November 16, 1990

Alameda County Health Agency Department of Environmental Health 80 Swan Way, Room 200 Oakland, California 94621

Attention: Ms. Katherine Chesick

Reference: ARCO Service Station No. 2112

1260 Park Street Alameda, California

Ms. Chesick:

As requested by ARCO Products Company, we are forwarding a copy of the Tank Replacement Observation Report prepared for the above referenced location. The report documents the tank replacement, excavation activities, soil sampling and analysis.

If you should have any questions or comments, please call.

Sincerely,

Keith E. Bullock

KEB/me

enclosures

K. Christie, ARCO Products Company

Viste & Ballow

H. C. Winsor, ARCO Products Company

T. Callaghan, Regional Water Quality Control Board



# TANK REPLACEMENT OBSERVATION REPORT

ARCO Service Station No. 2112 1260 Park Street Alameda, California



2140 WEST WINTON AVENUE HAYWARD, CALIFORNIA 94545

(415) 352-4800

November 7, 1990

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

Attn:

Mr. John Werfal

Re:

TANK REPLACEMENT OBSERVATION REPORT

ARCO Service Station #2112

1260 Park Street Alameda, California

Gentlemen:

#### INTRODUCTION

report summarizes the field activities conducted at the above referenced site (Plate 1) during the recent underground storage tank (UGST) replacement. Field work presented in this report performed between July 27 and September 30, 1990, in compliance with State and local guidelines. A GeoStrategies Inc. (GSI) geologist present onsite to observe the UGST removal, assist in directing soil excavation and to obtain soil samples from the tank excavation, piping trenches, and soil stockpiles. This report also presents the of the soil aeration completed through September 30, results Results of work completed after September 30, 1990 will be presented a future report. summary of field procedures and sampling Α results are presented below.

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#### SITE BACKGROUND

In January 1990, Applied Geosystems (AGS) drilled six exploratory borings (B-1 through B-6) to assess soil conditions in the area of the former and present tank complexes. Five borings were drilled in the vicinity of the former UGST complex and one boring was drilled in the area of the present UGST complex. Analytical results of soil samples from the former tank complex indicated the presence of petroleum hydrocarbons. Soil samples from the present tank complex were reported as none detected for petroleum hydrocarbons. Groundwater was first encountered in Borings B-1 and B-6 at approximately 12 feet. Results of this investigation are presented in the AGS report dated February 20, 1990.

The site is presently occupied by an operating ARCO Service Station. Four newly installed 10,000 gallon tanks containing leaded and unleaded gasoline products, two fueling islands, and a mini-mart building are located onsite (Plate 2).

#### FIELD PROCEDURES

Five UGSTs were excavated and removed from the site on July 26, These included one 10,000 gallon, two 4,000 gallon, and two 6,000 gallon UGSTs that contained gasoline products. Removal of the subsurface tanks was witnessed by representatives from the Alameda Fire Department (AFD) and the Alameda County Health Care Services Agency (ACHCS). The former tank complex was located on the south-east corner of the site behind the service station (Plate 2). The maximum extent of the former tank excavation was approximately 77 by 27 feet, with a maximum depth of approximately 12 feet. The present UGST complex was excavated just south of the service islands (Plate 2). The maximum extent of the relocated tank excavation was approximately 57 feet long by 24 feet wide and 13 feet deep. Soil samples normally taken from beneath the tanks were waived by the ACHCS official as a result of findings in the pre-excavation investigation by AGS dated February 20, 1990. The ACHCS official directed other soil sample locations from the sidewalls and bottoms of each excavation (Plate 3).

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order to remove the subsurface product lines and install new product lines, trenches were dug along each side of the fueling islands. The location of the piping trenches are shown on Plate 4. Excavated soils were first stockpiled onsite and then sampled (Plates 5 and 6). Upon receipt of chemical analyses, selected soils were removed from the site and transported to an appropriate facility. that contained high levels of disposal Soils petroleum hydrocarbons were aerated onsite in compliance with Bay Area Air Quality Management District (BAAQMD) guidelines.

#### SOIL SAMPLING

Soil samples were collected from the sidewalls and bottoms of each tank complex excavation, the product line trenches, and the These samples were collected in clean brass tubes, covered at both ends with aluminum foil and sealed with plastic end caps. The soil samples were labeled, entered on a Chain-of-Custody, placed in a cooler on blue ice and transported to a State-certified environmental laboratory. Soil samples were analyzed by (IT) Technology Analytical Services International located in California. Superior Analytical Laboratories, Inc. (Superior) Martinez, California, or bv a National Testing, Inc. (NET) mobile laboratory located at the site.

#### Tank Excavation Sampling

Soil samples were collected from the former UGST excavation from the sidewalls and bottoms of the sidewalls adjacent to the Samples from the present UGST complex excavation were collected at depths between approximately 6 and 12 feet below existing grade. Soil samples were designated as AX1-1 through AX1-11 for the former UGST excavation and AX2-1 through AX2-7 for the relocated UGST A backhoe bucket was used to collect soil from each The samples were collected by first removing the top few excavation. excavation. inches of soil, then pushing a brass sample tube into the soil until the tube was completely filled. The soil samples were then sealed, labeled, and handled according to the procedures described above. Soil sample locations and the extent of the excavations are presented on Plate 3. The former tank complex was excavated to approximately Groundwater was not encountered in 13 feet, just above groundwater. the present tank complex excavation.

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#### Trench Sampling

Trenches were excavated on the east side of the fueling islands to expose and remove underground product piping. After the piping was every of removed. one sample for 20 lineal feet trench collected. Additional trenches were excavated on the west side of the fueling islands to install new product piping. Trench depth was approximately 3 feet. Soil was excavated to an approximate depth of 9.5 feet in areas of observed contamination. Soil samples from the trenches were designated AT-1 through AT-33. Selected soil samples were omitted as a result of additional soil excavated from these Trench soil samples were collected using a hand-driven locations. sampler fitted with a brass tube or by driving a brass tube into soil collected with a backhoe bucket after the top few inches of soil were removed. The brass tubes were then removed. sealed. and handled according to the procedures described previously. The location of collected trench soil samplings are shown on Plate 4.

### Stockpile Sampling

One composite soil sample consisting of four soil samples were collected for approximately every 50 cubic yards of excavated soil. These four soil samples were laboratory composited and analyzed as one sample. Soil samples were collected by removing the first 6 to inches of soil, a brass tube was then pushed into the soil, removed, sealed, and handled according to the procedures described Soil from former previously. the and present tank complex excavations were stored in separate stockpiles. Excavated soils from the piping trenches were stockpiled with soil from the former Composite soil sample designations excavation stockpile. former tank excavation and trenching stockpiles are AS-1 through AS-6 and AS-22 through AS-39. The amount of soil in these stockpiles was estimated to be approximately (1200 cubic yards.) The present tank excavation stockpiles have composite soil sample designations of AS-7 through AS-21. Soil from the present tank excavation stockpiles was estimated to be approximately 750 cubic yards. Composite soil sample and stockpile locations are presented on Plates 5 and 6.

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#### CHEMICAL ANALYTICAL RESULTS

Soil samples were analyzed by either IT in San Jose, California; Superior in Martinez, California; or the NET mobile laboratory located at the site. The samples were analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline) according to EPA Method 8015 (Modified), and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) according to EPA Method 8020. NET analyzed for TPH-Gasoline according to DHS procedure GC FID/5030. Copies of the IT, Superior, and NET chemical analytical reports are presented in Appendix A.

#### Former Tank Excavation Results

Chemical analytical results of soil samples from the former tank excavation identified TPH-Gasoline concentrations ranging from none detected (ND) to 23,000 parts per million (ppm). Benzene was identified in these same soil samples at concentrations ranging from ND to 150 ppm. The highest TPH-Gasoline concentrations were initially reported from a depth of 10 to 12 feet at sample locations AX1-3, AX1-6, AX1-8, and AX1-10. After the excavation was enlarged to the final extent, soil samples collected from locations AX1-2\* and AX1-7\* at a depth of 10 feet also reported high concentrations of TPH-Gasoline. Soil samples collected from a depth of 6 feet reported TPH-Gasoline at levels of 50 ppm or less, except at sample location AX1-2 where a TPH-Gasoline concentration of 1700 ppm was detected. Additional soil removal from the south, east, and west sides of the excavation was not performed due to property boundaries and the close proximity of the station building. Groundwater from the excavation was not sampled due to the presence of a film of free product on the water surface. Chemical analytical results for soil samples from this excavation are presented in Table 1.

Asterisks identify soil sample designations have that been repeated and specified as separate and discreet sample These samples were collected in August. Samples that had repeated designations were collected in July.

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#### Present Tank Excavation Results

Chemical analytical results for soil samples from the present tank excavation reported TPH-Gasoline in samples AX2-1-12 and AX2-2-11 at a concentration of 2.0 ppm. Benzene was identified in samples AX2-1-12, AX2-2-11, and AX2-6-11 at concentrations ranging from 0.013 to 0.470 ppm. The remaining samples were reported as ND for both TPH-Gasoline and BTEX analytes. Chemical analytical results for soil samples from this excavation are presented in Table 1.

## Trench Sampling Results

TPH-Gasoline was detected in trench soil samples AT-1, AT-2, AT-4, AT-7, AT-8, AT-14, AT-17, AT-26, and AT-28 at concentrations ranging Benzene was detected in soil samples AT-2, from 1.9 to 5,800 ppm. AT-4, AT-7, AT-8, AT-14, and AT-17 at concentrations ranging from 0.008 to 51 ppm. These samples were collected at depths ranging from 2.5 to 9.5 feet below grade. The remaining soil samples were reported as ND for TPH-Gasoline and BTEX. Additional soil excavation TPH-Gasoline levels, from areas of high (sample locations AT-17, AT-26, and AT-28), was not attempted due to the proximity of the overhead canopy foundation. summarizes chemical analytical Table 2 results of soil samples from the trenches.

### **Stockpile Sampling Results**

Chemical analyses for soil sample composites from the former trenching stockpiles excavation and identified TPH-Gasoline concentrations ranging from 230 to 5,600 ppm, Benzene was reported in these same composites at concentrations ranging from ND to 3.9 Highest concentrations of TPH-Gasoline were reported from composite samples AS-22 and AS-23 at levels of 5,500 and 5,600 ppm, respectively. Chemical analytical results for these composites presented in Table 3.

TPH-Gasoline identified in was soil sample composites from present tank excavation stockpile at concentrations ranging from NDto 301 ppm. Benzene was reported as ND for each composite sample stockpile. sample this Soil composite chemical analytical results for the present tank excavation are summarized in Table 4.

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#### **SOIL AERATION**

Upon receipt of chemical analytical results for stockpiled soils, an allowable volume of stockpiled soil was aerated onsite in compliance with BAAQMD guidelines for uncontrolled soil aeration. Soil was spread out onsite to a thickness of 1 to 2 feet and turned over with a backhoe on a daily basis to assist in the aeration process. Soil samples were collected from the aerating soils using the procedures described previously for the initial stockpile soil Approximately 350 cubic yards of aerating soil was resampled and Composite samples for these soils were designated AS-1\*, AS-2\*, and AS-40 through AS-48. TPH-Gasoline concentrations for these samples ranged from ND to 490 ppm. Benzene was reported as ND for each composite. Chemical analytical results for these composites are presented in Table 5.

#### SOIL REMOVAL

Approximately 1950 cubic yards of soil was excavated from the former and present tank complexes and subsurface piping trenches. Soil stockpiles for the former tank excavation and trenches were estimated to contain approximately 1200 cubic yards of soil. Approximately 340 cubic yards of soil from these stockpiles contained TPH-Gasoline at concentrations of greater than 1000 ppm and were transported to GSXs Lokern Road disposal facility, located in Buttonwillow, California. The remaining 860 cubic yards of soil remained onsite for aeration.

Soil stockpiles from the present tank complex contained approximately 750 cubic yards of soil. Approximately 650 cubic yards of soil from these stockpiles contained TPH-Gasoline concentrations of less than 100 ppm and were transported to Redwood Landfill located in Novato, California. The remaining 100 cubic yards of soil remained onsite for aeration.

Approximately 350 cubic yards of soil have been aerated, resampled, and analyzed. Upon receipt of the chemical analytical reports indicating that these soil samples contain less than 100 ppm TPH-Gasoline, the soils were transported to the Redwood Landfill in Novato, California.

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#### PLANNED SITE ACTIVITIES

- o Soil stockpiled on-site will continue to be aerated and, upon receipt of chemical analytical results, will be transported to an appropriate disposal facility
- o After aerated soils have been removed from the site, the remaining product piping on the north side of the site will be removed. Soil samples will be collected from beneath the product lines approximately every 20 lineal feet. The ACHCS will be notified prior to the start of these activities.
- o A work plan will be issued to assess the extent of soil and ground-water contamination at the site.
- o Design of an appropriate remediation system to mitigate unexcavated soils beneath the site.

Gettler-Ryan Inc. November 7, 1990 Page 9

If you have any questions, please call.

GeoStrategies Inc. by,

Mollory
Robert C. Mallory
Geologist

Why 2. Likeum

Jeffrey L. Peterson Senior Hydrogeologist

R.E.A. 1021

№ 1262 **CERTIFIED** ENGINEERING **GEOLOGIST** OF CALIFORN

Christopher M. Palmer C.E.G. 1262, R.E.A. 285

#### RCM/CMP/kjj

Plate 1. Vicinity Map

Plate 2. Site Plan

**Excavation Soil Sample Map** Plate 3. Plate 4. Trench Soil Sample Map

Plate 5. Soil Stockpile Map Soil Stockpile Map Plate 6.

Appendix A: Soil Chemical Analytical Reports

OC Review: DHP

Report No. 7920-1

TABLE 1

# SOIL ANALYTICAL DATA (EXCAVATIONS)

SAMPLE SAMPLE ANALYZED TPH-G BENZENE TOLUENE ETHYLBENZENE **XYLENES** I.D. DATE DATE (PPM) (PPM) (PPM) (PPM) (PPM) AX1-1-6 26-Jul-90 26-Jul-90 14 <0.005 <0.005 <0.005 1 AX1-1-10 10-Aug-90 21-Aug-90 27. 0.12 1.1 0.7 4.4 AX1-2-6 26-Jul-90 26-Jul-90 1700 <0.005 16 4.8 76 AX1-2\*-10 10-Aug-90 19-Aug-90 7700. 60. 360. 150. 930. AX1-3-6 26-Jul-90 26-Jul-90 <1 <0.005 <0.005 <0.005 <0.005 AX1-3-10 09-Aug-90 21-Aug-90 15000. 330. 1900. 130. 850. AX1-3-12 26-Jul-90 26-Jul-90 23000 150 490 940 2700 AX1-4-6 26-Jul-90 31-Jul-90 <1 <0.005 <0.005 < 0.005 <0.005 AX1-4-12 26-Jul-90 26-Jul-90 1.2 <0.005 0.011 0.018 0.062 AX1-5-6 26-Jul-90 26-Jul-90 <1 0.019 < 0.005 < 0.005 0.032 AX1-6-6 26-Jul-90 26-Jul-90 0.011 0.055 <1 0.067 0.042 AX1-6-10 10-Aug-90 24. 110. 18-Aug-90 1000. 2.0 18. AX1-7-6 26-Jul-90 27-Jul-90 50 <0.005 <0.005 <0.005 < 0.005 AX1-7\*-10 10-Aug-90 21-Aug-90 9400. 1200. 96. 570. 200.

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline PPM = Parts Per Million

Notes: 1. All data shown as <x are reported as ND (NONE DETECTED).

- 2. BTEX data analyzed on July 26, 27 and 31, 1990 by NET are reported in micrograms per kilogram.
- The last number of the Sample I.D. corresponds to the approximate depth below existing grade that the sample was collected.
- 4. For sample locations, see Plate 3.
- 5. TPH-G concentration for AX1-8-10' appear to be the more volatile constituents of diesel.

TABLE 1

## SOIL ANALYTICAL DATA (EXCAVATIONS)

SAMPLE I.D.	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
X1-8-10	27-Jul-90	27-Jul-90	7,300	20	130	98	650
IX1-8*-10	10-Aug-90	18-Aug-90	320.	<0.4	<0.4	3.8	12.
X1-9-10	27-Jul-90	27-Jul -90	<1	0.014	<0.005	0.020	0.017
X1-9*-10	10-Aug-90	18-Aug-90	1.6	0.037	0.057	0.01	0.051
X1-10-10	27-Jul-90	27-Jul-90	2,700	36	51	180	320
X1-10*-10	10-Aug-90	18-Aug-90	120.	0.56	4.3	2.5	15.
X1-11-10	27-Jul-90	27-Jul-90	<1	12	6	14	35
X2-1-6	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	0.007	0.007
X2-1-12	31-Jul-90	31-Jul-90	2.0	0.024	0.073	0.048	0.110
X2-2-11	31-Jul-90	31-Jul-90	2.0	0.470	0.180	0.005	0.013
X2-3-6	31-Jul-90	31 <b>-</b> Jul -90	<1	<0.005	<0.005	<0.005	<0.005
X2-3-11.5	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
X2-4-6	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
X2-4-11	<b>31-Jul-9</b> 0	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
X2-5-6	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
X2-5-11	31-Jul-90	31-Jul-90	<1	<0.005	<0.005	<0.005	<0.005
X2-6-11	31-Jul-90	31-Jul-90	<1	0.013	0.011	<0.005	<0.005
X2-7-11	31-Jul-90	<b>31</b> -Jul <b>-</b> 90	<1	<0.005	<0.005	<0.005	<0.005

TABLE 2

# SOIL ANALYTICAL DATA (TRENCHING)

SAMPLE I.D.	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AT-1	17-Aug-90	20-Aug-90	2000.	<0.8	23.	28.	210.
AT-2	17-Aug-90	20-Aug-90	6.7	0.023	0.088	0.11	0.84
AT-3	17-Aug-90	20-Aug-90	<1.	<0.005	<0.005	<0.005	<0.005
AT-4	17-Aug-90	20-Aug-90	5.8	0.034	0.12	0.057	0.52
AT-7-2	08-Aug-90	16-Aug-90	2.0	0.008	0.017	0.008	0.061
AT-8-2.5	08-Aug-90	16-Aug-90	14.	0.11	0.15	0.28	1.6
AT-9-9.5	20-Aug-90	29-Aug-90	<1.	<0.01	<0.01	<0.01	<0.01
AT-10-2.5	15-Aug-90	17-Aug-90	<1	<0.003	<0.003	<0.003	<0.003
AT-10-9.5	20-Aug-90	28-Aug-90	<1.	<0.005	<0.005	0.008	0.014
AT-11-2.5	15-Aug-90	17-Aug-90	<1	<0.003	<0.003	<0.003	<0.003
AT-12-2.5	15-Aug-90	17-Aug-90	<1	<0.003	<0.003	<0.003	<0.003

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline PPM = Parts Per Million

Notes: 1. All data shown as <x are reported as ND (none detected).

- 2. BTEX data analyzed on August 17, 1990 by Superior are reported in micrograms per kilograms.
- 3. The last number of the Sample I.D. corresponds to the approximate depth below existing grade that the sample was collected.

  AT-1 and AT-3 were collected at 3.5 feet below existing grade. AT-2 and AT-4 were collected at 2.5 feet below existing grade.
- 4. For sample locations, see Plate 4.

TABLE 2

SOIL	ANALYTICAL	DATA
(	(TRENCHING)	

			•					
SAMPLE 1.D.	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)	_
AT-13-2.5	15-Aug-90	17-Aug-90	<1	<0.003	<0.003	<0.003	<0.003	-
AT-14-2.5 AT-14-7	15-Aug-90 23-Aug-90	17-Aug-90 24-Aug-90	250 1.9	0.019 0.025	0.032 0.034	0.110 0.026	3.0 0.25	
AT-17-8.5	20-Aug-90	28-Aug-90	5800.	51.	330.	100.	560.	
AT-24-5	22-Aug-90	29-Aug-90	<1.	<0.005	<0.005	<0.005	<0.005	
AT-25-5	22-Aug-90	28-Aug-90	<1.	<0.008	<0.008	<0.008	<0.008	
AT-26-5	22-Aug-90	28-Aug-90	890.	<1.	1.6	2.5	38.	
AT-27-5	22-Aug-90	28-Aug-90	<1.	<0.005	<0.005	<0.005	0.006	
AT-28-5	23-Aug-90	28-Aug-90	4600.	<2.	46.	56.	460.	
AT-29-5	23-Aug-90	27-Aug-90	<1.	<0.005	<0.005	<0.005	<0.005	
AT-30-5	23-Aug-90	24-Aug-90	<1.0	<0.005	<0.005	<0.005	<0.005	
AT-31-5	23-Aug-90	29-Aug-90	<1.	<0.005	<0.005	<0.005	0.007	
AT-32-5	24-Aug-90	28-Aug-90	<1.	<0.005	<0.005	<0.005	<0.005	
AT-33-5	24-Aug-90	28-Aug-90	<1.	<0.005	0.008	<0.005	0.009	

TABLE 3

# COMPOSITED SOIL ANALYTICAL DATA (FORMER UGT COMPLEX AND TRENCH STOCKPILES)

SAMPLE SAMPLE **ANALYSIS** TPH-G BENZENE TOLUENE **XYLENES** ETHYLBENZENE ΙD DATE DATE (PPM) (PPM) (PPM) (PPM) (PPM) AS-1 (A-D) 26-Jul-90 26-Jul-90 940 <0.005 5.3 1.9 24 (composite) AS-2 (A-D) 27-Jul-90 27-Jul-90 640 0.91 <0.005 <0.005 12 (composite) 1,100 AS-3 (A-D) 27-Jul-90 27-Jul-90 <0.005 14 3.6 52 (composite) AS-4 (A-D) 27-Jul-90 27-Jul-90 930 <0.005 <0.005 <0.005 24 (composite) AS-5 (A-D) 27-Jul-90 27-Jul-90 2,300 <0.005 20 15 130 (composite) 27-Jul-90 27-Jul-90 AS-6 (A-D) 1,300 3.9 14 72 16 (composite)

TPH-G = Total Petroleum Hydrocarbons as Gasoline PPM = Parts Per Million

Note: 1. All data shown as <x are reported as ND (none detected).

- 2. BTEX data analyzed on July 26 and 27, 1990 by NET, and August 2 and 22, 1990 by Superior, are reported in micrograms per kilogram.
- 3. For sample locations, see Plates 5 and 6.

TABLE 3

# COMPOSITED SOIL ANALYTICAL DATA (FORMER UGT COMPLEX AND TRENCH STOCKPILES)

SAMPLE ID	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AS-22 (A-D) (composite)	31-Jul-90	02-Aug-90	5,500	<0.3	62	48	480
AS-23 (A-D) (composite)	31-Jul-90	02-Aug-90	5,600	<0.3	75	55	560
AS-24 (A-D) (composite)	31-Jul-90	02-Aug-90	2,300	<0.3	1.5	1.1	170
AS-25 (A-D) (composite)	31-Jul-90	02-Aug-90	2,000	<0.3	<0.3	0.39	83
AS-26 (A-D) (composite)	31-Jul-90	02-Aug-90	870	<0.3	0.39	<0.3	42
AS-27 (A-D) (composite)	31-Jul-90	02-Aug-90	1,800	<0.3	<0.3	<0.3	59
AS-28 (A-D) (composite)	15-Aug-90	22-Aug-90	860	<0.15	8.0	0.69	56
AS-29 (A-D) (composite)	15-Aug-90	22-Aug-90	900	<0.15	1	0.72	66
AS-30 (A-D) (composite)	15-Aug-90	22-Aug-90	260	<0.15	<0.15	0.25	9.6
AS-31 (A-D) (composite)	15-Aug-90	22-Aug-90	550	<0.15	<0.25	0.41	24

TABLE 3

COMPOSITED SOIL ANALYTICAL DATA

(FORMER UGT COMPLEX AND TRENCH STOCKPILES)

SAMPLE ID	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AS-32 (A-D) (composite)	15-Aug-90	22-Aug-90	460	<0.15	0.59	0.62	29
AS-33 (A-D) (composite)	15-Aug-90	22-Aug-90	1,600	1.6	2.9	2.8	110
AS-34 (A-D) (composite)	15-Aug-90	22-Aug-90	620	0.37	0.85	0.44	48
AS-35 (A-D) (composite)	15-Aug-90	22-Aug-90	900	0.2	0.87	0.53	63
AS-36 (A-D) (composite)	15-Aug-90	22-Aug-90	680	0.54	5.4	2.6	50
AS-37 (A-D) (composite)	15-Aug-90	22-Aug-90	590	<0.15	2.4	0.89	43
AS-38 (A-D) (composite)	15-Aug-90	22-Aug-90	280	<0.15	0.33	0.2	19
AS-39 (A-D) (composite)	15-Aug-90	22-Aug-90	230	<0.15	<0.15	0.21	14

TABLE 4

# COMPOSITED SOIL ANALYTICAL DATA (PRESENT UGT COMPLEX STOCKPILE)

SAMPLE ID	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
AS-7 (A-D) (composite)	31-Jul-90	02-Aug-90	3	<0.003	0.014	0.013	0.120
AS-8 (A-D) (composite)	31-Jul-90	02-Aug-90	5	<0.003	0.035	0.033	0.280
AS-9 (A-D) (composite)	31-Jul-90	02-Aug-90	2	<0.003	0.008	0.007	0.075
AS-10 (A-D) (composite)	31-Jul-90	02-Aug-90	1	<0.003	0.005	0.006	0.064
AS-11 (A-D) (composite)	31-Jul-90	02-Aug-90	4	<0.003	0.013	0.015	0.130
AS-12 (A-D) (composite)	31-Jul-90	02-Aug-90	3	<0.003	<0.003	<0.003	0.016
AS-13 (A-D) (composite)	31-Jul-90	02-Aug-90	1	<0.003	<0.003	<0.003	0.005

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline PPM = Parts Per Million

Note: 1. All data shown as <x are reported as ND (none detected).

- 2. BTEX data are reported in micrograms per kilogram.
- 3. for sample locations, see Plate 5.

TABLE 4

# COMPOSITED SOIL ANALYTICAL DATA

(PRESENT UGT COMPLEX STOCKPILE)

#### SAMPLE SAMPLE ANALYZED TPH-G BENZENE TOLUENE ETHYLBENZENE XYLENES ID DATE DATE (PPM) (PPM) (PPM) (PPM) (PPM) AS-14 (A-D) 02-Aug-90 13 31-Jul-90 <0.003 0.042 0.036 0.280 (composite) AS-15 (A-D) 31-Jul-90 02-Aug-90 273 <0.150 0.270 0.730 5.100 (composite) AS-16 (A-D) 301 31-Jul-90 02-Aug-90 < 0.150 0.980 1.600 9.900 (composite) AS-17 (A-D) 31-Jul-90 02-Aug-90 4 <0.003 0.018 0.013 0.084 (composite) AS-18 (A-D) 31-Jul-90 02-Aug-90 2 <0.003 0.004 0.005 0.036 (composite) AS-19 (A-D) 02-Aug-90 31-Jul-90 <1 <0.003 <0.003 <0.003 <0.003 (composite) AS-20 (A-D) 02-Aug-90 3 31-Jul-90 <0.003 <0.003 <0.003 0.010 (composite) AS-21 (A-D) 31-Jul-90 02-Aug-90 <1 <0.003 <0.003 <0.003 0.007

(composite)

TABLE 5

# COMPOSITED SOIL ANALYTICAL DATA (AERATED SOIL)

SAMPLE I.D.	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENE (PPM)	SOIL REMOVED
AS-1* (A-D) (composite)	17-Aug-90	21-Aug-90	19.	<0.005	0.009	0.026	0.16	Approximately 50 cubic yards to Redwood Landfill
AS-2* (A-D) (composite)	17-Aug-90	20-Aug-90	6.4	<0.005	0.008	0.006	0.038	Approximately 50 cubic yards to Redwood Landfill
AS-40 (A-D) (composite)	22-Aug-90	28-Aug-90	12.	<0.17	<0.017	<0.017	0.099	Approximately 50 cubic yards to Redwood Landfill
AS-41 (A-D) (composite)	30-Aug-90	06-Sep-90	<1	<0.003	<0.003	<0.003	<0.003	
AS-42 (A-D) (composite)	30-Aug-90	06-Sep-90	14	<0.003	<0.003	<0.003	0.008	7
AS-43 (A-D) (composite)	10-Sep-90	10-Sep-90	490.	<0.2	0.2	<0.2	21.	,
AS-44 (A-D) (composite)	10-Sep-90	10-Sep-90	240	<0.2	<0.2	<0.2	0.4	
AS-45 (A-D) (composite)	17-Sep-90	24-Sep-90	<1	<0.003	<0.003	<0.003	0.005	Approximately 50 cubic yards to Redwood Landfill

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
PPM = Parts Per Million

Note: 1. All data shown as <x are reported as ND (none detected)

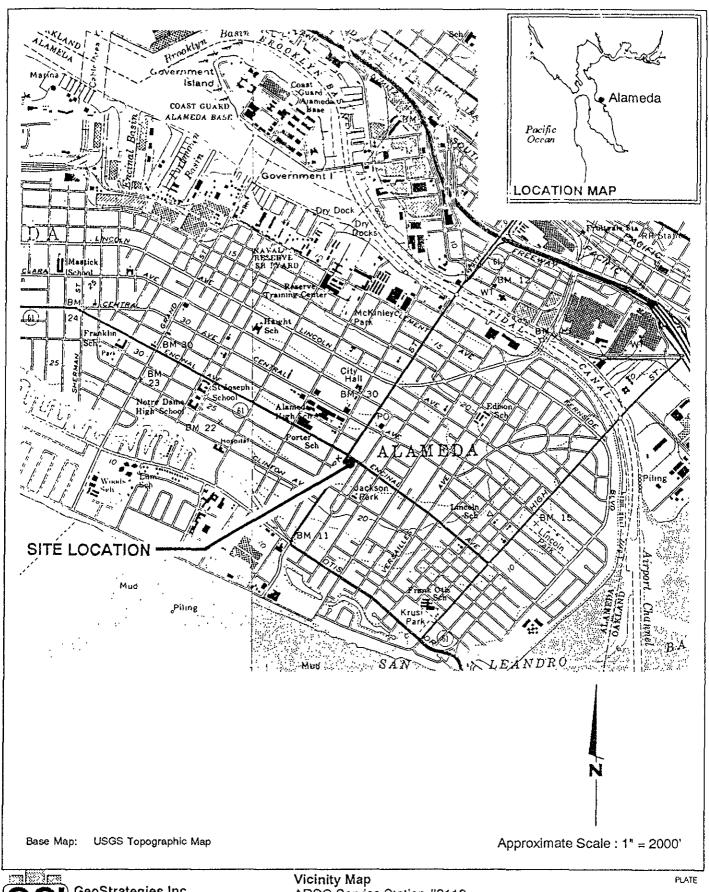
2. BTEX data analyzed by Superior on September 6 and 24, 1990, are reported in micrograms per kilogram

TABLE 5

# COMPOSITED SOIL ANALYTICAL DATA (AERATED SOIL)

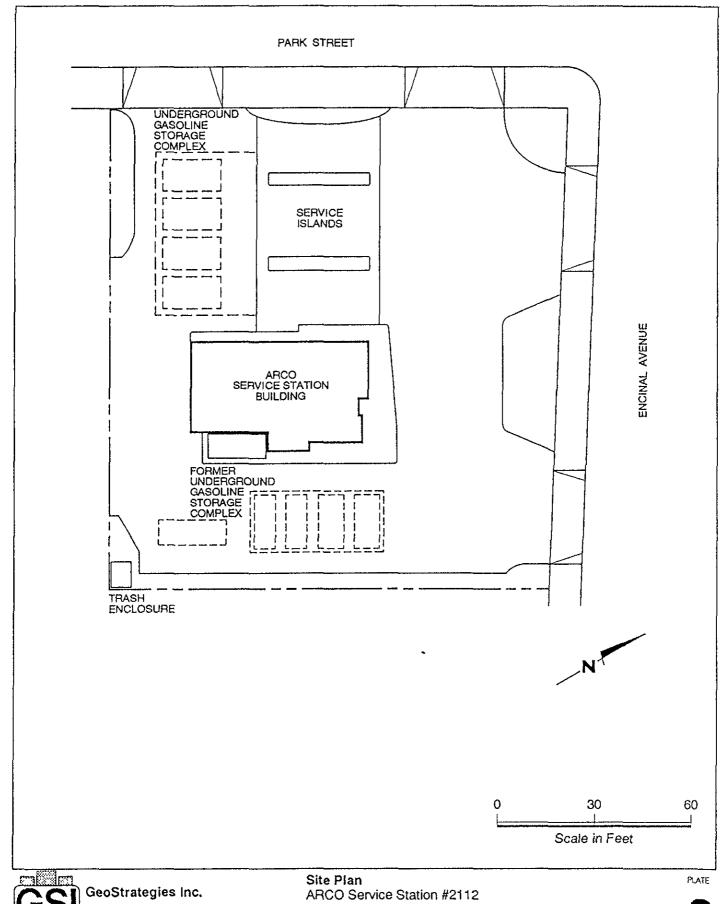
SAMPLE I.D.	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENE (PPM)	SOIL REMOVED
AS-46 (A-D) (composite)	17-Sep-90	24-Sep-90	3	<0.003	<0.003	0.006	0.017	Approximately 50 cubic yards to Redwood Landfill
AS-47 (A-D) (composite)	21-Sep-90	24-Sep-90	<1	<0.003	<0.003	<0.003	<0.003	Approximately 50 cubic yards to Redwood Landfill
AS-48 (A-D) (composite)	21-Sep-90	24-Sep-90	<1	<0.003	<0.003	<0.003	0.004	Approximately 50 cubic yards to Redwood Landfill

ILLUSTRATIONS



ARCO Service Station #2112 1260 Park Street Alameda, California

JOB NUMBER REVIEWED BY RG/CEG DATE REVISED DATE REVISED DATE 3/90 7920



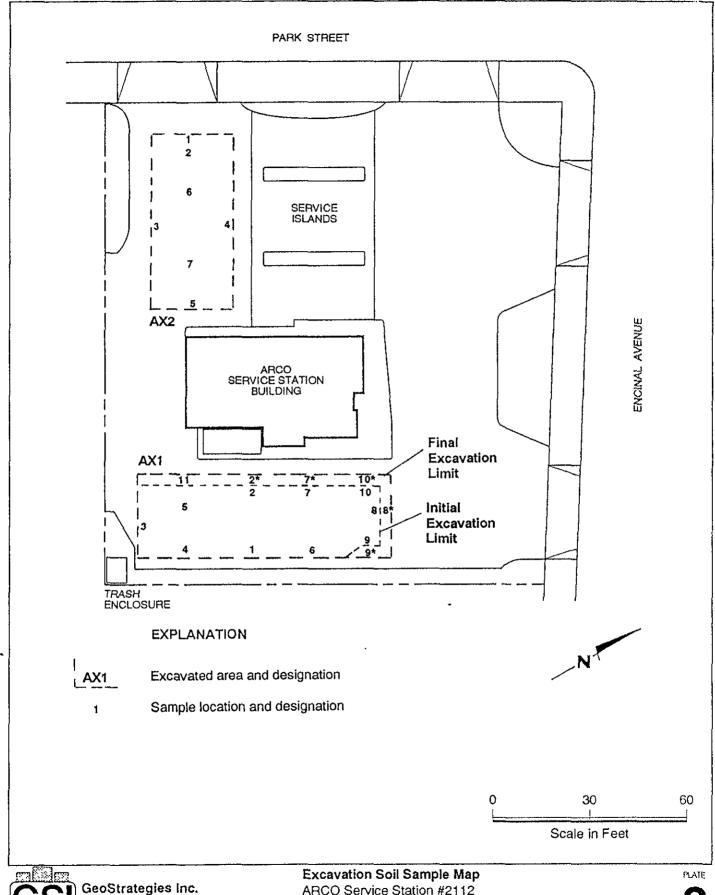
JOB NUMBER 7920 MENIEWED BY ROVCEG

ARCO Service Station #2112 1260 Park Street Alameda, California

2

DATE 10/90 REVISED DATE

REVISED DATE

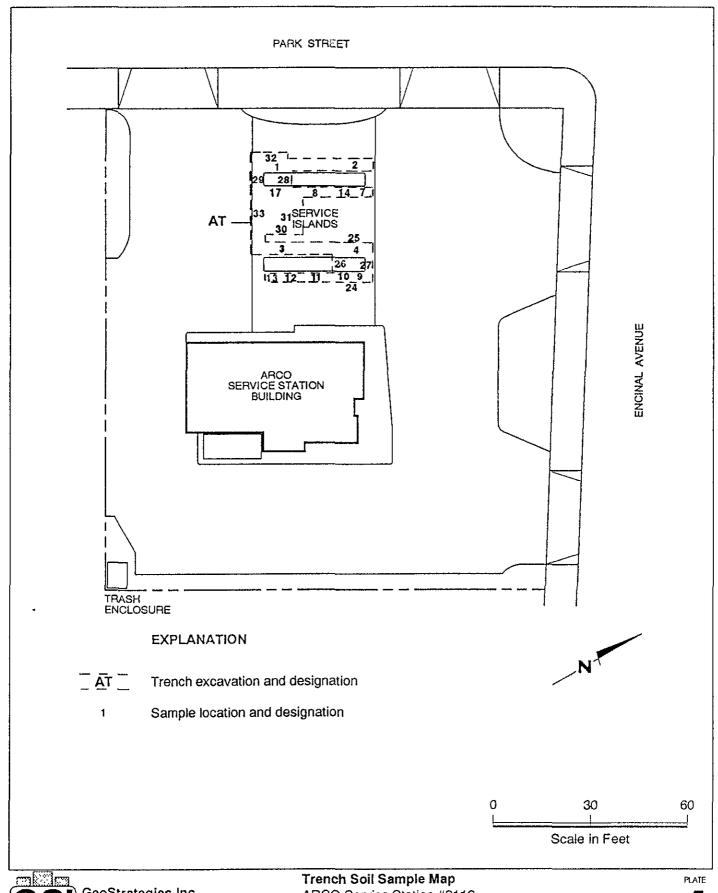


GSI

Excavation Soil Sample Map ARCO Service Station #2112 1260 Park Street Alameda, California

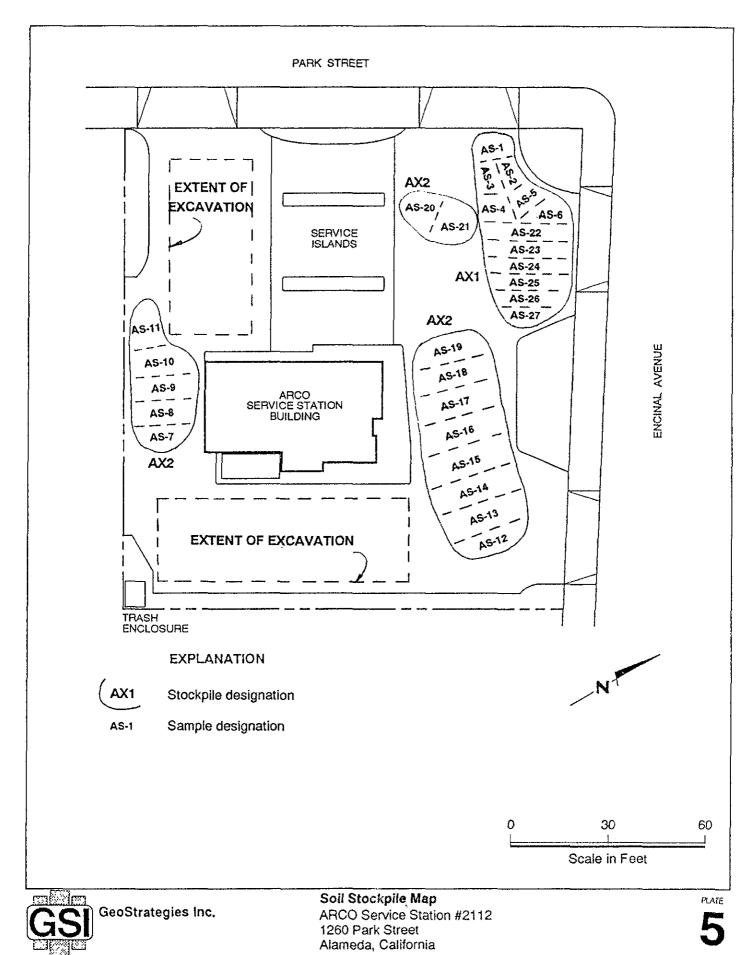
3

JOB NUMBER REVIEWED BY RG/CEG DATE REVISED DATE REVISED DATE
7920 CLUMP CEG (7672 10/90



ARCO Service Station #2112 1260 Park Street Alameda, California

DATE 10/90 REVIEWED BY RG/CEG REVISED DATE REVISED DATE JOB NUMBER 7920 Cup acaizor

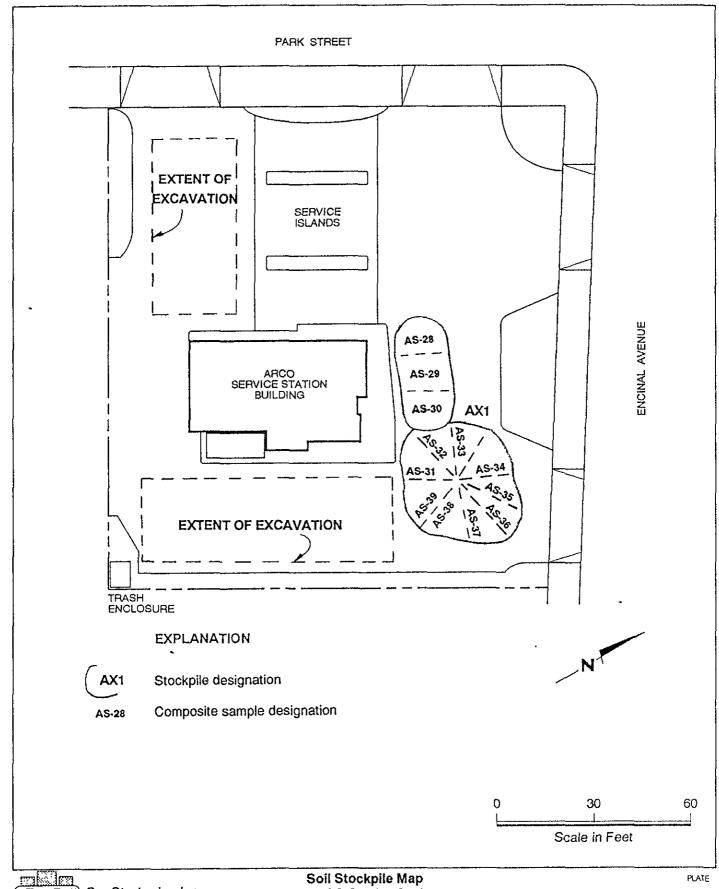


JOB NUMBER 7920 REVIEWED BY AG/CEG

0ATE 10/90

REVISED DATE

REVISED DATE



GSI

GeoStrategies Inc.

Soil Stockpile Map
ARCO Service Station #2112
1260 Park Street
Alameda, California

6

DOB NUMBER REVIEWED BY RG/CEG
7920 CLUP LEG 1262

DATE 10/90

REVISED DATE

REVISED DATE

# APPENDIX A SOIL CHEMICAL ANALYTICAL REPORTS



# CERTIFICATE OF ANALYSIS

Date: 08/23/90

Gettler-Ryan 2150 West Winton Hayward, CA 94545 John Werfal

Work Order: T0-08-154

P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: GR7920, Arco

Date Received: 08/15/90 Number of Samples: 8 Sample Type: solid

#### TABLE OF CONTENTS FOR ANALYTICAL RESULTS

PAGES	LABORATORY #	SAMPLE IDENTIFICATION
2	TO-08-154-01	AX1-3-10'
3	T0-08-154-02	AX1-2-10'
4	T0-08-154-03	AX1-1-10'
5	T0-08-154-04	AX1-7-10'
6	T0-08-154-05	AX1-6-10'
7 ·	T0-08-154-06	AX1-10-10'
8	T0-08-154-07	AX1-9-10' -
9	T0-08-154-08	AX1-8-10'

Reviewed and Approved:

Suzanne Veaudry Project Manager

SAN JOSE, CA

Work Order: T0-08-154

Company: Gettler-Ryan

Date: 08/23/90

Client Work ID: GR7920, Arco

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AI1-3-10' SAMPLE DATE: 08/09/90 LAB SAMPLE ID: T008154-01 SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

#### RESIDES in Milliarams per Kilogram.

RESUL	TS in Milligrams per	Kilogram:		
			EXTRACTION	ANALYSIS
		METHOD	DATE	DATE
BTEX		8020	08/15/90	08/21/90
Low B	oiling Hydrocarbons	Mod.8015	08/15/90	08/21/90
			DETECTION	
PARAM	ETER	LIMIT	DETECTED	
Low B	oiling Hydrocarbons			······································
	oiling Hydrocarbons alculated as Gasolin	e	400.	15000.
		e	400.	15000.
C: BTEX		e	400.	15000.
BTEX Be	alculated as Gasolin	e		
BTEX BG TG	alculated as Gasolin	e	4.0	130.

SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/23/90

Client Work "): GR7920, Arco

Work Order: T0-08-154

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AX1-2-10' SAMPLE DATE: 08/10/90 LAE SAMPLE ID: TOO8154-02 SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

RESULTS in Milligrams p	er Kilogram:				
		EXTRACTION	ANALYSIS		
	- <u>METHOD</u>	DATE	DATE		
BTEX	8020	08/15/90	08/19/90		
Low Boiling Hydrocarbon	s Mod.8015	08/15/90 08/19/9			
		DETECTION			
PARAMETER	-	LIMIT	DETECTED		
Low Boiling Hydrocarbon	S				
calculated as Gasol	ine	200.	7700.		
BTEX					
Benzene		2.0	60.		
Toluene		2.0	360.		
Ethylbenzene		2.0	150.		
Xylenes (total)	•	2.0	930.		

SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/23/90

Client Work ID: GR7920, Arco

Work Order: T0-08-154

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AI1-1-10' SAMPLE DATE: 08/10/90 LAB SAMPLE ID: T008154-03 SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

## RESULTS in Milligrams per Kilogram:

			EXTRACTION	ANALYSIS
	•	METHOD	DATE	DATE
BTE	X	8020	08/15/90	08/21/90
Low	Boiling Hydrocarbons	Mod.8015	08/15/90	08/21/90
PAR	AMETER		DETECTION LIMIT	DETECTED
		·		
Low	Boiling Hydrocarbons		_	
	calculated as Gasolin	e	2.0	27.
BTE	X			
	Benzene		0.02	0.12
	Toluene		0.02	1.1
	Ethylbenzene		. 0.02	0.7
	Xylenes (total)		0.02	4.4

SAN JOSE, CA.

Company: Gettler-Ryan

Date: 08/23/90

Client Work ID: GR7920, Arco

Work Order: T0-08-154

TEST NAME: Petroleum Hydroca Dobi

SAMPLE ID: AX1-7-10' SAMPLE DATE: 08/10/90 LAB SAMPLE ID: TOOP154-04 SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

#### RESULTS in Milliorams per Kilogram:

EXTRACTION	ANALYSIS
DATE	DATE
08/15/90	08/21/90
08/15/90	08/21/90
DETECTION	
LIMIT	DETECTED
400.	9400.
4.0	96.
4.0	570.
4.0	200.
	1200.
	DATE 08/15/90 08/15/90 DETECTION LIMIT 400.

SAN JOSE, CA

Work Order: T0-08-154

Company: Gettler-Ryan

Date: 08/23/90

Client Work ID: GR7920, Arco

TEST NAME: Petroleus sedrocarbons

SAMPLE ID: AX1-6-10' SAMPLE DATE: 08/10/90 LAB SAMPLE ID: TOOE154-05 SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogr	am:	
	EXTRACTION	ANALYSIS
<u>-метн</u>	OD DATE	DATE
BTEX 80	20 . 08/15/90	08/18/90
Low Boiling Hydrocarbons Mod.80	15 08/15/90	08/18/90
	DETECTION	
PARAMETER	LIMIT	DETECTED
Low Boiling Hydrocarbons		
calculated as Gasoline	40.	1000.
BTEX		
Benzene	0.5	2.0
Toluene	0.5	24.
Ethylbenzene	. 0.5	18.
Xylenes (total)	0.5	110.

SAN JOSE, CA

Work Order: T0-08-154

Company: Gettler-Ryan

Date: 08/23/90

Client Work ID: GR7920, Arco

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AX1-10-10' SAMPLE DATE: 08/10/90 LAB SAMPLE ID: T008154-06 SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

			EXTRACTION	ANALYSIS	
		METHOD	DATE	DATE	
BTE	X	8020	08/15/90	08/21/90	
Low	Boiling Hydrocarbons	Mod.8015	08/15/90	08/21/90	
·····	***************************************		DETECTION		
PARA	AMETER		LIMIT	DETECTED	
Low	Boiling Hydrocarbons			<del></del>	
	calculated as Gasoline		4.0	120.	
BTEX	<				
	Benzene		0.04	0.56	
	Toluene		0.04	4.3	
	Ethylbenzene		0.04	2.5	
	Xylenes (total)		0.04	15.	

SAN JOSE, CA

Work Order: T0-08-154

Company: Gettler-Ryan

Date: 08/23/90

Client Work ID: GR7920, Arro

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AX1-9-10' SAMPLE DATE: 06/10/90 LAB SAMPLE ID: T008154-07 SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

RESULIS IN MILLIPIANS DE	. vrrodiam:		
		EXTRACTION	ANALYSIS
	METHOD	DATE	DATE
ETEX	8020	08/15/90	08/18/90
Low Boiling Hydrocarbons	Mod.8015	08/15/90	08/18/90
		DETECTION	
PARAMETER	•	LIMIT	DETECTED
Low Boiling Hydrocarbons			
calculated as Gasolin	ie	1.0	1.6
BTEX			
Benzene		0.005	0.037
Toluene		0.005	0.057
Ethylbenzene	•	0.005	0.01
Xylenes (total)	•	0.005	0.051

Work Order: T0-08-154

SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/23/90

Client Work ID: GR7920, Arco

TEST NAME: Petroleum Bydrocarbons

SAMPLE ID: AI1-8-10' SAMPLE DATE: 08/10/90 LAB SAMPLE ID: T008154-08 SAMPLE MATRIX: solid

RECEIPT CONDITION: Cool

			EXTRACTION	ANALYSIS
		METHOD	DATE	DATE
BTE	X	8020	08/15/90	08/18/90
Low	Boiling Hydrocarbons	Mod.8015	08/15/90	08/18/90
	•		DETECTION	
PAR	AMETER		LIMIT	DETECTED
Low	Boiling Hydrocarbons			
	calculated as Gasolin	e	40.	*320.
BTE	x .			
	Benzene	•	0.4	None
	Toluene		0.4	None
	Ethylbenzene		0.4	3.8
·	Xylenes (total)		0.4	12.

<sup>\*</sup>Compounds detected and calculated as gasoline appear to be the more volatile constituents of diesel.

SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/23/90

Client Work ID: GR7920, Arco

Work Order: T0-08-154

# TEST CODE TPHVB TEST NAME TPH Gas, BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Gettler - F	yan Inc		10-08-154 10-08-155	ISTON		Chain of Custody
			T. / ENC			NO
CITY ALA					PHONE NO	
AUTHORIZED		FAL	DATE	,		
SAMPLE ID	NO. OF	SAMPLE MATRIX	DATEITIME	ANALYSIS REQUI		SAMPLE CONDITION LAB ID
AXI - 3-10		SOIL	e/9/90 8:25	TPH-GLS, L	STEX	Cool
AX1-2-10'			E/10/90 12:30			
121-1-10			12:32			
EX1-7-10			14:50			-
AX1-6-10	1		15:45			
AX1-10-10'			17:30			
AX1-9-10'			17:35			
DY1-8-10'	1		17:40		•	
AT-7-2'	(	SOIL	8/8/90 10:49			·
ST-8-2.5			10:59	$\sqrt{}$		
		•		_		
RELINQUISHED BY	2 m 11	, M		V50/89).		
RELINQUISHED BY:	Milling	<u>/ 873</u>	5-90 FECE	VED BY:	<u>8-15-9</u>	0 0730
	all	8-15-90	<u> </u>			
RELINQUISHED BY:			RECE	VED BYCAE	· 8-15	AD 1155
DESIGNATED LABOR	RATORY:	ZT/SCY		DHS #:	/ 37	
REMARKS:	5	- Oa 4	TAT			•
At	48	72hr 7	AT		,	
DATE COMPLETED_			FOREM	AN		•



NET Pacific, Inc. 435 Tesconi Circle Santa Rosa, CA 95401 Tel: (707) 526-7200 Fax: (707) 526-9623

J. W. W. C. 1800

er cons

John Werfal Gettler-Ryan Inc. 2150 Winton Ave. Hayward, CA 94545

Date: 08-06-90

NET Client Acct No: 679 NET Pacific Log No: 3048 Received: 07-28-90 0930

Client Reference Information-

Arco, 1260 Park St./Encinal, Alameda, Job: 7920

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack Laboratory Manager

JS:rct
Enclosure(s)

Client No: 679 Client Name: Gettler-Ryan Inc. NET Log No: 3048

Date: 08-05-90

Page: 2

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

Parameter			AS-2 comp 07-27-90	AS-3 comp 07-27-90	**************************************
		Reporting Limít	58811	58812	Units
PETROLEUM HYDROCARBONS					
VOLATILE (SOIL) DILUTION FACTOR * DATE ANALYZED			200 07-27-90	 300 07-27-90	
METHOD GC FID/5030 as Gasoline METHOD 8020	-	1	640	1,100	mg/Kg
Benzene Ethylbenzene		5 5	ND 910	ND 14,000	ug/Kg ug/Kg
Toluene Xylenes		5 5	ND 12,000	3,600 52,000	ug/Kg ug/Kg

Client Name: Gettler-Ryan Inc. NET Log No: 3048

Date: 08-06-90

Page: 3

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

Parameter			AS-4 comp 07-27-90	AS-5 comp 07-27-90	<del></del>	
	Method	Reporting Limit	58813	58814	Units	
PETROLEUM HYDROCARBONS VOLATILE (SOIL)						
DILUTION FACTOR *			600	600		
DATE ANALYZED			07-27-90	07-27-90		
METHOD GC FID/5030 as Gasoline	·	1	930	2,300	mg/Kg	
METHOD 8020						
Benzene		5	ND	ND	ug/Kg	
Ethylbenzene		5 5 5	ИD	20,000	ug/Kg	
Toluene		5	ND	15,000	ug/Kg	
Xylenes		5	24,000	130,000	ug/Kg	

Client Name: Gettler-Ryan Inc.

NET Log No: 3048

Date: 08-01-90

Page: 4

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

Parameter		_	AS-6 comp 07-27-90	AS-1 comp 07-26-90		
	Method	Reporting Limit	58815	58816 <sup>a</sup>	Units	
PETROLEUM HYDROCARBONS VOLATILE (SOIL) DILUTION FACTOR * DATE ANALYZED METHOD GC FID/5030 as Gasoline METHOD 8020		1	375 07-27-90 1,300	 600 07-26-90  940	mg/Kg	
Benzene Ethylbenzene Toluene Xylenes		5 5 5 5	3,900 16,000 14,000 72,000	ND 5,300 1,900 24,000	ug/Kg ug/Kg ug/Kg ug/Kg	

<sup>&</sup>lt;sup>a</sup> The dilution factor for Benzene, Ethylbenzene, and Toluene on this sample is 60.

Client No: 679 Client Name: Gettler-Ryan Inc.

NET Log No: 3048

Date: 08-06-90

Page: 5

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

	D	AX1-11-10.0 07-27-90 0947	AX1-1-6.0 07-26-90 1100	
Method	Reporting Limit	58817	58818	Units
		<u> </u>		
				•
		1 07-27-90	40 07-26-90	
-				
	1	ND	14	mg/Kg
				ug/Kg
	5			ug/Kg
	5			ug/Kg
	5	35	1,000	ug/Kg
	Method  	Reporting Limit  1 5 5 5 5 5	07-27-90 0947 Reporting Limit 58817	07-27-90 07-26-90 0947 1100  Reporting Limit 58817 58818  1 40 07-27-90 07-26-90 1 ND 14 5 12 ND 5 6 ND ND 5 14 ND ND

Date: 08-06-90

Client Name: Gettler-Ryan Inc. NET Log No: 3048

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Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

	Decembing	AX1-2-6.0 07-26-90 1105	AX1-3-6.0 07-26-90 1119	
Method	Limit	58819	58820	Units
		300	1	
<del></del>		07-26-90	07-26-90	
-		,		
	1	1,700	ND	mg/Kg
			<del></del>	
	5	ИD	ND	ug/Kg
	5	16,000	ND	ug/Kg
	5	4,800	ND	ug/Kg
	5	76,000	ND	ug/Kg
	Method 	Reporting Limit	07-26-90 1105 Reporting Method Limit 58819 	07-26-90 07-26-90 1105 1119  Reporting Limit 58819 58820

Client Name: Gettler-Ryan Inc.

NET Log No: 3048

Date: 08-06-90

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Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

Parameter		D	AX1-3-12.0 07-26-90 1124	AX1-4-6.0 07-26-90 1131	
	Method	Reporting Limit	58821	58822	Units
PETROLEUM HYDROCARBONS				\$100 per	
VOLATILE (SOIL)					
DILUTION FACTOR *			20,000	]	
DATE ANALYZED			07-26-90	07-31-90	
METHOD GC FID/5030	•	_			
as Gasoline		1	23,000	ND	mg/Kg
METHOD 8020		_	150 000		41.6
Benzene		5	150,000	ND	ug/Kg
Ethylbenzene		5	490,000	ИD	ug/Kg
Toluene		5	940,000	ИD	ug/Kg
Xylenes		5	2,700,000	ND	ug/Kg

Client Name: Gettler-Ryan Inc. NET Log No: 3048

Date: 08-06-90

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Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

Parameter		Donouting	AX1-4-12.0 07-26-90 1137	AX1-5-6.0 07-26-90 1145	·
	Method	Reporting Limit	58823	58824	Units
PETROLEUM HYDROCARBONS					
VOLATILE (SOIL) DILUTION FACTUR *			 1	 1	
DATE ANALYZED			07-26-90	07-26 <b>-</b> 90	
METHOD GC FID/5030 as Gasoline	-	1	1.2	ND	mg/Kg
METHOD 8020		1			11/97 Kg
Benzene		5	ND	19	ug/Kg
Ethylbenzene Toluene		5 5	11 18	ND	ug/Kg
Xylenes		5	62	ND 32	ug/Kg ug/Kg

Client No: 679 Client Name: Gettler-Ryan Inc. NET Log No: 3048

Page: 9

Date: '8-06-90

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

		Reporting Limit	AX1-6-6.0 07-26-90 1344	AX1-7-6.0 07-26-90 1344	
Parameter	Method		58825	58826	Units
PETROLEUM HYDROCARBONS					
VOLATILE (SOIL)					
DILUTION FACTOR *			1	200	
DATE ANALYZED			07-26-90	07-27-90	
METHOD GC FID/5030	-				
as Gasoline		1	ND	50	mg/Kg
METHOD 8020					_
Benzene		5	67	ND	ug/Kg
Ethylbenzene		5	11	ND	ug/Kg
Toluene		5	42	ND	ug/Kg
Xylenes		5	55	ND	ug/Kg

Client & me: Gettler-Ryan Inc.

NET Log No: 3048

Date: 08-06-90

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Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

		<del></del>			
		Danauting	AX1-8-10.0 07-26-90 1510	AX1-9-10.0 07-26-90 1512	
Parameter	Method	Reporting Limit	58827	58828	Units
PETROLEUM HYDROCARBONS					
VOLATILE (SOIL)					
DILUTION FACTOR * DATE ANALYZED			3000	1	
METHOD GC FID/5030	_		07-27-90	07-27-90	
as Gasoline METHOD 8020	•	1	7,300 	ND	mg/Kg
Benzene		5	20,000	14	ug/Kg
Ethylbenzene		5	130,000	ND	ug/Kg
Toluene Xylenes		5 5 5 5	98,000 650,000	20 17	ug/Kg ug/Kg

Client Name: Gettler-Ryan Inc.

NET Log No: 3048

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Date: 08-06-30

Ref: Arco, 1260 Park St./Encinal, Alameda, Job: 7920

		Reporting	AX1-10-10.0 07-26-90 1514	
Parameter	Method	Limit	58829	Units
PETROLEUM HYDROCARBONS VOLATILE (SOIL) DILUTION FACTOR * DATE ANALYZED METHOD GC FID/5030 as Gasoline METHOD 8020		1	 3000 07-27-90  2,700	mg/Kg
Benzene Ethylbenzene Toluene Xylenes		5 5 5 5	36,000 51,000 180,000 320,000	ug/Kg ug/Kg ug/Kg ug/Kg

### KEY TO ABBREVIATIONS and METHOD REFERENCES

: Less than; When appearing in results column indicates analyte not detected at the value following, which supercedes the

listed reporting limit.

mean : Average: sum of measurements divided by number of measurements.

mg/Kg (ppm): Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis

(parts per million).

mg/L : Concentration in units of milligrams of analyte per liter of sample.

mi/L/hr : Milliliters per liter per hour.

MPN/100 mL : Most probable number of bacteria per one hundred milliliters of sample.

N/A : Not applicable.

NA : Not analyzed.

<

ND : Not detected; the analyte concentration is less than applicable listed

reporting limit.

MTU : Nephelametric turbidity units.

RPO : Relative percent difference, 100 [Value 1 - Value 2]/mean value.

SWA : Standard not available.

ug/Kg (ppb): Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis

(parts per billion).

ug/L : Concentration in units of micrograms of analyte per liter of sample.

umbos/an : Micrambos per centimeter.

#### Method References

<u>Methods 601 through 625</u>: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-845, 3rd edition, 1986.

<sup>\*</sup> Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.



NET Pacific, Inc 435 Tesconi Circle Santa Rosa, CA 95401 Tel. (707) 526-7200 Fax. (707) 526-9623

# Requirements for Sample Submittal

Our policy with all clients requires that liquid samples be submitted as <u>three containers per analysis</u> (or combination analyses) per sample. This requirement exists for three reasons:

- The occasional need to re-analyze samples when the initial analysis is not satisfactory (e.g. matrix interferences, instrument failure, etc),
- 2) The need for sufficient sample to perform quality control procedures, including sample spike and duplicate sample analyses.
- 3) The occasional instance when there is a problem sample (e.g., VOA submitted with headspace, sample preserved improperly, sample broken during handling).

To routinely produce high quality data and consistently meet reporting commitments at a competitive price, as NET does, we need your cooperation with these sample submittal requirements. Failure to adhere to these guidelines will, in general, limit NET's liability to the cost of the sample analysis. Please encourage your staff to contact their NET Client Services Representative any time they need advice pertaining to the required number of sample containers and/or types of analyses necessary.

Gettler - R			ENVIRONWEI	NTAL DI	VISION		068	3 cı	nain of Custo
COMPANY/	nco							JOB NO.	7920
JOB LOCATION _	1260	PARK	51.	ENCI	NAL				
CITY_ALAI	MEDA		<u> </u>				PHONE	NO	
AUTHORIZED	SOHN WE	NFAL		DATE _	7/26	190	P.O. NO.		
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/T SAMPL		ANA	LYSI: REQI	JIRED	s.	AMPLE CONDITION LAB ID
121-1-6.0		5016	11:00 7	7/26/90	TPI	1-6A5,	BTEX	<del>-</del>	
DX1-76.0			11:05				. )		
DX1-3-6.0	/	_ )							
051-8-1XD	/_	-	71:24						., ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
DX1-4-6.0			11:3)					-	
AX1-4-12.0	1		11:37					···	
AXI -5-6.0	1		11:45			·····		•	•
AX1-6-6.0	1	-	13:44						,
AX1-7-6.0	/		- 13:44 -		1 :	,		·	
1X1-8-10.0	· /	,	15170	-	-	. '			
(X1-9-10.0	- / .		15:12	1 3 7		April		مین <del>داد در دارد</del> میناد در این	وجدي المراجعة
AXF 10-10,0	/		15:14	<del>\</del> \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	·: V	44 <u>.</u> 44.44	V ::-		
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RELINQUISHED BY:	mille	y 16:21	7/26/90	RECE	IVED BY	PJ	,,, ,	1621:	7/26/40
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JOB LOCATION		<u> </u>	/ = // - // //			<u> </u>
CITY ALAM					PHONE NO.	
AUTHORIZED J	5 N N W	ERFAL	DATE _	7/27/90	P.O. NO	
SAMPLE ID ·	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS RE	EQUIRED	SAMPLE CONDITION LAB ID
DX1-11-10.0		<u> SUL</u>	7/27/90 9:47	TPH-GAS	BTEX	
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ESIGNATED LABOR	ATORY			DHS #:		
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JOB LOCATION		DAICK SI.	/ENCINAL			
CITY ALAM				-/-/a>	_ PHONE NO.	
AUTHORIZED	2 NN	WERFAL	DATE _	7/27/90	P.O. NO	
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS RE	QUIRED	SAMPLE CONDITION LAB ID
AS-ZA		SOIL	7/27/90 10:10			
DS 2B			10:11			
AS-2C	1 ,	. \	10:16			
AS-2D			10314	***************************************		
A5-2 (COMP)				TPH-GAS	BTEX	
<u> </u>	, ,					
As -3A.		SOIL	7/27/90 10:05			
AS-3B	1.		10 106		,	
As-3C	1		10108	State of the state		
AS-3D	7.2.	V	10107		Action 1	
AS-3(comp)		A SAN SAN SAN SAN SAN SAN SAN SAN SAN SA	Million and the second of the	TPN-6AS	BIEX	The second second second section is a second
- NS-3 (COMF)		The second secon	1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
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COMPANY	Ryan Inc OKO	E	N V I R O N M E N T A L DIV	VISION	) 0660 JOB	Chain of Custody No. <u>7920</u>
		OKK ST.	/ ENCINA	۷		
CITY					PHONE NO.	
AUTHORIZED	JOHN WE	EKFAL	DATE _	7/27/90	P.O. NO	
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS R		SAMPLE CONDITION LAB ID
AS-4A		5016	9/7/10 10/19	· · · · · · · · · · · · · · · · · · ·		
DS-48		SOIL	10:20			
AS-4c		SOIL -				
AS-4D	/	SOIL -	—- J 10:34		,	
AS-4 (COMP)	)	PROFESSION AND ADMINISTRATION AN		TPN-GAS	OTEX	
D5-5D		SOIL	7/27/90 10:43			
DS-5B	1	SOIL	10,45		•	
15-5C	. <u></u>	· 501L	10:49		-	
AS-51)		1.6/L	10:50			, ,
AS-5 (COMP)	) (	The second secon		TPN-625	BTEX	
		And the second			11	
					•	
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Gettler -	Ryan inc.		N VIR ON MENTAL DI	VISION	0659	Chain of Custod
COMPANY	ARCO				JOB	NO. 7920
JOB LOCATION	1260	PARK ST	T. / ENCINA	<u></u>		
CITY	LAMERA				PHONE NO.	· · · · · · · · · · · · · · · · · · ·
AUTHORIZED _	JOHN	WERFAL	DATE	7/27/90	P.O. NO	
SAMPLE ID	NO. OF CONTAINER	SAMPLE RS MATRIX	DATE/TIME SAMPLED	ANALYSIS	REQUIRED	SAMPLE CONDITION LAB ID
A5-6A		5014	7/27/90 10:57	-		
DS-6B			10:58			
A5-6C	1					
AS-6D	1	<b>V</b> -	V 11:03			
As-6 Com	p)	,		TPN-6AS	BTEX	`
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# NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc. 435 Tesconi Circle Santa Rosa, GA 95401 Tel (707) 526-7200 Fax: (707) 526-9623

1. 1.

John Werfal Gettler-Ryan Inc. 2150 Winton Ave. Hayward, CA 94545 Date: 08-06-90

NET Client Acct No: 679 NET Pacific Log No: 3103 Received: 08-02-90 0800

Client Reference Information

ARCO, 1260 Park St.,/Encinal, Job: 7920

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack Laboratory Manager

JS:rct
Enclosure(s)

Client Name: Gettler-Ryan Inc.

NET Log No: 3103

Date: 08-06-90

Page: 2

Ref: ARCO, 1260 Park St.,/Encinal, Job: 7920

			AX2-1-6.0' 07-31-90 0921	AX2-1-12.0' 07-31-90 0928	
Parameter	Method	Reporting Limit	59104	59105	Units
PETROLEUM HYDROCARBONS VOLATILE (SOIL) DILUTION FACTOR * DATE ANALYZED METHOD GC FID/5030 as Gasoline METHOD 8020 Benzene Ethylbenzene Toluene Xylenes		1 5 5 5 5	 1 07-31-90  ND  ND ND 7	1 07-31-90  2.0  24 73 48 110	mg/Kg ug/Kg ug/Kg ug/Kg ug/Kg

Client Name: Gettler-Ryan Inc.

NET Log No: 3103

Date: 08-06-90

Page: 3

Ref: ARCO, 1260 Park St.,/Encinal, Job: 7920

			AX2-2-11.0' 07-31-90 0935	AX2-3-6.0' 07-31-90 0943	<del></del>
Parameter	Method	Limit	59106 <sup>a</sup>	59107	Units
PETROLEUM HYDROCARBONS VOLATILE (SOIL) DILUTION FACTOR * DATE ANALYZED METHOD GC FID/5030 as Gasoline METHOD 8020 Benzene Ethylbenzene Toluene Xylenes		1 5 5 5 5	 1 07-31-90  2.0  470 180 5	 1 07-31-90  ND  ND ND ND ND	mg/Kg ug/Kg ug/Kg ug/Kg ug/Kg

 $<sup>^{\</sup>mathrm{a}}$  The dilution factor for Benzene and Ethylbenzene on this sample is 60.

Client No: 679 Client Name: Gettler-Ryan Inc.

NET Log No: 3103

Page: 4

Date: 08-06-90

Ref: ARCO, 1260 Park St.,/Encinal, Job: 7920

	D	AX2-4-6.0' 07-31-90 0945	AX2-5-6.0' 07-31-90 0949	
Parameter	Reporting Limit	59108	59109	Units
PETROLEUM HYDROCARBONS				
VOLATILE (SOIL) DILUTION FACTOR *		1	1	
DATE ANALYZED METHOD GC FID/5030		07-31-90 	07-31-90	
as Gasoline METHOD 8020	1	ND	ND	mg/Kg
Benzene	5	ND	ND	ug/Kg
Ethylbenzene Toluene	5 5 5	ND ND	ND ND	ug/Kg ug/Kg
Xylenes	5	ND	ND	ug/Kg

Client Name: Gettler-Ryan Inc. NET Log No: 3103

Date: 08-06-90

Page: 5

Ref: ARCO, 1260 Park St.,/Encinal, Job: 7920

		******			
		B	AX2-6-11' 07-31-90 0956	AX2-7-1 ' 07-31-90 1000	
Parameter		Reporting Limit	59110	59111	Units
PETROLEUM HYDROCARBONS					
VOLATILE (SOIL) DILUTION FACTOR *	-		1	 1	
DATE ANALYZED			07-31 <b>-</b> 90	07-31-90	
METHOD GC FID/5030					
as Gasoline		1 ·	ND	ND	mg/Kg
METHOD 8020					
Benzene		5	13	ND	ug/Kg
Ethylbenzene		5	11	ND	ug/Kg
Toluene		5 5 5 5	ND	ND	ug/Kg
Xylenes		5	ND	ND	ug/Kg

Date: 08-06-90

Client No: 679 Client Name: Gettler-Ryan Inc. NET Log No: 31C3

Page: 6

Ref: ARCO, 1260 Park St.,/Encinal, Job: 7920

		 Reporting	AX2-5-11' 07-31-90 1005	AX2-3-11.5' 07-31-90 1013	
Parameter	Method	Limit	59112	59113	Units
PETROLEUM HYDROCARBONS VOLATILE (SOIL) DILUTION FACTOR * DATE ANALYZED			 1 07-31-90	  1 07-31-90	
METHOD GC FID/5030 as Gasoline METHOD 8020		1	ND	ND	mg/Kg
Benzene Ethylbenzene Toluene Xylenes		5 5 5 5	ND ND ND ND	ND ND ND ND	ug/Kg ug/Kg ug/Kg ug/Kg

Client No: 679 Client Name: Gettler-Ryan Inc.

NET Log No: 3103

Date: 08-06-90

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Ref: ARCO, 1260 Park St.,/Encinal, Job: 7920

		Dan autón a	AX2-4-11' 07-31-90 1017	
Parameter	Method	Reporting Limit	59114	Units
PETROLEUM HYDROCARBONS VOLATILE (SOIL)				
DILUTION FACTOR * DATE ANALYZED METHOD GC FID/5030			1 07-31-90	
as Gasoline METHOD 8020		1	ND 	mg/Kg
Benzene Ethylbenzene Toluene Xylenes		5 5 5	ND ND ND ND	ug/Kg ug/Kg ug/Kg ug/Kg

# KFY TO ABBREVIATIONS and METHOD REFERENCES

: Less than; When appearing in results column indicates analyte

not detected at the value following, which supercedes the listed reporting limit.

mean : Average: sum of measurements divided by number of measurements.

mg/Kg (ppm): Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis

(parts per million).

mg/L : Concentration in units of milligrams of analyte per liter of sample.

mL/L/hr : Milliliters per liter per hour.

MPN/100 mL : Most probable number of bacteria per one hundred milliliters of sample.

N/A : Not applicable.

NA : Not analyzed.

(

ND : Not detected; the analyte concentration is less than applicable listed

reporting limit.

NTU: Neohelametric turbidity units.

RPD : Relative percent difference. 100 [Value 1 - Value 2]/mean value.

SNA : Standard not available.

ug/Kg (ppb): Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis

(parts per billion).

ug/L : Concentration in units of micrograms of analyte per liter of sample.

unhos/an : Micranhos per centimeter.

#### Method References

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-845, 3rd edition, 1986.

<sup>\*</sup> Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.

Gettler - Ry		ENI	VIRONMENTAL DI			Chain of Custody
JOB LOCATION	1260 P.	ORIC ST	ENCI	NAL		(-3103)
CITY	MEDA			1		
AUTHORIZED	2011N	WERFAL	DATE	7/31/90	P.O. NO	
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS RE	QUIRED	SAMPLE CONDITION LAB ID
· 1XZ-1-6.0		SUIL	7/31/90 9.21	TPH-6A	5, BTEX	
AXZ-1-12.0			9:28		na <sub>ur</sub> tan	
DXZ-Z-11.0			9.35			
AXZ-3-6.0			9:43			
AXZ-4-6.0			7:45		and the same of th	
AXZ-5-6.0			9:49			
AXZ-6-11			9:56			
1XZ-7-11			10:00			
AXZ-5-11			10:02			
1x2-3-11.5			10:13		<del> </del>	
DXZ-4-11		<u> </u>	V 10:17			
	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·			<del></del>	-
RELINQUISHED BY:	1. Mu	lly 7/31/	90.16.35 J	EIVED BY:	ol 7/	31/40 g CP
RELINQUISHED BY:			RE¢	EIVED BY LAB:		
DESIGNATED LABO	RATORY:	•		DHS #:		
REMARKS:					,	
DATE COMPLETED			EOR	FMAN		



# CERTIFICATE OF ANALYS!S

Date: 08/21/90

Gettler-Ryan 2150 West Winton Hayward, CA 94545 John Werfal

Work Order: T0-08-195

P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: GR7920, Arco #2112

Date Received: 08/17/90 Number of Samples: 4 Sample Type: solid

# TABLE OF CONTENTS FOR ANALYTICAL RESULTS

PAGES	<u>LABORATORY #</u>	SAMPLE IDENTIFICATION
2	T0-08-195-01	AT-1
3	T0-08-195-02	AT-2
4	T0-08-195-03	AT-3
5	T0-08-195-04	AT-4

Reviewed and Approved:

Suzame Veaudry Project Manager

> American Council of Independent Laboratories International Association of Environmental Testing Laboratories American Association for Laboratory Accreditation

Page: 2

IT ANALYTICAL SERVICES SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/21/90

Client Work ID: GR7920, Arco #2112

Work Order: T0-08-195

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-1

SAMPLE DATE: 08/17/90 LAB SAMPLE ID: T008195-01 SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

KESULIS IN MI.	rridiame ber	Kilogram:		
			EXTRACTION	ANALYSIS
		METHOD	DATE	DATE
BTEX		8020	08/17/90	08/20/90
Low Boiling Hydrocarbons Mod.80			08/17/90	08/20/90
			DETECTION	
PARAMETER		LIMIT	DETECTED	
Low Boiling Hy	ydrocarbons			
calculated as Gasoline		80,	2,000.	
BTEX				
Benzene			0.8	None
Toluene			0.8	23.
Ethylbenzene			0.8	28.
Xylenes (total)			0.8	210.

Page: 3

IT ANALYTICAL SERVICES

Wo k Order: T0-08-195

SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/21/90

Client Work ID: GR7920, Arco #2112

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-2

SAMPLE DATE: 08/17/90 LAB SAMPLE ID: T008195-02 SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

	<del></del>	EXTRACTION	ANALYSIS
	METHOD	DATE	DATE
BTEX	8020	08/17/90	08/20/90
Low Boiling Hydrocarbons	Mod.8015	08/17/90	08/20/90
		DETECTION	
PARAMETER		LIMIT	DETECTED
Low Boiling Hydrocarbons			
calculated as Gasoline		1.0	6.7
BTEX			
Benzene		0.005	0.023
Toluene		0.005	0.088
Ethylbenzene	-	0.005	0.11
Xylenes (total)		0.005	0.84

SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/21/90

Client Work ID: GR7920, Arco #2112

Work Order: T0-08-195

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-3

SAMPLE DATE: 08/17/90
LAB SAMPLE ID: T008195-03
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

,000	onen ve urrradreme her	varoarem.		
			EXTRACTION	ANALYSIS
		METHOD	DATE	DATE
BTE	X	8020	08/17/90	08/20/90
Low	Boiling Hydrocarbons	Mod.8015	08/17/90	08/20/90
			DETECTION	
PARAMETER		LIMIT	DETECTED	
Low	Boiling Hydrocarbons			
	calculated as Gasolin	e	1.	None
BTE	(			
	Benzene		0.005	None
	Toluene		0.005	None
	Ethylbenzene		0.005	None
	Xylenes (total)		0.005	None

SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/21/90

Client Work ID: GR7920, Arco #2112

Work Order: T0-08-195

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-4

SAMPLE DATE: 08/17/90
LAB SAMPLE ID: T008195-04
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

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5.8

Date: 08/2:/90

Client Work ID: GR7920, Arco #2112

IT ANALYTICAL SERVICES SAN JOSE, CA

Work Order: T0-08-195

TEST CODE TPHVB TEST NAME TPH Gas, BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Gettler -	Ryan Inc ARCC	_ ~ ~ ~ ~ ~ ~ ~ ~ _ ~ _ ~ _ ~ _ ~ _ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ ~ _ ~	0-08-15	75 TY	JOB N	Chain of Custod
JOB LOCATION	1.260	Park S	5+	na managarang). Ada a — — h. Lib byrgach, Amilitar phi, gam 66 nhar	THE SAME SHOULD REVOLUTE AND A	
CITY	Alame	da				
AUTHORIZED_	John 4	Jersan.	DATE '	8-17-10	P.O. NO	
SAMPLE ID	NO. OF CONTAINERS	SAMF, E MATRIX	DATE/TIME SAMPLED	ANALYSIS REO	UIRED	SAMPLE CONDITION LAB ID
AT-1		50 j	8-17-90	Gas, BT	EX	Good (6)
x4T-)		/_			(	
34T-3			- 32-4-5-4-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7			
AT-4						J
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RELINOUSHED	BY:	2:5	إسر الراق	EIVED BY:		
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HELITEORIES	<i>סיי</i>		1,20			
RELINQUISHED	BY:	•	RECI	EIVED BY LAB:	- / /	
·					8/17/90	1455
	ABORATORY:		050	DHS #:	137	
REMARKS:	48 hc	our TA	<u> </u>			
	·			/		
DATE COMPLETED	8-17-90	7	FORE	EMAN MONTH	anow	ak
				V		



## CERTIFICATE OF ANALYSIS

Date: 08/17/90

Gettler-Ryan 2150 West Winton Hayward, CA 94545 John Werfal

Work Order: T0-08-155

P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: GR7920, Arco Date Received: 08715/90 Number of Samples: 2 Sample Type: solid

#### TABLE OF CONTENTS FOR ANALYTICAL RESULTS

PAGES	LABORATORY #	SAMPLE IDENTIFICATION
2	T0-08-155-01	AT-7-2'
3	T0-08-155-02	AT-8-2.5'

Reviewed and Approved:

Suzamne Veaudry Project Manager

SAN JOSE, CA

Work Order: T0-08-155

Company: Gettler-Kyan

Date: 08/17/90

Client Work ID: GR7920, Arco

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-7-2' SAMPLE DATE: 08/08/90 LAB SAMPLE ID: T008155-01 SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

	· · · · · · · · · · · · · · · · · · ·			
			EXTRACTION	ANALYSIS
		METHOD	DATE	DATE
BTE	х	8020	08/15/90	08/16/90
Low	Boiling Hydrocarbons	Mod.8015	08/15/90	08/16/90
		<del>"</del>	DETECTION	
PAR	AMETER		LIMIT	DETECTED
Low	Boiling Hydrocarbons		<u></u>	
	calculated as Gasolin	e	0.3	2.0
BTE	x			
•	Benzene		0.003	0.008
	Toluene		0.003	0.017
	Ethylbenzene		0.003	0.008
	Xylenes (total)		0.003	0.061

SAN JOSE, CA

Work Order: T0-08-155

Company: Gettler-Ryan

Date: 08/17/90

Client Work .D: GR7920, Arco

TEST NAME: Petroleum Bydrocarbons

SAMPLE ID: AT-8-2.5'
SAMPLE DATE: 08/08/90
LAB SAMPLE ID: T008155-02
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

		EXTRACTION	ANALYSIS
	METHOD	DATE	DATE
BTEX	8020	08/15/90	08/16/90
Low Boiling Hydrocarbons	Mod.8015	08/15/90	08/16/90
		DETECTION	
PARAMETER		LIMIT	DETECTED
Low Boiling Hydrocarbons		***	
calculated as Gasolin	ne	0.4	14.
BTEX			
Benzene		. 0.004	0.11
Toluene		0.004	0.15
Ethylbenzene		0.004	0.28
		0.004	0.20

IT ANALYTICAL SERVICES SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/17/90

Client Work ID: GR7920, Arco

Work Order: T0-08-155

#### TEST CODE TPHVB TEST NAME TPH Gas, BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purce and trap technique. Final detection is by gas chromatograhy using a flame inization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Gettler - F	yan Inc		10-08-	154		0626		of Custody
JOB LOCATION			T. /	ENC	INAL			
CITY AL.A			7			PHONT. NC.		
AUTHORIZED		LFA L		DATE _		P.O. NO		
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TII SAMPLE		ANALYSIS	REQUIRED		E CONDITION AB ID
AX1-3-15		5016	8/9/90	<u>8:25</u>	TPH-G	KS, BTEX		201
AX1-2-10'			8/10/90	12:30				
AX1-1-10				12:32				
AX1-7-10'				14:50				-
AX1-6-10	1			15:45				
AX 1-10-10'	1			17:30				
AX1-9-10'	1			17:35				
DY1-8-10'		<b>—</b>	$\downarrow$	17:40				,
KT-7-2'		SOIL	8/8/90 /	<u> </u>				
AT-7-2' AT-8-2.5			· 1	10:59	V	/		
					,			
		,						
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RELINQUISHED BY:					YED BYLAR	· ·		
) <u> </u>					VI, la l	1/An 8-1	5A0 .	1155
DESIGNATED LABO	RATORY:	ZT/SCY	<u>.                                    </u>	,	DHS #: ,	/ 37		<del></del>
REMARKS:			··· , , , ,					
- AXI		5-lay	TAT					
A t	49	3-72hr 7	AT					
DATE COMPLETED				SOREM				-

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## SUPERIOR ANALYTICAL LABORATORIES, INC.

825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512

DOHS #319 DOHS #220

## CERTIFICATE OF ANALYSIS

LABORATORY NO.: 81400 CLIENT: Gettler Eyan Co. DATE RECEIVED: 08/16/90 DATE REPORTED: 08/22/90

CLIENT JOB NO.: 7920

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS by Modified EPA SW-846 Method 5030 and 8015

LAB	Sample Identification	Concentration (mg/Kg) Gasoline Range
#	Sample Identification	
1	AT-10-2.5	ND<1
2	AT-11-2.5	ND<1
3	AT-12-2.5	ND<1
4	AT-13-2.5	ND<1
5	AT-14-2.5	250

mg/kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 1 mg/Kg

Date Sampled: 08/15/90 Date Analyzed: 08/17/90

QAQC Summary:

Daily Standard run at 2mg/L: RPD Gasoline = 14% MS/MSD Average Recovery = 89%: Duplicate RPD = 0%

Richard Srna, Ph.D.

Dorchu Since for
Laboratory Manager

## SUPERIOR ANALYTICAL LABORATORIES, INC.

825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512

DOHS #319 DOHS #220

#### CERTIFICATE OF ANALYSIS

LABORATORY NO.: 81400 CLIENT: Gettler Ryan Co. CLIENT JOB NO.: 7920 DATE RECEIVED: 08/16/90 DATE REPORTED: 08/22/90

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES by EPA SW-846 Methods 5030 and 8020

			Concentr	ation(ug/	Kg)
LAB #	Sample Identification	Benzene	Toluene	Ethyl Benzene	Xylenes
			-		
1	AT-10-2.5	ND<3	ND<3	ND<3	ND<3
2	AT-11-2.5	ND<3	ND<3	ND<3	ND<3
3	AT-12-2.5	ND<3	ND<3	ND<3	ND<3
4	AT-13-2.5	ND<3	ND<3	ND<3	ND<3
5	AT-14-2.5	19	32	110	3000

ug/Kg - parts per billion (ppb)

Method Detection Limit in Soil: 3 ug/Kg

Date Sampled: 08/15/90 Date Analyzed: 08/17/90

QAQC Summary:

Daily Standard run at 20ug/L: RPD = <15%

MS/MSD Average Recovery = 104 %: Duplicate RPD = <7%

Richard Srna, Ph.D.

Laboratory Manager

	yan Inc		VVIRONMENTAL DI	VISION		Chain of Custody
COMPANY		0.4			JOB	NO. 7970
JOB LOCATION _	1260 p	DRK S	T. / ENC	INAL		
CITY_ALAN	1EDA					
AUTHORIZED	TOHN WE	RFAL	DATE _	8/15/90	_ P.O. NO	
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REC	QUIRED	SAMPLE COND'TION LAB ID
AT-10-2.5		SOIL	8/15/90 8:59	TPH-GAS	BTEX	
AT-11-2.5			9:13			
DT-12-2.5			9:17			
AT-13-2.5			9:24			•
NT-14-2.5	1	$\bigvee$	9:27	V		
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Men /:	Mully	8/12	<u> 5/90                                   </u>	and from	egt Expa	555-57 8/15/5
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RELINQUISHED BY		<u> </u>		EIVED BY LAB:		0/10/10/10/10
-		-		ustr Kl	yres	8/16/90 1900
DESIGNATED LABO	)PATORY:		7	DHS #:	•	
	- DAY	TAT.		UПО #;		
REMARKS:		101				· · · · · · · · · · · · · · · · · · ·
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DATE COMPLETED .	•		=0.0 <b>=</b>			

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## CERTIFICATE OF ANALYSIS

Date: 08/27/90

Gettler-Ryan 2150 West Winton Hayward, CA 94545 John Werfal

Work Order: T0-08-262

P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: GR7920, ARCO

Date Received: 08/24/90 Number of Samples: 2

Sample Type: solid

#### TABLE OF CONTENTS FOR ANALYTICAL RESULTS

PAGES	LABORATORY #	SAMPLE IDENTIFICATION
2	T0-08-262-01	AT-30-5'
3	T0-08-262-02	AT-14-7'

Reviewed and Approved:

Suzanne Veaudry Project Manager

Date: 08/27/90

Client Work ID: GR7920, ARCO

IT ANALYTICAL SERVICES SAN JOSE, CA

Work Order: T0-08-262

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-30-5'
SAMPLE DATE: 08/23/90
LAB SAMPLE ID: T008262-01
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

		<b>-</b>		
			EXTRACTION	ANALYSIS
		_METHOD	DATE	DATE
BTE	X	8020	08/24/90	08/24/90
Low	Boiling Hydrocarbons	Mod.8015	08/24/90	08/24/90
			DETECTION	
PAR	AMETER		LIMIT	DETECTED
Low	Boiling Hydrocarbons			
	calculated as Gasolin	е	1.0	None
BTE	x			
	Benzene		0.005	None
	Toluene		0.005	None
	Ethylbenzene		0.005	None
	Xylenes (total)		0.005	None

Date: 08/27/90

Client Work ID: GR7920, ARCO

IT ANALYTICAL SERVICES SAN JOSE, CA

Work Order: T0-08-262

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-14-7' SAMPLE DATE: 08/23/90 LAB SAMPLE ID: T008262-02 SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

RESULTS in Milligrams pe	r Kilogram:		
	- <del></del>	EXTRACTION	ANALYSIS
	<u> METHOD</u>	DATE	DATE
BTEX	8020	08/24/90	08/24/90
Low Boiling Hydrocarbons	Mod.8015	08/24/90	08/24/90
D) D) VDMDD		DETECTION	
PARAMETER		LIMIT	DETECTED
Low Boiling Hydrocarbons			
now politing mydrocarpons			
calculated as Gasoli	ne	1.0	1.9
	ne	1.0	1.9
calculated as Gasoli	ne	0.005	
calculated as Gasoli:	ne		0.025 0.034
Calculated as Gasoli: BTEX Benzene	ne	0.005	0.025

Date: 08/27/90

Client Work ID: GR7920, ARCO

IT ANALYTICAL SERVICES SAN JOSE, CA

Work Order: T0-08-262

#### TEST CODE TPHVB TEST NAME TPH Gas, BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Results for organic chemical parameters in soils have been corrected for moisture content and are reported on a dry soil basis unless noted otherwise. Results for inorganic chemical parameters have not been corrected for moisture content.

Geiller - R			10-08-20 NVIRONNENTAL DI	DLO		Chair of Cuc	it: dy
COMPANY					JOB	NO 1970	** ———————————————————————————————————
JOB LOCATION _		DRK	ST. /ENC	INAL			
CITY				-/ /	PHONE NO		
AUTHORIZED	TONN L	JERFAL	DATE _	8/20/90	P.O. NO		
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS RE	QUIRED	SAMPLE CONDITI	ION
AT-17-8.5	/	<u> 50/L</u>	5/20/90 11:40	17N -605	GEX.	<u>Cool</u>	
ET-10-9.5'	/		8/20/90 12.00				
47-9-9,5			1/20/90 12:10				<del></del>
AT-24 - 5'			8/22/90 15:08				
AT-25 - 5'			8/22/90 15:19				····
AT-26-5'			8/22/90 1545		<del></del> .		···
AT-27-5'			8/22/90 16:12				.=
AT-28-5'			8/23/90 10:14				-
AT-29-5'			8/23/90 10:30				
DT-31-5'			8/23/90 14:32				······································
AT30-51			8/23/90 14:28				
KAT14-71			8/23/90 15:32	<u>.                                    </u>	······································	<u> </u>	·
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BELINQUISHED BY	:		RECE	eived by Labi	Delayt	70 9:05	
DESIGNATED LABO	DRATORY:/_	SAN =	TUSE	DHS #:			
REMARKS: ¥ Z				APLES	AT-30-	5' pN/	)
			UR TAT			•	
OF.	SAMPLES		DEL J	0NN	WEIRFO	er W/	
	XL 12						
DATE COMPLETED			FORE	MAN			



### CERTIFIC ATE OF ANALYSIS

Date: 08/30/90

Gettler-Ryan 2150 West Winton Hayward, CA 94545 John Werfal

Work Order: T0-08-261

P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: -GR7920, ARCO

Date Received: 08/24/90 Number of Samples: 10 Sample Type: solid

#### TABLE OF CONTENTS FOR ANALYTICAL RESULTS

PAGES	LABORATORY #	SAMPLE IDENTIFICATION
2	T0-08-261-01	AT-17-8.5'
3	TO-08-261-02	AT-10-9.5'
4	T0-08-261-03	AT-9-9.5'
5	T0-08-261-04	AT-24-5'
6	TO-08-261-05	AT-25-5'
7	TO-08-261-06	AT-26-5'
8	TO-08-261-07	AT-27-5'
9	T0-08-261-08	AT-28-5'
10	T0-08-261-09	AT-29-5'
11	T0-08-261-10	AT-31-5'

Reviewed and Approved:

Suzanze Veaudry Project Manager

SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/30/90

Client Work ID: GR7920, ARCO

Work Order: T0-08-261

TEST NAME: Petrol um Hydrocarbons

SAMPLE ID: AT-17-8.5'
SAMPLE DATE: 08/20/90
LAB SAMPLE ID: T008261-01
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

r Kilogram:			
	EXTRACTION	ANALYSIS	
- METHOD	DATE	DATE	
8020	08/24/90	08/28/90	
Mod.8015	08/24/90	08/28/90	
	DETECTION LIMIT	DETECTED	
ne	200.	5800.	
	2.	51.	
	2.	330.	
	2.	100.	
	2.	560.	
	8020 Mod.8015	EXTRACTION  METHOD DATE  8020 08/24/90  Mod.8015 08/24/90  DETECTION LIMIT  200.	

Work Order: T0-08-261

SAN JOSE, CA

Date: 08/30/90 Client Work ID: GR7920, ARCO Work Order

TEST NAME: Petroleum Bydrocarbo s

SAMPLE ID: AT-10-9.5'
SAMPLE DATE: 08/20/90
LAB SAMPLE ID: T008261-02
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

Company: Gettler-Ryan

1/11/3	opro to writigians ber	. Kilogram.		
			EXTRACTION	ANALYSIS
		METHOD	DATE	DATE
BTE	х	8020	08/24/90	08/28/90
Low	Boiling Hydrocarbons	Mod.8015	08/24/90	08/28/90
			DETECTION	
PARAMETER		LIMIT	DETECTED	
Low	Boiling Hydrocarbons			
	calculated as Gasolin	e	1.	None
BTE:	x <sup>·</sup>			
	Benzene		0.005	None
	Toluene		0.005	None
	Ethylbenzene		0.005	0.008
	Xylenes (total)		0.005	0.014

SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/30/90

Client Work IL: GR7920, ARCO

Work Order: T0-08-261

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-9-9.5' SAMPLE DATE: 08/20/90 LAB SAMPLE ID: T008261-03 SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

mercare an interest for	· ····································		
		EXTRACTION	ANALYSIS
	-METHOD	DATE	DATE
BTEX	8020	08/24/90	08/29/90
Low Boiling Hydrocarbons	Mod.8015	08/24/90	08/29/90
		DETECTION	
PARAMETER	LIMIT	DETECTED	
Low Boiling Hydrocarbons	······································		
calculated as Gasolin	ıe	1.	None
BTEX			
Benzene		0.01	None
Toluene		0.01	None
Ethylbenzene		0.01	None
Xylenes (total)		0.01	None

Page: 5

IT ANALYTICAL SERVICES

SAN JOSE, CA

Work Order: T0-08-261

Company: Gettler-Ryan

Date: 08/30/90

Client Work ID: GR7920, ARCO

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-24-5'
SAMPLE DATE: 08/22/90
LAB SAMPLE ID: T008261-04
SAMPLE MATRIX: Bolid
RECEIPT CONDITION: Cool

RES	oris in writingrams ber	KIIOGIAM:		
			EXTRACTION	ANALYSIS
		METHOD	DATE	DATE
BTE.	x	8020	08/24/90	08/29/90
Low	Boiling Hydrocarbons	Mod.8015	08/24/90	08/29/90
•			DETECTION	
PAR	AMETER	•	LIMIT	DETECTED
Low	Boiling Hydrocarbons		**************************************	
	calculated as Gasolin	e	1.	None
BTE	х			
	Benzene		0.005	None
	Toluene		0.005	None
	Ethylbenzene		0.005	None
	Xylenes (total)		0.005	None

SAN JOSE, CA

Work Order: T0-08-261

Company: Gettler-Ryan

Date: 08/30/90

Client Work ID: GR7920, ARC.

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-25-5' SAMPLE DATE: 08/22/90 LAB SAMPLE ID: T008261-05 SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

, 650	ontotalama bor	MILLOGIAM.		
			EXTRACTION	ANALYSIS
		<u> METHOD</u>	DATE	DATE
BTE	X	8020	08/24/90	08/28/90
Low	Boiling Hydrocarbons	Mod.8015	08/24/90	08/28/90
			DETECTION	<u> </u>
PARAMETER		LIMIT	DETECTED	
Low	Boiling Hydrocarbons			
	calculated as Gasolin	е	1.	None
BTE	X			
	Benzene		0.008	None
	Toluene		0.008	None
	Ethylbenzene		0.008	None
	Xylenes (total)		0.008	None

SAN JOSE, CA

Work Order: T0-08-261

Company: Gettler-Ryan

Date: 08/30/90

Client Work ID: GR7920, ARCO

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-26-5' SAMPLE DATE: 08/22/90 LAB SAMPLE ID: T008261-06 SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

			EXTRACTION	ANALYSIS
		-method	DATE	DATE
BTE	X	8020	08/24/90	08/28/90
Low	Boiling Hydrocarbons	Mod.8015	08/24/90	08/28/90
		•		
	· · · · · · · · · · · · · · · · · · ·		DETECTION	
PARAMETER			LIMIT	DETECTED
Low	Boiling Hydrocarbons			-
	calculated as Gasolin	e	100.	890.
BTE	x			
	Benzene		1.	None
	Toluene		1.	1.6
	Ethylbenzene		1.	2.5
	Xylenes (total)		1.	38.

SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/30/90

Client Work ID: GR7920, ARCO

Work Order: T0-08-261

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-27-5'
SAMPLE DATE: 08/22/90
LAB SAMPLE ID: T008261-07
SAMPLE MATRIX: Bolid
RECEIPT CONDITION: Cool

		_		
			EXTRACTION	ANALYSIS
		-METHOD	DATE	DATE
BTE	х	8020	08/24/90	08/28/90
Low	Boiling Hydrocarbons	Mod.8015	08/24/90	08/28/90
			DETECTION	
PAR	AMETER		LIMIT	DETECTED
Low	Boiling Hydrocarbons			
	calculated as Gasolin	е	1.	None
BTE	X			
	Benzene		0.005	None
	Toluene		0.005	None
	Ethylbenzene		0.005	None
	Xylenes (total)		0.005	0.006

IT ANALYTICAL SERVICES SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/30/90

Client Work ID: GR7920, ARCO

Work Order: T0-08-261

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-28-5'
SAMPLE DATE: 08/23/90
LAB SAMPLE ID: T008261-08
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

KEROTIR IN WITTIG	trame bet virohram:		
		EXTRACTION	ANALYSIS
	-METHOD	DATE	DATE
BTEX	8020	08/24/90	08/28/90
Low Boiling Hydro	ocarbons Mod.8015	08/24/90	08/28/90
		DETECTION	
PARAMETER		LIMIT	DETECTED
Low Boiling Hydro	ocarbons		
calculated as	Gasoline	200.	4600.
BTEX			
Benzene		2.	None
Toluene		2.	46.
Ethylbenzene		2.	56.
Xylenes (tota	1)	2.	460.

SAN JUSE, CA

Work Order: TC-08-261

Company: Gettler-Ryan

Date: 08/30/90

Client Work ID: GR7920, ARCO

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-29-5'
SAMPLE DATE: 0./23/90
LAB SAMPLE ID: T008261-09
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams p	er Kilogram:		
		EXTRACTION	ANALYSIS
	_METHOD	DATE	DATE
BTEX	8020	08/24/90	08/29/90
Low Boiling Hydrocarbon	s Mod.8015	08/24/90	08/29/90
		DETECTION	
PARAMETER		LIMIT	DETECTED
Low Boiling Hydrocarbon	s		
calculated as Gasol	ine	1.	None
BTEX			
Benzene		0.005	None
Toluene		0.005	None
Ethylbenzene		0.005	None
Xylenes (total)		0.005	None

SAN JOSE, CA

Work Order: T0-08-261

Company: Gettler-Ryan

Date: 08/30/90

Client Work ID: GR7920, ARCO

TET ' NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-31-5'
SAMPLE DATE: 08/23/90
LAB SAMPLE ID: T008261-10
SAMPLE MATRIX: Bolid
RECEIPT CONDITION: Cool

onin in warrantigues ber	MIIOGIAM.		
		EXTRACTION	ANALYSIS
	-METHOD	DATE	DATE
x	8020	08/24/90	08/29/90
Boiling Hydrocarbons	Mod.8015	08/24/90	08/29/90
		DETECTION	
PARAMETER		LIMIT	DETECTED
Boiling Hydrocarbons			
calculated as Gasolin	е	1.	None
χ.			
Benzene		0.005	None
Toluene		0.005	None
Ethylbenzene		0.005	None
Xylenes (total)		0.005	0.007
	Boiling Hydrocarbons  AMETER  Boiling Hydrocarbons calculated as Gasolin  Benzene Toluene Ethylbenzene	METHOD  8020  Boiling Hydrocarbons Mod.8015  AMETER  Boiling Hydrocarbons calculated as Gasoline  8  Benzene Toluene Ethylbenzene	METHOD DATE  8020 08/24/90  Boiling Hydrocarbons Mod.8015 08/24/90  AMETER DETECTION LIMIT  Boiling Hydrocarbons calculated as Gasoline 1.  8 Benzene 0.005 Toluene 0.005 Ethylbenzene 0.005

IT ANALYTICAL SERVICES SAN JOSE, CA

Work Order: T0-08-261

Company: Gettler-Ryan

Date: 08/30/90

Client Work ID: GR7920, ARCO

TEST CODE TPHVB TEST NAME TPH Gas, BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ioni: ation detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Results for organic chemical parameters in soils have been corrected for moisture content and are reported on a dry soil basis unless noted otherwise.

Gettler - R	van Inc		10-08-20 10-08-2		0699	Chain of Custo
-	-		N V I R O N M E N Y A L D I	V + S + C N	-	3 NO -7970
COMPANY	1260	PARK	st. /enc	CINAL		
			<u> </u>		PHONENO	
CITY			D' ~E		PHCNE NO.	
AUTHORIZED	$O \wedge N$	WERFAL	D,_E		P.O. NO	
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS F	REOUIRED	SAMPLE CONDITION LAB ID
AT-17-8.5			5/20/90 11:40	17N-GO	5 GTEX	_000
4T-10-9.5'			i/20/90 12.00			
(7-9-9,5			8/20/90 12:10			
07-24 - 51			- 8/22/90 15:08			
07-25 - 5'			5/22/90 15:19			
DT-26- 5'			8/22/90 1545			
07-27-5			8/22/90 16:12			
AT-28-5'	i		8/23/90 10:14			
AT-29-5'	1		8/23/90 10:30			
DT-31 -5'			8/23/90 14:32			
OT 30-5'			8/23/90 14:28	1		
OT 14 - 7/	1		8/23/90 15:3:		<del></del>	<b>—</b>
<u> </u>			<u> </u>		7	***************************************
RELINQUISHED BY	200	10	REC	EIVED BY:		
. Jahred		lloux	· A	hndis	wanys	<u> </u>
RELINQUISHED BY		18-24		EIVED.BY:	• 0	
PELINOUISHED BY	werself	o. 4.0		EIVED BY, LAB!		
,				bontha	2/24/	9:05
DESIGNATED LAB	DRATORY: /	T SON =	TOSE	/ DHS #:	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	•
REMARKS: 4 Z			FOR SU	MPLES	AT-30	-5' pNO
		72 HO	-			MAINDER
OF		<			WEIRF	,
		- :	<u>, </u>			
VEKR	22	RESULT-	5 254	1,0		



### CERTIFICATE OF ANALYSIS

Date: 08/28/90

Gettler-Ryan 2150 West Winton Hayward, CA 94545 John Werfal

Work Order: T0-08-276

P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: -GR7920, Arco Date Received: 08/24/90 Number of Samples: 2

Sample Type: solid

#### TABLE OF CONTENTS FOR ANALYTICAL RESULTS

PAGES	LABORATORY #	SAMPLE IDENTIFICATION
2	TO-08-276-01	AT-32-5'
3	T0-08-276-02	AT-33-5'

Reviewed and Approved:

Suzanne Veaudry Project Manager

SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/28/90

Client Work ID: GR7520, Arco

Work Order: T0-08-276

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-32-5'
SAMPLE DATE: 08/24/90
LAB SAMPLE ID: T008276-01
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

	<u>x</u>			
			EXTRACTION	ANALYSIS
		-METHOD	DATE	DATE
BTE	х	8020	08/27/90	08/28/90
Low Boiling Hydrocarbo		Mod.8015	08/27/90	08/28/90
			DETECTION	
PAR	PARAMETER		LIMIT	DETECTED
Low	Boiling Hydrocarbons	<del></del>		
	calculated as Gasolin	е	1.	None
BTE	X.			
	Benzene		0.005	None
	Toluene		0.005	None
	Ethylbenzene		0,005	None
	<pre>Xylenes (total)</pre>		0.005	None

SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/28/90

Client Work ID: GR7520, Arco

Work Order: T0-08-276

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AT-33-5'
SAMPLE DATE: 08/24/90
LAB SAMPLE ID: T008276-02
SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RES	ULTS in Milligrams per	K <del>ilo</del> gram:		
			EXTRACTION	ANALYSIS
		METHOD	DATE	DATE
BTE	x	8020	08/27/90	08/28/90
Low	Boiling Hydrocarbons	Mod.8015	08/27/90	08/28/90
			DETECTION	
PARAMETER		LIMIT	DETECTED	
Low	Boiling Hydrocarbons			
	calculated as Gasolin	е	1.	None
BTE	x			
	Benzene		0.005	None
			0.005	0.008
	Toluene		0.005	0.008
	Toluene Ethylbenzene		0.005	None

IT ANAL'. FICAL SERVICES SAN JOSE, CA

Company: Gettler-Ryan

Date: 08/28/90

Client Work ID: GR7920, Arco

Work Order: T0-08-27

#### TEST CODE TPHVB TEST NAME TPH Gas, BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Results for organic chemical parameters in soils have been corrected for moisture content and are reported on a dry soil basis unless noted otherwise. Results for inorganic chemical parameters have not been corrected for moisture content.

Gettler - R	san Inc CCO	1	TC-OB-	IVISICA -		Chain of Custod
)	1260	PARK	ST /E	NCINSC		
CITY_ALAM					PHONE NO	)
AUTHORIZED		ERFAL	DATE			
			<del></del>	6./1	F.O. NO	
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLE(	ANALYSIS F	700.1.1.	SAMPLE CONDITION LAB ID
AT-32-5'		<u> 501L</u>	8/24/90 11:42 V 12:02		15, STEX	Co/16)
AT-33-5'			12:02			
			<del></del>			
						-
<b>.</b>		_			****	
,						
		,				
-						
)						
					•	
RELINQUISHED BY	·	41	REC	EIVED #7:		
Therest	(. Mu	llow		fflel	M 8-	24-90 15:30
RELINQUISHED/BY		3-24-90		EIVED BY:		
RELINQUISHED BY:		32470		EIVED BY LAB:		
)				5-15	8/2	14/90 1645
DESIGNATED LABO	 DATODY.	マナド	icy .	DHC #·	/3	······································
REMARKS:	8 1/n	7717		Uno#	TOUN	WERFAL
- WITH	•			<i>y y</i>	<u> </u>	
<u> </u>	VENDAL	V COM	U/J,			
\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.			<u>, , , , , , , , , , , , , , , , , , , </u>			
	_	_				



## CERTIFICATE OF ANALYSIS

Date: 08/23/90

Gettler-Ryan 2150 West Winton Blyward, CA 94545 John Werfal

Work Order: T0-08-196

P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: GR7920, Arco #2112

Date Received: 08/17/90

Number of Samples: 8; 2 Composites of 4 ea.

Sample Type: solid

### TABLE OF CONTENTS FOR ANALYTICAL RESULTS

PAGES	LABORATORY #	SAMPLE IDENTIFICATION
	T0-08-196-01	AS-la
2	T0-08-196-01	COMPOSITE AS-1
	T0-08-196-02	AS-1b
	T0-08-196-03	AS-1c
	T0-08-196-04	AS-ld
	T0-08-196-05	AS-2a
3	TO-08-196-05	COMPOSITE AS-2
•	TO-08-196-06	AS-2b
	TO-08-196-07	AS-2c
	T0-08-196-08	AS-2d

Reviewed and Approved:

Suzaphe Veaudry Project Manager

IT ANALYTICAL SERVICES SAN JOSE, CA

Work Order: T0-08-196

Company: Gettler-Ryan

Date: 08/23/90

Client Work ID: GE7920, Arco #2112

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: COMPOSITE AS-1 SAMPLE DATE: 08/17/90

LAB SAMPLE ID: T008196-01, -02, -03, -04 [Composite]

SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

RESULTS in Milligrams	per Kilogram:		
	<del></del>	EXTRACTION	ANALYSIS
	<u>METHOD</u>	DATE	DATE
BTEX	8020	08/17/90	08/20/90
Low Boiling Hydrocarbo	08/17/90 -	08/21/90	
		DETECTION	
PARAMETER		LIMIT	DETECTED
Low Boiling Hydrocarbon	າຍ		
calculated as Gasol	line	2.0	19.
BTEX			
Benzene		0.005	None
Toluene		0.005	0.009
Ethylbenzene		0.005	0.026
Xylenes (total)		0.005	0.16

Page: 3

Company: Gettler-Ryan

Date: 08/23/90

Client Work ID: GR7920, Arco #2112

IT ANALYTICAL SERVICES

SAN JOSE, CA

Work Order: T0-08-196

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: COMPOSITE AS-2 SAMPLE DATE: 08/17/90

LAB SAMPLE ID: T008196-05, -06, -07, -08 [Composite]

SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

#### RESULTS in Milligrams per Kilogram:

		<del></del>	EXTRACTION	ANALYSIS
		-METHOD	DATE	DATE
BTE	х	8020	08/17/90	08/20/90
Low	Boiling Hydrocarbons	Mod.8015	08/17/90 -	08/20/90
			DETECTION	
PAR	AMETER	LIMIT	DETECTED	
Low	Boiling Hydrocarbons			
	calculated as Gasolin	1.0	6.4	
BTE	х			
	Benzene		0.005	None
	Toluene		0.005	0.008
	Ethylbenzene		0.005	0.006
	Xylenes (total)		0.005	0.038

Page: 4

Company: Gettler-Ryan

Date: 08/23/90

Client Work ID: GR7920, Arco #2112

IT ANALYTICAL : :RVICES SAN JOSE, CA

Work Order: T0-08-196

#### TEST CODE TPHVB TEST NAME TPH Gas, BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Gellier - Ryan Inc.	Chain of Custody
COMPANY ARCO = 112	JOE N7. 7920
OBLOCATION 1260 PENK ST	
SITY Alameda	PHONE NO.
AUTHORIZED J: July LJen Seed DATE 9-17-99	P.O. NO
SAMPLE NO. OF SAMPLE DATE/TIME  OF CONTAINERS MATRIX SAMPLED ANALYSIS REC	SAMPLE CONDITION QUIRED LAB ID
AS-1a Sc. 1 4-17-40 GOUS, B	
45-14 <u> </u>	/
AS-16 /	
As.1d . 1	
compreit and analyze as	rn e
ASDa 1 Soil 4-17-90 Gas, 127	EX Co-1A
A3-21.	
13-20	
45-24 1	\
composite and analyze	asone
· · · · · · · · · · · · · · · · · · ·	•
RELINQUISHED BY: - 2:55 P.L. RECEIVED BY:	•
RELINQUISHED BY: - RECEIVED BY:	
RELINQUISHED BY:  RECEIVED BY LAB:	1 1/1=/00 1900
	132
DESIGNATED LABORATORY: TT Sam JOSE DHS #:	1 3 7
REMARKS:	
	and the state of t
	. //
DATE COMPLETED 2-17-90 FOREMAN / TOTAL	Gusseyich -

1555 Berks Ular I - Scothyllesect C. 5 # 24 - Portic (#18) 647 2021

#### CERTIFICATION TABLETS

LADORATORY NO. . 52014

CLIENT: Gettler Ryan Contactants

CLIENT JOE NO. : 7920

WAIL RECULTED STATES OF ST

## ARALYSIS POR TOLOL PRINCIPLA PARADOARSONS by Rudiffed CDA SW 8.6 October 7030 and EQIR

1.4.9		Concentration (maying)
*	Sample ldentarious on	desoline Range
3	AS-7A, B, C, D	2
2	ASHRA, B, C, D	į
3	AS-9A, E, C, D	2
-1	AS-10A,B,C,D	1
ži.	AS-11A,B,C,D	4
6	AS-12A, B, C, D	3
7	AS-13A,B,C,D	1
8	AS-14A, B, C, D	1 3
9	AS-ISA,B,C,D	273
1.0	AS-16A, E, C, D	301
11	AS-17A,B,C,D	4
10.3	AS-18A,B,C,D	<u>, 7</u>
13	AS-19A,B,C,D	KD<1
14	AS-20A, B, C, D	3
15	AS-21A,B,C,D	· ND<1
16	AS-22A, B, C, D	5500
17	AS-23A, B, C, D	5800
18	AS-24A, B, C, D	2300
19	AS-25A, B, C, D	2000
20	AS-26A, B, C, D	870
21	AS-27A, E, C, D	1800

mg/kg - parts per million (ppm) Minimum Detection Limit for Gasoline in Soil: lmg/kg

QAQC Sommary:

Daily Standard run at Emg/L: RPD Gasoline = <15% MS/MSD Average Recovery = 95%: Duplicate RPD = <1%

Richard Srns, Ph.D.

(Illia) J. Jungum (fox)
Laboratory Director

1556 Black Unit 9 . FALKUR OF 94184 - PHOKE 1416, 647-2081

## CLETTITICATI CI CONTALES E

LABORATORY ROLL 0832 F

tan westivin. 17/21/99

PLIEBLE Gottler Even Corsoliants

DATE REPORTED SERVED/90

CLIENT JOB W. . 7920

AN LEADING FOR PERSONAL TOP SOME HOPE OF THE BENKERY, A SYMPHES ON EACH OF A LANGE OF THE BOST OF THE BOST

			•	Coheentr	ationing/	46)
LAIS #	Sample Joenh Clearlon		Senance	Toluene	Ethyl Bengono	252000
	The second secon					
,	AS-7A, P, C, D		NU<3	14	13	120
) Ž	$AS - 8K_1K_1C_1U$		80×3	្ញី <u>ទី</u>	33	280
2. 3	$AS \cdot SA \cdot B \cdot A \cdot D$		NL 4 3	3	7	7.5
	AS-YOA, E, C, Q		NDIS	5	ΰ	6.3
4 5	AS-11A, E, C, D		ND<3	7.3	15	130
ដ ប៊	AS-12A, B, C, D		ND:3	NDC3	NDKB	1.5
D n	AS-10A, B, C, D		ND<3	ND C3	MD < 3	5
<i>;</i>	AS-14A, B, C, D		RD<3	72	3.6	280
23 23	AS-15A, B, C, D		<b>एटे इंजा</b> य	270	730	ö100
10	AS-16A, B. C. D		ND<150	ម្ភិន	1600	9900
10	AS-10A, B. C. D		ND<3	18	13	84
12	AS-18A, D, C, D		ND < 3	4	5	3.6
1.3	AS-19A, B, C, D		ND43	NDK3	ND<3	ND<3
	AS-20A, B, O, D	•	ND<3	ND C3	N043	10
1 <u>4</u> 15	AS-20A,B,C,D		ND<3	NIK3 -	ND < 3	7
15	AS-22A, B, C, D		RIX300	62000	42000	480000
17	AS-23A,B,C,D		NDK300	75000	55000	560000
18	AS-24A.B.C.L		ND:300	1500	1100	170000
; 9	AS-26A, 1., C.1.		NDK3C0	RD<30d	390	83000
00 00	AS-20A, B, C, D		ND4300	390	NDKSCO	42000
21	AS-27A, B, C, D		ND:300	ND<300	ND<300	48000
4. I	30 C ( 2 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		31.1000	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		• • • •

ug/kg - parts per billion (ppb)

Minimum Detection Limit in Soil: 3.0ug/kg Higher detection limit due to nigh hydrocarbon backgroupd.

WAQC Summery:

Daily Standard run at 20ug/L: RPD = <15% MS/MSD Average Recovery = 100% : Duplicate RPD = <6%

Richard Srna, Ph.D.

Cililia H Joaquer (Fox)

Laboratory Director

Gettler - R	=		NVIRON	VENTAL DIS	/1510 N	<b>⊸</b> <.	Chain of Custody
OB LOCATION _	^	ARK EN	JCINI	74			
CITY ALAN		<del></del>				PHONE NO	
AUTHORIZED	,	ERFAL		DATE	7/31/90		
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX		E/TIME MPLED	ANALYSIS	REQUIRED	SAMPLE CONDITION LAB ID
A5-7A		501L	7/31/	90 11:01			
A5-7B					compos	ITE	
AS-7C	/			11:05	_	15 (8015)	
AS- 70		$\underline{\qquad}$	<u> </u>	11:06	BTEX	(8020	
A5-8A		501L	7/31/9	10 11:20	<u> </u>		
AS-8B				11:21	-		•
AS-8C				11:24	17	, (	
A5-80		V	1	11:25			
A5-9A	1	5014	7/31/9	0 11:28			
A5-9B				11:29			
A5-9C				11:32	<i>‡</i> 1	11	
A5-90		<u> </u>	*	11:33			
RELINQUISHED BY	- millo	7/3	1/90	RECEI	VED BY:	7-31-90	EXPLESSIT
RELINQUISHED BY:	/	16	:41	RECEI	VED BY:	Mani/(1)	1
RELINQUISHED BY:		···		BECE!	VED BY LAB:		
	· · · · · · · · · · · · · · · · · · ·		<del> </del>				
DESIGNATED LABO	RATORY:		·		DHS #: _		
REMARKS:	24HR	TAT					
•			<del></del>				*
	·		ē <sup>š</sup>				
						<i></i>	
SATE COMPLETED	7-31-90			FOREM	AN SI	Allann	

COMPANY_A	1760 PA	OK FA	)(/h)A(		JOB N	o. <u>7920                                    </u>
JOB LOCATION _ CITYALA,	MEDA	1-10		DIJ	ONE NO	
AUTHORIZED	DHN K	ERFAL	DATE 2		ONE NO	
SAMPLE ID	NO. OF CONTAINERS	S/MPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRE	D	SAMPLE CONDITION LAG ID
A5-10A		501L	7/31/90 1140		·	
10B			1141	composite		
10C			11447	JPH-GAS (BO	<u> </u>	
100		<u> </u>	- <u>V 1146</u> )	BTEX (8020		~
AS-11A		5016	7/31/90 115 Z		GANIC _	**************************************
118			1153	- /ol	AP -	
110	1		1157	11 (12)		
110			<u>V 1158</u> )	<u> </u>		
A5-12A	)	SOIL	7/31/90 13057			,
128			1 1306			,
12C			1319	11		
<u> 120</u> .			<u>V 1321</u>			
RELINQUISHED BY	7 mil	1/1 7	31 90 RECEH	νεό ΒΥ: / 7-3/	- (0)	EXPRESS/
RELINQUISHED BY	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	- J.	<u>16:41                                   </u>	VED BY! // 4/	Xille	1 1634
TIELINGOIOTIED DI	•	V	NEOEI	VED BI) 1041	-	
RELINQUISHED BY	:	·	RECEI	VED BY LAB:		
DESIGNATED LABO	ORATORY:			DHS #:		
REMARKS:	ZYHR	TAT				**
			ANALYZE A.	5-11 ALSO F	OR OK	PANIC.
					<u> </u>	1 FAD

JOB LOCATION _	MEDA	CK (ZNC)	NH			
CITYAUTHORIZED	JOHN WE	RFAL	DATE	7-21 00	NO	
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAN	MPLE CONDITION LAB ID
A5-13A		5014	7/31/90 1327	) composite		
A5-13B			1329	TPH-GAS (801)	j)	••
AS-13C			1332	BTEX (8020)	)	
AS-130		<u> </u>	- V 1334)			A-74-7
195-14A		5016	7/31/90 1337	)		•
45-14B			1338 /	/ // - (1		
AS-14c			1346		<del></del>	
A5-140			<u>V 1341)</u>			707 H
<u> 45- 154</u>	/	5016	7/31/90 1353	)		· · · · · · · · · · · · · · · · · · ·
A5-15B		-	1354 6	11 1/		
A5-15C			1359			
A5-160	/	<u> </u>	1400			
RELINQUISHED BY:		/ 7/3	190 REGE	HYED BY: 7-3/-9	(b), (c)	GNRESS,
RELINQUISHED BY:	· millo	7 16:1	<u>4i</u>	Sicy Mass	1/62.	634
RELINQUISHED BY:		•	RECE	IVED BY LAB:		
DESIGNATED LABO	RATORY: ,			DHS #:	· · · · · · · · · · · · · · · · · · ·	
REMARKS:	24 HR	TAT				
)					* 1 400	-

COMPANYA	17/2 10		NVIRONMENTAL DI	VISION *		Chain of Dustody BNO. 7920
		KI- 1CNC	MAL.			
	LAMEDA			2/21/20	PHONE NO.	
AUTHORIZED	OHN INZIC	CAL_	DATE _	7/31/90	P.O. NO	
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS RI	EOUIRED	SAMPLE CONDITIONLAB ID
A5-16A	/	SOIL	7/31/90 1403	)		
AS-16B		/	1404	composi-	TE	
AS-16C			1408	TPH-GA	5 (8015)	
45-160		<u> </u>	<u> </u>	BTEX (	3020)	
A5-17A		501L	7/31/901412	)		
45-17-8			1413 /	-		
AS-17C			1418	10		
A5-170		$\overline{}$	1419			
AS-18A		SOIC	7/31/9014247	)		
AS - 18B			1425.			
AS-18c			1428 7	11	17	
AS-180		$\overline{}$	1429			
			· J			
RELINQUISHED BY:	m.M.	2	1131190	IVED BY: 7	- 31- 90 .	EXPRE-55-17
RELINQUISHED BY:	· //4ec	16:41		Ceny ///	11/WZ	034
		····			* /	
RELINQUISHED BY:			RECEI	IVED BY LAB:	•	
					· · · · · · · · · · · · · · · · · · ·	
DESIGNATED LABO	RATORY:	17)		DHS #:	· · · · · · · · · · · · · · · · · · ·	
REMARKS:	<u> </u>	177 (				
<u> </u>						
	· · · · · · · · · · · · · · · · · · ·			<del></del>		
	/				9	

JOB LOCATION		R 12NC	INAC			
AUTHORIZED	IAMEDA JOHN N	FRIAL	DATE	7/31/90	PHONE NO.	
SAMPLE	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS RE		SAMPLE CONDITION
<u> </u>	CONTAINERS	5016	7/31/90 1439	ANACISIONI	OUNED	LAB ID
AS-19B		<u> </u>	1440	COMPOSITE	<del></del>	and the state of t
45 - MC	1		1442	]		
AS-190		V -	-V 1443		8020)	# ************************************
45- 20A	1	5016	7/31/90 145	3)		
75-20B	/		1454/	-		
15-20c			1456		(7	
75-200		<u> </u>	1457			
95-21A		5016	7/31/90 1500	)	-	
<u> 45-218</u>			1501			
95-21c			1503		1	
45-210		<u> </u>	1504	****		
RELINQUISHED BY:	2 on M	7/3	190 RECI	EIYED BY: 7	:31-90	EXPRESS
ELINQUISHED BY:	. mello	7	IF: Y	EIVED BX: 1/	25/1600	1636
	<i>V</i>			72	07/	•
ELINQUISHED BY:			RECE	EIVED BY LAB:		
ESIGNATED LABOR	RATORY:			DHS #:		•
EMARKS:	24 HR	2. TAT				
			· ·			

CITY ALX	AMEDA	7	INIAL	PHONE NO	)
AUTHORIZED		\		7-31-90 P.O. NO.	
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
A5-22A		301L	7/31/90 1514	)	
95-22B			1515	COMPOSITE	
95-220			1518	TPH-GAS (8015)	
45-22D				BTEX (8020)	
45-23A			1522		
95-23B			1523	11	
75-23c			1527		*
15-230	1		1528		
15- 24A			16357		
75-24B			1536		
75-24c			1543	11	
75-240			1547		
ELINOUISHED BY		7/3	190 · BECE	YED BY; 7-31-90)	EXPLESSI
SLINQUISHED BY:	· Millo	7	16:41	cay Maxilla	2 634
	U		/RECEI	VED/BY: /(, 4//	
ELINQUISHED BY:			RECEI	VED BY LAB:	
			·	_ \_	
ESIGNATED LABOR	RATORY:			DHS #:	
MARKS:	24 HR	TAT			
					· · · · · · · · · · · · · · · · · · ·

CITY	ALAMED	9	DATE	7-31-90	PHONE NO	
SAMPLE ID	NO, OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS RI		SAMPLE CONDITION
15-25A		<u>5016</u>	7/31/90 1547	)		
258			1548	COMPOSITE		
25c			1550	TPH-GA:	5(8015)	
250				BTEX (	8020)	
26A			15:54	)		
26B			15:55/	patricinal control of the control of		
<u> 26c</u>			1557		1 (	
26D			1559)			
27A			16:02	SARANIANTO URBELL		
27 <i>B</i>			16:03	( )	7/	
27c			16:08	**************************************		
1 270	$\overline{V}$	1	1609)		<del></del>	
LINOUISHED BY:	7. mili	19 7	151/10	EIVED BY: 7-3	1-90) Ailles	EXPRESS I
				2.1.20	747/	
LINQUISHED BY:			REC	EIVED BY LAB:		
SIGNATED LABO	RATORY:			DHS #:		
MARKS:	24 P	IR TH				*,
<del></del>						

825 ARNOLD, STE 114 . MARTINEZ, CALIFORNIA 94553 . (415) 229-1512

DOHS #319 DOHS #220

#### CERTIFICATE OF ANALYSIS

LABORATORY NO.: 81380 CLIENT: Gettler Ryan Co. DATE RECEIVED: 08/15/90 DATE REPORTED: 08/22/90

CLIENT JOB NO.: 7920

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range
		ينها بين الله الله الله الله الله الله الله الل
1	AS-34A-D	620
2	AS-35A-D	900
3	AS-36A-D	680
4	AS-37A-D	590
5	AS-38A-D	280
6	AS-39A-D	230
7	AS-28A-D	860
8	AS-29A-D	900
9	AS-30A-D	260
10	AS-31A-D	550
1 1	AS-32A-D	460
12	AS-33A-D	1600

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 1 mg/Kg

Date Sampled: 08/14/90 Date Analyzed: 08/21/90

QAQC Summary:

Daily Standard run at 2mg/L: RPD Gasoline = 11% MS/MSD Average Recovery = 93%: Duplicate RPD = 8%

Richard Srna, Ph.D.

Dirent Srn.

Laboratory Manager

825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512

DOHS #319 DOHS #220

#### CERTIFICATE OF ANALYSIS

LABORATORY NO.: 81380 CLIENT: Gettler Ryan Co. CLIENT JOB NO.: 7920

DATE RECEIVED: 08/15/90 DATE REPORTED: 08/22/90

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES by EPA SW-846 Methods 5030 and 8020

				Concentr	ation(ug/	Kg)
LAB					Ethyl	
#	Sample Identification		Benzene	Toluene	Benzene	Xylenes
	M + +					
1	AS-34A-D		370	850	440	48000
2	AS-35A-D		200	870	530	63000
3	AS-36A-D		540	5400	2600	50000
4	AS-37A-D		ND<150	2400	890	43000
5	AS-38A-D		ND<150	330	200	19000
6	AS-39A-D		ND<150	ND<150	210	14000
7	AS-28A-D		ND<150	800	690	56000
· 8	AS-29A-D		ND<150	1000	720	66000
9	AS-30A-D		ND<150	ND<150	250	9600
10	AS-31A-D	•	ND<150	250	410	24000
11	AS-32A-D		ND<150	590	620	29000
12	AS-33A-D		1600	2900	2800	110000

ug/Kg - parts per billion (ppb)

Method Detection Limit in Soil: 3 ug/Kg

Date Sampled: 08/14/90 Date Analyzed: 08/21/90

QAQC Summary:

Daily Standard run at 20ug/L: RPD = <15%

MS/MSD Average Recovery = 98 %: Duplicate RPD = <14%

Richard Srna, Ph.D.

Dorena Sina for Laboratory Manager

Gettler - I	Ryan Inc.		81380 pg		0691	Chain of Custon
COMPANY	ARCO				JOB	NO. 7920
JOB LOCATION	1260	PARK S	T. / ENU.	NAL		
CITY_ALA	MEDA	····			PHON: NO.	
AUTHORIZED	JOKN	WERFAL	DATE _	8/14/90	P.O. NO	
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS RE	OUIRED	SAMPLE CONDITION LAB ID
45-29 A		5014	8/14/20 10:11)			
AS-28B				TPH-GAS (compos	BTEX	
PS-28C			10:19	(compos	$T \in$	
AS-ZPD			10:24)			
AS-29A			10:33			
A5-29B			10.40	TON-GRS	BIEX	
AS-29C	<u> </u>		10:43	(composit	-E)	
AS-29D	1		10:44)		•	
DS-30A	1		10:46		•	
AS-30B			10:47	TPH-GAS,	BTEX	
DS-30C			10:40	compo.		
DS-30 D	1 ·		10:50)			
RELINQUISHED B	(. me	16? 8/1	4/90	IVED BY:	2 653	87~ 3:50
ELINQUISHED B	· /:		RECE	IVED BY LAB:	Sing 5	2/15/go 1045
ESIGNATED LAB	ORATORY:			DHS #:		A Popularia
EMARKS:S	- DAY	TAT	COMPO 517	<u> </u>	25-Z8 A	-0,
DS-29	- A - D	ANO	AS-30-A-	D.	· · · · · · · · · · · · · · · · · · ·	
					· · · · · · · · · · · · · · · · · · ·	

Gettler - R		EN	VIRONWENTAL DI	VISION		Chain of Custod
JOB LOCATION _		PARK S	T. /EN	CINAL	JOB	NO
CITY ALA					PHONE NO.	
AUTHORIZED		WERFAL	DATE _	8/14/90	_ P.O. NO	
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS RE	OUIRED	SAMPLE CONDITION LAB ID
15-31A		<u>501L</u>	8/14/2010:50			
DS-31B			}	TPH-GAS,	BTEX	
A5-3/C				(compos,	TE)	
15-31D						•
A5-32A			11:07			
D5-32B	1		11:07	TPH-6AS,	GTEX	
AS-32C		_	11:15	TPN-6DS,	TE)	
AS-32D			11:16			
NS-33 A	1		11:22			
AS-33B			11:23	TPN-6AS,	BTEX	
15-33C			11:27	TPN-6AS, (compos	TE)	
115-33.D		<u>V.</u>	11:29)			
RELINQUISHED BY	D/M	elly . 8/14/	190 · C	IVED BY:	6.83	-8/04/1350
RELINQUISHED BY	:		RECE	ived by LAB:	Lains	8/15/90 1015
DESIGNATED LABO	RATORY:			DHS #:	•	•
REMARKS:	_ DAY	TAT.	COMPOST	TE AS	-31 A-	- D
AS-32 A	A-D,	ANO A	S-33 A-D			,
DATE COMPLETED			FORE		<del></del>	100

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	~,	8135° (	78 14 H -	6.6.6.6	
Gettler - Ryan		ENVIRONMENTALO	IVISION		Chain of Custody
COMPANY ARCO				JOB	NO. 7920
JOB LOCATION/26		<u> </u>	NCINAL		
CITY ALL ME				_ PHONE NO	
AUTHORIZED JOH	N WERF	ALL DATE	<u> 7/14/70</u>	_ P.O. NO	
Orini Ec	IO. OF SAMP TAINERS MATR	RIX SAMPLED	ANALYSIS RE	QUIRED	SAMPLE CONDITION LAB ID
AS- 74A	<u>                                     </u>	1_ E/14/90/11:37			
DS-34B	1	1/11:39	TPH-CAS, (COMPOS	BIEX	
DS-34C		// 11:42	(COMPO)		
DS-34D		11:43	}		-
A5-35A		11:48	)		
AS-35B		11:49	TPH-GAS (COMPO	BTEX	
AS-35C		11:55	(compo	SITE)	
AS-35D		/11:57/			
DS-36 A	·	/12:00	)		
DS-36B		12:02	TPH-GAS,	BTEX	
A5-36C		/12:05	TPH-GAS, (COMPOS	TE)	
ás-36D . 1	<u> </u>	12:06)			
RELINQUISHED BY:	•	16:50 REC	DEIVED BY:	1 700	
ALSTERN C	milley	8/14/90 C	CEIVED BY:	613	8/-4 15:50
	0				
RELINQUISHED BY:		. REC	CEIVED BY LAB:	Hains 8	15/90 1045
DESIGNATED LABORATOR	RY:		7 DHS #:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	7.
REMARKS: 5-02	Y TAT.	Composi	E AS	-34A -	- D ,
AS - 35A -		A5-36 A - D	) 、		
	·				
DATE COMPLETED		FOE	EMAN	·	

Gettle	Ryan Inc	<u> </u>	81350	,	068	7 <b>Chain c</b>	
		CK 5%.	ENCINA	46		56 NO	·
CITY_A			-/		PHONE NO	·	
	JOHN WE	RFAL	DATE _	8/14/90			
		<del></del>			F.O. NO		
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS R	EQUIRED		CONDITION B ID
15-370		SOIL	9/14/90/12:12)		···	<del> </del>	
DS-37B			12:13	TPH-GAS,	BTEX		
DS-37C	/		1/12:17	(cc mpos 1	TE)		
A5-37D			12:18)				
AS-38A			/12:21				
AS-38B			1/12:22	TPH-GAS,	BTEX		
A5-38C	)		12:27	(composi	TE)		
45-38D	1		/12:28)				- <u> </u>
15-39 A	1		/12:32)		78 · · · · · · · · · · · · · · · · · · ·		
A5-39B	)			TPH-6AS	BTEX	<del> </del>	
AS-39C	1		12:39	TPH-6AS, i (compos.	ME)	· · · · · · · · · · · · · · · · · · ·	
A5-39D	) .	V.	1/12:40				****
			<b>V</b>				
RELINQUISHED RELINQUISHED	TC. Mille	16:	<u> 1/90</u>	IVED BY:		E/ (4	15:52
				· · · · · · · · · · · · · · · · · · ·			
RELINQUISHED.I	BY: 	· 	RECEI	yED BY LAB:	gives .	8/15/90	1045
DESIGNATED LA	BORATORY:			/ DHS #:			
REMARKS:	5 - DAY 7	DT.	COMPOSITE	25-3	7A-D,	A538	A-D,
DNO A	5-39A - D			•			
				_			
						· · · · · · · · · · · · · · · · · · ·	
DATE COMPLETED			FOREN	1AN			

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# ANALYTICAL SERVICES

#### CERTIFICATE OF ANALYSIS

Date: 08/28/90

Gettler-Ryan 2150 West Winton Bayward, CA 94545 John Werfal

Work Order: T0-08-263

P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: GR7920, ARCO

Date Received: 08/24/90

Number of Samples: 4; 1 Composite of 4 -

Sample Type: solid

#### TABLE OF CONTENTS FOR ANALYTICAL RESULTS

PAGES	LABORATORY #	SAMPLE IDENTIFICATION
2	T0-08-263-01	AS-40-A
	TO-08-263-02	AS-40-B
	TO-08-263-03	AS-40-C
	T0-08-263-04	AS-40-D Composite

Reviewed and Approved:

Suzanne Veaudry

Project Manager

IT ANALYTICAL SERVICES

Work Order: T0-08-263

SAN JOSE, TA

Company: Gettler-Ryan

Date: 08/28/90

Client Work ID: GR7920, ARCO

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: AS-40-A, AS-40-B, AS-40-C, AS-40-D [Composite]

SAMPLE DATE: 08/22/90

LAB SAMPLE ID: T008263-01, -02, -03, -04 [Composite]

SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

			EXTRACTION	ANALYSIS
		METHOD	DATE	DATE
BTE	X	8020	08/24/90	08/28/90
Low	Boiling Hydrocarbons	Mod.8015	08/24/90 -	08/28/90
			DETECTION	
PAR	AMETER	•	LIMIT	DETECTED
Low	Boiling Hydrocarbons			
	calculated as Gasolin	е	2.0	12.
BTEX	<			
	Benzene		0.017	None
	Toluene		0.017	None
	Ethylbenzene		0.017	None
	Xylenes (total)		0.017	0.099

Company: Gettler-Ryan

Date: 08/28/90

Client Work ID: GR7920, ARCO

IT ANALYTICAL SERVICES SAN JOSE, CA

Work Crder: T0-08-263

TEST CODE TPHVB TEST NAME TPH Gas, BLEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Results for organic chemical parameters in soils have been corrected for moisture content and are reported on a dry soil basis unless noted otherwise. Results for inorganic chemical parameters have not been corrected for moisture content.

COMPANY	na Inc	E	NVIRONMENTAL DIV	ISION		Chain c' Custo
JOB LOCATION _	1260	PARK	5T. / EN	CINAL		
CITY	MEDA		,		HONE NO.	
AUTHORIZED	SOHN L	JERFAL	DATE	8/22/90 P		
SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIR		SAMPLE CONDITION
15-40-A		50,2	8/22/90 14.50	TPH-GAS	BIEX	
P5-40-B.		·	14:51	1	<del>/</del> '	
A5-40-C			15.00			<del></del>
A5-40-D	)		15.02	1.		
٠٠٠ ٤٠			*		<del></del>	,
				*	,;	
						·
		<del></del>			<del> </del>	
,			<u> </u>		•	·
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1555 BURKE, UNIT I · SAN FRANCISCO, CA 94124 · PHONE (415) 647-2081

#### CERTIFICATE OF ANALYSIS

LABORATORY NO.: 52437

CLIENT: Gettler Ryan Consultants

CLIENT JOB NO.: 7920

DATE RECEIVED: 08/30/90

DATE REPORTED: 09/06/90

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range
1 2	AS-41A, B, C, D, COMP AS-42A, B, C, D, COMP	ND<1 14*

mg/kg - parts per million (ppm) Minimum Detection Limit for Gasoline in Soil: 1mg/kg

QAQC Summary:

Daily Standard run at 2mg/L: RPD Gasoline = <15% MS/MSD Average Recovery = 93%: Duplicate RPD = 0%

\* Not with the typical gasoline pattern

Richard Srna, Ph.D.

1555 BURKE, UNIT I · SAN FRANCISCO, CA 94124 · PHONE (415) 647-2081

#### CERTIFICATE OF ANALYSIS

LABORATORY NO.: 52437

DATE RECEIVED: 08/30/90 CLIENT: Gettler Ryan Consultants DATE REPORTED: 09/06/90

CLIENT JOB NO.: 7920

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES by EPA SW-846 Methods 5030 and 8020

			Concentr	ation(ug/ Ethyl	Kg)
# 	Sample Identification	Benzene	Toluene	Benzene	Xylenes
1 2	AS-41A,B,C,D,COMP AS-42A,B,C,D,COMP	ND<3	ND<3	ND<3	ND<3 8

ug/kg - parts per billion (ppb)

Minimum Detection Limit in Soil: 3.0ug/kg

QAQC Summary:

Daily Standard run at 20ug/L: RPD = <15%

MS/MSD Average Recovery = 94% : Duplicate RPD = <6%

Richard Srna, Ph.D.

Gettler - Ryan Inc	- \	SF	# 52437	Chain of Custo
COMPANYA(LL)				JOB NO. 7920
JOB LOCATION1260	PARK ST.	/ ENCINA	1 -	
CITYALAMEDA			PHONE	NO
AUTHORIZED JOHN U	IEKFAL	DATE _	8/30/90 P.O. NO	
SAMPLE NO. OF ID CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
AS-41A 1	SOIL	8/30/20 10:00		
DS-41B (		10:02		
AS-41C		10:04		_
DS-41D ) )		10:05)/	/	
AS-41-COMP		<u> </u>	TPH-GAS, BTEX	
		-	. (	
AS-42A )	5012	8/30/90 10:07)		
NS-42B	1	10:08		
DS-42C		10:10		
45-420		10:13		
AS-42-COMP	**************************************	<u> </u>	TPN-GAS, BTEX	
	•	-	•	
RELINOUISHED BY	nella 8/-	30/9 U RECE	IVED BY:	10 (5 1 2)
PELINQUISHED BY:	WWY	16:40 <u>C</u>	WP SIZATO 18	the (Sealed)
			up 2/30/50 16 1VED BY: NWE	gn 8/30/90
RELINQUISHED BY:	· · · · · · · · · · · · · · · · · · ·	RECEI	VED BY LAB:	( <del>)</del>
-				
DESIGNATED LABORATORY:			DHS #:	
REMARKS: NORMAL	T.A.T.			
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			····	······································
		· · · · · · · · · · · · · · · · · · ·		777
DATE COMPLETED		FOREM	AANNAN	



# ANALYTICAL SERVICES

#### CERTIFICATE OF ANALYSIS

Date: 09/13/90

Gettler-Ryan 2150 West Winton Hayward, CA 94545 John Werfal

Work Order: T0-09-075

P.O. Number: 7920

This is the Certificate of Analysis for the following samples:

Client Work ID: GR7920, Arco #2112

Date Received: 09/10/90

Number of Samples: 8; 2 Composites of 4 ea.

Sample Type: solid

#### TABLE OF CONTENTS FOR ANALYTICAL RESULTS

PAGES	LABORATORY #	SAMPLE IDENTIFICATION
	T0-09-075-01	AS-43-A
2	TO-09-075-01	Composite AS-43
	T0-09-075-02	AS-43-B
	T0-09-075-03	AS-43-C
	T0-09-075-04	AS-43-D
	TO-09-075-05	AS-44-A
3	T0-09-075-05	Composite AS-44
	TO-09-075-06	AS-44-B
	T0-09-075-07	AS-44-C
•	T0-09-075-08	AS-44-D

Reviewed and Approved:

Suzarne Veaudry Project Manager

IT ANALYTICAL SERVICES

SAN JOSE, CA

Work Order: T0-09-075

Company: Gettler-Ryan

Date: 09/13/90

Client Work ID: GR7920, Arco #2112

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: Composite AS-43

SAMPLE DATE: 09/10/90

LAB SAMPLE ID: T009075-01, -02, -03, -04 [Composite]

SAMPLE MATRIX: solid
RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

1/11/11	onto the nextensions box				
			EXTRACTION	ANALYSIS	
		METHOD	DATE	DATE	
BTE	χ.	8020	09/10/90	09/10/90	
Low	Boiling Hydrocarbons	Mod.8015	09/10/90 -	09/10/90	
			DETECTION		
PARAMETER			LIMIT	DETECTED	
Low	Boiling Hydrocarbons	······································			
	calculated as Gasolin	e	20.	490.	
BTE	х				
	Benzene		0.2	None	
	Toluene		0.2	0.2	
	Ethylbenzene		0.2	None	
	Xylenes (total)		0.2	21.	

Page: 3

IT ANALYTICAL SERVICES

Work Order: T0-09-075

SAN JOSE, CA

Company: Gettler-Ryan

Date: 09/13/90

Client Work ID: GR7920, Arco #2112

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: Composite AS-44

SAMPLE DATE: 09/10/90

LAB SAMPLE ID: T009075-05, -06, -07, -08 [Composite]

SAMPLE MATRIX: solid RECEIPT CONDITION: Cool

RESULTS in Milligrams per Kilogram:

		EXTRACTION		ANALYSIS
•	METHOD	DATE		DATE
BTEX	8020	09/10/90		09/10/90
Low Boiling Hydrocarbons	Mod.8015	09/10/90	-	09/10/90

PARAMETER	DETECTION LIMIT	DETECTED	
Low Boiling Hydrocarbons			
calculated as Gasoline	20.	240.	
BTEX			
Benzene	0.2	None	
Toluene	0.2	None	
Ethylbenzene	0.2	None	
Xylenes (total)	0.2	0.4	

IT ANALYTICAL SERVICES

SAN JOSE, CA

Company: Gettler-Ryan

Date: 09/13/90

Client Work ID: GR7920, Arco #2112

Work Order: T0-09-075

TEST CODE TPHVB TEST NAME TPH Gas, BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from E.P.A. Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatograhy using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethylbenzene and xylenes.

Results for organic chemical parameters in soils have been corrected for moisture content and are reported on a dry soil basis unless noted otherwise.

Gettler - Ryan Inc		TC-55		Chain of Custod
COMPANY_ /JILLO				JOB NO . 7920
	PAKK	ST. / ENC!	VAC	<del>.</del> . <u>.</u>
CITY_ALAMEDA			PHONE	NO
AUTHORIZED JUIN WE'LL	FAL	DATE	9/4/9U P.O. NO	
SAMPLE NO. OF	SAMPLE MATRIX	DATEITIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
1 DS-43-A]	5314	9/10/10 10:33		5.40
= D5-43-13		1 10 25	\	
= DS-43-C		10:37	)	
1 AC-43-D)		10:34	,	
AS-43 LEIMP.		1	TPH-GAS BTEX	
AS-44-A 1	WIL	9/10/90 10:40	-	South (2)
. DS-44-B	1	10 42		
7 AS - 441-C		10.44	)	
; DS-44-D		10:46)	7	.)
AS-44 VCOMP		بر الد	TPIN-CAC, BTIEX	
	,			
_				
RELINQUISHED BY:	9/15/9		ED BY:	•
RELINQUISHED BY:		RECEIVI	ED BY:	
RELINQUISHED BY:		RECEIVE	ED BY LAB:	· · · · · · · · · · · · · · · · · · ·
·			7/.	1490 1155
DESIGNATED LABORATORY:			DHS #:	
REMARKS: 24 NK. TOT	· Com	POSITE A	5-43-A-D	DND
DS-44-A-D				W + 1,444
•				
DATE COMPLETED		FOREMA		

825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512

DOHS #319 DOHS #220

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 91566 CLIENT: Gettler Ryan Co. CLIENT JOB NO.: 7920 DATE PECEIVED: 09/19/90 DATE REPORTED: 09/25/90 DATE SAMPLED: 09/17/90 DATE ANALYZED: 09/24/90

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range
1 2	AS-45-A,B,C,D AS-46-A,B,C,D	_ ND<1 3

mg/kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 1 mg/Kg

QAQC Summary:

Daily Standard run at 2mg/L: RPD Gasoline = 1% MS/MSD Average Recovery = 97%: Duplicate RPD = 0.8%

Richard Srna, Ph.D.

Laboratory Manager

825 ARNOLD, STE. 714 - MARTINEZ, CĂLIFORNIA 94553 - (415) 229-1512

DOHS #319 DOHS #220

LABORATORY NO.: 81566 CLIENT: Gettler Ryan Co. CLIENT JOB NO.: 7920 DATE RECEIVED: 05/15/90 DATE REPORTED: 09/25/90 DATE SAMPLED: 09/17/90

DATE ANALYZED: 09/24/90

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES - by EPA SW-846 Methods 5030 and 801

Concentration(ug/Kg) Ethyl LAB Toluene Benzene Sample Identification Benzene # Xylenes ND(3 \_ ND(3 ND (3 AS-45-A, B, C, D ND<3 NDK3 6 AS-46-A,B,C,D 17

ug/Kg - parts per billion (ppb)

Method Detection Limit in Soil: 3 ug/Kg

QAQC Summary:

Daily Standard run at 20ug/L: RPD = <15%

MS/MSD Average Recovery = 102 %: Duplicate RPD = <4%

Richard Srna, Ph.D.

Laboratory Manager

Gettler - Ry	an Inc	ENVIRONME	NYAL DIVISION	1 81510	Chain of Custoc
COMPANY,	ALLO			JOB	NO. 7920
JOB LOCATION	_1260,	PARK St.	ENCINAL		
		EDA			
AUTHORIZED	John	WERFAL	DATE 9/17/90	P.O. NO	
SAMPLE ID	NO, CE CONTAINERS	SAMPLE DATE	TIME	REQUIRED	SAMPLE CONDITION LAB ID
AS-XX-17	1	Soil 9/17/40	15.32		
As-45-B 5		9/17/40	<u>15:33</u>		
HS-45-C)			15.35		
A5-45-D/	/	<u> </u>	15:39)		***************************************
<u>AS-45</u>	comp.		TPH-GA	S, BTEX	
AS-46-A		50,1 9/17/90	15:41	<u> </u>	
AS-46-6			15:43)		
AS 46-C)	1		15:46)	·	
AS-46-D			1545		
<i>P</i>	comp.		TPH-GAS	BHEX	
					•
RELINQUISHED BY:		8:20Am	RECEIVED BY	millo	2:20 2/10/an
RELINQUISHED BY:	cast	9/18/90	RECEIVED BY:	n da in i	9-18-90
Noton (	Milley	9/18/96 .16:14		J Duck	1614
RELINQUISHED BY		9-15	RECEIVED BY LAB:	9-18-	90 ·
HOY ( CAN	Wil.	Express + 1/5	50 A BMIN	W 17:57	2
DESIGNATED LABOR	RATORY:		DHS #:		
REMARKS:					
				·	
DATE COMPLETED			FOREMAN		

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DOHS #319 DOHS #220

#### CERTIFICATE OF ANALYSIS

LABORATORY NO.: 81596 CLIENT: Gettler Ryan Co. CLIENT JOB NO.: 7920 DATE RECEIVED: 09/24/90 DATE REPORTED: 09/25/90 DATE SAMPLED: 09/21/90 DATE ANALYZED: 09/24/90

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range		
1 2	AS-47A, 47B, 47C, 47D AS-48A, 48B, 48C, 48D COMP	ND<1 ND<1		

mg/kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 1 mg/Kg

QAQC Summary:

Daily Standard run at 2mg/L: RPD Gasoline = 10% MS/MSD Average Recovery = 96%: Duplicate RPD = 0%

Richard Srna, Ph.D.

Dorena Srna for Laboratory Manager

825 ARNOLD, STE. 114 · MARTINEZ, CALIFORNIA 94553 · (415) 229-1512

DOHS #319 DOHS #220

#### CERTIFICATE OF ANA

LABORATORY NO.: 81596 CLIENT: Gettler Ryan Co. CLIENT JOB NO.: 7920

DATE RECEIVED: 09/24/90 DATE REPORTED: 09/25/90 DATE SAMPLED: 09/21/90 DATE ANALYZED:09/24/90

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES by EPA SW-846 Methods 5030 and 8020

Concentration(ug/Kg) LAB Ethyl Sample Identification Benzene Toluene Benzene Xylenes AS-47A, 47B, 47C, 47D COMP NDKS ND<3 NDK3 AS-48A, 48B, 48C, 48D COMP NDK3 NDK3 ND<3

ug/Kg - parts per billion (ppb)

Method Detection Limit in Soil: 3 ug/Kg

QAQC Summary:

Daily Standard run at 20ug/L: RPD = <15%

MS/MSD Average Recovery = 96 %: Duplicate RPD = <10%

Richard Srna, Ph.D.

Laboratory Manager

Gettler - Ry	an Inc.		8159	6 P)		Chain of Custody
COMPANY .	H	KCO			JOB	NO. 7920
JOB LOCATION	1260	PH	PRK St.	/ ENCINAL		
CITY	AL	AMEDA			PHONE NO	
AUTHORIZED	John	WARFEL_	DATE	9/24/90	P.O. NO	
SAM! _E	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS RE	QUIRED	SAMPLE CONDITION LAB ID
<u>AS-47A</u>	1		9/21/90			
AS-47B _	1		-1/2 024/-20-	BTE		
AS-47C				< .	•	
AS-470	<u> </u>			Composite anolyze	è ·····	
<u>AS-48.A</u>	/	5011	9/21/90	Composito	_	
AS-48B	/	1	1/-/-	Janalyse Sample	for:	7/7/10/10/10/10/10/10/10/10/10/10/10/10/10/
AS-48 C				TPH. G	H5	The second secon
AS-497	V	1		BTEX		
					· ·	
			•			
RELINQUISHED BY:			RE	CEIVED BY:		
RELINQUISHED BY:	<u></u>	•		X077 /	m Coy	1440
X077 Sh	n Car		,,_			·
RELINQUISHED BY:		)	Ţ.	CEIVED BY LAB:	9/24/20	16:75
• • • • • • • • • • • • • • • • • • • •				brena Srna	12/20	16.73
DESIGNATED LABOR	_			DHS #:		
REMARKS:	omposite	and xu	alyze as	<u> </u>	mple (2	sets)
	III					
		<del>, ,</del>				
					1.	
DATE COMPLETED		<u> </u>	<i>4/90</i> FOR	REMAN	-fliesd	
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