27-93

GOLDEN STATE / CAS LABORATORIES, INC.

QA/QC Report

Client: EMCON Associates
 Project: ARCO Products Company/#OG70-007.01
 Sample Matrix: Water

Service Request No.: LA932608

**Surrogate Recovery Summary
 Base Neutral/Acid Semivolatile Organic Compounds
 EPA Methods 3510/8270**

Sample Name	Lab Code	P e r c e n t R e c o v e r y					TPH
		2FP	PHL	TBP	NBZ	FBP	
MW-8(10)	LA2608-1	49	26	103	56	59	72
Method Blank	LA2608-MB	60	31	86	81	87	102
EPA Acceptance Criteria		21-100	10-94	10-123	35-114	43-116	33-141

2FP 2-Fluorophenol
 PHL Phenol-D₈
 TBP 2,4,6-Tribromophenol
 NBZ Nitrobenzene-D₅
 FBP 2-Fluorobiphenyl
 TPH Terphenyl-D₁₄

Approved by *MDH* Date 8-27-92

GOLDEN STATE / CAS LABORATORIES, INC.

QA/QC Report

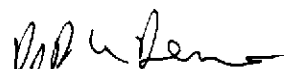
Client: EMCON Associates
Project: ARCO Products Company/#OG70-007.01
LCS Matrix: Water

Service Request No.: LA932608

Laboratory Control Sample Summary
Total Metals
mg/L (ppm)

Analyte	EPA Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Criteria
Cadmium	3010/6010	0.100	0.095	95	75-125
Chromium	3010/6010	0.500	0.487	97	75-125
Lead	3020/7421	0.0400	0.0419	105	75-125
Nickel	3010/6010	0.500	0.486	97	75-125
Zinc	3010/6010	0.500	0.482	96	75-125

Approved by



Date

8-27-93

GOLDEN STATE / CAS LABORATORIES, INC.

QA/QC Report

Client: EMCON Associates
Project: ARCO Products Company/#OG70-007.01
Sample Matrix: Water

Date Analyzed: 08/20/93
Service Request No.: LA932608

Matrix Spike/Duplicate Matrix Spike Summary
Total Metals
mg/L (ppm)

Lab Code: LA2598-1,2590-1(Lead)

Percent Recovery

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Duplicate Spiked Sample Result	Spiked Sample	Duplicate Spiked Sample	CAS Acceptance Criteria	Relative Percent Difference
Cadmium	0.005	0.100	ND	0.094	0.090	94	90	75-125	4
Chromium	0.005	0.500	0.026	0.434	0.435	82	82	75-125	<1
Lead	0.002	0.040	ND	0.037	0.036	92	90	75-125	3
Nickel	0.04	0.500	ND	0.441	0.446	88	89	75-125	1
Zinc	0.01	0.500	0.390	0.821	0.807	86	83	75-125	2

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by MDH Demet Date 8-27-93

GOLDEN STATE / CAS LABORATORIES, INC.

QA/QC Report

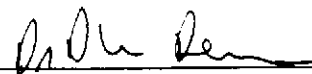
Client: EMCON Associates
Project: ARCO Products Company/#OG70-007.01
LCS Matrix: Water

Date Extracted: 08/24/93
Date Analyzed: 08/25/93
Service Request No.: LA932608

Laboratory Control Sample Summary
Base Neutral/Acid Semivolatile Organic Compounds
EPA Methods 3510/8270
 $\mu\text{g/L}$ (ppb)

Analyte	True Value	Result	Percent Recovery	EPA Percent Recovery Acceptance Criteria
Phenol	50.0	18.4	37	5-112
2-Chlorophenol	50.0	42.7	85	23-134
1,4-Dichlorobenzene	50.0	41.9	84	20-124
N-Nitrosodi-n-propylamine	50.0	35.6	71	D-230
1,2,4-Trichlorobenzene	50.0	42.4	85	44-142
4-Chloro-3-methylphenol	50.0	48.7	97	22-147
Acenaphthene	50.0	38.3	77	47-145
4-Nitrophenol	50.0	11.9	24	D-132
2,4-Dinitrotoluene	50.0	42.6	85	39-139
Pentachlorophenol	50.0	41.9	84	14-176
Pyrene	50.0	51.9	104	52-115

D Detected; result must be greater than zero.

Approved by 

Date 8-27-93

GOLDEN STATE / CAS LABORATORIES, INC.

QA/QC Report

Client: EMCON Associates
Project: ARCO Products Company/#OG70-007.01
Sample Matrix: Water

Date Extracted: 08/11/93
Date Analyzed: 08/12/93
Service Request No.: LA932608

Matrix Spike/Duplicate Matrix Spike Summary
Base Neutral/Acid Semivolatile Organic Compounds
EPA Methods 3510/8270
 $\mu\text{g/L}$ (ppb)

Lab Code: LA2544-2

Percent Recovery

Analyte	Spike Level		Sample Result	Spike Result		MS		EPA Acceptance Criteria	Relative Percent Difference
	MS	DMS		MS	DMS				
Phenol	50.0	50.0	ND	22.9	24.4	46	49	12-89	6
2-Chlorophenol	50.0	50.0	ND	37.4	35.1	75	70	27-123	7
1,4-Dichlorobenzene	50.0	50.0	ND	35.9	36.9	72	74	36-97	3
N-Nitrosodi-n-propylamine	50.0	50.0	ND	27.2	31.1	54	62	41-116	14
1,2,4-Trichlorobenzene	50.0	50.0	ND	35.6	36.7	71	73	39-98	3
4-Chloro-3-methylphenol	50.0	50.0	ND	21.0	24.3	42	47	23-97	11
Acenaphthene	50.0	50.0	ND	43.8	48.0	88	96	46-118	9
4-Nitrophenol	50.0	50.0	ND	24.4	28.0	49	56	10-80	13
2,4-Dinitrotoluene	50.0	50.0	ND	36.0	43.7	72	87	24-96	19
Pentachlorophenol	50.0	50.0	ND	27.6	20.7	55	41	9-103	29
Pyrene	50.0	50.0	ND	55.5	58.4	111	117	26-127	5

ND None Detected at or above the method reporting limit

Approved by



Date 8-27-93

ARCO Products Company

Division of AtlanticRichfieldCompany

Task Order No. **EMC-93-5**

Chain of Custody

ARCO Facility no. 601	City (Facility) San Leandro	Project manager (Consultant) JIM BUTERA
ARCO engineer Kyle Christie	Telephone no (ARCO) 571-2434	Telephone no (Consultant) 453-0719
Consultant name ENCON Associates	Address (Consultant) 1938 Juncheon Avenue San Jose	Fax no (Consultant) 453-0452

Laboratory name
CAS

Contract number
070777

Sample ID	Lab no	Container no	Matrix			Preservation		Sampling date	Sampling time	BTEX 602EPA 802C	BTEX/TPH EPA 802/8020/8015	TPH Modified 8015 Gas — Diesel — Oil and Grease 413.1 — 413.2 —	TPH EPA 418 1/5M503E	EPA 801C	EPA 824/824C	EPA 825/825C	TCLP Metals — VOC — VOA — SAM Metals EPA 8210-7000 TTL — STLC —	Lead Org (DHS) Lead EPA 7420/7421	Cd 7420/7421	Cr 7420/7421	Mn 7420/7421	Ni 7420/7421	Pb 7420/7421	Zn 7420/7421	
			Soil	Water	Other	Ice	Acid																		
MW-8 (10) 2570	4			X		X	NP	8/12/93	1436			X				X									
MW-8 (10) 2730	4			X		X	HCl		1436			X		X											
MW-8 (10)	1			X		X	HNO ₃		1436										X	X					



Rev. 2, 5/91

SAMPLE ID: MW-1 (NA)
CLIENT NAME: ARCO 601
LOCATION: 712 LEWELLING BL
SAN LEANDRO, 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) :	<u>NR</u>	VOLUME IN CASING (gal.) :	<u>NA</u>
DEPTH TO WATER (feet) :	<u>NA</u>	CALCULATED PURGE (gal.) :	<u>NA</u>
DEPTH OF WELL (feet) :	<u>NA</u>	ACTUAL PURGE VOL (gal.) :	<u>NA</u>

DATE PURGED:	<u>8-17-93</u>	Start (2400 Hr)	<u>NA</u>	End (2400 Hr)	<u>NA</u>
DATE SAMPLED:	<u>NA</u>	Start (2400 Hr)	<u>NA</u>	End (2400 Hr)	<u>NA</u>

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. ($\mu\text{mhos/cm @ } 25^\circ \text{C}$)	TEMPERATURE ($^\circ\text{F}$)	COLOR (visual)	TURBIDITY (visual)
_____	_____	_____	_____	_____	_____	_____
NO	SAMPLES	TAKEN,	PRODUCT	IN	WELL	_____
_____	_____	_____	_____	_____	_____	_____
D. O. (ppm):	NR	ODOR:	NA		NR	NR
					(COBALT 0 - 100)	(NTU 0 - 200)

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

SAMPLING EQUIPMENT

_____ 2" Bladder Pump	_____ Bailer (Teflon®)	_____ 2" Bladder Pump	_____ Bailer (Teflon®)
_____ Centrifugal Pump	_____ Bailer (PVC)	_____ DDL Sampler	_____ Bailer (Stainless Steel)
_____ Submersible Pump	_____ Bailer (Stainless Steel)	_____ Dipper	_____ Submersible Pump
_____ Well Wizard™ <u>NA</u>	_____ Dedicated	_____ Well Wizard™ <u>NA</u>	_____ Dedicated
Other: _____		Other: _____	

WELL INTEGRITY: OK LOCK #: 3259

REMARKS: NO SAMPLES TAKEN, PRODUCT IN WELL (0.01')

Meter Calibration: Date: 8-18-93 Time: _____ Meter Serial #: _____ Temperature °F: _____
(EC 1000 _____ / _____) (DI _____) (pH 7 _____ / _____) (pH 10 _____ / _____) (pH 4 _____ / _____)

Location of previous calibration: _____

Signature: Kari Buchholz Reviewed By: JB Page 1 of 15



WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

PROJECT NO: 0670-007.01SAMPLE ID: MW-2 (12)PURGED BY: K REICHELDERFERCLIENT NAME: ARCO 601SAMPLED BY: ↓LOCATION: 712 LEWELLING BLVD
SAN LEANDRO, CATYPE: Ground Water X Surface Water _____ Treatment Effluent _____ Other _____CASING DIAMETER (inches): 2 _____ 3 _____ 4 X 4.5 _____ 6 _____ Other _____

CASING ELEVATION (feet/MSL):	<u>NR</u>	VOLUME IN CASING (gal.):	<u>2.88</u>
DEPTH TO WATER (feet):	<u>7.89</u>	CALCULATED PURGE (gal.):	<u>8.64</u>
DEPTH OF WELL (feet):	<u>12.3</u>	ACTUAL PURGE VOL (gal.):	<u>9.00</u>

DATE PURGED:	<u>8-17-93</u>	Start (2400 Hr)	<u>1401</u>	End (2400 Hr)	<u>1413</u>
DATE SAMPLED:	<u>8-17-93</u>	Start (2400 Hr)	<u>1419</u>	End (2400 Hr)	<u>1421</u>

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (μ mhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (Visual)	TURBIDITY (Visual)
<u>1404</u>	<u>3.00</u>	<u>6.72</u>	<u>1741</u>	<u>71.3</u>	<u>CLOUDY</u>	<u>LIGHT</u>
<u>1408</u>	<u>6.00</u>	<u>6.76</u>	<u>1789</u>	<u>71.1</u>	<u>↓</u>	<u>↓</u>
<u>1413</u>	<u>9.00</u>	<u>6.79</u>	<u>1793</u>	<u>70.9</u>	<u>✓</u>	<u>✓</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

D. O. (ppm):	<u>NR</u>	ODOR:	<u>STRONG</u>		<u>NR</u>	<u>NR</u>
					(COBALT 0 - 100)	(NTU 0 - 200)

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

_____ 2" Bladder Pump	_____ Bailer (Teflon &)
_____ Centrifugal Pump	<u>X</u> Bailer (PVC)
_____ Submersible Pump	_____ Bailer (Stainless Steel)
_____ Well Wizard™	_____ Dedicated
Other: _____	

SAMPLING EQUIPMENT

_____ 2" Bladder Pump	<u>X</u> Bailer (Teflon &)
_____ DOL Sampler	_____ Bailer (Stainless Steel)
_____ Dipper	_____ Submersible Pump
_____ Well Wizard™	_____ Dedicated
Other: _____	

WELL INTEGRITY: OK LOCK #: 3259

REMARKS: SPOTS OF SHEEN ON PURGE WATER
15/16" LID - ONLY ONE BOLT ATTACHES TO TAB INSIDE WELL BOX;
THE TAB IS BROKEN OFF
SEAL IS CHIPPED ON ONE SIDE BUT BOX IS SOLID

Meter Calibration: Date: 8-17-93 Time: 1200 Meter Serial #: 9203 Temperature °F: _____
(EC 1000 _____ / _____) (DI _____) (pH 7 _____ / _____) (pH 10 _____ / _____) (pH 4 _____ / _____)

Location of previous calibration: MW-12Signature: Kevin Reichelderfer Reviewed By: JB Page 2 of 15



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

PROJECT NO: OG70-007.01
PURGED BY: K REICHELDERFER
SAMPLED BY: NA

SAMPLE ID: MW-3 (NA)
CLIENT NAME: ARCO 601
LOCATION: 712 LEWELLING BL.
SAN LEANDRO, 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.): NA
DEPTH TO WATER (feet): NA CALCULATED PURGE (gal.): NA
DEPTH OF WELL (feet): NA ACTUAL PURGE VOL (gal.): NA

DATE PURGED: 8-17-93 Start (2400 Hr) NA End (2400 Hr) NA
DATE SAMPLED: NA Start (2400 Hr) NA End (2400 Hr) NA

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (μ mhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>NO SAMPLES TAKEN, PRODUCT IN WELL 0.01</u>						
D. O. (ppm):	<u>NR</u>	ODOR:	<u>NA</u>		<u>NR</u>	<u>NR</u>
					(COBALT 0 - 100)	(NTU 0 - 200)

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

PURGING EQUIPMENT

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

SAMPLING EQUIPMENT

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

WELL INTEGRITY: OK LOCK #: 3259

REMARKS: _____

Meter Calibration: Date: 8-18-93 Time: _____ Meter Serial #: _____ Temperature °F: _____
(EC 1000 _____ / _____) (DI _____) (pH 7 _____ / _____) (pH 10 _____ / _____) (pH 4 _____ / _____)
Location of previous calibration: _____

Signature: Kari Reichelderfer Reviewed By: JB Page 3 of 15



WATER SAMPLE FIELD DATA SHEET

REV. 2, 5/91

PROJECT NO: 067000701
PURGED BY: B. Staffer
SAMPLED BY: _____

SAMPLE ID: MW-9(7)
CLIENT NAME: Arco 601
LOCATION: 712 Levee Bldg
San Leandro, CA

TYPE: Ground Water Y Surface Water _____ Treatment Effluent _____ Other _____
CASING DIAMETER (inches): 2 _____ 3 _____ 4 Y 4.5 _____ 6 _____ Other _____

CASING ELEVATION (feet/MSL): NA VOLUME IN CASING (gal.): 0.04
DEPTH TO WATER (feet): 7.82 CALCULATED PURGE (gal.): 1.33
DEPTH OF WELL (feet): 8.5 ACTUAL PURGE VOL (gal.): 0.5

DATE PURGED: 8/17/93 Start (2400 Hr) 1521 End (2400 Hr) 1530
DATE SAMPLED: 8/17/93 Start (2400 Hr) 1535 End (2400 Hr) 1537

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (μ mhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1524</u>	<u>0.5</u>	<u>7.0</u>	<u>1820</u>	<u>78.1</u>	<u>Cloudy</u>	<u>low</u>
<u>Well Line 6 at 0.5 gallons @ 1530</u>						
<u>1537</u>	<u>Recharge</u>	<u>7.12</u>	<u>1758</u>	<u>77.2</u>	<u>Clear</u>	<u>low</u>
D. O. (ppm): <u>NA</u>		ODOR: <u>Slight</u>			<u>NA</u>	<u>NA</u>
						(COBALT 0 - 100) (NTU 0 - 200)

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

PURGING EQUIPMENT

SAMPLING EQUIPMENT

____ 2" Bladder Pump Y Bailer (Teflon) _____
____ Centrifugal Pump _____ Bailer (PVC) _____
____ Submersible Pump _____ Bailer (Stainless Steel) _____
____ Well Wizard™ _____ Dedicated _____
Other: _____

____ 2" Bladder Pump Y Bailer (Teflon) _____
____ DDL Sampler _____ Bailer (Stainless Steel) _____
____ Dipper _____ Submersible Pump _____
____ Well Wizard™ _____ Dedicated _____
Other: _____

WELL INTEGRITY: Good

LOCK #: 3259

REMARKS: _____

Meter Calibration: Date: 8/17/93 Time: 1212 Meter Serial #: 9072 Temperature °F: _____
(EC 1000 _____ / _____) (DI _____) (pH 7 _____ / _____) (pH 10 _____ / _____) (pH 4 _____ / _____)
Location of previous calibration: MW-15

Signature: B. Staffer

Reviewed By: JB

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EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

PROJECT NO: 0670-007.01

SAMPLE ID: MW-5 (10)

PURGED BY: K REICHELDERFER

CLIENT NAME: ARCO 601

SAMPLED BY: ✓

LOCATION: 712 LEWELLING BLVD
SAN LEANDRO, 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): <u>NR</u>	VOLUME IN CASING (gal.): <u>1.69</u>
DEPTH TO WATER (feet): <u>7.51</u>	CALCULATED PURGE (gal.): <u>5.08</u>
DEPTH OF WELL (feet): <u>10.1</u>	ACTUAL PURGE VOL (gal.): <u>2.50</u>

DATE PURGED: <u>8-17-93</u>	Start (2400 Hr) <u>1517</u>	End (2400 Hr) <u>1524</u>
DATE SAMPLED: <u>8-17-93</u>	Start (2400 Hr) <u>1534</u>	End (2400 Hr) <u>1536</u>

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1521</u>	<u>2.00</u>	<u>6.78</u>	<u>1961</u>	<u>71.5</u>	<u>CLOUDY</u>	<u>LIGHT</u>
<u>1524</u>	<u>WELL DRIED @ 2.50 GALLONS</u>					

<u>1538</u>	<u>RECHARGE</u>	<u>6.76</u>	<u>2070</u>	<u>71.1</u>	<u>CLOUDY</u>	<u>LIGHT</u>
D. O. (ppm): <u>NR</u>	ODOR: <u>STRONG</u>	<u>NR</u>	<u>NR</u>	(COBALT 0 - 100) (NTU 0 - 200)		

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

PURGING EQUIPMENT

_____ 2" Bladder Pump	_____ Bailer (Teflon®)
_____ Centrifugal Pump	<u>X</u> Bailer (PVC)
_____ Submersible Pump	_____ Bailer (Stainless Steel)
_____ Well Wizard™	_____ Dedicated
Other: _____	

SAMPLING EQUIPMENT

_____ 2" Bladder Pump	<u>X</u> Bailer (Teflon®)
_____ ODL Sampler	_____ Bailer (Stainless Steel)
_____ Dipper	_____ Submersible Pump
_____ Well Wizard™	_____ Dedicated
Other: _____	

WELL INTEGRITY: OK LOCK #: 3259

REMARKS: - SHEEN ON PURGE WATER
- 1524 WELL DRIED @ 2.50 GALLONS
- DTW PRIOR TO SAMPLING 7.39

Meter Calibration: Date: 8-17-93 Time: 1200 Meter Serial #: 9203 Temperature °F: _____

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

Location of previous calibration: MW-12

Signature: Kevin Reichelderfer Reviewed By: JB Page 5 of 15



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

PROJECT NO: OG70-007.01
PURGED BY: K REICHELDERFER
SAMPLED BY: NA

SAMPLE ID: MW-6 (NA)
CLIENT NAME: ARCO 601
LOCATION: 712 LEWELLING BL
SAN LEANDRO, 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.): NA
DEPTH TO WATER (feet): NA CALCULATED PURGE (gal.): NA
DEPTH OF WELL (feet): NA ACTUAL PURGE VOL (gal.): NA

DATE PURGED: 8-17-93 Start (2400 Hr) NA End (2400 Hr) NA
DATE SAMPLED: NA Start (2400 Hr) NA End (2400 Hr) NA

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	EC. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>NO</u>	<u>SAMPLES</u>	<u>TAKEN</u>	<u>WELL WAS</u>	<u>DRY</u>		
D. O. (ppm):	<u>NR</u>	ODOR:	<u>NA</u>		<u>NR</u>	<u>NR</u>
					(COBALT 0 - 100)	(NTU 0 - 200)

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

PURGING EQUIPMENT

____ 2" Bladder Pump _____ Bailor (Teflon's)
____ Centrifugal Pump _____ Bailor (PVC)
____ Submersible Pump _____ Bailor (Stainless Steel)
____ Well Wizard™ NA _____ Dedicated
Other: _____

SAMPLING EQUIPMENT

____ 2" Bladder Pump _____ Bailor (Teflon's)
____ DDL Sampler _____ Bailor (Stainless Steel)
____ Dipper _____ Submersible Pump
____ Well Wizard™ NA _____ Dedicated
Other: _____

WELL INTEGRITY: OK LOCK #: 3259

REMARKS: _____

Meter Calibration: Date: 8-18-93 Time: _____ Meter Serial #: _____ Temperature °F: _____
(EC 1000 _____ / _____) (DI _____) (pH 7 _____ / _____) (pH 10 _____ / _____) (pH 4 _____ / _____)

Location of previous calibration: _____

Signature: Kari Reichelderfer Reviewed By: JB Page 6 of 15



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 2. 5/91

PROJECT NO: OG70-007.01
PURGED BY: K REICHELDERFER
SAMPLED BY: NA

SAMPLE ID: MW-7 (NA)
CLIENT NAME: ARCO 601
LOCATION: 712 LEWELLING BLVD
SAN LEANDRO, 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.): NA
DEPTH TO WATER (feet): DRY NA 9.5 CALCULATED PURGE (gal.): NA
DEPTH OF WELL (feet): NA 9.5 ACTUAL PURGE VOL. (gal.): NA

DATE PURGED: 8-17-93 Start (2400 Hr) NA End (2400 Hr) NA
DATE SAMPLED: NA Start (2400 Hr) NA End (2400 Hr) NA

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (μ mhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>NO SAMPLES TAKEN, WELL WAS DRY</u>						
D. O. (ppm): <u>NR</u> ODOR: <u>NA</u> <u>NR</u> <u>NR</u> (COBALT 0-100) (NTU 0-200)						

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

PURGING EQUIPMENT

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

SAMPLING EQUIPMENT

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

WELL INTEGRITY: OK LOCK #: 3259

REMARKS: NO SAMPLES TAKEN, WELL WAS DRY

Meter Calibration: Date: 8-18-93 Time: _____ Meter Serial #: _____ Temperature °F: _____
(EC 1000 _____ / _____) (DI _____) (pH 7 _____ / _____) (pH 10 _____ / _____) (pH 4 _____ / _____)

Location of previous calibration: _____

Signature: Kari Reichelderfer Reviewed By: JB Page 07 of 15



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

PROJECT NO: 06770-007.01
PURGED BY: K REICHELDERFER
SAMPLED BY: V

SAMPLE ID: MW-8 (10)
CLIENT NAME: ARCO 601
LOCATION: 712 LEWELLING BLVD
SAN LEANDRO, 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.): 1.50
DEPTH TO WATER (feet): 7.90 CALCULATED PURGE (gal.): 4.51
DEPTH OF WELL (feet): 10.2 ACTUAL PURGE VOL. (gal.): 2.00

DATE PURGED: 8-17-93 Start (2400 Hr) 1330 End (2400 Hr) 1337
DATE SAMPLED: 8-17-93 Start (2400 Hr) 1436 End (2400 Hr) 1451

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1333</u>	<u>1.50</u>	<u>6.81</u>	<u>1605</u>	<u>74.4</u>	<u>GREY</u>	<u>HEAVY</u>
<u>1337</u>	<u>WELL DRIED @ 2.00 GALLONS</u>					
<u>1453</u>	<u>RECHARGE</u>	<u>6.98</u>	<u>1701</u>	<u>73.9</u>	<u>GREY</u>	<u>MODERATE</u>
D. C. (ppm):	<u>NR</u>	ODOR:	<u>STRONG</u>			
					<u>NR</u>	<u>NR</u>
					(COBALT 0 - 100)	(NTU 0 - 200)

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

PURGING EQUIPMENT

____ 2" Bladder Pump
____ Centrifugal Pump X
____ Submersible Pump
____ Well Wizard™
Other: _____

____ Bailer (Teflon) X
____ Bailer (PVC)
____ Bailer (Stainless Steel)
____ Dedicated

SAMPLING EQUIPMENT

____ 2" Bladder Pump X
____ DDL Sampler
____ Dipper
____ Well Wizard™
Other: _____

____ Bailer (Teflon) X
____ Bailer (Stainless Steel)
____ Submersible Pump
____ Dedicated

WELL INTEGRITY: OK LOCK #: 3259

REMARKS: • 1337 WELL DRIED @ 2.00 GALLONS
• A FEW SPOTS OF GREEN ON PURGE WATER
• 1433 DTW 8.01

Meter Calibration: Date: 8-17-93 Time: 1200 Meter Serial #: 9203 Temperature °F: _____
(EC 1000 _____ / _____) (DI _____) (pH 7 _____ / _____) (pH 10 _____ / _____) (pH 4 _____ / _____)

Location of previous calibration: MW-12

Signature: Kevin Reichelderfer Reviewed By: JB Page 8 of 15

EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

 PROJECT NO: OG70-007.01
 PURGED BY: D. Stafford
 SAMPLED BY: D. Stafford

 SAMPLE ID: MLW-10(15)
 CLIENT NAME: Hico 601
 LOCATION: 712 Levee/ing Blvd
San Leandro, CA

 TYPE Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐
 CASING DIAMETER (inches): 2 ☒ 3 ☐ 4 ☐ 4.5 ☐ 6 ☐ Other ☐

 CASING ELEVATION (feet/MSL): NA VOLUME IN CASING (gal.): 1.23
 DEPTH TO WATER (feet): 8.61 CALCULATED PURGE (gal.): 3.72
 DEPTH OF WELL (feet): 16.2 ACTUAL PURGE VOL (gal.): 4.0

 DATE PURGED: 8/17/93 Start (2400 Hr) 12:42 End (2400 Hr) 12:53
 DATE SAMPLED: 8/17/93 Start (2400 Hr) 12:55 End (2400 Hr) 13:01

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (Visual)	TURBIDITY (Visual)
<u>12:47</u>	<u>1.5</u>	<u>6.86</u>	<u>1382</u>	<u>75.2</u>	<u>Cloudy</u>	<u>low</u>
<u>12:50</u>	<u>3.0</u>	<u>6.91</u>	<u>1412</u>	<u>73.8</u>	<u>↓</u>	<u>↓</u>
<u>12:52</u>	<u>4.0</u>	<u>6.95</u>	<u>1414</u>	<u>72.9</u>	<u>↓</u>	<u>↓</u>

 D. O. (ppm): NA ODOR: None (CCBALT 0 - 100) (NTU 0 - 200)

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

PURGING EQUIPMENT

☐ 2" Bladder Pump
☐ Centrifugal Pump
☐ Submersible Pump
☐ Well Wizard™
 Other: _____

☐ Bailor (Teflon®)
☒ Bailor (PVC)
☐ Bailor (Stainless Steel)
☐ Dedicated

SAMPLING EQUIPMENT

☒ 2" Bladder Pump
☐ ODL Sampler
☐ Dipper
☐ Well Wizard™
 Other: _____

☒ Bailor (Teflon®)
☐ Bailor (Stainless Steel)
☐ Submersible Pump
☐ Dedicated

 WELL INTEGRITY: Good LOCK #: Dolphin

REMARKS: _____

 Meter Calibration: Date: 8/17/93 Time: 12:17 Meter Serial #: 9072 Temperature °F: _____

(EC 1000 _____) (Cl _____) (pH 7 _____) (pH 10 _____) (pH 4 _____)

 Location of previous calibration: MLW-15

 Signature: [Signature] Reviewed By: [Signature] Page 10 of 15



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

PROJECT NO: 0670-007.01
PURGED BY: K REICHELDERFER
SAMPLED BY: ↓

SAMPLE ID: MW-11(11)
CLIENT NAME: ARCO 601
LOCATION: 712 LEWELLING BLVD
SAN LEANDRO, 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): <u>NR</u>	VOLUME IN CASING (gal.): <u>1.97</u>
DEPTH TO WATER (feet): <u>8.79</u>	CALCULATED PURGE (gal.): <u>5.90</u>
DEPTH OF WELL (feet): <u>11.8</u>	ACTUAL PURGE VOL. (gal.): <u>6.00</u>

DATE PURGED: <u>8-17-93</u>	Start (2400 Hr) <u>1250</u>	End (2400 Hr) <u>1303</u>
DATE SAMPLED: <u>8-17-93</u>	Start (2400 Hr) <u>1308</u>	End (2400 Hr) <u>1310</u>

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1254</u>	<u>2.00</u>	<u>6.84</u>	<u>1782</u>	<u>74.6</u>	<u>GREY</u>	<u>HEAVY</u>
<u>1258</u>	<u>4.00</u>	<u>6.87</u>	<u>1818</u>	<u>74.4</u>	<u>↓</u>	<u>↓</u>
<u>1303</u>	<u>6.00</u>	<u>6.96</u>	<u>1825</u>	<u>74.1</u>	<u>↓</u>	<u>↓</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

D. O. (ppm): NR ODOR: MILD NR NR
(COBALT 0 - 100) (NTU 0 - 200)

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

PURGING EQUIPMENT

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

SAMPLING EQUIPMENT

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

WELL INTEGRITY: OK LOCK #: 3259

REMARKS: _____

Meter Calibration: Date: 8-17-93 Time: 1200 Meter Serial #: 9203 Temperature °F: _____
(EC 1000 _____ / _____) (DI _____) (pH 7 _____ / _____) (pH 10 _____ / _____) (pH 4 _____ / _____)

Location of previous calibration: MW-12

Signature: Kim Reichelderfer Reviewed By: JB Page 110 of 15



EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

PROJECT NO: 0670-007.01

SAMPLE ID: MW-12(11)

PURGED BY: K REKHELDERFER

CLIENT NAME: ARCO 601

SAMPLED BY: ✓

LOCATION: 712 LEWELLING Blvd.
SAN LEANDRO, 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): <u>NR</u>	VOLUME IN CASING (gal.): <u>1.50</u>
DEPTH TO WATER (feet): <u>9.30</u>	CALCULATED PURGE (gal.): <u>4.51</u>
DEPTH OF WELL (feet): <u>11.6</u>	ACTUAL PURGE VOL. (gal.): <u>2.50</u>

DATE PURGED: <u>8-17-93</u>	Start (2400 Hr) <u>1217</u>	End (2400 Hr) <u>1224</u>
DATE SAMPLED: <u>8-17-93</u>	Start (2400 Hr) <u>1235</u>	End (2400 Hr) <u>1237</u>

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1221</u>	<u>1.50</u>	<u>6.80</u>	<u>1653</u>	<u>72.5</u>	<u>CLOUDY</u>	<u>LIGHT</u>
<u>1224</u>	<u>WELL DRIED @ 2.50 GALLONS</u>					

<u>1241</u>	<u>RECHARGE</u>	<u>6.85</u>	<u>1705</u>	<u>72.9</u>	<u>CLOUDY</u>	<u>LIGHT</u>
D. O. (ppm): <u>NR</u>	ODOR: <u>NONE</u>				<u>NR</u>	<u>NR</u>

(COBALT 0 - 100) (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): FB-1 @ 1239

PURGING EQUIPMENT

☐ 2" Bladder Pump
☐ Centrifugal Pump
☐ Submersible Pump
☐ Well Wizard™
 Other: _____

☐ Bailer (Teflon®)
☒ Bailer (PVC)
☐ Bailer (Stainless Steel)
☐ Dedicated

SAMPLING EQUIPMENT

☐ 2" Bladder Pump
☐ DDL Sampler
☐ Dipper
☐ Well Wizard™
 Other: _____

☒ Bailer (Teflon®)
☐ Bailer (Stainless Steel)
☐ Submersible Pump
☐ Dedicated

WELL INTEGRITY: OK LOCK #: 3259

REMARKS: 1224 WELL DRIED @ 2.50 GALLONS
DTW PRIOR TO SAMPLING 10.33

Meter Calibration: Date: 8-17-93 Time: 1200 Meter Serial #: 9203 Temperature °F: 79.2
 (EC 1000 1013, 1000) (DI 5.81) (pH 7 7.01, 7.00) (pH 10 10.02, 10.00) (pH 4 3.92, —)

Location of previous calibration: _____

Signature: Keri Reichelderfer Reviewed By: JB Page 12 of 15

WATER SAMPLE FIELD DATA SHEET 2/1/74

PROJECT NO: OG70-007.01
PURGED BY: B. Stafford
SAMPLED BY: B. Stafford

SAMPLE ID: MLW-13 (12)
CLIENT NAME: Arco 601
LOCATION: 712 Lewelling Blvd
San Leandro, CA

TYPE: Ground Water X Surface Water _____ Treatment Effluent _____ Other _____
CASING DIAMETER (inches): 2 X 3 _____ 4 _____ 4.5 _____ 6 _____ Other _____

CASING DIAMETER (inches):	1.75	VOLUME IN CASING (gal.):	0.72
CASING ELEVATION (feet/MSL):	144	CALCULATED PURGE (gal.):	2.16
DEPTH TO WATER (feet):	8.58	ACTUAL PURGE VOL (gal.):	3.0
4.42 DEPTH OF WELL (feet):	13.0		

DATE PURGED:	<u>8/17/93</u>	Start (2400 Hr)	<u>1352</u>	End (2400 Hr)	<u>1403</u>
DATE SAMPLED:	<u>8/17/93</u>	Start (2400 Hr)	<u>14:05</u>	End (2400 Hr)	<u>1408</u>

DATE SAMPLED:						
TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. ($\mu\text{mhos/cm @ } 25^\circ \text{ C}$)	TEMPERATURE (°F)	COLOR (Visual)	TURBIDITY (Visual)
1356	1.0	6.99	1744.	77.2	Tan	Moderate
1359	2.0	6.96	1860.	72.2	d	b
1402	3.0	7.04	1840.	71.4	b	d
D.O. (ppm):	N/A		ODOR: None		NA (COBALT 0 - 100)	NA (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): 5007

PURGING EQUIPMENT

☐ 2" Sladder Pump	☐ Bailer (Teflon®)
☐ Centrifugal Pump	☒ Bailer (PVC)
☐ Submersible Pump	☐ Bailer (Stainless Steel)
☐ Well Wizard™	☐ Dedicated
Other: _____	

SAMPLING EQUIPMENT

☐ 2" Sluoder Pump	☒ Bailor (Teflon®)
☐ DDL Sampler	☐ Bailor (Stainless Steel)
☐ Dipper	☐ Submersible Pump
☐ Well Wizard™	☐ Dedicated

Other: _____

Other: _____

WELL INTEGRITY: Good LOCK #: 3259

REMARKS: _____

Meter Calibration: Date: 8/17/13 Time: 1212 Meter Serial #: 9072 Temperature °F: _____
(EC 1000 _____ / _____) (DI _____) (pH 7 _____ / _____) (pH 10 _____ / _____) (pH 4 _____ / _____)

Location of previous calibration: mw-15

Signature: Paul Shifford Reviewed By: JD Page 154 of 15

EMCON
ASSOCIATES

SAMPLE ID: AW-14 (12)
CLIENT NAME: Arco GC1
LOCATION: 712 Lewelling Blvd.
San Leandro, CA

CASING ELEVATION (feet/MSL):	<u>NA</u>	VOLUME IN CASING (gal.):	<u>0.5</u>
DEPTH TO WATER (feet):	<u>9.93</u>	CALCULATED PURGE (gal.):	<u>1.5</u>
307 DEPTH OF WELL (feet):	<u>13-D</u>	ACTUAL PURGE VOL (gal.):	<u>1.5</u>

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

SAMPLING EQUIPMENT

☐ 2" Bladder Pump	☒ Bailer (Teflon®)
☐ ODL Sampler	☐ Bailer (Stainless Steel)
☐ Dipper	☐ Submersible Pump
☐ Well Wizard™	☐ Dedicated

Other: _____

REMARKS:

Signature: Bart Stiller Reviewed By: _____ Page 14 of 15

PROJECT NO: 0670-007.01
PURGED BY: D. Stittford
SAMPLED BY: D. Stittford

DATA SHEET

SAMPLE ID: MLW-15(9)

CLIENT NAME: Arco 601

LOCATION: 712 Lewelling Blvd
San Leandro, CA

TYPE: Ground Water X Surface Water _____ Treatment Effluent _____ Other _____
CASING DIAMETER (inches): 2 X 3 _____ 4 _____ 4.5 _____ 6 _____ Other _____

CASING DIAMETER (inches):	14	VOLUME IN CASING (gal.):	0.52
CASING ELEVATION (feet/MSL):		CALCULATED PURGE (gal.):	1.50
DEPTH TO WATER (feet):	6.58	ACTUAL PURGE VOL (gal.):	1.5
3.52 DEPTH OF WELL (feet):	10.1		

DATE PURGED: 8/17/93 Start (2400 Hr) 12:22 End (2400 Hr) 12:30
DATE SAMPLED: 8/17/93 Start (2400 Hr) 12:33 End (2400 Hr) 12:35

DATE SAMPLED: <u>9/14/80</u>						
TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. ($\mu\text{mhos/cm @ } 25^\circ \text{C}$)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>12:26</u>	<u>0.5</u>	<u>5.42</u>	<u>997.</u>	<u>73.7</u>	<u>Tan</u>	<u>Moderate</u>
<u>12:28</u>	<u>1.0</u>	<u>5.98</u>	<u>982.</u>	<u>71.6</u>	<u>Red-Tan</u>	<u>↓</u>
<u>12:30</u>	<u>1.5</u>	<u>5.95</u>	<u>991.</u>	<u>70.9</u>	<u>↓</u>	<u>↓</u>
D.O. (ppm):	<u>NA</u>	ODOR: <u>NONE</u>		(COBALT 0 - 100) <u>NA</u>		(NTU 0 - 200) <u>NA</u>

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): 1001

PURGING EQUIPMENT

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

SAMPLING EQUIPMENT

☐ 2" Bladder Pump	☒ Bailer (Teflon)
☐ DDL Sampler	☐ Bailer (Stainless Steel)
☐ Dipper	☐ Submersible Pump
☐ Well Wizard™	☐ Dedicated
Other: _____	

Other: _____

WELL INTEGRITY: Good LOCK #: 3255

REMARKS: _____

Meter Calibration: Date: 8/17/93 Time: 1212 Meter Serial #: 9072 Temperature °F: 56.2
(EC 1000 1005 / 1000) (DI 6.84) (pH 7 7.54 / 7.00) (pH 10 10.68 / 10.00) (pH 4 3.72 /)

Location of previous calibration: N/A

Signature: [Signature] Reviewed By: [Signature] Page 15 of 15