Susan

gettler — ryan inc.
general contractors

91 FEB 13 AM 11:48

January 28, 1991

County of Alameda
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Reference: ARCO Service Station #4931
731 W. MacArthur Boulevard
Oakland, California 94609

Gentlemen:

As requested by ARCO Products Company, we are forwarding a copy of the Site Update report dated January 28, 1991 documenting the groundwater sampling and site activities conducted during the Fourth quarter 1990.

Please do not hesitate to call should you have any questions or comments.

Sincerely,

Keith E Bullock

Keith E. Bullock

KEB/jpz

enclosure

cc: Mr. Kyle Christie, ARCO Products Company
Mr. Tom Callaghan, Regional Water Quality Control Board
Mr. H. C. Winsor, ARCO Products Company

1992 national avenue • hayward, california 94545-1787 • 783-7500

GeoStrategies Inc.

SITE UPDATE

ARCO Service Station No. 4931
731 West McArthur Boulevard
Oakland, California

790901-8

January 28, 1991

GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545

January 28, 1991

Gettler-Ryan Inc.
2150 West Winton Avenue
Hayward, California 94545

Attn: Mr. Keith Bullock

Re: SITE UPDATE
ARCO Service Station No. 4931
731 West MacArthur Boulevard
Oakland, California

Gentlemen:

This Site Update presents the results of the fourth quarter ground-water sampling performed on October 27, 1990, by Gettler-Ryan Inc. (G-R) for the above referenced location (Plates 1 and 2). Field work and laboratory analysis methods were performed to comply with current State of California Water Resources Control Board (SWRCB) procedures. G-R ground-water sampling procedures were presented in a GeoStrategies Inc. (GSI) report dated October 4, 1990.

CURRENT GROUND-WATER SAMPLING RESULTS

Potentiometric Data

Prior to ground-water sampling, water levels were measured in each of the monitoring wells using an electronic oil-water interface probe (Table 1). Static water-levels were measured from the surveyed top of well box and recorded to the nearest $\pm$0.01 foot. Depth to groundwater ranged from 10.30 to 12.21 feet below the top of the well box. These data correspond to elevations ranging from 42.23 to 48.06 above Mean Sea Level (MSL). A potentiometric contour map was prepared from the water-level measurement data (Plate 3). The local hydraulic gradient was calculated to be 0.01 with ground-water flow approximately to the southwest.

Floating Product Measurements

Each monitoring well was checked for the presence of floating product with an electronic oil-water interface probe. The probe detects the presence of floating product and allows the thickness of floating product to be measured to the nearest ± 0.01 foot. Each well was also checked with a clean, clear acrylic bailer to confirm interface probe results and to check for the presence of product sheens. Floating product was observed in monitoring wells A-4 and A-8 with measured thicknesses of 0.03 and 0.10 feet, respectively. Product sheens were observed in monitoring well A-3.

Groundwater Analytical Data

Chemical analyses identified Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline) at concentrations ranging from none detected (ND) to 14,000 parts per billion (ppb). Detectable TPH-Gasoline was reported in monitoring wells A-2, A-3, A-5 and A-9. Benzene concentrations exceeding current Regional Water Quality Control Board (RWQCB) Maximum Contaminant Levels (MCL) were recorded for monitoring wells A-2, A-3, A-6, A-7, A-9 and A-10. Well A-12 was reported as ND for all chemical constituents analyzed. The chemical analytical data are summarized in Table 1 and a historical summary is included as Table 2. TPH-Gasoline and benzene chemical analytical data have been used to prepare a concentration map (Plate 4) for this quarter.

The analyses of the ground-water samples were performed by International Technology (IT) Analytical Services in San Jose, California. The IT Analytical Services certified analytical report is included in the attached G-R Groundwater Sampling Report presented in Appendix A.

If you have any questions, please call.

GeoStrategies Inc. by,

Cliff M. Garratt
Hydrogeologist

David H. Peterson
Senior Geologist
C.E.G. 1186

REGISTERED GEOLOGIST
DAVID H. PETERSON
No. 1186
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

CMG/DHP/mlg

Plate 1. Vicinity Map
Plate 2. Site Plan
Plate 3. Potentiometric Map
Plate 4. TPH-Gasoline/Benzene Concentration Map

Appendix A: Gettler-Ryan Inc. Groundwater Sampling Report

QC Review:

TABLE 1

GROUND-WATER ANALYSES DATA

WELL NO	SAMPLE DATE	ANALYZED DATE	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)	WELL ELEV (FT)	STATIC WATER ELEV (FT)	PRODUCT THICKNESS (FT)	DEPTH TO WATER (FT)
A-2	27-Oct-90	12-Nov-90	14000.	1100.	210.	66.	2700.	55.38	43.78	----	11.60
A-3	27-Oct-90	12-Nov-90	780.	10.	27.	18.	85.	54.48	42.62	sheen	11.86
A-4	27-Oct-90	12-Nov-90	----	----	----	----	----	54.62	42.43	0.03	12.21
A-5	27-Oct-90	12-Nov-90	280.	<0.5	<0.5	<0.5	<0.5	54.15	42.38	----	11.77
A-6	27-Oct-90	12-Nov-90	<50.	0.7	<0.5	<0.5	<0.5	55.13	44.71	----	10.42
A-7	27-Oct-90	12-Nov-90	<50.	2.7	7.6	1.1	3.0	54.67	44.37	----	10.30
A-8	27-Oct-90	12-Nov-90	----	----	----	----	----	53.61	42.3	0.10	11.39
A-9	27-Oct-90	13-Nov-90	110.	30.	3.7	4.1	8.3	52.96	42.25	----	10.71
A-10	27-Oct-90	12-Nov-90	<50.	2.3	6.9	1.2	3.0	54.16	42.05	----	12.11

CURRENT REGIONAL WATER QUALITY CONTROL BOARD MAXIMUM CONTAMINANT LEVELS
Benzene 1.0 ppb Xylenes 1,750 ppb Ethylbenzene 680 ppb

CURRENT DHS ACTION LEVELS
Toluene 100 pbb

TPH-G = Total Petroleum Hydrocarbon calculated as Gasoline
PPB = Parts Per Billion TB = Trip Blank

Notes: 1. All data shown as <x are reported as ND (none detected).
2. Static Water elevations referenced to mean sea level (MSL). Elevations are corrected for free product using a correction factor of 0.8.
3. DHS Action Levels and MCLs are subject to change pending State review.

TABLE 1

GROUND-WATER ANALYSES DATA

WELL NO	SAMPLE DATE	ANALYZED DATE	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)	WELL ELEV (FT)	STATIC WATER ELEV (FT)	PRODUCT THICKNESS (FT)	DEPTH TO WATER (FT)
A-11	27-Oct-90	12-Nov-90	<50.	0.6	2.4	0.6	1.5	53.75	42.09	----	11.66
A-12	27-Oct-90	12-Nov-90	<50.	<0.5	<0.5	<0.5	<0.5	52.05	41.15	----	10.90
TB	----	12-Nov-90	<50.	<0.5	<0.5	<0.5	<0.5	----	----	----	----

TABLE 2

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH (PPB)	BENZENE (PPB)	TOLUENE (PPB)	E.B. (PPB)	XYLENES (PPB)
21-Mar-86	A-2	31000.	....	....	....	....
07-Jan-88	A-2	12000.	920.	1500.	....	4000.
20-Mar-89	A-2	22000.	1200.	1800.	1200.	7700.
24-May-89	A-2	9000.	460.	260.	250.	2400.
18-Aug-89	A-2	14000.	900.	200.	<200.	1300.
27-Oct-89	A-2	16000.	1200.	340.	90.	3100.
15-Jan-90	A-2	9900.	1100.	460.	150.	2900.
04-Apr-90	A-2	16000.	1100.	400.	380.	3900.
30-Jul-90	A-2	16000.	1400.	340.	290.	3600.
30-Jul-90	A-2	16000.	1400.	340.	290.	3600.
29-Oct-90	A-2	14000.	1100.	210.	66.	2700.
21-Mar-86	A-3	1000.	....	....	....	....
07-Jan-88	A-3	250.	2.3	8.	....	21.
20-Mar-89	A-3	230.	1.6	<1.	3.	3.
24-May-89	A-3	170.	0.9	2.	1.	<3.
18-Aug-89	A-3	180.	0.7	1.	<1.	<3.
27-Oct-89	A-3	120.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-3	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-3	88.	1.2	2.0	0.8	4.
30-Jul-90	A-3	120.	8.3	2.9	2.3	12.
29-Oct-90	A-3	780.	10.	27.	18.	85.
20-Mar-89	A-4	360000.	1500.	3700.	6500.	35000.
24-May-89	A-4	1500000.	1000.	2000.	6000.	23000.
04-Apr-90	A-4	40000.	680.	320.	1400.	4900.
21-Mar-86	A-5	88.	....	....	....	....
07-Jan-88	A-5	<50.	0.5	1.	....	4.
20-Mar-89	A-5	60.	0.5	1.	2.	10.
24-May-89	A-5	<50.	0.5	<1.	<1.	<3.
18-Aug-89	A-5	<50.	<0.5	<1.	<1.	<3.
27-Oct-89	A-5	<50.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-5	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-5	<50.	<0.5	<0.5	<0.5	<1.
30-Jul-90	A-5	<50.	<0.5	<0.5	<0.5	<0.5
29-Oct-90	A-5	280.	<0.5	<0.5	<0.5	<0.5
21-Mar-86	A-6	<10.	....	....	....	....
21-Mar-86	A-6	<10.	....	....	....	....
07-Jan-88	A-6	390.	54.	89.	....	110.
20-Mar-89	A-6	220.	33.	21.	9.	39.
24-May-89	A-6	110.	13.	6.	3.	13.
18-Aug-89	A-6	<50.	2.1	1.	<1.	<3.
27-Oct-89	A-6	55.	3.8	1.6	1.7	6.
15-Jan-90	A-6	100.	12.	2.5	5.5	18.

TABLE 2

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH (PPB)	BENZENE (PPB)	TOLUENE (PPB)	E.B. (PPB)	XYLENES (PPB)
04-Apr-90	A-6	100.	17.	7.1	5.5	18.
30-Jul-90	A-6	<50.	2.6	<0.5	<0.5	1.2
29-Oct-90	A-6	<50.	0.7	<0.5	<0.5	<0.5
07-Jan-88	A-7	<50.	<0.5	1.	----	4.
20-Mar-89	A-7	<50.	0.9	<1.	<1.	<3.
24-May-89	A-7	<50.	<0.5	<1.	<1.	<3.
18-Aug-89	A-7	<50.	<0.5	<1.	<1.	<3.
27-Oct-89	A-7	<50.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-7	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-7	<50.	<0.5	<0.5	<0.5	<1.
30-Jul-90	A-7	<50.	<0.5	<0.5	<0.5	<0.5
29-Oct-90	A-7	<50.	2.7	7.6	1.1	3.0
07-Jan-88	A-9	300.	45.	14.	----	43.
21-Mar-89	A-9	50.	2.8	1.	1.	3.
24-May-89	A-9	120.	26.	12.	4.	79.
18-Aug-89	A-9	14000.	400.	800.	400.	2000.
27-Oct-89	A-9	1700.	150.	36.	30.	110.
15-Jan-90	A-9	860.	140.	58.	38.	140.
04-Apr-90	A-9	620.	36.	13.	9.4	32.
30-Jul-90	A-9	180.	77.	1.6	2.1	4.2
29-Oct-90	A-9	110.	30.	3.7	4.1	8.3
07-Jan-88	A-10	<50.	0.6	11.	----	4.
20-Mar-89	A-10	<50.	<0.5	<1.	<1.	<3.
24-May-89	A-10	<50.	<0.5	<1.	<1.	<3.
18-Aug-89	A-10	<50.	<0.5	<1.	<1.	<3.
27-Oct-89	A-10	<50.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-10	<50.	<0.5	<0.5	<0.5	<1.
30-Jul-90	A-10	<50.	<0.5	<0.5	<0.5	<0.5
29-Oct-90	A-10	<50.	2.3	6.9	1.2	3.0
07-Jan-88	A-11	<50.	1.1	2.	----	5.
20-Mar-89	A-11	<50.	<0.5	<1.	<1.	<3.
24-May-89	A-11	<50.	<0.5	<1.	<1.	<3.
18-Aug-89	A-11	<50.	<0.5	<1.	<1.	<3.
27-Oct-89	A-11	<50.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-11	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-11	<50.	<0.5	<0.5	<0.5	<1.
30-Jul-90	A-11	<50.	<0.5	0.6	<0.5	0.5
29-Oct-90	A-11	<50.	0.6	2.4	0.6	1.5
07-Jan-88	A-12	<50.	<0.5	2.	----	<4.
20-Mar-89	A-12	<50.	<0.5	<1.	<1.	<3.
24-May-89	A-12	<50.	<0.5	<1.	<1.	<3.

TABLE 2

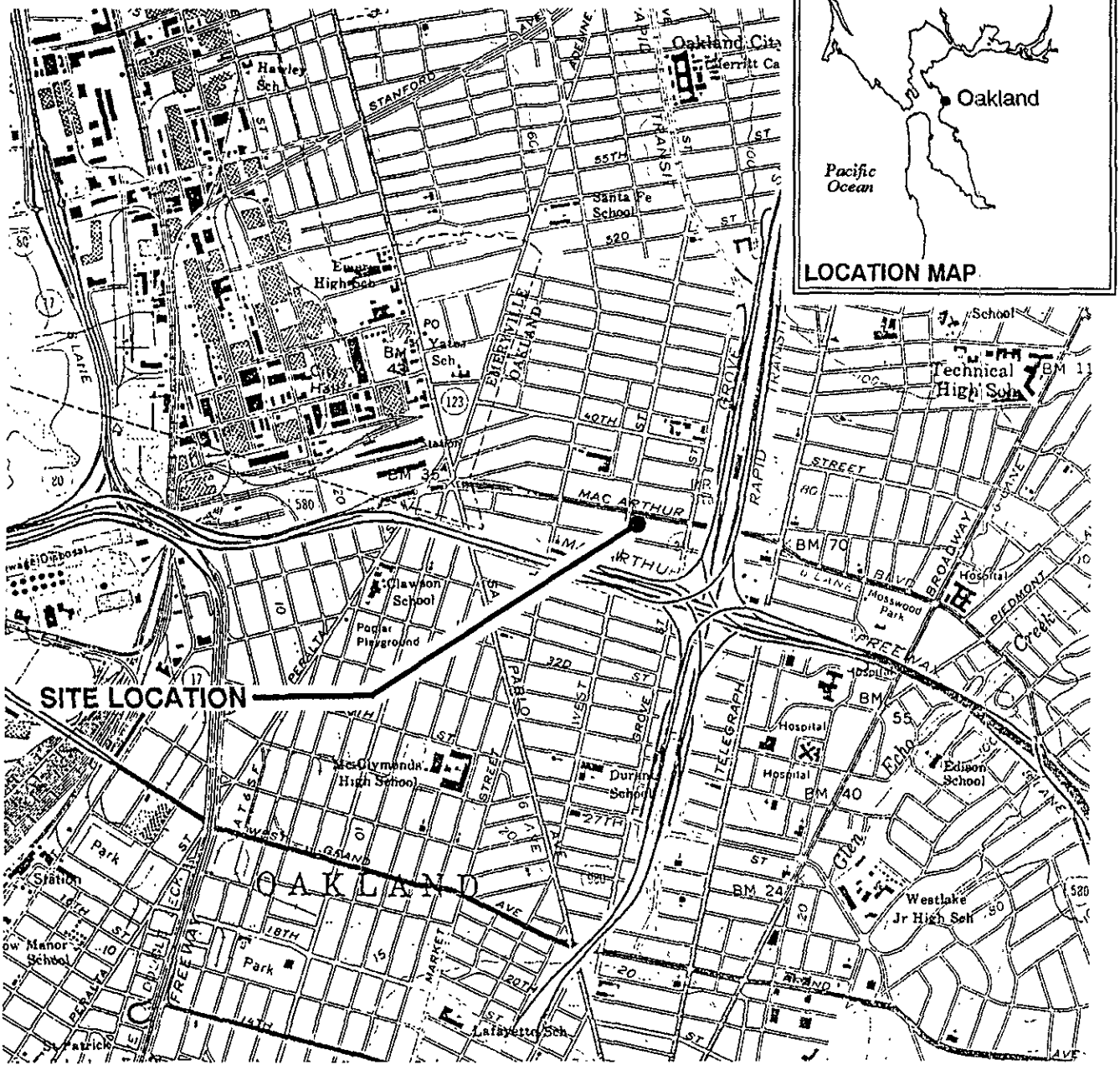
HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH (PPB)	BENZENE (PPB)	TOLUENE (PPB)	E.B. (PPB)	XYLENES (PPB)
18-Aug-89	A-12	<50.	<0.5	<1.	<1.	<3.
27-Oct-89	A-12	<50.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-12	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-12	<50.	<0.5	<0.5	<0.5	<1.
30-Jul-90	A-12	<50.	<0.5	<0.5	<0.5	<0.5
29-Oct-90	A-12	<50.	<0.5	<0.5	<0.5	<0.5

PPB = Parts per billion
TPH = Total Petroleum Hydrocarbons
E.B. = Ethylbenzene

NOTE: 1. All data shown as <X are reported as ND (none detected)
2. Ethylbenzene & Xylenes were combined in 1986 and 1988

ILLUSTRATIONS



Base Map: USGS Topographic Map

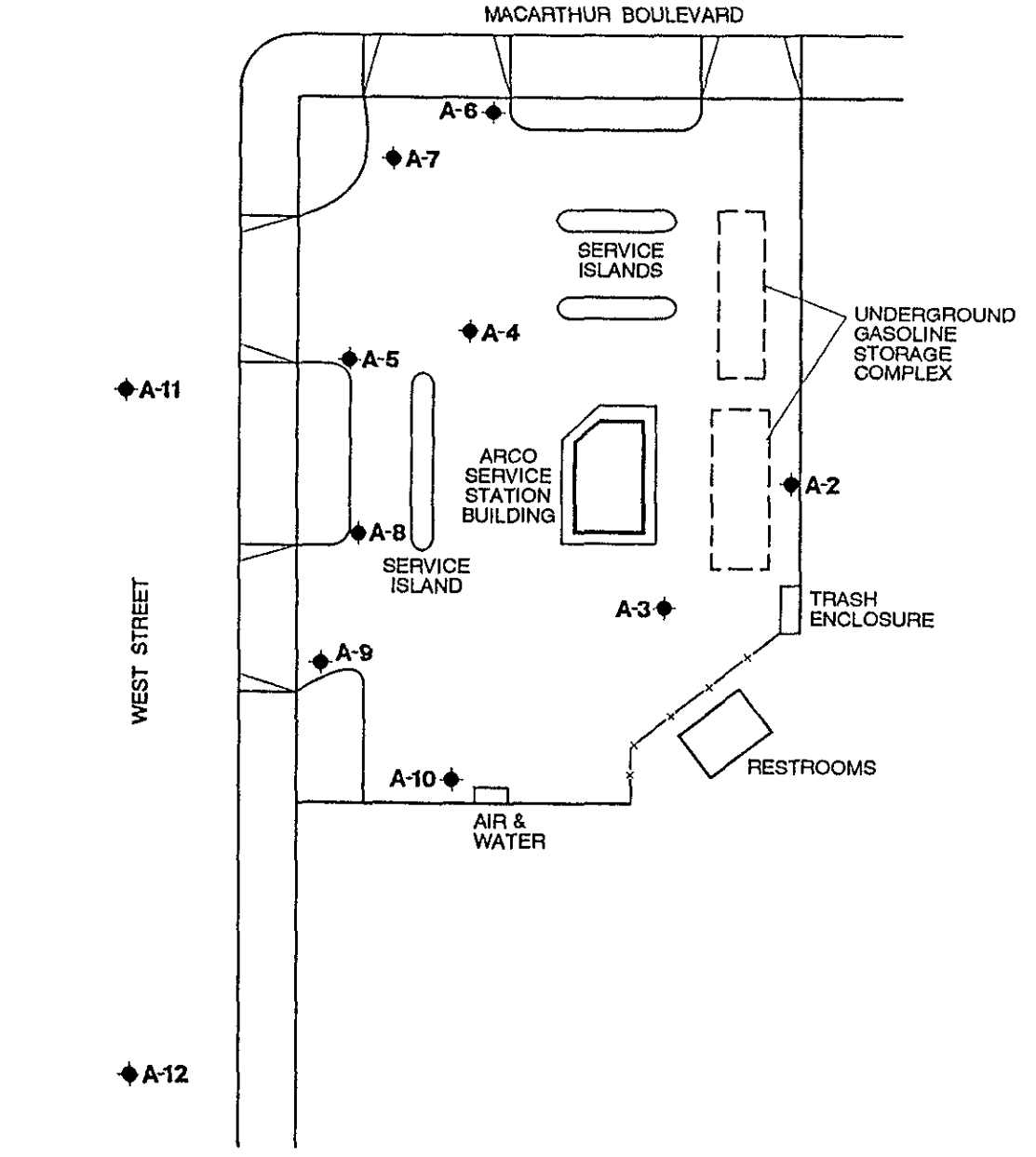
Approximate Scale : 1" = 2000'

GeoStrategies Inc.

Vicinity Map
ARCO Service Station #4931
731 W. MacArthur Boulevard
Oakland, California

PLATE
1

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
7909		1/90		



EXPLANATION

A-2 Ground-water monitoring well location

N

0 40 80

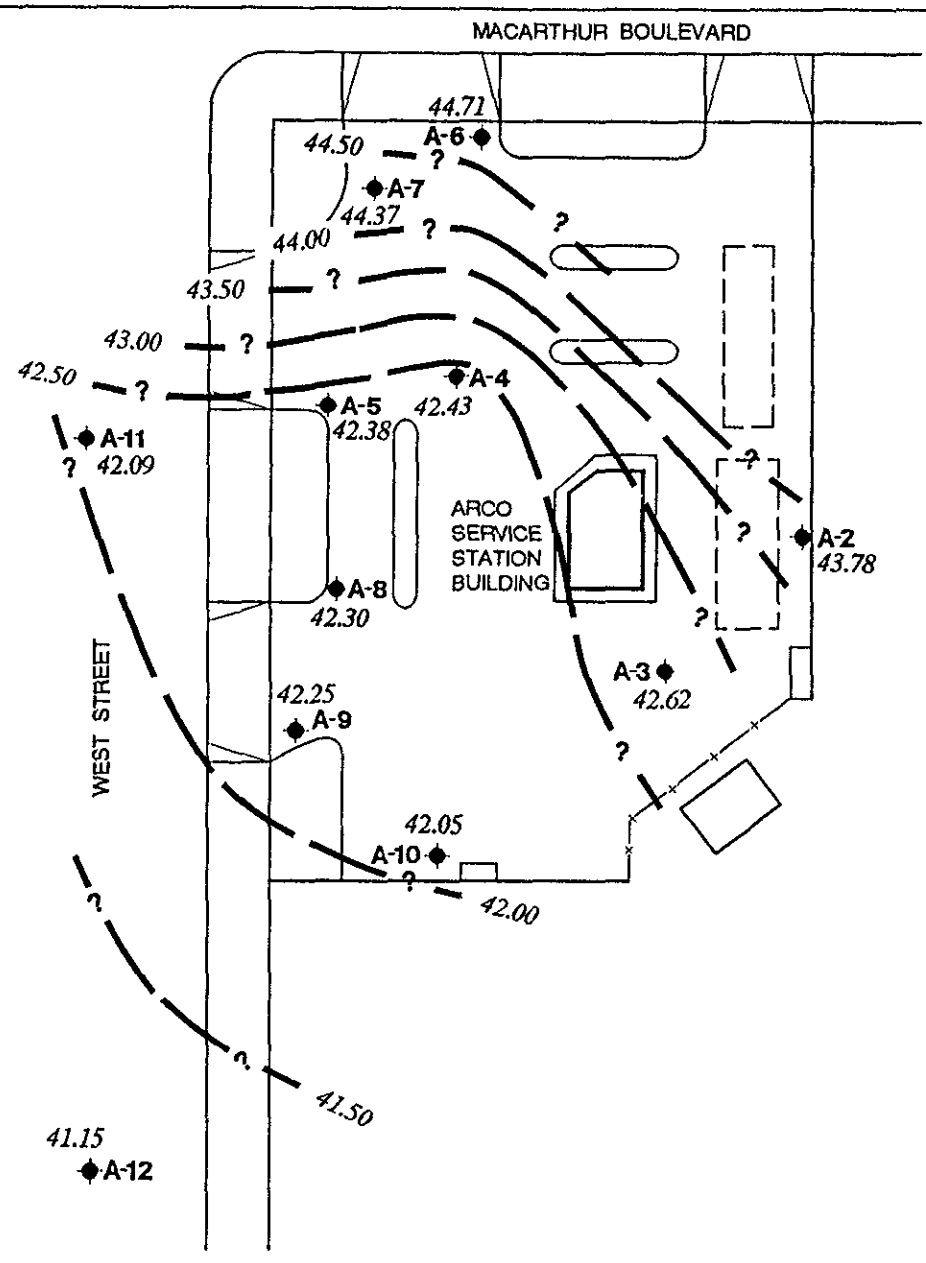
Scale in Feet

GeoStrategies Inc.

Site Plan
ARCO Service Station #4931
731 W. MacArthur Boulevard
Oakland, California

PLATE **2**

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
790901	DHP	1/91		



EXPLANATION

A-2 — Ground-water monitoring well location

41.50 — Ground-water elevation contour
Approximate Gradient = 0.01

41.15 — Ground-water elevation in feet referenced to Mean Sea Level (MSL) measured on October 27, 1990

Note: Contours may be influenced by irrigation practices and/or site construction activities

N

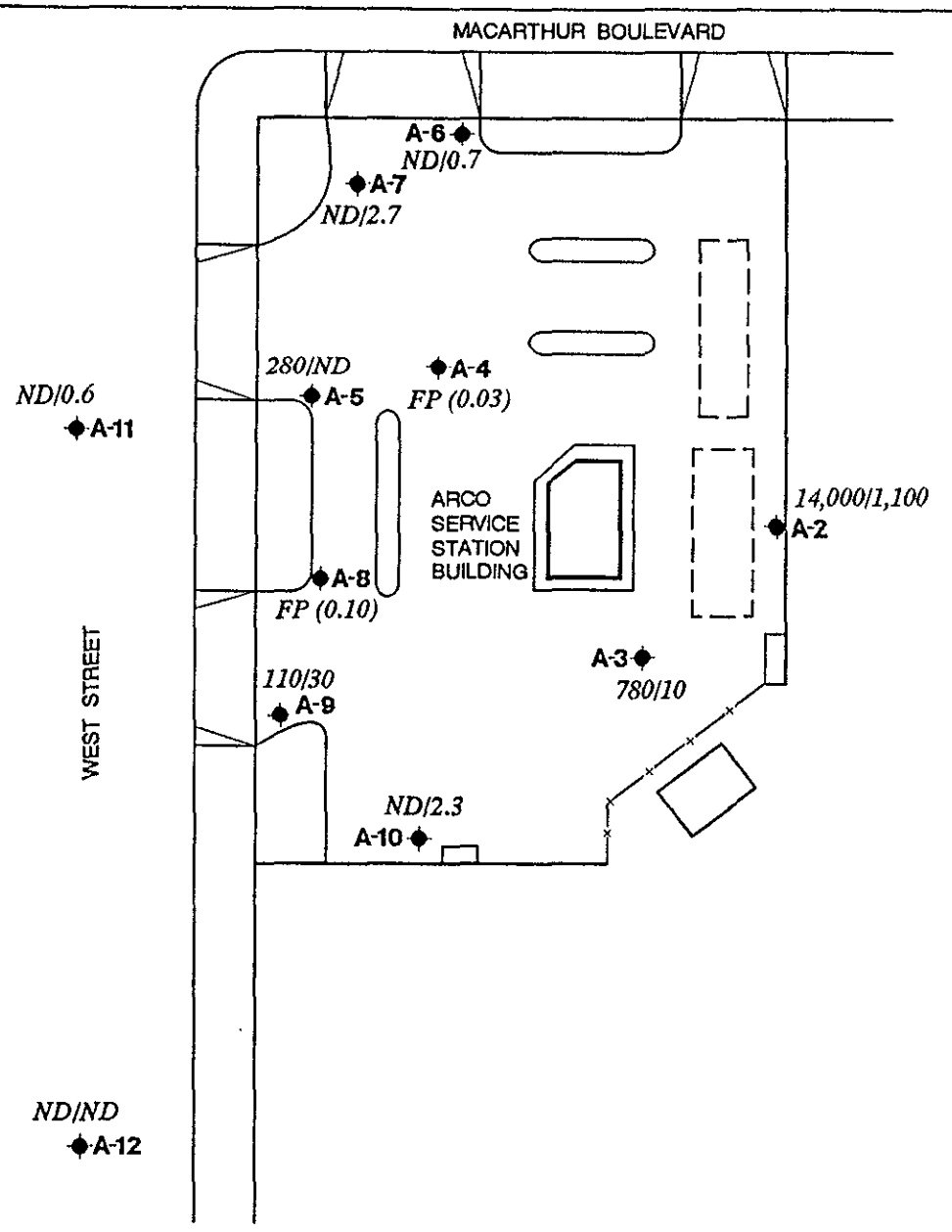
0 40 80
Scale in Feet

GeoStrategies Inc.

Potentiometric Map
ARCO Service Station #4931
731 W. MacArthur Boulevard
Oakland, California

PLATE
3

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
790901	DHP	1/91		



EXPLANATION

◆ A-2	Ground-water monitoring well location
110/30	TPH-G (Total Petroleum Hydrocarbons calculated as Gasoline)/Benzene concentrations in ppb sampled on October 27, 1990
ND	Not Detected (see laboratory reports for detection limits)
FP (0.10)	Floating Product (thickness in feet)

N

0 40 80

Scale in Feet

GeoStrategies Inc.

TPH-G/Benzene Concentration Map
ARCO Service Station #4931
731 W. MacArthur Boulevard
Oakland, California

PLATE **4**

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
790901	DHP	1/91		

APPENDIX A

GETTLER-RYAN INC.

GROUNDWATER SAMPLING REPORT

gettler — ryan inc.

November 20, 1990

GROUNDWATER SAMPLING REPORT

ARCO Products Company
Post Office Box 5811
San Mateo, California 94402

Referenced Site: ARCO Service Station #4931
731 W MacArthur Blvd./West St.
Oakland, California

Sampling Date: October 27, 1990

This report presents the results of the quarterly groundwater sampling and analytical program conducted by Gettler-Ryan Inc. on October 27, 1990 at the referenced location. The site is occupied by an operating service station located on the southeast corner of West MacArthur Boulevard and West Street. The service station has underground storage tanks containing regular leaded, unleaded and super unleaded gasoline products.

There are currently nine groundwater monitoring wells on site and two off site at the locations shown on the attached site map. Prior to sampling, the wells were inspected for total well depth, water levels, and presence of separate phase product using an electronic interface probe. A clean acrylic bailer was used to visually confirm the presence and thickness of separate phase product. Groundwater depths ranged from 10.30 to 12.21 feet below grade. A product sheen was observed in well A-3. Separate phase product was observed in Wells A-4 and A-8.

Wells that did not contain separate phase product were purged and sampled. The purge water was contained in drums for proper disposal. Standard sampling procedure calls for a minimum of four case volumes to be purged from each well. Each well was purged while pH, temperature, and conductivity measurements were monitored for stability. Details of the final well purging results are presented on the attached Table of Monitoring Data. In cases where a well dewatered or less than four case volumes were purged, groundwater samples were obtained after the physical parameters had stabilized. Under such circumstances the sample may not represent actual formation water, due to the low flow conditions.

Samples were collected, using Teflon bailers, in properly cleaned and laboratory prepared containers. All sampling equipment was thoroughly cleaned after each well was sampled and steam cleaned upon completion of work at the site. The samples were labeled, stored on blue ice, and transported to the laboratory for analysis. A trip blank, supplied by the laboratory, was included and analyzed to assess quality control. Analytical results for the trip blank are included in the Certified Analytical Report (CAR's). Chain of custody records were established noting sample identification numbers, time, date, and custody signatures.

2150 west winton avenue • hayward, california 94545-1210 • (415) 783-7500

The samples were analyzed at International Technology Corporation - Santa Clara Valley Laboratory, located at 2055 Junction Avenue, San Jose, California. The laboratory is assigned a California DHS-HMTL Certification number of 137. The results are presented as a Certified Analytical Report, a copy of which is attached to this report.

Tom Paulson
Sampling Manager

attachments

TABLE OF MONITORING DATA
GROUNDWATER WELL SAMPLING REPORT

WELL I.D.	A-2	A-3	A-4	A-5	A-6	A-7
Casing Diameter (inches)	4	4	4	3	3	3
Total Well Depth (feet)	18.7	19.3	----	23.8	25.6	22.8
Depth to Water (feet)	11.60	11.86	12.21 **	11.77	10.42	10.30
Free Product (feet)	none	sheen	0.03	none	none	none
Reason Not Sampled	----	----	free product	----	----	----
Calculated 4 Case Vol.(gal.)	18.7	19.6	----	18.3	23.0	18.9
Did Well Dewater?	yes	yes	----	yes	yes	yes
Volume Evacuated (gal.)	7.0	9.0	----	9.0	13.0	13.0
Purging Device	Suction	Suction	----	Suction	Suction	Suction
Sampling Device	Bailer	Bailer	----	Bailer	Bailer	Bailer
Time	11:44	11:11	----	12:08	12:00	11:40
Temperature (F)*	65.8	69.3	----	68.0	68.6	69.3
pH*	6.46	6.60	----	6.56	7.68	8.15
Conductivity (umhos/cm)*	1073	1924	----	639	649	653

* Indicates Stabilized Value

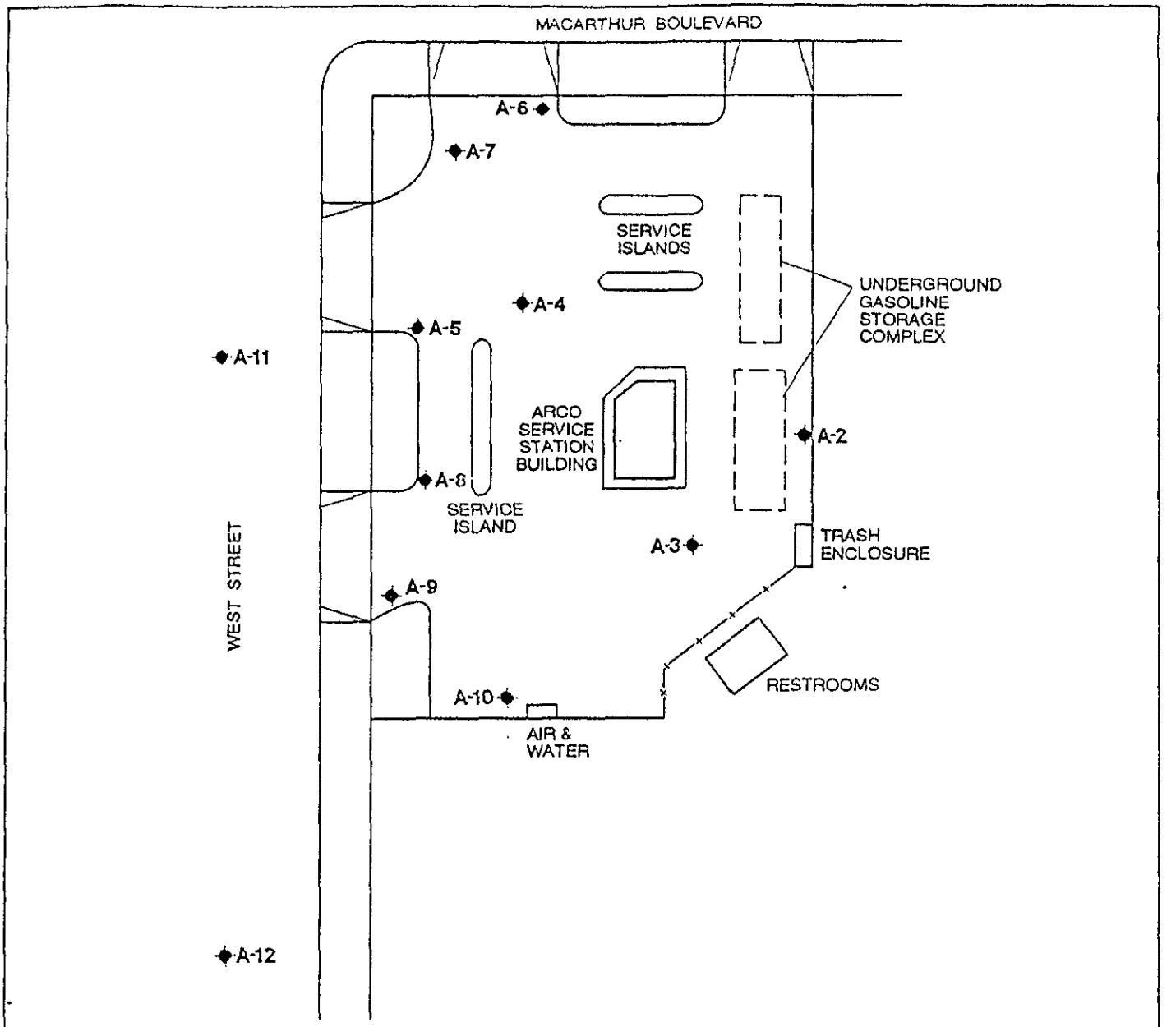
** Not corrected for presence of free product

TABLE OF MONITORING DATA
GROUNDWATER WELL SAMPLING REPORT

WELL I.D.	A-8	A-9	A-10	A-11	A-12
Casing Diameter (inches)	3	6	3	3	3
Total Well Depth (feet)	----	38.7	28.4	27.2	29.0
Depth to Water (feet)	11.39 **	10.71	12.11	11.66	10.90
Free Product (feet)	0.10	none	none	none	none
Reason Not Sampled	free product	----		----	----
Calculated 4 Case Vol.(gal.)	----	167.4	24.7	23.6	27.5
Did Well Dewater?	----	no	no	no	yes
Volume Evacuated (gal.)	----	211.0	31.0	30.0	26.0
Purging Device	----	Diaphram	Suction	Diaphram	Suction
Sampling Device	----	Bailer	Bailer	Bailer	Bailer
Time	----	10:42	11:16	09:48	09:25
Temperature (F)*	----	69.3	66.5	69.5	
pH*	----	6.50	8.38	6.65	7.10
Conductivity (umhos/cm)*	----	705	750	622	706

* Indicates Stabilized Value

** Not corrected for presence of free product



GeoStrategies Inc.

Site Plan
ARCO Service Station #4931
731 W. MacArthur Boulevard
Oakland, California

PLATE

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
909				

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Date: 11/27/90

Gettler-Ryan
2150 West Winton
Hayward, CA 94545
Tom Paulson

Work Order: T0-10-328 P.O. Number: 3909

This is the Certificate of Analysis for the following samples:

Client Work ID: GR3909, Arco #4931, CORRECTED REPORT
Date Received: 10/27/90
Number of Samples: 10
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 11/27/90
Client Work ID: GR3909, Arco #4931

Work Order: TO-10-328

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **A-2**
SAMPLE DATE: **10/27/90**
LAB SAMPLE ID: **TO10328-01**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/12/90
Low Boiling Hydrocarbons	Mod.8015		11/12/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1000.	14000.
BTEX		
Benzene	10.	1100.
Toluene	10.	210.
Ethylbenzene	10.	66.
Xylenes (total)	10.	2700.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 11/27/90
Client Work ID: GR3909, Arco #4931

Work Order: TO-10-328

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **A-3**
SAMPLE DATE: **10/27/90**
LAB SAMPLE ID: **TO10328-02**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/12/90
Low Boiling Hydrocarbons	Mod.8015		11/12/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	50.	780.
BTEX		
Benzene	0.5	10.
Toluene	0.5	27.
Ethylbenzene	0.5	18.
Xylenes (total)	0.5	85.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 11/27/90
Client Work ID: GR3909, Arco #4931

Work Order: TO-10-328

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **A-5**
SAMPLE DATE: **10/27/90**
LAB SAMPLE ID: **TO10328-03**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/12/90
Low Boiling Hydrocarbons	Mod.8015		11/12/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	50.	280.
BTEX		
Benzene	0.5	None
Toluene	0.5	None
Ethylbenzene	0.5	None
Xylenes (total)	0.5	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 11/27/90
Client Work ID: GR3909, Arco #4931

Work Order: TO-10-328

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **A-6**
SAMPLE DATE: **10/27/90**
LAB SAMPLE ID: **TO10328-04**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/12/90
Low Boiling Hydrocarbons	Mod.8015		11/12/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	50.	None
BTEX		
Benzene	0.5	0.7
Toluene	0.5	None
Ethylbenzene	0.5	None
Xylenes (total)	0.5	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 11/27/90
Client Work ID: GR3909, Arco #4931

Work Order: T0-10-328

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **A-7**
SAMPLE DATE: **10/27/90**
LAB SAMPLE ID: **T010328-05**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/12/90
Low Boiling Hydrocarbons	Mod.8015		11/12/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	50.	None
BTEX		
Benzene	0.5	2.7
Toluene	0.5	7.6
Ethylbenzene	0.5	1.1
Xylenes (total)	0.5	3.0

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 11/27/90
Client Work ID: GR3909, Arco #4931

Work Order: T0-10-328

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **A-9**
SAMPLE DATE: **10/27/90**
LAB SAMPLE ID: **T010328-06**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/13/90
Low Boiling Hydrocarbons	Mod.8015		11/13/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	50.	110.
BTEX		
Benzene	0.5	30.
Toluene	0.5	3.7
Ethylbenzene	0.5	4.1
Xylenes (total)	0.5	8.3

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 11/27/90
Client Work ID: GR3909, Arco #4931

Work Order: TO-10-328

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **A-10**
SAMPLE DATE: **10/27/90**
LAB SAMPLE ID: **TO10328-07**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/12/90
Low Boiling Hydrocarbons	Mod.8015		11/12/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	50.	None
BTEX		
Benzene	0.5	2.3
Toluene	0.5	6.9
Ethylbenzene	0.5	1.2
Xylenes (total)	0.5	3.0

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 11/27/90
Client Work ID: GR3909, Arco #4931

Work Order: TO-10-328

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **A-11**
SAMPLE DATE: **10/27/90**
LAB SAMPLE ID: **TO10328-08**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/12/90
Low Boiling Hydrocarbons	Mod.8015		11/12/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	50.	None
BTEX		
Benzene	0.5	0.6
Toluene	0.5	2.4
Ethylbenzene	0.5	0.6
Xylenes (total)	0.5	1.5

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 11/27/90
Client Work ID: GR3909, Arco #4931

Work Order: T0-10-328

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **A-12**
SAMPLE DATE: **10/27/90**
LAB SAMPLE ID: **T010328-09**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/12/90
Low Boiling Hydrocarbons	Mod.8015		11/12/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	50.	None
BTEX		
Benzene	0.5	None
Toluene	0.5	None
Ethylbenzene	0.5	None
Xylenes (total)	0.5	None

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Gettler-Ryan, CORRECTED REPORT
Date: 11/27/90
Client Work ID: GR3909, Arco #4931

Work Order: T0-10-328

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **Trip Blank**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: T010328-10
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Micrograms per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/12/90
Low Boiling Hydrocarbons	Mod.8015		11/12/90

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	50.	None
BTEX		
Benzene	0.5	None
Toluene	0.5	None
Ethylbenzene	0.5	None
Xylenes (total)	0.5	None

-r - Ryan Inc. TL-IC-328 ENVIRONMENTAL DIVISION

Chain of Custody

-MPANY ARCO # 403

JOB NO

-E LOCATION 731 W. MacArthur

-ITY Oakland

PHONE NO

-UTHORIZED Tom Davison DATE 10-27-90 P.O. NO. 3909

SAMPLE ID	NO OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
A-2	3	liquid	10/27/90/11:44	THC (gas) BTXE	Cool
A-3	↓	↓	/11:11	↓	↓
A-5			/12:08		
A-6			/12:00		
A-7			/11:40		
A-9			/10:42		
A-10			/11:16		
A-11			/ 9:48		
A-12	↓	↓	/9:25	↓	
Trip	1	↓	———		

-LINQUISHED BY: John D. Zwerzyns. 10-27-90 13:38

RECEIVED BY: [signature] 10-29-90 Refrig-1 07:00

-LINQUISHED BY: [signature] 10-29-90 17:15

RECEIVED BY:

-LINQUISHED BY:

RECEIVED BY LAB: [signature] 10/29/90 17:15

-SIGNATED LABORATORY: FT (SCV) 137 DHS #: 137

-MARKS.

-TE COMPLETED 10-27-90 FOREMAN John D. Zwerzyns.

ORIGINAL