Applied GeoSystems, Inc.
A RESNA Company

RESNA
Working To Restore Nature

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LETTER REPORT
QUARTERLY GROUNDWATER MONITORING
Second Quarter 1992
at
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

9/1/92

69036.04

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September 1, 1992
0722MWHE
69036.04

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

Subject: Second Quarter 1992 Groundwater Monitoring Report for ARCO Station 2035, 1001 San Pablo Avenue, Albany, California.

Mr. Whelan:

As requested by ARCO Products Company (ARCO), this letter report summarizes the results of the second quarter 1992 groundwater monitoring performed by ARCO's contractor, EMCON Associates (EMCON) of San Jose, at the above-referenced site. The objectives of this quarterly groundwater monitoring are to evaluate changes in the groundwater flow direction and gradient, and changes in concentrations of petroleum hydrocarbons in the local groundwater associated with the former waste-oil and former underground gasoline-storage tanks at the site. The 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. Field procedures and acquisition of field data were performed under the direction of EMCON; evaluation and warrant of their field data and field protocols is beyond RESNA Industries Inc.'s (RESNA's) scope of work. RESNA's scope of work was limited to interpretation of field and laboratory analytical data, which included evaluating trends in reported hydrocarbon concentrations in the local groundwater, the groundwater gradient, and direction of groundwater flow beneath the site.

The operating ARCO Station 2035 is located southeast of the intersection of Marin and San Pablo Avenues in Albany, California, as shown on the Site Vicinity Map, Plate 1.

Prior to the present monitoring, RESNA (formerly Applied GeoSystems [AGS]) performed investigations related to the former underground waste-oil and gasoline-storage tanks at the

site. In August 1989 RESNA performed a limited environmental site assessment (AGS, January 1990) which included drilling of five soil borings (B-1 through B-5) in the vicinity of the former underground gasoline-storage tanks (USTs). In June through August 1991, RESNA performed an environmental investigation related to UST removal and replacement, which included the drilling of two soil borings (B-6 and B-7) in the area of new tank pit and observing excavation and removal of four USTs, (three 6,000-gallon USTs [T2 and T3], and one 10,000-gallon UST [T4]) and product lines (RESNA, September 1991). The removed gasoline-storage tanks were replaced with four 10,000 gallon gasoline-storage tanks. A 550-gallon waste-oil tank was removed from the site in 1977 during ARCO's conversion of the station to a mini-market In October and November 1991, RESNA performed a subsurface environmental investigation, which included the drilling of four soil boring (B-8 through B-11) and installation of recovery well RW-1 in boring B-8, and three groundwater monitoring wells (MW-1 through MW-3) in borings B-9 through B-11 respectively; performing an aquifer pumping test; performing well research for water supply and monitoring wells within a 1/2 mile radius of the site, and performing a record search for possible offsite sources of gasoline hydrocarbons detected in the soil and groundwater at the subject site (RESNA, March 1992). In October 1991, RESNA began quarterly monitoring of the onsite wells. The results of these environmental investigations and assessments are presented in the reports listed in the references section of this letter report. The approximate locations of the USTs, the former waste-oil tank, and other pertinent features at the site are shown on Plate 2, Generalized Site Plan.

Groundwater Sampling and Gradient Evaluation

Depth-to-water measurements (DTW) were performed by EMCON field personnel on April 21, May 12, and June 12, 1992. Quarterly sampling was performed by EMCON field personnel on June 12, 1992. The results of EMCON's field work on the site, including DTW measurements and subjective analysis for the presence of product in the groundwater in MW-1 through MW-3, and RW-1, are presented on EMCON's field report sheets, and EMCON's Summary of Groundwater Monitoring Data. These data are included in Appendix A.

The DTW levels, wellhead elevations, groundwater elevations, and subjective observations of product in the groundwater for this quarter and previous groundwater monitoring at the site are summarized in Table 1, Cumulative Groundwater Monitoring Data. EMCON's DTW measurements were used to evaluate the groundwater elevations. Floating product was recorded in recovery well RW-1. Visual evidence of product or sheen was not noted in the other monitoring wells. Groundwater elevations in wells MW-1 through MW-3, and RW-1, decreased approximately 1.4 feet between April 21, and June 12, 1992. The groundwater gradients and flow directions evaluated from April, May and June 1992 data

are shown on the Groundwater Gradient Maps, Plates 3 through 5. The interpreted groundwater gradients averaged approximately 0.02 with flow direction toward the west-southwest. This gradient is consistent with monitoring data from the last quarter, but deviates from the initially interpreted gradient direction inferred from the October 1991 monitoring data. Fluctuations in the gradient direction may be due to local high volume pumping or other unknown causes.

Groundwater monitoring wells MW-1 through MW-3 were purged and sampled by EMCON field personnel on June 12, 1992; RW-1 was not sampled because floating product was present. Prior to groundwater sampling, approximately five well volumes were purged from MW-2, four well volumes were purged from MW-1, and two well volumes were purged from MW-3. Reportedly, well MW-1 was dewatered after four well volumes were purged, and MW-3 was dewatered after two well volumes were purged. EMCON's water sample field data sheets are included in Appendix A. The purge water was removed from the site by a licensed hazardous waste hauler; the Monitoring Well Purge Water Disposal Form is also included in Appendix A.

Laboratory Methods and Results

Under the direction of EMCON, water samples collected from the wells were analyzed by Columbia Analytical Services, Inc. (California Department of Health Services Certification No. 1426). The water samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and for benzene, toluene, ethylbenzene, and total xylenes (BTEX) using modified Environmental Protection Agency (EPA) Methods 5030/8020. Results of these and previous water analyses are summarized in Table 2, Cumulative Results of Groundwater Laboratory Analyses of Water Samples. The TPHg and benzene concentrations are shown on Plate 6, TPHg/Benzene Concentration in Groundwater. The Chain of Custody Records and Laboratory Analytical Reports are included in Appendix A.

Results of this quarter's monitoring indicate:

- Concentrations of TPHg were reported as 2,900 parts per billion (ppb) in well MW-1, 720 ppb in well MW-3, and as nondetectable (<50 ppb) in well MW-2.

- Concentrations of benzene were reported as 1,100 ppb in MW-1, 210 ppb in well MW-3, and as nondetectable (<0.5 ppb) in well MW-2. Concentrations of benzene in wells MW-1 and MW-3 exceed the Maximum Contaminant Level (MCL) of 1.0 ppb benzene.

- Concentrations of toluene were reported as 2.5 ppb in well MW-1, and nondetectable in wells MW-2 (<0.5 ppb) and MW-3 (<2.5 ppb). All reported concentrations are below the Department of Health Services Drinking Water Action Level (DWAL) of 100 ppb toluene. In the groundwater sample from well MW-3 the Method Reporting Limit (MRL) was raised due to a high analyte concentration requiring sample dilution.

- Concentrations of ethylbenzene were reported as 21 ppb in well MW-1, 23 ppb in well MW-3, and as nondetectable (<0.5 ppb) in MW-2. All reported concentrations are below the State MCL of 680 ppb ethylbenzene.

- Concentrations of total xylenes were reported as 15 ppb in well MW-1, 4.0 ppb in well MW-3, and nondetectable (<0.5 ppb) in well MW-2. All reported concentrations are below the State MCL of 1750 ppb total xylenes.

The following general trends were noted in reported hydrocarbon concentrations in groundwater from the three monitoring wells since the last quarterly monitoring: concentrations of TPHg decreased in wells MW-1 and MW-3, and remained nondetectable in MW-2; and concentrations of BTEX generally decreased in monitoring wells MW-1 through MW-3.

Product Removal

Floating product was measured and removed from well RW-1 on May 29, June 8, and June 30, 1992. Quantities of floating product recovered and thickness of floating product during first and second quarters 1992 are presented in Table 3, Approximate Cumulative Product Recovered. In April, a Horner EZY Floating Product Skimmer was installed in well RW-1. The total cumulative recovered product from RW-1 is approximately 12.35 gallons.

Conclusions

Groundwater has been impacted by petroleum hydrocarbons. The extent of petroleum hydrocarbons in the local groundwater has not been defined. The TPHg and benzene concentration contour maps (Plated 6 and 7) indicate that the highest concentrations of petroleum hydrocarbons are present at the former locations of the USTs at the northeast edge of the subject site, and at RW-1 downgradient of the former tanks.

Monthly groundwater monitoring and quarterly groundwater sampling should continue at the site, including analyses of the groundwater for TPHg and BTEX. Based on nondetectable concentrations of TOG, TPHd should not be analyzed in the wells at this site.

check this out if OK?

In addition, RESNA concludes biweekly measurement and removal of product from the skimmer installed in well RW-1 should continue as a method of interim remediation.

Distribution

RESNA recommends that copies of this report be forwarded to:

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

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

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

Sincerely,
RESNA Industries Inc.

Erin McLucas
Staff Geologist

Joan E. Tiernan
Registered Civil
Engineer # 044600

cc: H.C. Winsor, ARCO Products Company

Enclosures: References
Plate 1, Site Vicinity Map
Plate 2, Generalized Site Plan
Plate 3, Groundwater Gradient Map, April 12, 1992
Plate 4, Groundwater Gradient Map, May 12, 1992
Plate 5, Groundwater Gradient Map, June 12, 1992
Plate 6, TPHg/Benzene Concentrations in Groundwater, June 12, 1992

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

Appendix A: EMCON's Field Report Sheets (2), Depth to Water/Floating Product Survey Results, Summary of Groundwater Monitoring Data, Certified Analytical Reports with Chain-of-Custody, and Water Sample Field Data Sheets
Monitoring Well Purge Water Disposal Form

REFERENCES

Applied GeoSystems. January 24, 1990. Limited Environmental Site Assessment at ARCO Station 2035. AGS 96036-1.

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

RESNA/Applied GeoSystems. April 29, 1991. Work Plan for Subsurface Investigations and Remediation at ARCO Station 2035, 1001 San Pablo Avenue, Albany, California. AGS 69036.02.

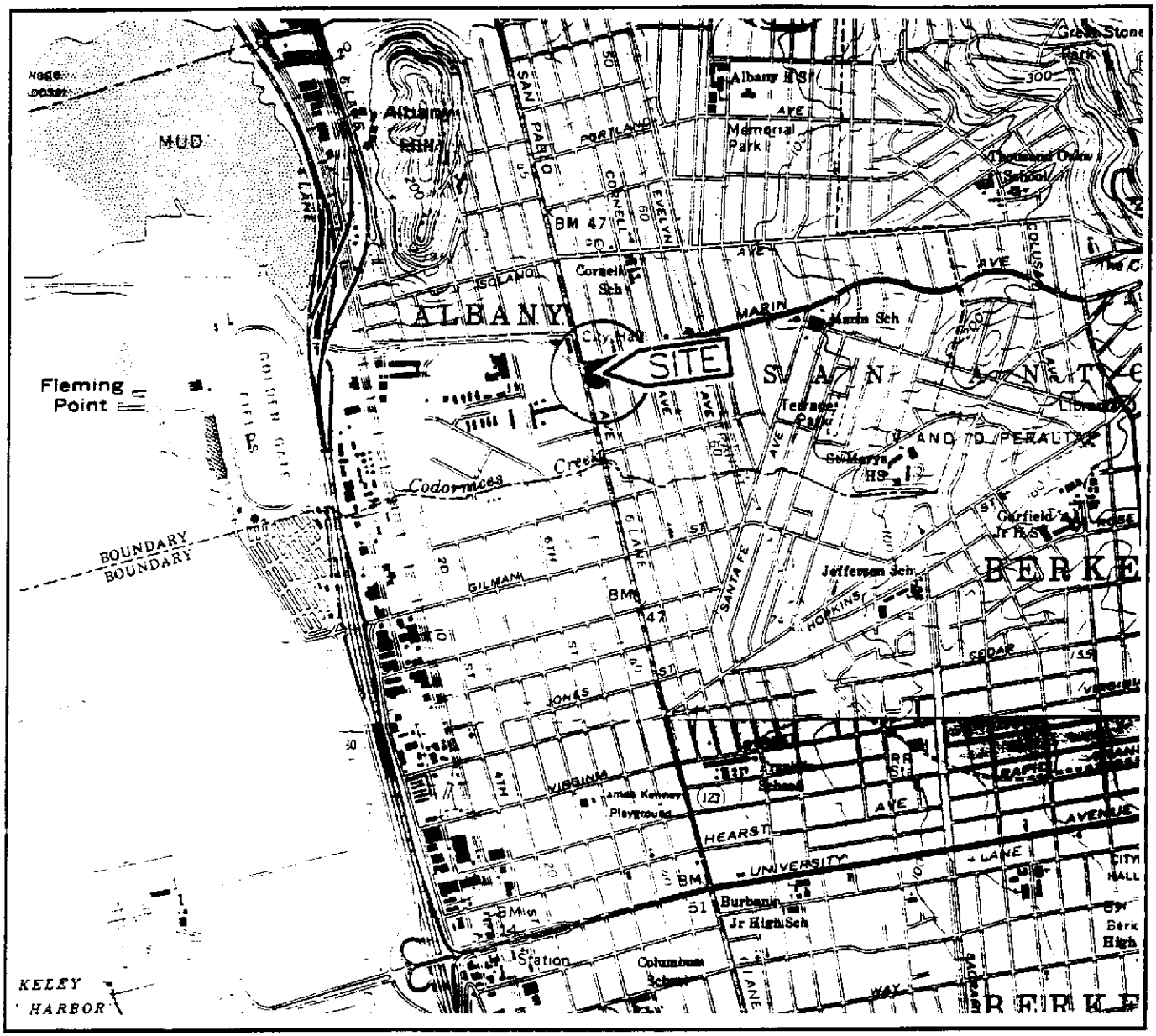
RESNA/Applied GeoSystems. April 29, 1991. Addendum One to Work Plan at ARCO Station 2035, 1001 San Pablo Avenue, Albany, California. AGS 69036.02

RESNA/Applied GeoSystems. June 24, 1991. Site Safety Plan for the ARCO Service Station 2035, 1001 San Pablo Avenue, Albany, California. AGS 69036.03S.

RESNA/Applied GeoSystems. September 11, 1991. Underground Gasoline-Storage Tank Removal and Replacement. AGS 69036.03.

RESNA March 6, 1992. Subsurface Environmental Investigation and Pump Test at ARCO Station 2035, 1001 San Pablo Avenue, Albany, California. 69036.02.

RESNA May 4, 1992. Letter Report, Quarterly Groundwater Monitoring First Quarter 1992 at ARCO Station 2035, 1001 San Pablo Avenue, Albany, California. 69036.04



Base: U.S. Geological Survey
7.5–Minute Quadrangles
Richmond/Oakland West, California.
Photorevised 1980

LEGEND

(•) = Site Location

N

Approximate Scale

2000 1000 0 2000 4000

feet

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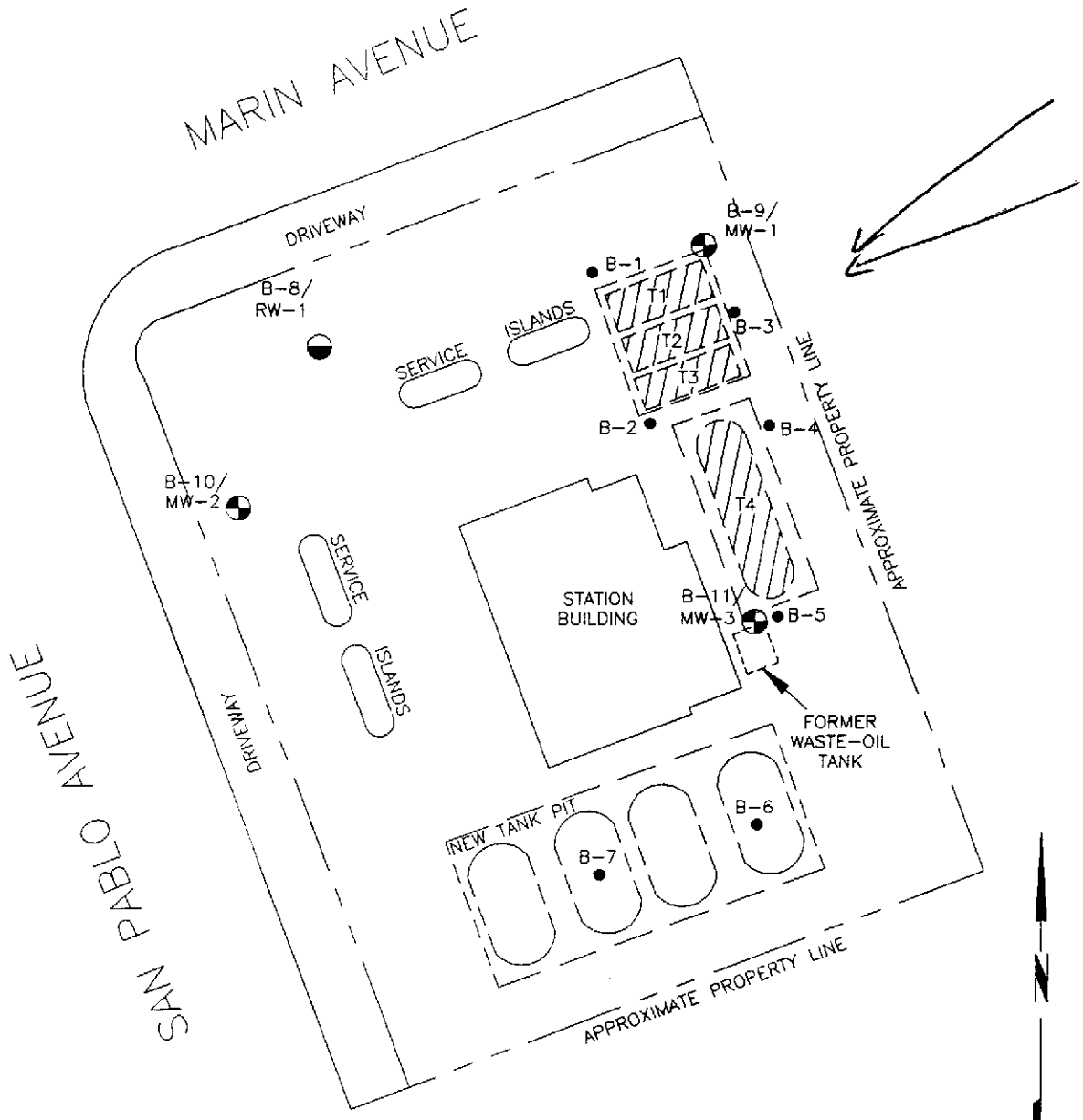
SITE VICINITY MAP
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
1



EXPLANATION

RW-1 = Recovery well (Exceltech, October 1991)

MW-3 = Monitoring well (Exceltech, October 1991)

T1 = Former underground gasoline tank pits

B-7 = Soil boring (RESNA, August 1989 and June 1991)

Approximate Scale

30 15 0 30 60

feet

Source: Surveyed by John E. Koch, Land Surveyor.

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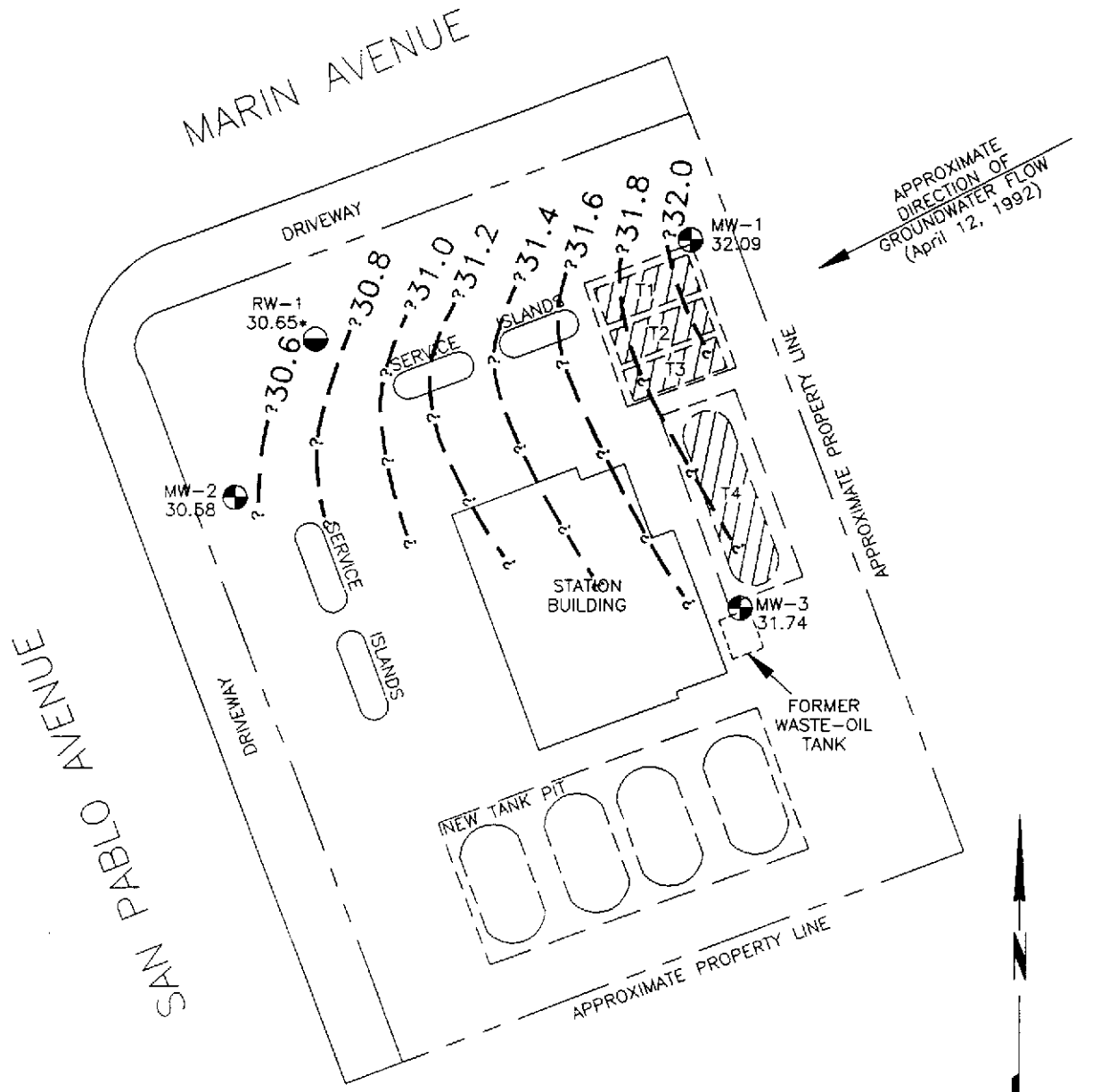
GENERALIZED SITE PLAN
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE
2



EXPLANATION

RW-1 = Recovery well (Exceltech, October 1991)

MW-3 = Monitoring well (Exceltech, October 1991)

= Former underground gasoline tank pits

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

32.09 = Elevation of groundwater in feet above MSL, April 12, 1992

* = Floating product

Approximate Scale

30 15 0 30 60

feet

Source: Surveyed by John E. Koch, Land Surveyor.

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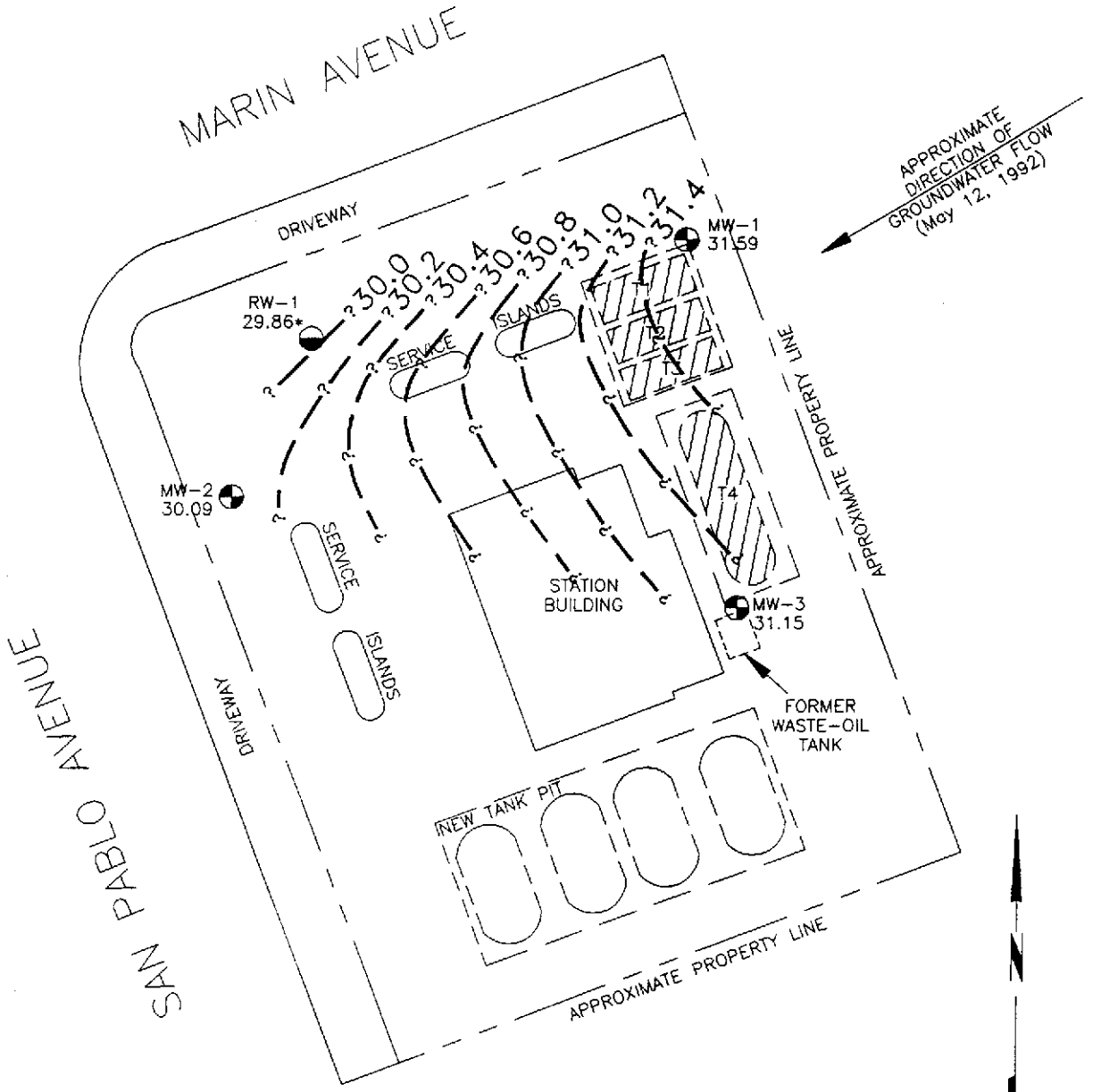
GROUNDWATER GRADIENT MAP
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE **3**



EXPLANATION

RW-1 = Recovery well (Exceltech, October 1991)

MW-3 = Monitoring well (Exceltech, October 1991)

= Former underground gasoline tank pits

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

31.59 = Elevation of groundwater in feet above MSL, May 12, 1992

* = Floating product

Approximate Scale

30 15 0 30 60

feet

Source: Surveyed by John E. Koch, Land Surveyor.

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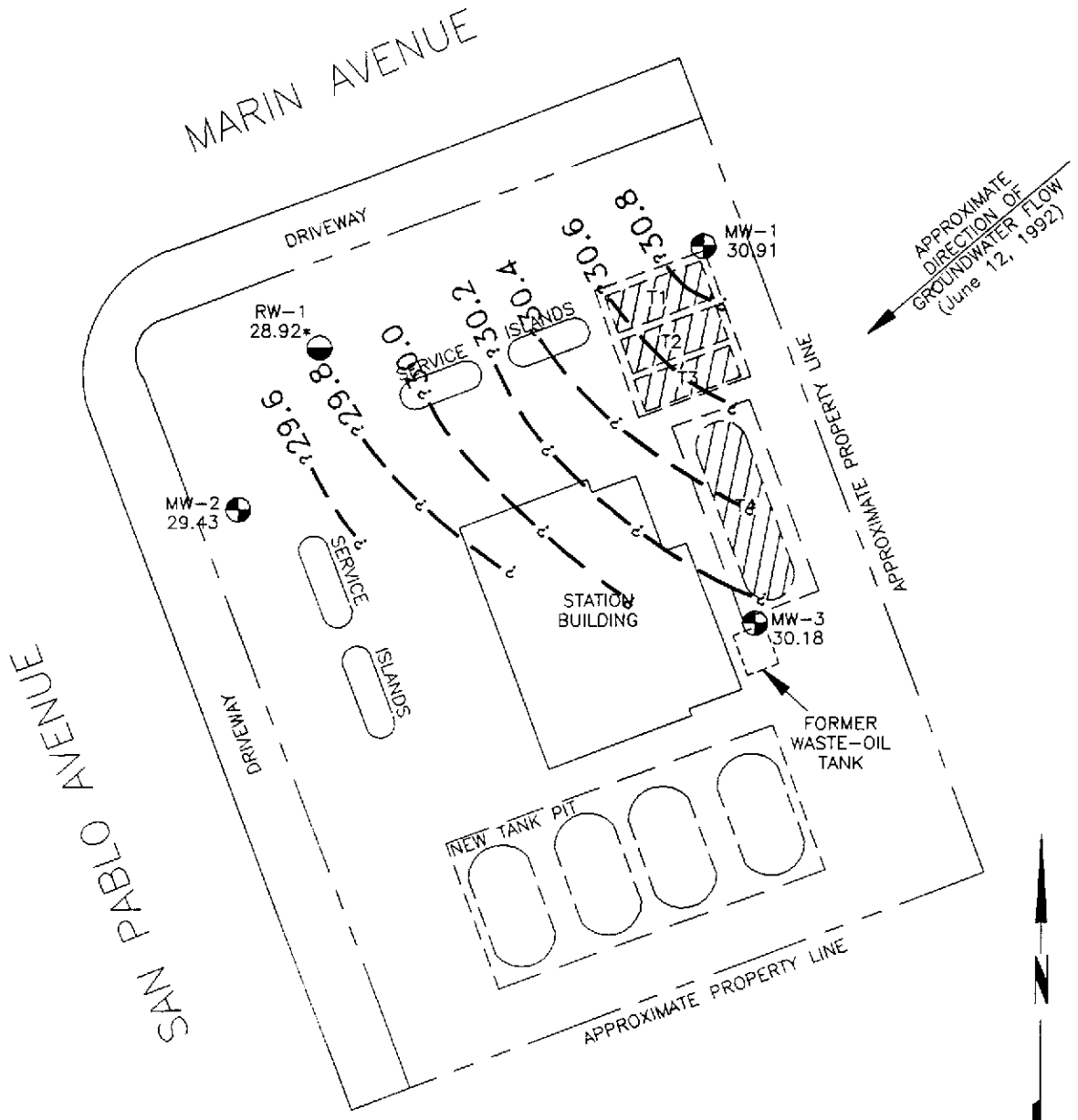
GROUNDWATER GRADIENT MAP
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 4



EXPLANATION

RW-1 = Recovery well (Exceltech, October 1991)

MW-3 = Monitoring well (Exceltech, October 1991)

= Former underground gasoline tank pits

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

30.91 = Elevation of groundwater in feet above MSL, June 12, 1992

* = Floating product

Approximate Scale

30 15 0 30 60

feet

Source: Surveyed by John E. Koch, Land Surveyor.

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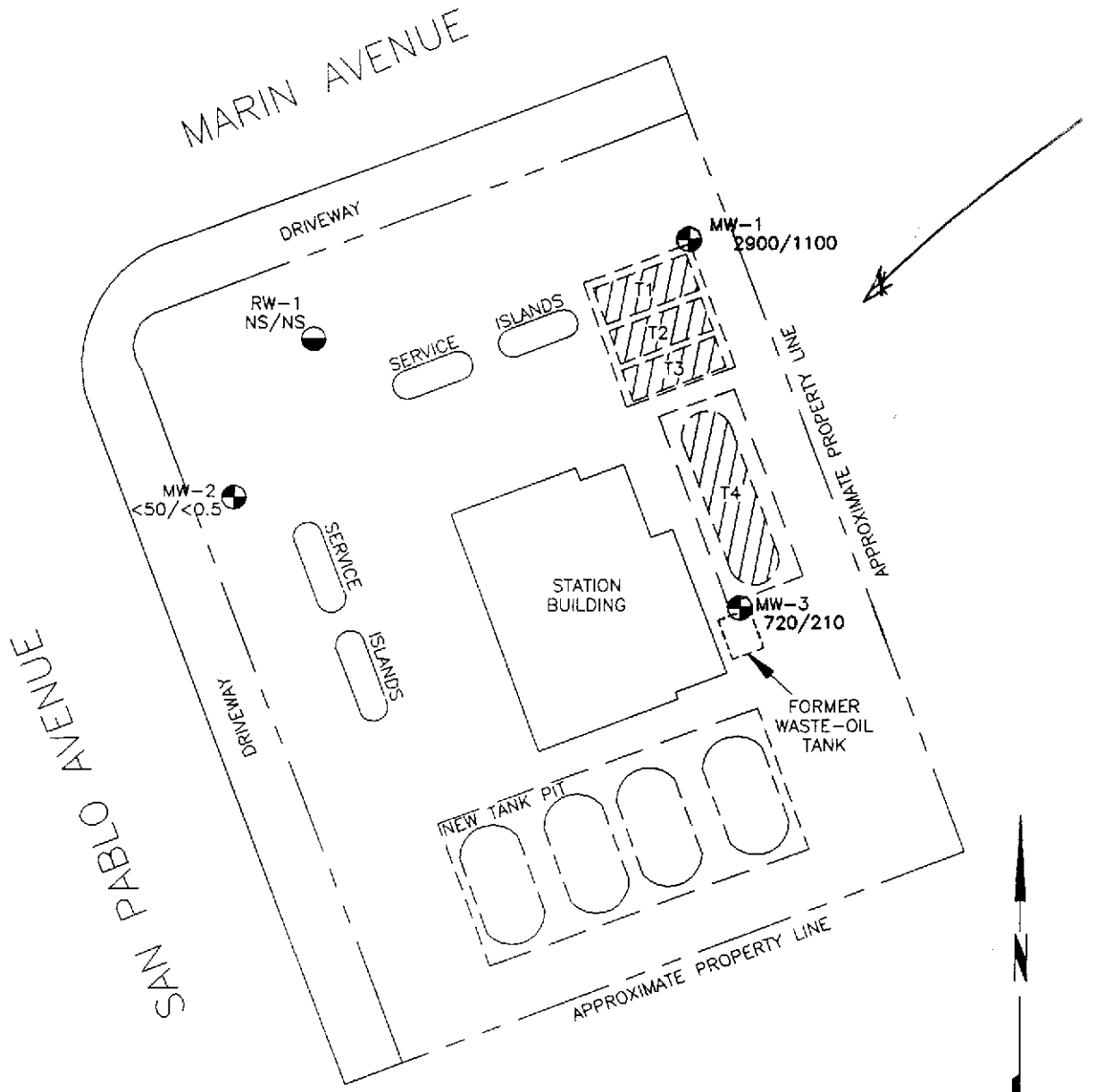
GROUNDWATER GRADIENT MAP
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 5



EXPLANATION

RW-1 = Recovery well (Exceltech, October 1991)

MW-3 = Monitoring well (Exceltech, October 1991)

T1 = Former underground gasoline tank pits

2900/1100 = Concentration of TPHg/Benzene in groundwater, in ppb, June 12, 1992

NS = Not sampled due to floating product

Approximate Scale

30 15 0 30 60

feet

Source: Surveyed by John E. Koch, Land Surveyor.

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TPHg/BENZENE CONCENTRATIONS IN GROUNDWATER
ARCO Station 2035
1001 San Pablo Avenue
Albany, California

PLATE 6

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 2035
Albany, California
Page 1 of 2

Well Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Evidence of Product (feet)
MW-1				
10/29/91	41.41	11.86	29.55	None
11/07/91		10.94	30.47	None
11/14/91		10.97	30.44	None
01/19/92		10.06	31.35	None
02/19/92		8.65	32.76	None
03/19/92		8.33	33.08	None
04/21/92		9.32	32.09	None
05/12/92		9.82	31.59	None
06/12/92		10.50	30.91	None
MW-2				
10/29/91	40.38	11.10	29.28	None
11/07/91		11.20	29.18	None
11/14/91		11.21	29.17	None
01/19/92		10.44	29.94	None
02/19/92		8.70	31.68	None
03/19/92		8.84	31.54	None
04/21/92		9.80	30.58	None
05/12/92		10.29	30.09	None
06/12/92		10.95	29.43	None
MW-3				
10/29/91	41.44	11.62	29.82	None
11/07/91		11.52	29.92	None
11/14/91		11.50	29.94	None
01/19/92		10.56	30.88	None
02/19/92		9.52	31.92	None
03/19/92		9.01	32.43	None
04/21/92		9.70	31.74	None
05/12/92		10.29	31.15	None
06/12/92		11.26	30.18	None
RW-1				
10/29/91	40.33	10.85	29.48	Sheen
11/07/91		11.97	28.36	0.01
11/14/91		11.03	29.30	0.01
01/19/92		10.22*	30.11*	3.26
02/19/92		8.49*	31.84*	2.14
03/19/92		8.50*	31.83*	0.5
04/21/92		9.68*	30.65	0.03
05/12/92		10.47	29.86	Product not measured
06/12/92		11.41	28.92	Product not measured

See notes on Page 2 of 2.

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 2035
Albany, California
Page 2 of 2

Wellhead Elevation based on benchmark (B1198): A standard Bronze Disk in the sidewalk 0.8' behind the face of curb on the northerly side of Marin Avenue 6' +/- westerly of the curb return at the northeast corner of Marin Avenue and San Pablo Avenue at an elevation of 40.426 feet above mean sea level, City of Albany, California.
Depth-to-water measurements in feet below the top of the well casing.
*Adjusted water level due to product. The static water level in each well that was suspected to contain floating product was measured with an ORS® interface probe; this instrument is accurate to the nearest 0.01 foot. The probe contains two different sensor units, one for detecting the liquid/air interface, and one for distinguishing between water and hydrocarbon. The thickness of the floating product and the groundwater depths in each well were recorded. The recorded thickness of the floating product was then 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. These calculated groundwater depths were subtracted from surveyed wellhead elevations to calculate the differences in groundwater elevations.

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES OF WATER SAMPLES
ARCO Station 2035
Albany, California

WELL DATE	TPHg	B	T	E	X	TOG	VOC	Cd	Cr	Pb	Ni	Zn
MW-1												
10/29/91	620	76	69	15	60	NA	NA	NA	NA	NA	NA	NA
03/19/92	6,500	2,600	89	42	290	NA	NA	NA	NA	NA	NA	NA
06/12/92	2,900	1,100	2.5	21	15	NA	NA	NA	NA	NA	NA	NA
MW-2												
10/29/91	<60	2.4	4.6	0.48	2.3	NA	ND	NA	NA	NA	NA	NA
03/19/92	<50	6.8	0.9	<0.5	1.1	NA	NA	NA	NA	NA	NA	NA
06/12/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA
MW-3												
10/29/91	32	2.1	2.8	0.35	1.8	<5.0	ND*	<0.010	<0.010	<0.0050	<0.050	0.045
03/19/92	2,100	780	8.8	16	58	NA	NA	NA	NA	NA	NA	NA
06/12/92	720	210	<2.5**	23	4.0	NA	NA	NA	NA	NA	NA	NA
RW-1												
10/29/91	Not sampled–sheen											
03/19/92	Not sampled–floating product											
06/12/92	Not sampled–floating product											
MCL:		1		680	1,750			10	50	50	—	—
DWAL:			100									

Results in parts per billion (ppb).
TPHg: Total petroleum hydrocarbons as gasoline by EPA method 5030/8015/8020.
B: benzene, T: toluene, E: ethylbenzene, X: total xylenes isomers
BTEX: Analyzed by EPA method 5030/8015/8020.
TOG: Total oil and grease by Standard method 5520 B&F.
VOC: Volatile organic compounds by EPA method 624.
*: All compounds were nondetectable except for toluene (3.0 ppb).
**: Laboratory Raised Methods Reporting Limit (MRL) due to high analyte concentration requiring sample dilution.
Cd: Cadmium by EPA method 200.7.
Cr: Chromium by EPA method 200.7.
Ni: Nickel by EPA method 200.7.
Zn: Zinc by EPA method 200.7.
Pb: Lead by EPA method 3010.
NA: Not analyzed.
<: Results reported below the laboratory detection limit.
ND: Not detected; detection limit varied according to analyte.
MCL: State Maximum Contaminant Level (October 1990).
DWAL: State Drinking Water Action Level (October 1990).

Sample Identification: W-11-MW3
W = Water Sample
11 = Depth in feet
MW3 = Monitoring well number

TABLE 3
APPROXIMATE CUMULATIVE PRODUCT RECOVERED
ARCO Station 2035
Albany, California

Well Date	Product Thickness (feet)	Product Recovered (gallons)
YEAR: 1992		
RW-1		
01/29/92	3.35	5.0
02/28/92	2.58	3.8
03/12/92	1.28	2.0
03/25/92	0.91	0.5
05/29/92	0.23	0.3
06/08/92	0.60	0.5
06/30/92	0.15	0.25
	1992 TOTAL:	12.35

APPENDIX A
EMCON'S FIELD REPORT SHEETS (2),
DEPTH TO WATER/FLOATING PRODUCT SURVEY RESULTS,
SUMMARY OF GROUNDWATER MONITORING DATA,
CERTIFIED ANALYTICAL REPORTS WITH CHAIN-OF-CUSTODY, AND
WATER SAMPLE FIELD DATA SHEETS

MONITORING WELL PURGE WATER DISPOSAL FORM

EMCON
ASSOCIATES
Consultants in Wastes
Management and
Environmental Control

Date April 27, 1992
Project G70-17.01

To:
Mr. Joel Coffman
RESNA/ Applied Geosystems
3315 Almaden Expressway, Suite 34
San Jose, California 95118

We are enclosing:

Copies	Description
1	Depth To Water/Floating Product Survey Results
	April 1992 monthly water level survey, ARCO
	station 2035, 1001 San Pablo Avenue, Albany, CA

For your: X Information Sent by: X Mail

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

Mark Knuttel MK

Reviewed by: 6/3/92

Robert Porter, Senior Project Engineer.

1938 Junction Avenue, San Jose, California 95131-2102, (408) 453-0713, Fax (408) 453-0452

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : G70-17.01 STATION ADDRESS : 1001 San Pablo Ave. Albany, CA DATE : 04-21-92

ARCO STATION # : 2035 FIELD TECHNICIAN : LARRY WESS 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-2	OK	OK	OK	OK	OK	9.80	9.80	ND	ND	28.7	—
2	MW-3	OK	OK	OK	OK	BAD	9.70	9.70	ND	ND	32.0	REPLACED 4" WELL CAP.
3	MW-1	OK	OK	OK	BAD	OK	9.32	9.32	ND	ND	29.6	CUT LOCK. REPLACED WITH #0464.
4	RW-1	OK	OK	OK	N/A	N/A	9.70	9.70	9.67	.03'	25.75	PRODUCT IN SKIMMER

EMCON ASSOCIATES
Consultants in Wastes Management and Environmental Control

Date May 12, 1992
Project G70-17.01

To:
Mr. Joel Coffman
RESNA/ Applied Geosystems
3315 Almaden Expressway, Suite 34
San Jose, California 95118

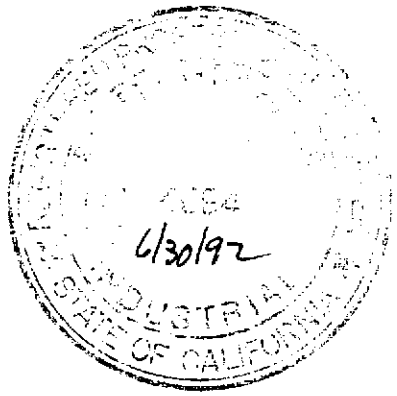
We are enclosing:

Copies	Description
1	Depth To Water/Floating Product Survey Results
	May 1992 monthly water level survey, ARCO
	station 2035, 1001 San Pablo Avenue, Albany, CA

For your: X Information Sent by: X Mail

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

Reviewed by:



Mark Knuttel MK

Robert Porter, Senior Project Engineer.

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

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : G70-17.01 STATION ADDRESS : 1001 San Pablo Ave. Albany, CA DATE : 5-12-92

ARCO STATION # : 2035 FIELD TECHNICIAN : R. 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-2	ok	Yes	ok	3259	Yes	10.29	10.30	ND	ND	28.8	Grout is very uneven.
2	MW-3	ok	Yes	ok	"	Yes	10.29	10.29	ND	ND	32.2	Slight odor.
3	MW-1	ok	Yes	ok	"	Yes	9.82	9.82	ND	ND	29.7	Water in C. Box.
4	RW-1	ok	Yes	ok	none	None	10.47	10.47			25.7	Product on skimmer

EMCON ASSOCIATES
Consultants in Wastes Management and Environmental Control

Date July 1, 1992
Project G70-17.01

To:
Mr. Joel Coffman
RESNA/ Applied Geosystems
3315 Almaden Expressway, Suite 34
San Jose, California 95050

We are enclosing:

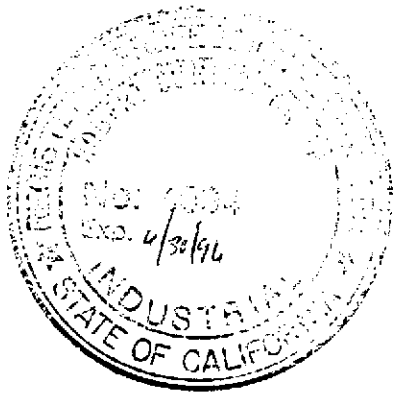
Copies	Description
1	Depth To Water / Floating Product Survey Results
1	Summary of Groundwater Monitoring Data
1	Certified Analytical Reports with Chain-of-Custody
4	Water Sample Field Data Sheets

For your: X Information Sent by: X Mail

Comments:

Enclosed are the data from the second quarter 1992 monitoring event at ARCO service station 2035, 1001 San Pablo Avenue, Albany, California Groundwater monitoring is conducted consistent with applicable regulatory guidelines.. Please call if you have any questions:.(408) 453-2266.

Reviewed by: Jim Butera JB



Robert Porter, Senior Project Engineer.

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

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : G70-17.01 STATION ADDRESS : 1001 San Pablo Ave. Albany, CA DATE : 6-12-92

ARCO STATION # : 2035 FIELD TECHNICIAN : HORTON / REICHELDERFER DAY : FRIDAY

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-2	OK	OK	OK	OK	OK	10.95	10.95	ND	ND	29.10	-
2	MW-3	OK	OK	OK	OK	OK	11.26	11.26	ND	ND	32.60	-
3	MW-1	OK	OK	OK	OK	OK	10.50	10.50	ND	ND	29.90	-
4	RW-1	OK	OK	OK	none	none	11.41	11.41			26.30	SKIMMER COMPLETELY FILLED WITH PRODUCT

Summary of Groundwater Monitoring Data
Second Quarter 1992
ARCO Service Station 2035
1001 San Pablo Avenue, Albany, California
micrograms per liter (µg/l) or parts per billion (ppb)

Well ID and Sample Depth	Sampling Date	Depth To Water (feet)	Floating Product Thickness (feet)	TPH[1] as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)
MW-1(29)	06/12/92	10.50	ND.[2]	2,900.	1,100.	2.5	21.	15.
MW-2(29)	06/12/92	10.95	ND.	<50	<0.5	<0.5	<0.5	<0.5
MW-3(32)	06/12/92	11.26	ND.	720.	210.	<2.5	23.	4.0
RW-1	NS.[3]	11.41	NS.	NS.	NS.	NS.	NS.	NS.
FB-1[4]	06/12/92	NA.[5]	NA.	<50	<0.5	<0.5	<0.5	<0.5

1. TPH. = Total petroleum hydrocarbons
2. ND. = Not detected
3. NS. = Not sampled; well was not sampled due to detection of floating product
4. FB. = Field blank
5. NA. = Not applicable

Columbia Analytical Services, Inc.

June 24, 1992

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

Re: **EMCON Project No. G70-17.01**
Arco Facility No. 2035

Dear Mr. Butera:

Enclosed are the results of the water samples submitted to our lab on June 12, 1992. For your reference, our service request number for this work is SJ92-0730.

All analyses were performed in accordance with the laboratory's quality assurance program.

Please call if you have any questions.

Respectfully submitted:

COLUMBIA ANALYTICAL SERVICES, INC.

Keoni A. Murphy
Laboratory Manager

Annelise J. Bazar
Regional QA Coordinator

le/KAM

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

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: EMCON Project No. G70-17.01
Arco Facility No. 2035

Date Received: 06/12/92
Work Order #: SJ92-0730
Sample Matrix: Water

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

Sample Name:		MW-1 (29)	MW-2 (29)	MW-3 (32)
Date Analyzed:		06/23/92	06/18/92	06/22/92
Analyte	**MRL**			
Benzene	0.5	1,100.	ND	210.
Toluene	0.5	2.5	ND	<2.5*
Ethylbenzene	0.5	21.	ND	23.
Total Xylenes	0.5	15.	ND	4.0
TPH as Gasoline	50	2,900.	ND	720.

TPH Total Petroleum Hydrocarbons
MRL Method Reporting Limit
ND None Detected at or above the method reporting limit
* Raised MRL due to high analyte concentration requiring sample dilution.

Approved by _____ Date June 24 1992

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: EMCON Project No. G70-17.01
Arco Facility No. 2035

Date Received: 06/12/92
Work Order #: SJ92-0730
Sample Matrix: Water

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

Sample Name:		FB-1	Method Blank	Method Blank
Date Analyzed:		06/18/92	06/18/92	06/22/92
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

TPH Total Petroleum Hydrocarbons
MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by _____ Date June 24, 1992

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	06/12/92
Project:	EMCON Project No. G70-17.01	**Work Order #:**	SJ92-0730
	Arco Facility No. 2035	**Sample Matrix:**	Water

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

Sample Name:		Method Blank
Date Analyzed:		06/23/92
Analyte	**MRL**	
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Total Xylenes	0.5	ND
TPH as Gasoline	50	ND

TPH Total Petroleum Hydrocarbons
MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by _____ Date June 24 1992

APPENDIX A

LABORATORY QC RESULTS

Client: EMCON Associates
Project: EMCON Project No. G70-17.01
Arco Facility No. 2035

Date Received: 06/12/92
Work Order #: SJ92-0730
Sample Matrix: Water

QA/QC Report
Continuing Calibration Summary
BTEX and TPH as Gasoline
EPA Methods 5030/8020/DHS LUFT Method
Nanograms

Date Analyzed: 06/18/92

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Criteria
Benzene	250.	247.	99.	85-115
Toluene	250.	268.	107.	85-115
Ethylbenzene	250.	260.	104.	85-115
Total Xylenes	750.	743.	99.	85-115
TPH as Gasoline	2,500.	2,694.	108.	90-110

Date Analyzed: 06/22/92

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Criteria
Benzene	250.	240.	96.	85-115
Toluene	250.	261.	104.	85-115
Ethylbenzene	250.	251.	100.	85-115
Total Xylenes	750.	725.	97.	85-115
TPH as Gasoline	2,500.	2,555.	102.	90-110

TPH Total Petroleum Hydrocarbons

Approved by _____ Date June 24/1992

Client: EMCON Associates
Project: EMCON Project No. G70-17.01
Arco Facility No. 2035

Date Received: 06/12/92
Work Order #: SJ92-0730
Sample Matrix: Water

QA/QC Report
Continuing Calibration Summary
BTEX and TPH as Gasoline
EPA Methods 5030/8020/DHS LUFT Method
Nanograms

Date Analyzed: 06/23/92

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Criteria
Benzene	250.	264.	106.	85-115
Toluene	250.	285.	114.	85-115
Ethylbenzene	250.	275.	110.	85-115
Total Xylenes	750.	797.	106.	85-115
TPH as Gasoline	2,500.	2,393.	96.	90-110

TPH Total Petroleum Hydrocarbons

Approved by _____ Date _____

Applied GeoSystems, Inc.
A RESNA Company

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. BARNEY CHAN
ACHCSA
DEPARTMENT OF ENVIRONMENTAL HEALTH
80 SWAN WAY, ROOM 200
OAKLAND, CA 94621

DATE: 9/2/92
PROJECT NUMBER: 69036.04
SUBJECT: ARCO STATION 2035, 1001 SAN PABLO AVENUE, ALBANY, CA.

FROM: ERIN MCLUCAS
TITLE: STAFF GEOLOGIST

WE ARE SENDING YOU [XX] Attached [ ] Under separate cover via _____ the following items:

[ ] Shop drawings [ ] Prints [XX] Reports [ ] Specifications

[ ] Letters [ ] Change Orders [ ] _____

COPIES	DATED	NO.	DESCRIPTION
1	9/1/92	69036.04	LETTER REPORT QUARTERLY GROUNDWATER MONITORING SECOND QUARTER 1992 AT ARCO STATION 2035, 1001 SAN PABLO AVENUE, ALBANY, CA.

THESE ARE TRANSMITTED as checked below:

[ ] For review and comment [ ] Approved as submitted [ ] Resubmit ___ copies for approval

[XX] As requested [ ] Approved as noted [ ] Submit___ copies for distribution

[ ] For approval [ ] Return for corrections [ ] Return ___ corrected prints

[ ] For your files [ ] _____

REMARKS: PER ARCO'S REQUEST (MR MICHAEL WHELAN) THIS REPORT HAS BEEN FORWARDED FOR YOUR REVIEW.

Copies: 1 to project file no. 69036.04

*Revision Date: 11/21/91
*File Name: TRANSMT.PRJ

Client: EMCON Associates
Project: EMCON Project No. G70-17.01
Arco Facility No. 2035

Date Received: 06/12/92
Work Order #: SJ92-0730
Sample Matrix: Water

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

Sample Name	Date Analyzed	Percent Recovery α,α,α-Trifluorotoluene
MW-1 (29)	06/23/92	112.
MW-2 (29)	06/18/92	104.
MW-3 (32)	06/22/92	112.
FB-1	06/18/92	95.
MW-2 (29) MS	06/18/92	106.
MW-2 (29) DMS	06/18/92	102.
Method Blank	06/18/92	111.
Method Blank	06/22/92	112.
Method Blank	06/23/92	110.
	CAS Acceptance Criteria	70-130

TPH Total Petroleum Hydrocarbons

Approved by _____ Date June 1, 1992

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Received:**	06/12/92
Project:	EMCON Project No. G70-17.01	**Work Order #:**	SJ92-0730
	Arco Facility No. 2035	**Sample Matrix:**	Water

QA/QC Report
Matrix Spike/Duplicate Matrix Spike Summary
BTE
EPA Methods 5030/8020
µg/L (ppb)

Sample Name: MW-2 (29)
Date Analyzed: 06/18/92

Analytes	Spike Level	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	Acceptance Criteria
Benzene	25.	ND	25.8	26.2	103.	105.	39-150
Toluene	25.	ND	27.1	27.4	108.	110.	46-148
Ethylbenzene	25.	ND	27.0	27.3	108.	109.	32-160

ND None Detected at or above the method reporting limit

Approved by _____ Date _____

APPENDIX B

CHAIN OF CUSTODY

ARCO Products Company
Division of AtlanticRichfieldCompany

Task Order No. EMCEC-92-1

Chain of Custody

ARCO Facility no. 2035	City (Facility) Albany	Project manager (Consultant) Jim Butera	Laboratory name CAS
ARCO engineer Kyle Christie	Telephone no. (ARCO) (415) 871-2434	Telephone no. (Consultant) (408) 453-0719	Fax no. (Consultant) (408) 453-0452
Consultant name ENCON ASSOCIATES	Address (Consultant) 1938 Junction Avenue San Jose CA		Contract number 07077

Sample I.D	Lab no	Container no	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH GAS EPA M602 8020/8015	TPH Modified 8015 Gas — Diesel —	Oil and Grease 413.1 — 413.2 —	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Semi Metals — VOA — VOA —	CAM Metals EPA 6010/7000 TTLC — STLC —	Lead Org./DHS — Lead EPA 7420/7421 —
MW-1(21)	1-2	2		X		X	HCl	6/12/92	11:25		X									
MW-2(27)	3-4	2		X		X	HCl	6/12/92	10:25		X									
MW-3(32)	5-6	2		X		X	HCl	6/12/92	10:50		X									
BW-1		2		X		X	HCl				X				NC	sample				
FB-1	7-8	2		X		X	HCl	6/12/92	10:35		X									

Special detection Limit/reporting: Lowest Possible

Special QA/QC: As Normal

Remarks: 2-40ml VOA's per well G70-17,01

Lab number: 5592-0730

Turnaround time

- Priority Rush 1 Business Day [ ]
- Rush 2 Business Days [ ]
- Expedited 5 Business Days [ ]
- Standard 10 Business Days [✓]

Condition of sample: OK

Temperature received: 10°C

Relinquished by sampler	Date 6/12/92	Time 1551	Received by
Relinquished by	Date	Time	Received by 6-12-92 1551
Relinquished by	Date	Time	Received by laboratory / Date / Time

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

APPC-3292 (2-91)

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 670-17 C1 SAMPLE ID: MW-1

PURGED BY: S. Horton / K. Reichelderfer CLIENT NAME: ARCO #3035

SAMPLED BY: S. Horton / K. Reichelderfer LOCATION: Albany, 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): — VOLUME IN CASING (gal.): 12.72

DEPTH TO WATER (feet): 10.50 CALCULATED PURGE (gal.): 63.63

DEPTH OF WELL (feet): 29.90 ACTUAL PURGE VOL. (gal.): ~~65.00~~ 50.00

DATE PURGED: 6/12/97 Start (2400 Hr) 10:59 End (2400 Hr) 11:14

DATE SAMPLED: 6/12/97 Start (2400 Hr) 11:24 End (2400 Hr) 11:25

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
11:03	13	7.12	521	63.8	brown	heavy
11:06	26	6.56	569	63.9	brown	moderate
11:11	39	6.53	619	63.4	brown	moderate
11:14	~~50~~	Well Dried At 50 Gallons				
11:25	~~65~~ recharge	6.90	607	62.5	brown	heavy

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

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

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

WELL INTEGRITY: Good LOCK #: 3259

REMARKS: ___

Meter Calibration: Date: 6/12/97 Time: ___ Meter Serial #: 9917 Temperature °F: ___

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

Location of previous calibration: MW-2

Signature: [signature] Reviewed By: JB Page 1 of 4

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: GTC-17.01 SAMPLE ID: MW-2

PURGED BY: S.Horton / K.Reichelderfer CLIENT NAME: ARCO #2035

SAMPLED BY: S.Horton / K Reichelderfer LOCATION: Albany, 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): — VOLUME IN CASING (gal.): 11.90

DEPTH TO WATER (feet): 10.95 CALCULATED PURGE (gal.): 59.53

DEPTH OF WELL (feet): 29.10 ACTUAL PURGE VOL. (gal.): 60 CC

DATE PURGED: 6/12/92 Start (2400 Hr) 9:50 End (2400 Hr) 10:16

DATE SAMPLED: 6/12/92 Start (2400 Hr) 10:24 End (2400 Hr) 10:25

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
9:59	12	5.73	919	64.9	cloudy	slight
10:04	24	6.45	652	63.9	cloudy	slight
10:10	36	6.74	671	63.1	clear	trace
10:12	48	6.57	673	62.9	clear	trace
10:16	60	6.74	671	62.1	clear	trace

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

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

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

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

WELL INTEGRITY: Good LOCK #: 3259

REMARKS: ___

Meter Calibration: Date: 6/12/92 Time: ___ Meter Serial #: 5912 Temperature °F: 65.4

(EC 1000 1093 / 1000) (DI ___) (pH 7 7.16 / 7.00) (pH 10 9.96 / 10.00) (pH 4 3.80 / ___)

Location of previous calibration: ___

Signature: S. Horton Reviewed By: JB Page 2 of 4

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 670-1701 SAMPLE ID: MW-3

PURGED BY: S.Horton/K.Reichelderfer CLIENT NAME: ARCO #2035

SAMPLED BY: S.Horton/K.Reichelderfer LOCATION: Albany, 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): - VOLUME IN CASING (gal.): 13.99

DEPTH TO WATER (feet): 11.26 CALCULATED PURGE (gal.): 69.99

DEPTH OF WELL (feet): 32.60 ACTUAL PURGE VOL. (gal.): ~~35.60~~ 29.00

DATE PURGED: 6/12/92 Start (2400 Hr) ~~9:56~~ 10:33 End (2400 Hr) 10:43

DATE SAMPLED: 6/12/92 Start (2400 Hr) 10:49 End (2400 Hr) 10:50

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
10:35	14	6.37	714	60.1	brown	moderate
10:42	28	6.42	748	60.4	brown	moderate
10:43	~~Bail~~ AB recharge	Well	Dried At	29.0 Gallons		
10:50	~~Bail~~ AB	6.58	708	60.2	brown	heavy
	~~Bail~~					

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

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

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

WELL INTEGRITY: Good LOCK #: 3259

REMARKS: ___

Meter Calibration: Date: 6/12/92 Time: ___ Meter Serial #: 5917 Temperature °F: ___

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

Location of previous calibration: MW-2

Signature: [signature] Reviewed By: JB Page 3 of 4

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: G7C-17.01 SAMPLE ID: RW-1

PURGED BY: ~~S. Horton/K. Reichelderfer~~ CLIENT NAME: ARCO # 2035

SAMPLED BY: S. Horton/K. Reichelderfer LOCATION: Albany, 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): - VOLUME IN CASING (gal.): NA

DEPTH TO WATER (feet): 11.41 CALCULATED PURGE (gal.): /

DEPTH OF WELL (feet): 26.30 ACTUAL PURGE VOL. (gal.): /

DATE PURGED: 6/12/92 Start (2400 Hr) NA End (2400 Hr) NA

DATE SAMPLED: 6/12/92 Start (2400 Hr) / End (2400 Hr) /

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
		NC	Sample			
	Well Contained Product					

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

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

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

WELL INTEGRITY: Good LOCK #: None

REMARKS:

Meter Calibration: Date: 6/12/92 Time: ___ Meter Serial #: 5912 Temperature °F: ___

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

Location of previous calibration: MW-2

Signature: [signature] Reviewed By: JB Page 4 of 4

(TF1047)

TF NUMBER: 1047 GIB-92-056

MONITORING WELL PURGE WATER TRANSPORT FORM

GENERATOR INFORMATION

NAME: ARCO PRODUCTS RECEIVED

ADDRESS: P.O. BOX 5811 JUL 30 1992

CITY,STATE,ZIP: SAN MATEO, CA 94402 FRESNO SAN JOSE PHONE #: (415) 571-2434

DESCRIPTION OF WATER: PURGE WATER GENERATED DURING SAMPLING OR DEVELOPMENT OF MONITORING WELLS LOCATED AT VARIOUS SITES. AUGER RINSATE GENERATED DURING THE INSTALLATION OF MONITORING WELLS AT VARIOUS SITES. THE WATER MAY CONTAIN DISSOLVED HYDROCARBONS.

THE GENERATOR CERTIFIES THAT THIS WATER AS DESCRIBED IS NON-HAZARDOUS

Kyle Christie by Jon Dehn 7-2-92
(Typed or printed full name & signature) (Date)

SITE INFORMATION

	STA #	JOB #	ADDRESS	GALS
1	A-697	20598&20665	420W. SHAW AVE., FRESNO, CA	58
	A-335	20597-PW	4595 E. CLINTON ST., FRESNO, CA	5
3	A-6100	20717-DW	25775 SO. PATTERSON PASS RD., TRACY, CA	102
	A-771	20656-PW	899 RINCON AVE., LIVERMORE, CA	90
	A-6041	20657-PW	7249 VILLAGE PARKWAY, DUBLIN, CA	31
6	A-5387	20655-PW	20200 HESPERIAN BLVD., SAN LORENZO, CA	187
	A-761	20599-PW	1985 BROADWAY AVE., VALLEJO, CA	109
8	A-2035	20659-PW	1001 SAN PABLO AVE., ALBANY, CA	165
	A-414	20660-PW	5000 SHATTUCK AVE., BERKELEY, CA	80
10	A-6148	20658-PW	5131 SHATTUCK AVE., OAKLAND, CA	54
			TOTAL GALLONS:	581

TRANSPORTER INFORMATION

NAME: BALCH PETROLEUM

ADDRESS: 930 AMES AVE.

CITY,STATE,ZIP: MILPITAS, CA 95035 PHONE #: (408) 942-8686

TRUCK ID #: PETERBILT HURSCHEL WARD Hurschel Ward 7-2-92
(Typed or printed full name & signature) (Date)

TSD FACILITY INFORMATION

NAME: GIBSON OIL & REFINING

ADDRESS: 475 SEAPORT BLVD

CITY,STATE,ZIP: REDWOOD CITY, CA 94063 PHONE #: (415) 368-5511

RELEASE #: 11320 BILL EDWARDS Bill Edwards 7-2-92
(Typed or printed full name & signature) (Date)

GAL 1100