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REPORT SUPPLEMENTAL SUBSURFACE ENVIRONMENTAL INVESTIGATION

at

Former Beacon Station 546 29705 Mission Boulevard Hayward, California

AGS Job No. 18008-6

Prepared for

Ultramar Inc. 525 West Third Street Hanford, California 93230

> by Applied GeoSystems

Leigh I Beem Project Geologist

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April 25, 1990

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> April 25, 1990 AGS 18008-6

Mr. Glenn Dembroff Ultramar Inc. 525 West Third Street Hanford, California 93230

Subject: Executive Summary of Report on a Supplemental

Subsurface Environmental Investigation at Former

Beacon Station 546, 29705 Mission Boulevard, Hayward,

California.

Mr. Dembroff:

This report describes a limited subsurface environmental investigation conducted by Applied GeoSystems at Beacon Station 546, as requested by Ultramar Inc. The site is located at 29705 Mission Boulevard, Hayward, California, at the southeastern corner of the intersection of Mission Boulevard and Industrial Parkway.

The scope of work included drilling boreholes, installing five wells, reconstructing one existing well (MW-4), collecting soil and ground water samples, and analyzing the samples in the laboratory for specified compounds and physical parameters. addition, a 26-1/2 hour pumping test was performed to evaluate hydraulic parameters beneath the site.

Previous work has been performed at the site by Kaprealian Engineering, Inc., (KEI) and Applied GeoSystems (AGS). KEI drilled five soil borings to a depth of 30 feet around the underground storage tanks (UST) for gasoline and diesel. Hydrocarbons were detected in both soil and ground water. 1988, AGS observed the removal of the USTs, evaluated the condition of the tanks, and collected soil samples from the tank Hydrocarbons were detected in most of the samples In 1988, AGS installed three onsite ground-water monitoring wells and collected soil and water samples. results indicated detectable concentrations of hydrocarbons in both soil and ground-water samples.

In June 1989 and February 1990, AGS installed a total of five offsite wells to the south, southwest, and southeast of the

Beacon site and conducted a pumping test. The findings of this investigation are summarized below:

- o A vertically continuous silty clay sequence is found beneath the site.
- o Fractures were observed in soil samples collected from the saturated zone.
- o Ground water occurs under unconfined conditions beneath the site, ranges from approximately 13 to 14 feet in elevation, generally flows toward the southwest, and may be flowing in part through a fractured system.
- o An aquifer test performed in October 1989 suggests the following values for these aquifer parameters:
 - Hydraulic Conductivity = 4.2 to 6.3 X 10⁻³ cm/sec
 - Transmissivity = 1795 to 2678 gpd/ft
 - Storativity = 4.0 to 6.5×10^{-3}

In addition, the specific capacity for MW-1 is estimated to be 1.15 gpm/ft drawdown.

- o The compounds TPHg and BTEX were detected in the soil beneath the Beacon site, and relatively low (nondetectable to 150 ppm) levels have also been found in offsite soil near wells MW-4, MW-7, and MW-8. The magnitude and extent of hydrocarbons in soil have yet to be fully delineated.
- o The compounds TPHg and BTEX were present in the ground water samples collected from beneath the Beacon site and to the south and southwest at least as far as MW-5 and MW-8. Based on the laboratory data, the vertical and lateral extent of hydrocarbons in ground water has not yet been fully delineated.

The following recommendations are based on the findings of the subject investigation. The recommendations pertain primarily to additional site characterization.

- o Resample wells MW-1 through MW-8 to verify chemical concentrations in the ground water.
- o A study should be performed to evaluate the fate and transport of chemical compounds in the subsurface environment.
- o A program for delineation of organic chemical compounds in the soil and ground water should be implemented.
- o Quarterly monitoring of the ground water at the site and vicinity should continue and include subjective evaluation and laboratory analyses of water samples.

We recommend that copies of this report be forwarded to Mr. Hugh Murphy of the Hayward Fire Department, 22300 Foothill Boulevard, Hayward, California 94541; and Mr. Scott Hugenberger of the Regional Water Quality Control Board, 1111 Jackson Street, Room 6040, Oakland, California 94590.

Please call if you have questions regarding this report.

Sincerely,
Applied GeoSystems

Leigh I. Beem Project Geologist

CONTENTS

1.0	INTRODUCTION	1
2.0	PREVIOUS ENVIRONMENTAL WORK	4
3.0	PHYSICAL CHARACTERISTICS	7 8
4.0	FIELD AND LABORATORY INVESTIGATIONS	10 10 11 12 13
	August 1989	14 14 15 16 16
5.0	Samples and Hydraulic Gradient	17 18 18 18
6.0	CHEMICALS IN SOIL AND GROUND WATER	21 21 22
7.0	FINDINGS AND RECOMMENDATIONS	23 23 24
	TATIONS	25

TABLES

- TABLE 1: LABORATORY RESULTS OF SOIL SAMPLES COLLECTED DURING THE TANK REMOVAL IN 1988
- TABLE 2: CUMULATIVE ANALYTICAL RESULTS OF SOIL SAMPLES
 - FROM BORINGS MW-1 THROUGH MW-6
- TABLE 3: CUMULATIVE ANALYTICAL RESULTS OF WATER SAMPLES
- TABLE 4: WELL INVENTORY
- TABLE 5: GROUND WATER SURFACE ELEVATION DATA, JULY 3, 1989
- TABLE 6: DRAWDOWN DATA
- TABLE 7: CUMULATIVE RESULTS OF GROUND WATER EVALUATIONS
- TABLE 8: GROUND WATER SURFACE ELEVATION DATA, MARCH 5, 1990

PLATES

- PLATE 1: SITE VICINITY MAP
- PLATE 2: GENERALIZED SITE PLAN AND CROSS SECTION LOCATION
- PLATE 3: WELL LOCATION MAP
- PLATE 4: GROUND WATER ELEVATION MAP JULY 3, 1989
- PLATE 5: GROUND WATER ELEVATION MAP MARCH 5, 1990
- PLATE 6: GEOLOGIC CROSS SECTION A-A'
- PLATE 7: GEOLOGIC CROSS SECTION B-B'
- PLATE 8: PUMPING TEST
- PLATE 9: CONCENTRATION OF TPHg IN GROUND WATER, MARCH 5 1990
- PLATE 10: CONCENTRATION OF BENZENE IN GROUND WATER, MARCH 5, 1990

APPENDICES

- APPENDIX A: PROCEDURES
- APPENDIX B: LOGS OF BORINGS
- APPENDIX C: LABORATORY REPORTS
- APPENDIX D: SIEVE ANALYSIS
- APPENDIX E: SURVEYORS REPORT

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REPORT
SUPPLEMENTAL SUBSURFACE ENVIRONMENTAL
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at

Former Beacon Station 546 29705 Mission Boulevard Hayward, California

For Ultramar Inc.

1.0 INTRODUCTION

Beacon Oil Company, now Ultramar Inc. (Ultramar), operated Beacon Station 546, located at 29705 Mission Boulevard in Hayward, California, until the station was closed in early 1988. The former station had four underground storage tanks (USTs) in which gasoline, diesel, and waste oil were stored. The USTs were removed in April 1988 and ground water monitoring wells were installed in three phases; in June and July of 1988, in June 1989, and in February 1990. This report discusses the results of the second and third phase of characterization and evaluation at the former Beacon site and vicinity.

1.1 Purpose

The purpose of this investigation was to assess the concentrations and extent of hydrocarbon compounds in soil and ground water at the site, and to characterize further the subsurface geologic and hydrologic setting. This investigation included:

- o assessing the concentrations and extent of hydrocarbons in unsaturated soil and ground water west of the site by installing five offsite monitoring wells in the inferred down gradient ground water flow direction;
- o performing a 26-1/2-hour pumping test at the site;

In addition to chemical and hydrogeological characterization listed above, further assessment of the geology at the site was included in the characterization program.

1.2 Scope

The scope of the work included drilling boreholes, installing wells, reconstructing one existing well, collecting soil and ground water samples, analyzing the samples in the laboratory for specified compounds and physical parameters, and performing a pumping test.

Field activities performed during the investigation included:

- o Installing three offsite 2-inch-diameter ground water monitoring wells in June 1989;
- o Performing a 26-1/2-hour pumping test in October 1989;
- o Installing two offsite 4-inch-diameter ground-water monitoring wells and reconstructing one existing well in February 1990;
- o Measuring ground water levels in the new and existing wells;
- o Sampling ground water from the new and existing wells.

At the request of Ultramar, Applied GeoSystems (AGS) has prepared this report, at the current stage of the investigation, to provide a summary of work completed to date and the results of the latest hydrogeological investigation.

1.3 Site Location and Description

Former Beacon Station 546 is located at the southeast intersection of Industrial Parkway and Mission Boulevard (29705 Mission Boulevard) in Hayward, California (Plate 1). Former site features included one 10,000 and one 8,000 gallon UST for gasoline, one 8,000 gallon UST for diesel, and one 500 gallon UST for waste-oil (Plate 2).

Existing site features include the station building, the service island canopy, and a temporary chain link fence enclosing the site. The topography of the site and surrounding properties slope gently from east to west.

2.0 PREVIOUS ENVIRONMENTAL WORK

When the site was an operating Beacon Station, three USTs for fuel were located east of the station building and one UST for waste-oil was located behind the station building. Kaprealian Engineering, Inc. (KEI) drilled five borings around the USTs for fuel in April 1987. These tanks were removed in April 1988 and three ground water monitoring wells were installed in June and July of 1988 by AGS.

2.1 Exploratory Drilling

Kaprealian drilled five exploratory borings to a depth of 30 feet around the USTs for fuel in April 1987. Three soil samples were retained from four borings and two samples from one boring for chemical analyses. In addition, unpurged ground water samples were collected from four of the five borings. Kaprealian reported encountering ground water at 26 feet in all five borings.

The results indicate that concentrations of total petroleum hydrocarbons (TPH) in soil samples ranged from 7.3 to 1,600 parts per million (ppm). The unpurged ground water samples collected all contained relatively high concentrations of hydrocarbons (2.0 to 1,700 parts per million [ppm] TPH). A location map of the borings and the summary of the laboratory results are included in Appendix C to this report.

2.2 Tank Removal

In 1988, AGS observed the removal of the USTs, inspected the tanks for holes, and collected soil samples from the tank pits for chemical analysis (AGS Report 18008-1, August 4, 1988). Small holes were observed in one of the gasoline tanks and the The results of soil samples collected within two waste-oil tank. feet beneath the areas corresponding to the bottom ends of each tank indicated hydrocarbons ranging from 5 to 184 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPHg), and nondetectable to 2,750 ppm total petroleum hydrocarbons as diesel (TPHd). A sample from the former waste-oil tank pit indicated nondetectable levels of total petroleum hydrocarbons as waste-oil (TOG) and 0.035 and 0.016 ppm acetone and methylene The fuel storage tank pit was excavated to approximately 25 feet below grade. Based on the KEI site plan it appears that the KEI boreholes were encompased in the tank According to the August 1988 AGS report, visual observation indicated that soil impacted by hydrocarbons was excavated from the tank excavations. The results of soil samples collected from the 13 to 15 foot depth zone in the product tank excavation and 9 feet in the waste oil tank pit are summarized in Table 1.

2.3 Well Installation

In June and July 1988, AGS installed three 4-inch-diameter ground water monitoring wells at the site (Applied GeoSystems 18008-3, August 17, 1988). Soil samples were collected from the well

borings at a depth immediately above the ground water (25 feet). The results of the soil samples indicated nondetectable to 59 ppm

TABLE 1 LABORATORY RESULTS OF SOIL SAMPLES COLLECTED DURING THE TANK REMOVAL IN 1988 Beacon Station 546 29705 Mission Boulevard Hayward, California

Sample Identifier	ТРНд	TPHd	TOG	Voc
S-15-T1N	184	NA	NA	NA
S-13-T1S	112	NA	NA	NA
S-15-T2N	46	NA	NA	NA
S-15-T2S	5	NA	NA	NA
S-15-T3E	NA	2,750	NA	NA
S-15-T3W	NA	<5	NA	NA
S-9-WT	NA	<5	<30	<*

Results reported in parts per million (ppm)

TPHg = total petroleum hydrocarbons as gasoline

TPHd = total petroleum hydrocarbons as diesel

TOG = total petroleum hydrocarbons as oil and grease

VOC = volatile organic compounds

< = less than detection limit for method of analysis used</pre>

NA = analysis not required

* = less than the respective detection limits for each VOC except for acetone and methylene chloride

Sample description: S-9-T4S

S-9-T4S
Side of pit sampled
(WT = Waste-oil tank)
Tank number
Depth below grade (feet)
Soil

TPHg (borings MW-1 through MW-3) and 255 ppm TPHd (boring MW-1). The wells were developed, purged, and sampled for laboratory analysis. The concentration of TPHg in water ranged from 2.81 ppm in MW-3 to 17.4 ppm in MW-1. Total petroleum hydrocarbons as

TABLE 2 CUMULATIVE ANALYTICAL RESULTS OF SOIL SAMPLES FROM BORINGS MW-1 THROUGH MW-6 Beacon Oil Company Station 546 29705 Mission Boulevard Hayward, California

Sample Number	ТРНд	TPHd	Benzene	Toluene	Ethyl- benzene	Total Xylenes
Sample date	: 6/30/	88 and	7/1/88			
S-25-MW1	59	255	13.4	58.1	10.3	63.2
S-25-MW2	28	NA	0.30	0.99	0.62	2.85
S-25-MW3	<2	NA	0.28	0.10	0.09	<0.05
Sample date	: 6/26/	89 and	6/27/89			•
S-10-B4	< 5	NA	<0.04	<0.04	<0.04	<0.04
S-15-B4	<5	NA	<0.04	<0.04	<0.04	<0.04
S-20-B4	NA	<10	1.27	0.92	0.59	3.02
S-10-B5	<5	NA	<0.04	<0.04	<0.04	<0.04
S-15-B5	<5	NA	<0.04	<0.04	<0.04	<0.04
S-20-B5	NA	<10	<0.04	<0.04	<0.04	<0.04
S-25-B6	<5	NA	<0.04	<0.04	<0.04	<0.04
Sample date	: 2/22/	90 and	2/23/90			
S-171/2-B7	1.5		<0.1	<0.1	<0.1	<0.1
S-20-B7	9.9	<5	<0.1	<0.1	<0.1	0.1
S-221/2-B7	<1.0	<5	<0.1	<0.1	<0.1	<0.1
S-15-B8	14	NA	0.9	<0.1	<0.1	0.1
S-20-B8	150	<5	1.7	<0.1	2.7	6.6
S-25-B8	2.6	<5	0.3_	<0.1	<0.1	0.3

Results are in parts per million (ppm)

B4 = MW4, B5 = MW5, and B6 = MW6

TPHg = total petroleum hydrocarbons as gasoline

TPHd = total petroleum hydrocarbons as diesel

< = below the detection limits of the analysis</pre>

Sample designation = $\underline{S} - \underline{25} - \underline{B8}$

- Boring or well number - Sample depth in feet - Sample Matrix (Water) diesel was detected in the water sample from MW-1 (at 5.4 ppm) and was not analyzed in the other two wells. The laboratory results of the soil samples are summarized in Table 2; results of water samples from MW-1 through MW-3 are summarized in Table 3.

TABLE 3

CUMULATIVE ANALYTICAL RESULTS OF WATER SAMPLES Beacon Oil Company Station 546 29705 Mission Boulevard Hayward, California (Page 1 of 2) Sample Ethyl-Total Number Date TPHd TPHq Benzene Toluene benzene Xylenes Well MW-1 7/88 W-25-MW1 17.4 5.4 4.07 2.99 0.33 3.59 2/89 W-25-MW1 20.8 NA 1.43 0.19 2.45 0.89 8/89 W-25-MW1 1.50 NA 0.300 0.280 0.100 0.600 10/89 W-25-MW1 0.079 NA <0.0005 <0.0005 <0.0005 <0.0005 3/90 W-26-MW1 3.1 <0.050 0.8 0.19 0.0006 0.38 Well MW-2 7/88 W-23-MW2 7.16 NA 1.266 2.117 0.230 1.563 2/89 W-24-MW2 4.13 NA 0.231 0.102 0.030 0.113 8/89 W-24-MW2 0.950 NA 0.110 0.065 0.067 0.270 10/89 W-24-MW2 0.930 NA 0.240 0.220 0.034 0.074 3/90 W-23-MW2 0.260 0.0025 < 0.0005 <0.050 0.0/043 0.044 Well MW-3 7/88 W-27-MW3 2.81 NA 0.094 0.006 0.028 0.029 2/89 0.09 W-27-MW3 NA 0.0026 < 0.0005 0.0005 0.0006 8/89 W-26-MW3 0.025 NA 0.0059 0.0057 0.0037 0.0164 10/89 W-26-MW3 < 0.050 <0.0005 <0.0005 <0.0005 <0.0005 NA 3/90 W-26-MW3 <0.050 <0.050 <0.0005 <0.0005 <0.0005 <0.0005 Well MW-4 7/89 W-22-MW4 0.550 NA 0.144 0.191 0.032 0.1106 8/89 W-23-MW4 2.50 NA 0.280 0.460 0.140 0.980 10/89 0.780 W-23-MW4 8.001 NA 1.600 0.120 0.550 W-21-MW4 3/90 1.3 <0.050 0.280 0.071 0.0006 0.19 See Page 2 of 2 for explanation.

	CUMULATI	Beacon 2970	TICAL R Oil Com 5 Missi ayward,	LE 3 ESULTS (pany Sta on Boule Califor 2 of 2)		SAMPLES	
Date	Sample Number	TPHg	TPHd	Benzene	Toluene	Ethyl- benzene	Total Xylenes
Well	MW-5						,
7/89	W-24-MW5	5.2	ΝA	0.970	1.100	0.520	1.250
	W-24-MW5				0.430		
10/89	W-24-MW5	8.8	NA		0.370		
3/90	W-23-MW5	27	<0.050		0.98		
Well	MW-6			V .			
7/89	W-24-MW6	0.350	NΑ	0.0835	0.587	0.269	n n799
	W-24-MW6		NA	0.00187	0.00196	0.00168	0.0733
	W-24-MW6		NA	<0.0005	<0.0005	<0.0005	<0.00150
	W-23-MW6			0.0013		0.0012	
Well	MW-7						
3/90	W-17-MW7	0.27	<0.050	0.022	<0.0005	<0.0005	0.0014
Well	MW-Q						
	W-16-MW8	1.2	<0.050	0.8	0.19	0.0006	0.380
ND = NA = < = TPHg TPHd	None Detection None Detection Not analyz Below detection Total period Total period designate	ted. ed. ection l troleum	imits hydroca hydroca -16-MW-8	arbons a arbons a 3 - Well n - Sample	s gasolir s diesel.	ı feet	

3.0 PHYSICAL CHARACTERISTICS

The site is bordered on the northwest by Industrial Parkway, and on the northeast by Mission Boulevard. The southern portion of the site is bordered by a retail center and a bowling alley.

The site and surrounding properties slope gently from east to west. From east to west, elevations at the site range between 40 feet to 28 feet above mean sea level.

3.1 Regional Geology

The Beacon Site is located within the flatlands of the San Francisco Bay Region. This region is characterized by northwest-trending mountain ranges, broad basins, and narrow valleys.

The Beacon site is situated on the Bay Plain on the eastern side of the San Francisco Bay depression. The San Francisco Bay depression is characterized by crustal downwarping caused by movement along northwest-trending faults that bound the depression (California Department of Water Resources [DWR], 1963). The Hayward fault forms the eastern boundary of the depression and is located approximately 2000 feet east of the site.

The Bay Plain in the vicinity of the site is composed of fluvial deposits of the San Lorenzo Cone. Deposits of the San Lorenzo Cone consist of interbedded gravel, sand, silt, and clay of Quaternary age. These strata are discontinuous and slope gently westward toward the San Francisco Bay (Maslonkowski, 1984).

3.2 Regional Hydrogeology

Five primary aquifer zones are identified in strata of the San Lorenzo Cone. A shallow zone which consists of interbedded permeable and semi-permeable lenses extends from the ground surface to a depth of approximately 50 feet. The second zone extends from approximately 30 feet to 100 feet below the surface

and is equivalent to the Newark Aquifer of the Niles Cone. Aquifers found between approximately 130 feet to 220 feet below the surface are analogous to the Centerville Aquifer of the Niles Cone. Aquifers found between approximately 250 feet and 400 feet below the surface are identified as the Fremont Aquifer of the Niles Cone. Those found at a depth greater than 400 feet are referred to as deeper aquifers (Maslonkowski, 1984).

The shallow saturated zone beneath the site consists of silty clay that may be fractured. These fractures apparently are of relatively high permeability. The permeable zone generally is recharged by infiltration of precipitation, irrigation, and stream flow. The water level of the saturated zone exhibits minor fluctuation seasonally. Data collected from previous environmental investigations suggest a ground-water flow direction generally toward the southwest (AGS Report 18008-3, August 17, 1990).

3.2 Well Inventory

Alameda County Flood Control and Water Conservation District records indicate approximately 25 sites within a 1/2-mile of the site that have or had wells. Total depth of these wells varies from less than 9 feet to greater than 400 feet below the ground surface. The records indicate some of the wells may have been destroyed. Wells in the vicinity of the site are used for irrigation, industrial, domestic, or monitoring purposes.

Two irrigation wells are located in the vicinity of the intersection of Mission Boulevard and Alquire Road. These wells were operated by Hayward Golf Course, which has been abandoned for some time. To the southeast of the site approximately two

blocks, Arco Station 362 has six monitoring wells between 4 and 41 feet in depth. Table 4 summarizes the well inventory data.

TABLE 4
WELL INVENTORY WITHIN 1/2 MILE OF BEACON SITE
Beacon Oil Company Station 546
29705 Mission Boulevard
Hayward, California

Well Number	Map Number	Total Well Depth	Well Use	Diameter (inches)
3S/2W 35A 1	1.	84	DOM	10
3S/2W 35A 2	2	28	DES	60
3S/2W 35B 3	3	65	ABN	6
3S/2W 35C	4	?	DES	?
3S/2W 35C 1	5	90	DOM	?
3S/2W 35C 3	6	32	IRR	8
3S/2W 35E 1	7	142	DOM	?
3S/2W 35F	8	?	DES	?
3S/2W 35F 1	9	68	IRR	8
3S/2W 35F 2	10	63	DOM	8
3S/2W 35F 3	11	31	MON	2
3S/2W 35H 1	12	180	DOM	?
3S/2W 35H 2	13	100	DOM	8 ?
3S/2W 35H 3	14	265	CAT	?
3S/2W 35H 4	15	?	DES	?
3S/2W 35H 5~8	16	16-22	BOR	0
3S/2W 35L	17	55	DES	8
3S/2W 35L 1	18	51	DOM	6
3S/2W 35L 4	19	470	DOM	6
3S/2W 35L 5-1		9-20	MON	2
3S/2W 35N 1-3		65 - 72	?-DES	7
3S/2W 35P 3	22	?	?	?
35/2W 35P 4	23	265	CAT	?
3S/2W 35R 1	24	570	IRR	12
3S/2W 36M 5-1	0 25	4-41	MON	2

Total depth measurements are in feet.

BOR = Boring

CAT = Cathodic protection well

rotection well DES = Destroyed well

MON = Monitoring well

IRR = Irrigation well

DOM = Domestic well

5-13 = Nine wells at the site.

65-72 = Depths of the wells vary from 65 to 72 feet.

? = Unknown

The location of the well sites within 1/2-mile of the site are shown on Plate 3.

4.0 FIELD AND LABORATORY INVESTIGATIONS

During this investigation, well installation was completed in two episodes and a site aquifer test was performed. Offsite wells MW-4 through MW-6 were installed in June and July 1989, following which, a pumping test was performed to evaluate the hydraulic characteristics of the saturated zone. Based on data from the pumping test, two additional offsite wells (MW-7 and MW-8) were installed in February 1990. In addition, existing 2-inchdiameter well MW-4 was reconstructed with 4-inch-diameter casing.

Work performed at the site by AGS and its subcontractors was in accordance with AGS Site Safety Plan 18008-4S, dated June 1, 1989. A discussion of the procedures used to conduct various aspects of the investigation is included in Appendix A. Subsurface sediments were described using the Unified Soil Classification System and geologic information collected during drilling is presented on Logs of Borings (Plates B1 through B11) in Appendix B.

4.1 Well Installation

On June 26 and 27, 1989, AGS observed the drilling for and installation of wells MW-4 through MW-6. These wells were located to the southwest, south, and southeast of the Beacon site in the parking lot of the Holiday Bowl.

On February 21 through 23, 1990, AGS observed the drilling for and installation of wells MW-7 and MW-8, and the reconstruction

of existing well MW-4. These wells were located to the southwest of the Beacon site in the parking lot of the Holiday Bowl. Well MW-7 was installed in the sidewalk adjacent to Industrial Parkway to evaluate extent of hydrocarbons to the west. Well MW-8 was installed in the Holiday Bowl parking lot in the inferred hydraulic downgradient direction to evaluate the extent of hydrocarbons to the southwest. Well MW-4 was reconstructed from a 2-inch-diameter to 4-inch-diameter well to increase its capacity as a possible recovery well.

4.1.1 Drilling, Construction, Development, and Sampling of the Wells

In general, the sediments encountered in borings MW-4 through MW-6 from ground surface to between 35 and 40 feet are silty clays with minor amounts of sand and gravel. Three soil samples from MW-4 and MW-5 and one from MW-6 were retained for chemical analysis. Wells MW-4 and MW-6 were completed at a depth of 40 feet and MW-5 was completed at a depth of 35 feet. The wells were screened from total depth to 15 feet (MW-5) and 20 feet (MW-4 and MW-6) below grade. Ground water samples were collected from MW-4 through MW-6 after each well was developed using a combination of surging and pumping. The wells were surveyed by a licensed land surveyor on July 3, 1989. A site ground water elevation map is constructed using the data shown in Table 5, and indicates a hydraulic gradient to the southwest (Plate 4). The graphical representation of the construction of wells MW-4 through MW-6 are shown on Plates B2 through B6 in Appendix B.

TABLE 5 GROUND-WATER SURFACE ELEVATION DATA Beacon Oil Company Station 546 29705 Mission Boulevard Hayward, California (July 3, 1989)

Well No.	Casing Elevation (X)	Depth to Ground Water (Y)	Ground-Water Elevation (X - Y)
MW-1	37.46	24.25	13.21
MW-2	35.95	22.87	13.08
MW-3	40.28	26.81	13.47
MW-4	34.88	22.04	12.84
MW-5	36.37	23.35	13.02
MW-6	37.43	23.95	13.48

Measurements are in feet.

Casing surveyed by Ron Archer, Civil Engineer, Inc., License No. 23721 of Pleasanton, California, on July 5, 1989.

Benchmark: The top of a brass disk set in concrete in a monument casing at the intersection of Mission Boulevard and Industrial Parkway on the west side

of centerline of Mission Boulevard. Elevation taken as 36.547 mean sea level, City of Hayward datum.

In general, the sediments encountered in the well borings of MW-7 and MW-8 from ground surface to between 33 and 40 feet are silty clays with minor amounts of sand and gravel. This is consistent with material logged in previous well borings. Ground water was encountered at depths of approximately 22 feet (MW-7) and 23 feet (MW-8).

Three soil samples from MW-7 and MW-8 were retained for chemical analysis. Wells MW-7 and MW-8 were completed at a depth of 33 and 40 feet. Wells were screened from total depth to 18 feet (MW-7) and 20 feet (MW-8) below grade. The graphical

construction of MW-7 and MW-8 are shown on Plates B8 and B10 in Appendix B. Wells MW-7 and MW-8 were allowed to set for 72 hours and then were developed using a combination of surging and pumping. The wells were purged and sampled 72 hours after development.

4.1.2 Analytical Results of Soil Samples

Soil samples collected at depths of 10, 15, and 20 feet from MW-4 and MW-5, and 25 feet from MW-6, were analyzed for TPHg using modified Environmental Protection Agency (EPA) method 8015, and for the gasoline constituents benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) using EPA Method 8020. In addition, two soil samples collected from 20 feet below grade from MW-4 and MW-5 were analyzed for TPHd by EPA Method 8015. The results indicate no TPHg, TPHd, or BTEX were detected except in the sample collected from 20 feet below grade in boring B-4 which contained low levels of BTEX. The results of these analyses are summarized in Table 2.

Soil samples collected at depths of 17-1/2, 20, and 22-1/2 feet from MW-7 and 15, 20, and 25 feet from MW-8, were analyzed for TPHg using modified EPA method 8015, and for BTEX using EPA Method 8020. In addition, the samples collected from 20 and 22-1/2 feet below grade from MW-7 and 20 and 25 feet below grade from MW-8 were analyzed for TPHd by EPA Method 8015. Total petroleum hydrocarbons as diesel was not detected in samples from MW-7 and MW-8.

The results for MW-7 indicate 1.5 ppm TPHg at 17-1/2 feet below grade, 9.9 ppm TPHg and 0.1 ppm xylenes at 20 feet below grade, and no detectable TPHg or BTEX at 22-1/2 feet. Similarly, the results for MW-8 indicate, 14 ppm TPHg, 0.9 ppm benzene, and 0.1

ppm xylenes at 15 feet below grade; 150 ppm TPHg, 1.7 ppm benzene, 2.7 ppm ethylbenzene, and 6.6 ppm xylenes at 20 feet below grade; and 2.6 ppm TPHg, 0.3 ppm benzene, and 0.3 ppm xylenes at 25 feet below grade.

The results of analytical soil analysis for wells MW-7 and MW-8 are shown in Table 2. The laboratory reports are included in Appendix C to this report.

4.2 July 1989 Analytical Results of Water Samples

The water samples collected from wells MW-4 through MW-6 were analyzed in the laboratory for TPHg using Department of Health Services Leaking Underground Fuel Tank (DHS-LUFT) Method and for BTEX by EPA Method 503.1. Detectable levels of TPHg and BTEX were found in MW-4 through MW-6 with MW-5 being the highest at 5.2 ppm TPHg, 0.970 ppm benzene, 1.10 ppm toluene, 0.520 ppm ethylbenzene, and 1.25 ppm total xylenes. The results of these and previous analyses are summarized in Table 3. The laboratory reports are included in Appendix C to this report.

4.3 Ground Water Sampling Prior to Pumping Test, August 1989

Ground water from wells MW-1 through MW-6 was sampled in August 1989 to evaluate hydrocarbon concentrations prior to a pumping test. Wells MW-1 through MW-6 were purged and sampled on August 10, 1989, and analyzed for organic chemicals consisting of benzene, toluene, ethylbenzene, 1,4-dichlorobenzene, monochlorobenzene and total xylenes by EPA Method 503.1.

The compounds BTEX were detected in all six wells at varying concentrations. Wells MW-1 and MW-5 had the highest

concentration of these constituents compared to the other wells. The results of these analyses are summarized in Table 3. The laboratory reports are included in Appendix C to this report.

4.4 Pumping Test

On October 16 and 17, 1989, a pumping test was conducted at the site for a period of 26-1/2 hours. The purpose of the test was to evaluate the hydraulic conductivity, transmissivity, storativity, radius of influence, and heterogeneity of the aquifer. The values for the aformentioned parameters are typically used in the design of ground water treatment systems.

Ground water was pumped from MW-1 at a discharge rate of 6-1/2 gallons per minute (gpm) and drawdown was recorded in the pumping well and five observation wells. The distance to the observation wells ranged from 42 to 112 feet from MW-1. Drawdown was recorded in all of the observation wells and ranged from 0.38 (MW-3) to 0.84 (MW-5) feet. The drawdown in the pumping well was 4.58 feet. The amount of drawdown recorded in each well and the distance of the wells from the pumping well is summarized in Table 6.

During the ground water recovery period of the test, a magnitude 7.1 earthquake (Loma Prieta Earthquake) struck the San Francisco Bay Area disrupting the natural recovery of the ground water. It was noted that water levels in the observation wells fluctuated up to 1 foot during the first 20 minutes after the first shock. Because of this, only the drawdown data was used to evaluate the aquifer test data. The interpretation of the data and the approximate values for pertinent hydraulic characteristics are presented in Section 5.0.

TABLE 6	
DISTANCE DRAWDOWN DATA	
Beacon Oil Company Station	546
29705 Mission Boulevard	
Hayward, California	

Well Number	Total Drawdown	Distance from Pumped Well
MW-1	4.58	0
MW-2	0.40	112
MW-3	0.38	98
MW-4	0.61	68
MW-5	0.84	42
MW-6	0.40	95

Measurements are in feet after pumping MW-1 at 6-1/2 gpm for 26-1/2 hours.

4.4.1 Ground Water Sampling Following Pumping Test

Following the pumping test, the observation wells (MW-2 through MW-6) were purged, and ground water samples were collected from all six wells. The ground water samples were analyzed for TPHg by DHS LUFT Method and BTEX by EPA Methods 5030 and 602. The data indicate that there was a significant decrease in BTEX concentrations in MW-1 (pumping well), and notable decreases in BTEX in wells MW-3 and MW-6 following the pumping test. Benzene increased in MW-5 while toluene, ethylbenzene, and xylenes decreased. In well MW-2, the concentration of BTEX remained within the same general magnitude. The concentration of BTEX increased in MW-4, which is in the inferred downgradient direction of the former tank pit area on the Beacon site.

4.5 Reconstruction of MW-4

Well MW-4 was reamed with 10-inch-diameter augers and reconstructed with 4-inch-diameter casing to its original depth of 40-1/2 feet. The procedures for reconstruction are described in Appendix A, the graphical construction of the well is shown on Plate B2 and B3 in Appendix B.

4.6 Purging and Sampling of All Wells

Following the installation and development of MW-7 and MW-8, wells MW-1 through MW-8 were purged on March 5 and 6, 1990, and analyzed for TPHg by EPA Method 5030, for TPHd by EPA Method 3550, and for BTEX by EPA Method 602. No TPHd was detected in any of the water samples from the wells. The results indicate that:

- o TPHg and BTEX remained nondetectable in MW-3;
- o TPHg and BTEX had decreased in MW-2 and MW-4;
- o TPHg and BTEX had increased in MW-1 and MW-5;
- o TPHg remained nondetectable, but BTEX increased to slightly above detection limits in MW-6;
- o 0.270 ppm TPHg, 0.022 ppm benzene, and 0.0014 ppm xylenes were detected in MW-7;
- o 1.2 ppm TPHg, 0.800 ppm benzene, 0.190 ppm toluene, 0.0006 ppm ethylbenzene, and 0.380 ppm xylenes were detected in MW-8.

The cumulative results of ground water samples collected at the study site are summarized in Table 3. The laboratory reports for the March 1990 samples are included in Appendix C to this report.

4.7 Evaluation of Ground Water and Hydraulic Gradient

Periodically, the wells have been subjectively evaluated for floating product or sheen and the depth to water in each well measured. No floating product or sheen have been recorded in any of the wells, however, slight to moderate product odor has been reported in all the wells except for MW-2, MW-3, and MW-6. The cumulative results of ground water subjective evaluations to date is presented in Table 7.

TABLE 7	
CUMULATIVE RESULTS OF GROUND WATER	EVALUATIONS
Beacon Oil Company Station	546
29705 Mission Boulevard	
Hayward, California	
(page 1 of 2)	

Well	Date	Depth to Water	Floating Product	Sheen	Notes
MW-1	7/7/88	24.45	None	None	Slight odor
	2/24/89	24.42	None	None	No odor
	7/7/89	24.25	None	None	No odor
	8/9/89	24.58	None	None	Slight odor
	10/16/89	25.06	None	None	Moderate
	3/5/90	23.71	None	None	Strong
MW-2	7/7/89	23.07	None	None	No odor
	2/24/89	23.00	None	None	No odor
	7/3/89	22.87	None	None	No odor
	8/9/89	23.19	None	None	No odor
	10/16/89	23.65	None	None	No odor
	3/5/90	22.28	None	None	Slight
MW-3	7/7/88	26.98	None	None	No ođor
	2/24/89	26.97	None	None	No odor
	7/3/89	26.81	None	None	No odor
	8/9/89	27.10	None	None	No odor

Depth to water is in feet below the top of casing.

TABLE 7
CUMULATIVE RESULTS OF GROUND WATER EVALUATIONS
Beacon Oil Company Station 546
29705 Mission Boulevard
Hayward, California
(page 2 of 2)

Well	Date	Depth to Water	Floating Product	Sheen	Notes
MW-3	10/16/89	27.60	None	None	No odor
	3/5/90	26.25	None	None	No odor
MW-4	6/30/89	21.97	None	None	No odor
	7/3/89	22.04	None	None	No odor
	8/9/89	22.21	None	None	No odor
	10/16/89	22.75	None	None	No odor
	3/5/90	21.45	None	None	Slight
MW-5	6/30/89	23.33	None	None	Slight odor
	7/3/89	23.35	None	None	No odor
	8/9/89	23.66	None	None	No odor
	10/16/89		None	None	No odor
	3/5/90	22.74	None	None	No odor
MW-6	6/30/89	23.94	None	None	No odor
1	7/3/89	23.95	None	None	No odor
	8/9/89	24.29	None	None	No odor
	10/16/89	24.82	None	None	No odor
	3/5/90	23.45	None	None	No odor
MW-7	3/5/90	17.29	None	None	Slight
MW-8	3/5/90	15.57	None	None	Slight
Depth	to water	is in feet	below the t	op of ca	asing.

Wells MW-4, MW-7, and MW-8 were surveyed by a licensed land surveyor and tied into existing data on February 27, 1990. Water level data (shown in Table 8) from March 5, 1990 was used to construct the site ground water elevation map shown on Plate 5. The data suggests a ground water flow direction to the southwest which is consistent with the July 3, 1989 inferred flow direction. A copy of the surveyors report is in Appendix D.

TABLE 8 GROUND-WATER SURFACE ELEVATION DATA Beacon Oil Company Station 546 29705 Mission Boulevard Hayward, California (March 5, 1990)

Well No.	Casing Elevation (X)	Depth to Ground Water (Y)	Ground-Water Elevation (X - Y)
MW-1	37.46	23.71	13.75
MW-2	35.95	22.28	13.67
MW-3	40.28	26.81	14.03
MW-4	34.94	21.45	13.49
MW-5	36.37	22.74	13.63
MW6	37.43	23.45	13.98
MW-7	30.50	17.29	13.21
MW-8	28.48	15.57	12.91

Measurements are in feet.

Casing surveyed by Ron Archer, Civil Engineer, Inc., License No. 23721 of Pleasanton, California, on July 5, 1989. Wells MW-4, MW-7, and MW-8 were surveyed on February 27, 1990.

5.0 SITE GEOLOGY AND HYDROLOGY

Physical characteristics of the shallow subsurface material encountered beneath the study site are discussed in the following section. The soil type, local stratigraphy, and soil characteristics are presented in section 5.1. Hydogeological properties, including pumping test data and interpretation are outlined in section 5.2.

5.1 Site Stratigraphy

The site is underlain by silty clays with varying amounts of sand and gravel. Occasionally, minor lenses of clayey silt (MW-7) or clayey and sandy gravel (MW-2) are encountered. In some instances, fractures in the silty clay have been noted in the saturated zone. A sieve analysis was performed on a sample collected from the saturated zone in MW-5. The test results indicate that the sample is a silty clay with approximately 90 percent of the material of silt or clay size (passing No. 200 sieve). The laboratory report is included in Appendix D to this report. Two geologic cross sections were constructed using data from the Logs of Borings and are presented on Plates 6 and 7. The analytical results of soil samples are shown on the cross sections.

5.2 Site Hydrogeology

Data collected during the previous and the present investigations indicate that the ground water beneath the site is unconfined. Ground water flow beneath the site may be locally accentuated due to a fractured zone in the silty clay.

5.2.1 Hydraulic Characteristics

Data from the pumping test is summarized and the hydrogeologic characteristics are presented in this section. The hydraulic parameters consisting of hydraulic conductivity (K), transmissivity (T), storativity (S), well maximum yield, and radius of influence were evaluated using the procedures described in Appendix A.

The cone produced from pumping MW-1 began influencing the closest observation well located 42 feet away (MW-5) after 17 minutes, and began influencing the farthest observation well located 112 feet away (MW-2) after 100 minutes. The data indicates that no significant flow boundaries exist beneath the site. A schematic diagram illustrating the cone is shown on Plate 8.

Ground water flow beneath the site may be influenced in part by the presence of fractures in the silty clay. These fractures were most evident in the borings of wells MW-7 and MW-8. In addition, because MW-1 can be pumped continuously at 6-1/2 gpm, and the sieve analysis indicates a silty clay in the saturated zone, suggests fracture flow may be the dominant mode of ground water flow.

The results of the aquifer test suggest the following values for K, T, and S using curve matching techniques developed after Theis (1935) and an Analytical Method developed by Theim (1906). These values are:

Curve Matching

o $K = 4.2 \times 10^{-3}$ centimeters per second (cm/sec)

oT = 1795 gpd/ft

 $oS = 4.0 \times 10^{-3}$

Analytical Method

 $oK = 6.3 \times 10^{-3} \text{ cm/sec}$

oT = 2678 gpd/ft

 $os = 6.5 \times 10^{-3}$

As shown, the values obtained from the two separate methods agree fairly well.

Well MW-1 can be expected to yield approximately 11-1/2 gpm at 10 feet of drawdown. Typically, 14 feet of water is recorded in MW-1. The 4.58 feet of drawdown produced by a discharge of 6-1/2 gpm in the well during the aquifer test is 32 percent of the total possible drawdown (14 feet). Using a curve produced by Fletcher (1986, p. 217), the 32 percent is analogous to 52 percent of the obtainable maximum yield. Thus, 6-1/2 gpm is 52 percent of the maximum yield of the well. Using similar calculations, the specific capacity of well MW-1 is estimated to be 1.15 gpm/ft drawdown.

6.0 CHEMICALS IN SOIL AND GROUND WATER

As previously discussed, TPHg and BTEX have been found in some of the soil and ground water samples collected from the site area. The impact of these chemical compounds on the soil and ground water at the site is discussed in this section.

6.1 Distribution of Organic Compounds in Soil

Kaprealian drilled five exploratory borings to a depth of 30 feet around the USTs for fuel in April 1987. Concentrations of total TPH in soil samples ranged from 7.3 to 1,600 ppm. During the UST removal in 1988, soil samples collected from below the tanks were found to contain between 5 and 184 ppm TPHg, in addition, one sample contained 2,759 TPHd. In 1988, soil samples collected slightly above the ground water from well borings MW-1 and MW-2 contained 59 and 28 ppm TPHg. The samples from MW-1 also contained 255 ppm TPHd and 13.4 ppm benzene, 10.3 ppm ethylbenzene, 58.1 ppm toluene, and 63.2 ppm total xylenes. Based on the KEI site plan it appears that the KEI boreholes were encompased in the excavations for the removal of the tanks.

In 1989, soil samples collected from well borings MW-4 through MW-6 did not contain detectable concentrations of TPHg and BTEX except for one sample from MW-4. No TPHd was detected in soil from MW-4 and MW-5. Soil collected from MW-4 at a depth of 20 feet contained low levels of TPHg and BTEX.

Hydrocarbons were found in the soil near wells MW-7 and MW-8 at depths from approximately 15 to 25 feet, the highest concentration of TPHg occuring at 20 feet. In 1990, three soil samples per boring were analyzed from well MW-7 and MW-8. In

boring MW-7, the TPHg concentration was 1.5 ppm at 17-1/2 feet, 9.9 ppm at 20 feet, and <1.0 ppm at 22-1/2 feet below grade. Similarly, TPHg concentrations in soil from MW-8 was 14 ppm at 15 feet, 150 ppm at 20 feet, and 2.6 ppm at 25 feet below grade. Two soil samples from each of these well borings were analyzed for TPHd but none was detected.

6.2 Distribution of Organic Compounds in Ground Water

Water samples collected from the wells have contained detectable concentrations of TPHg and BTEX. Presently, the highest concentrations of these compounds are found near MW-5. The concentrations of these compounds have fluctuated with time and in response to the pumping test in October 1989. However, concentrations of TPHg and BTEX have continued to increase over time in MW-5.

Dissolved hydrocarbons appear to be migrating south and southwest. As previously discussed, the inferred ground water flow direction is southwest which is consistent with the concentration maps of TPHg and benzene shown on Plates 9 and 10. In addition, the hydrocarbons appear to be migrating south toward MW-5, which may be due to lateral migration along preferred fractures in the silty clay.

7.0 FINDINGS AND RECOMMENDATIONS

The principal findings of the investigation and the resulting recommendations are outlined in this section. The findings are summarized in Section 7.1 and the recommendations are presented in Section 7.2.

7.1 Findings

This investigation was intended to complement previous interim investigations, to further characterize the subsurface conditions at the site and vicinity, and included the sampling and analyses of soil and ground water. The following section summarizes the nature of the subsurface geologic materials, nature and extent of the chemicals in the different media, and provides principal findings related to the distribution of chemical compounds at the site.

- o A vertically continuous silty clay sequence is found beneath the site to a depth of approximately 40 feet.
- o Fractures were observed in soil samples collected from the saturated zone.
- o Ground water occurs under unconfined conditions beneath the site, ranges from approximately 13 to 14 feet in elevation (25 to 26 feet below grade), generally flows toward the southwest, and may be flowing in part through a fractured system.
- o An aquifer test performed in October 1989 suggests the following values for these aquifer parameters:
 - Hydraulic Conductivity = 4.2 to 6.3 X 10⁻³ cm/sec
 - Transmissivity = 1795 to 2678 gpd/ft
 - Storativity = 4.0 to 6.5×10^{-3}

In addition, the specific capacity for MW-1 is estimated to be 1.15 gpm/ft drawdown.

- o The radius of influence produced by pumping MW-1 at 6-1/2 gpm is at least 112 feet.
- The compounds TPHg, TPHd, and BTEX were detected in the soil beneath the Beacon site, and relatively low (nondetectable to less than 150 ppm) TPHg and BTEX have also been found in offsite soil near wells MW-4, MW-7, and MW-8. The magnitude and extent of hydrocarbons in soil have yet to be fully delineated.
- o The compounds TPHg and BTEX were present in the ground water samples collected from beneath the Beacon site and to the south and southwest at least as far as MW-5 and MW-8. Based on the laboratory data, the vertical and lateral extent of hydrocarbons in ground water has not yet been fully delineated.

7.2 Recommendations

The following recommendations are based on the findings of the subject investigation. The recommendations pertain primarily to additional site characterization.

- o Resample wells MW-1 through MW-8 to verify chemical concentrations in the ground water.
- A study should be performed to evaluate the fate and transport of chemical compounds in the subsurface environment.
- o A program for delineation of organic chemical compounds in the soil and ground water should be implemented.
- Quarterly monitoring of the ground water at the site and vicinity should continue and include subjective evaluation and laboratory analyses of water samples.

LIMITATIONS

This report was prepared in accordance with standards of environmental geological practice generally accepted in California at the time this investigation was performed. This investigation was conducted solely for the purpose of evaluating environmental conditions of the soil and first ground water with respect to hydrocarbons in the vicinity of the Beacon site. No soil engineering or geotechnical recommendations are implied or should be inferred. Evaluation of the geologic conditions at the site for the purpose of this investigation is made from a limited number of observation points. Subsurface conditions may vary away from the data points available. Additional work, including further subsurface investigation, can reduce the inherent uncertainties associated with this type of investigation.

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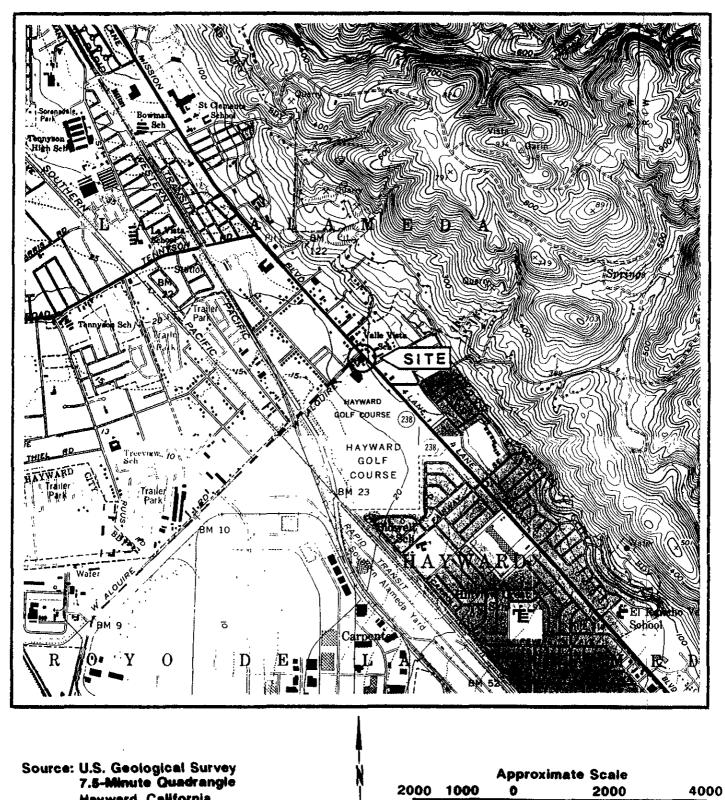
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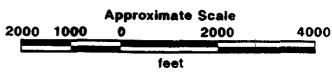
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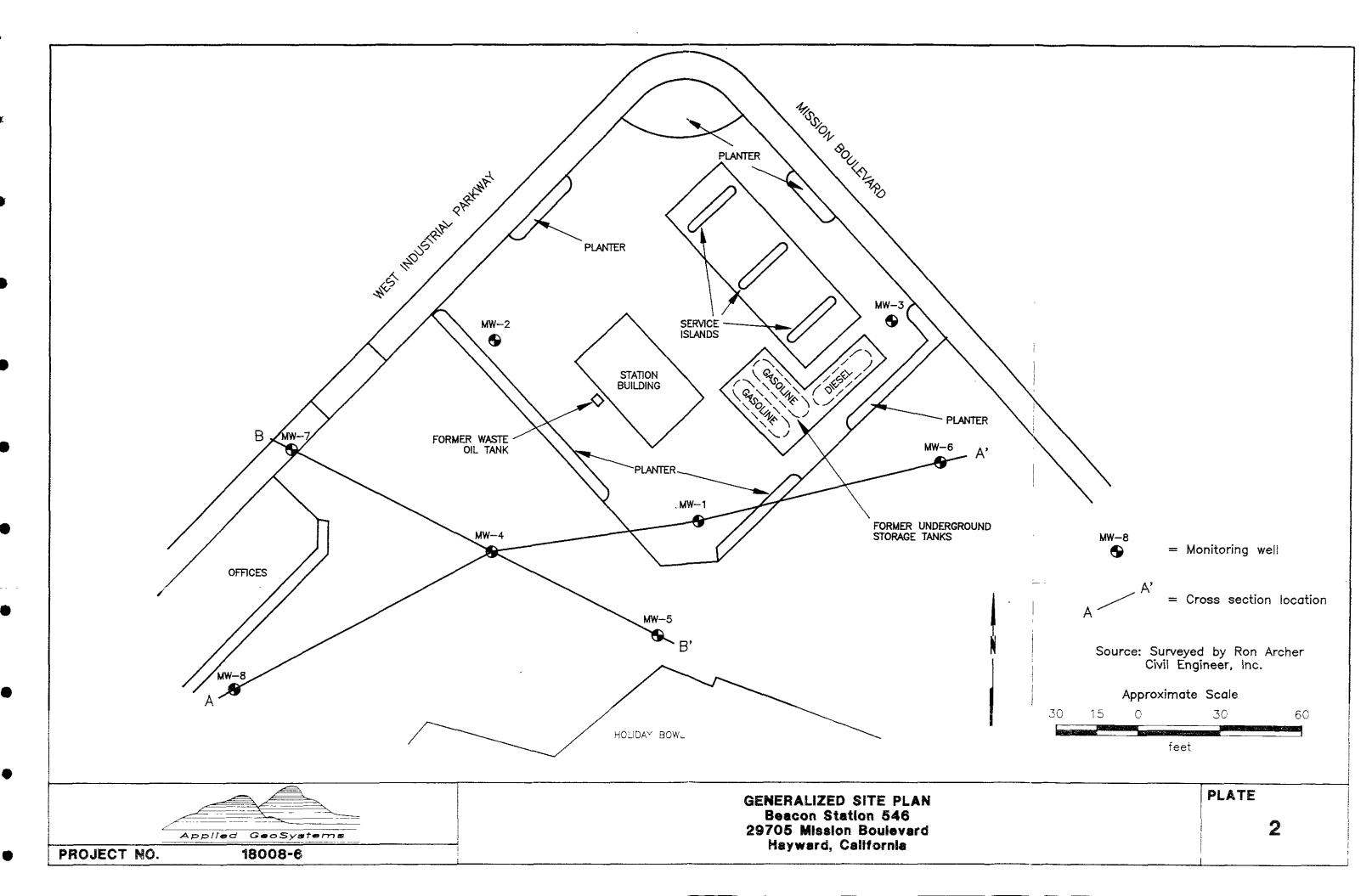


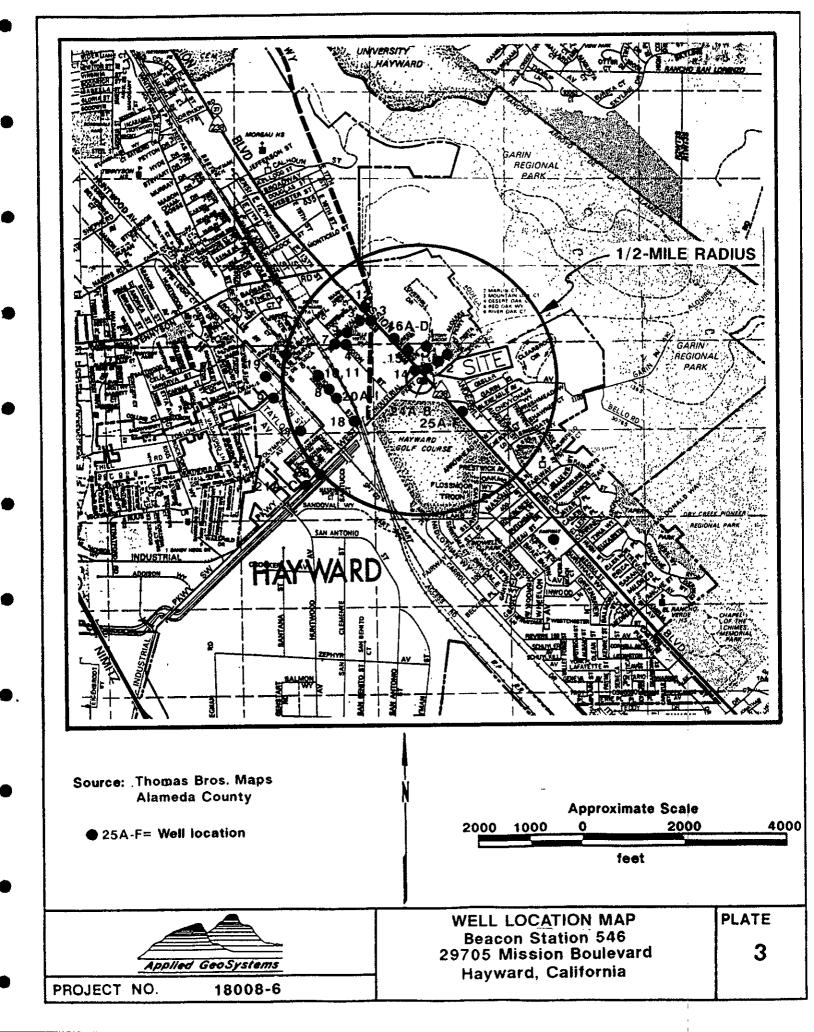
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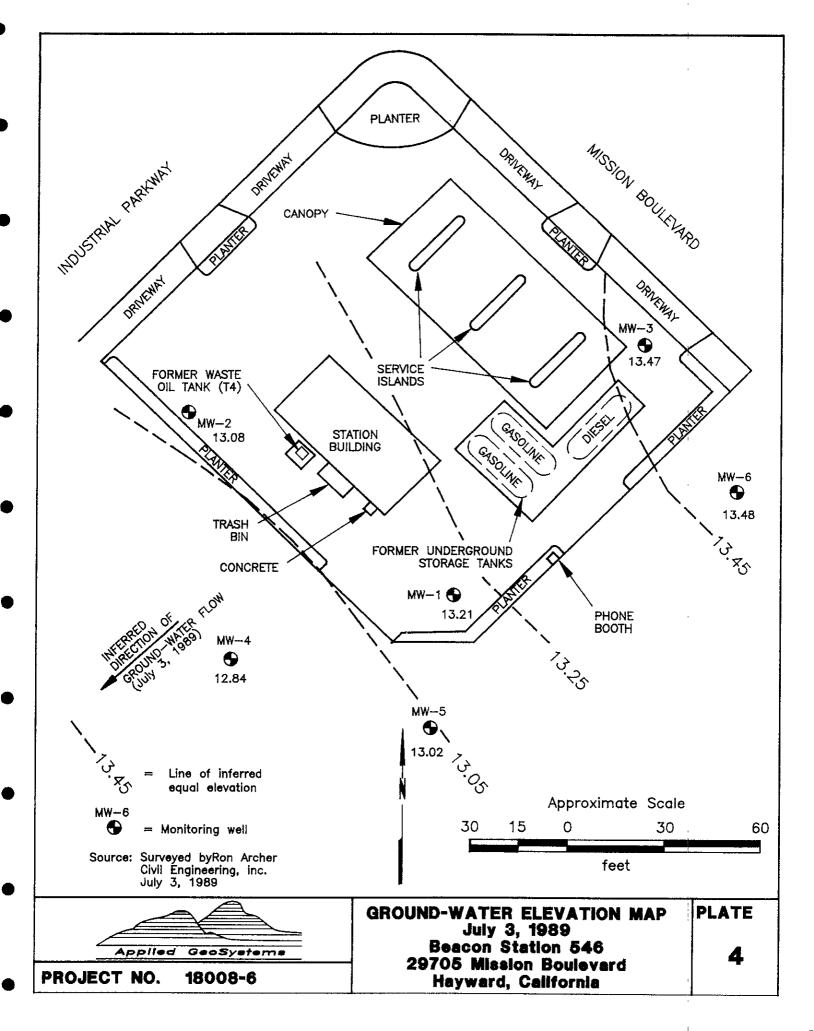
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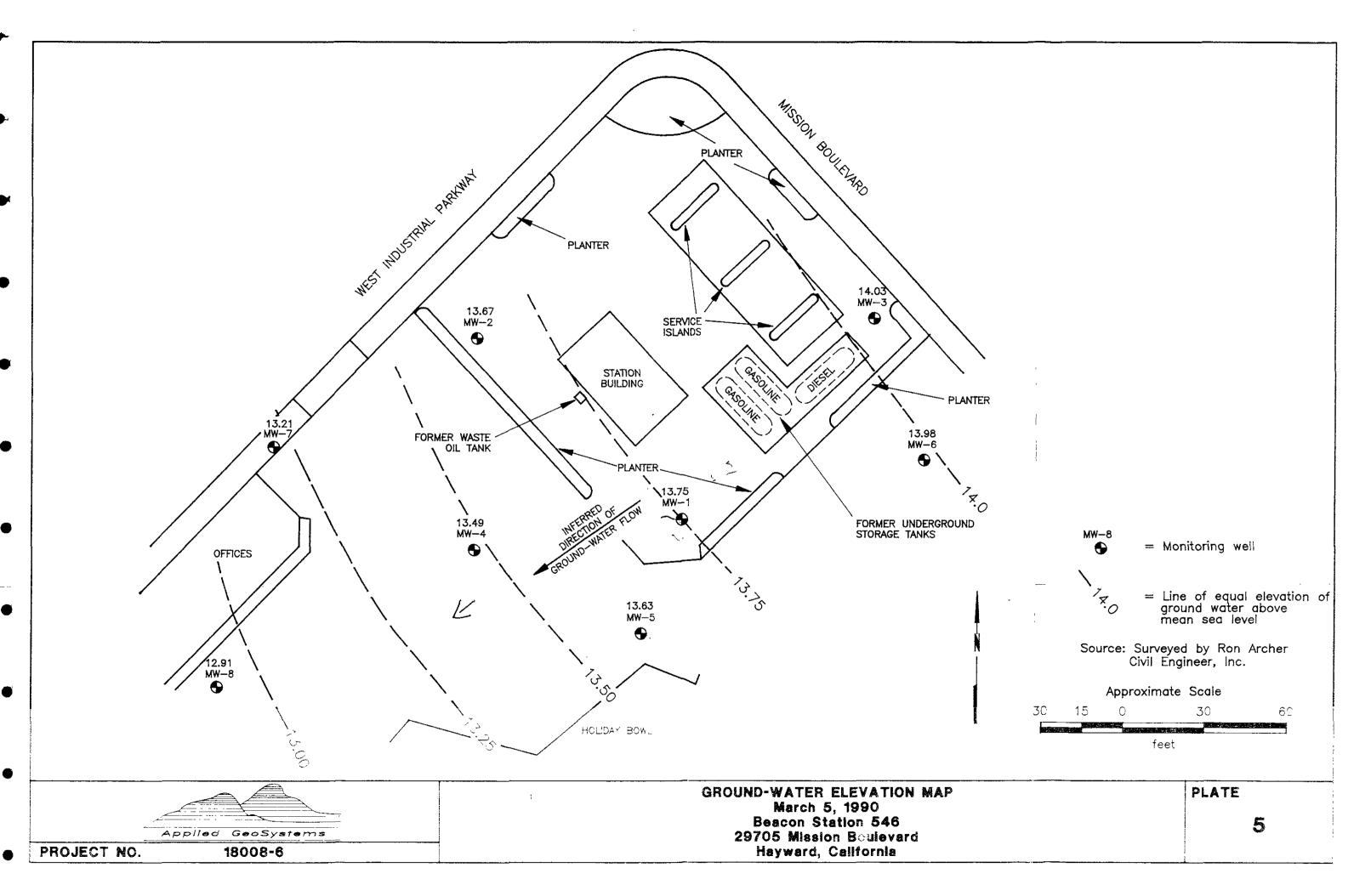
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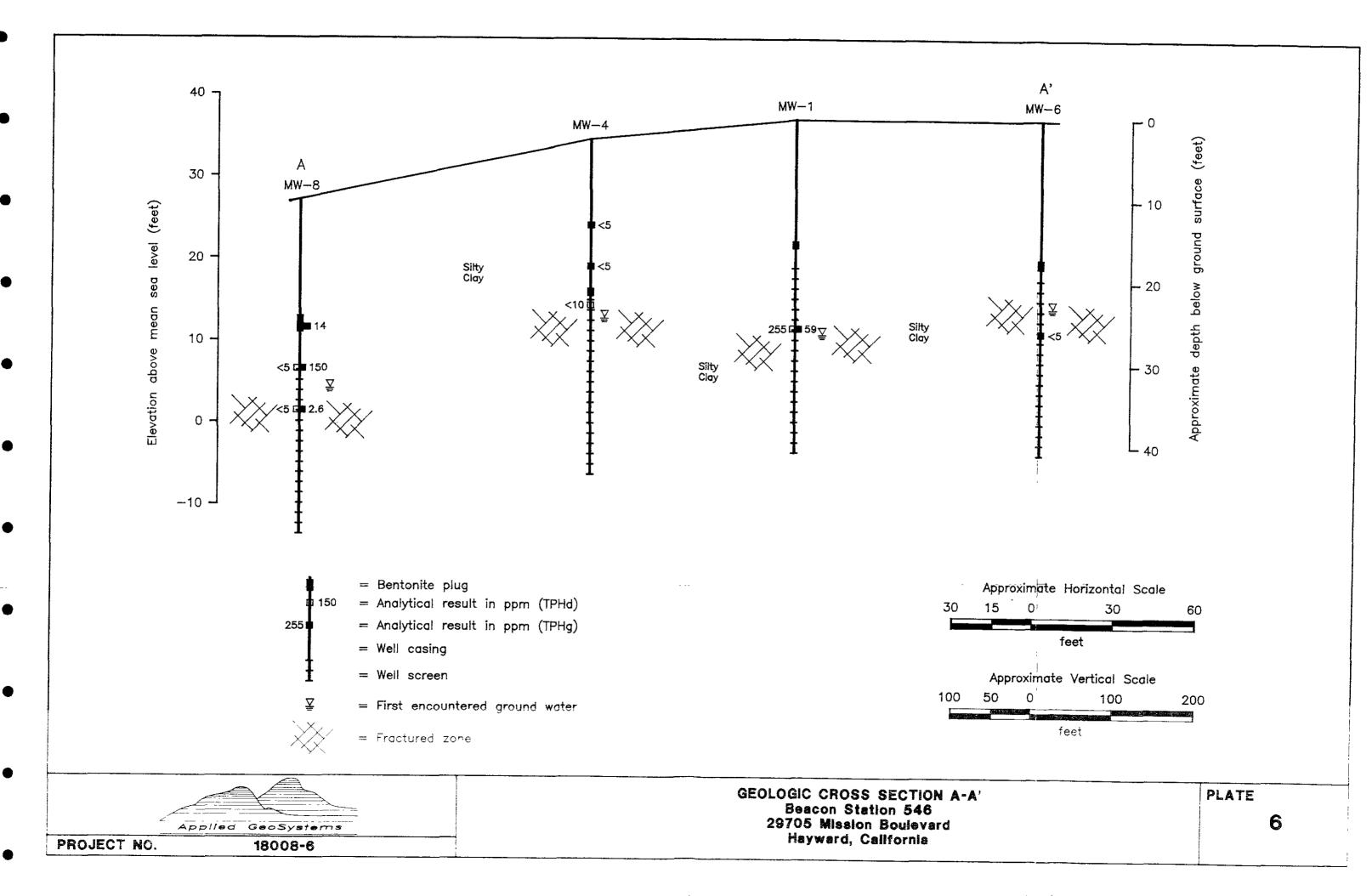
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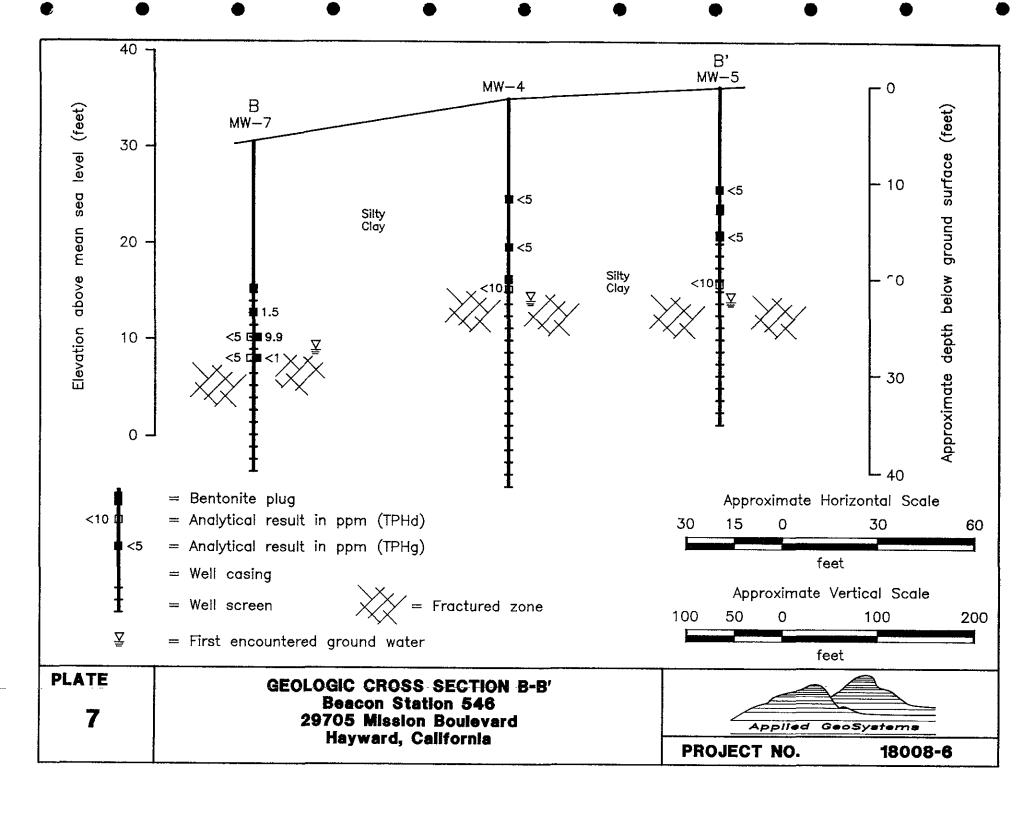


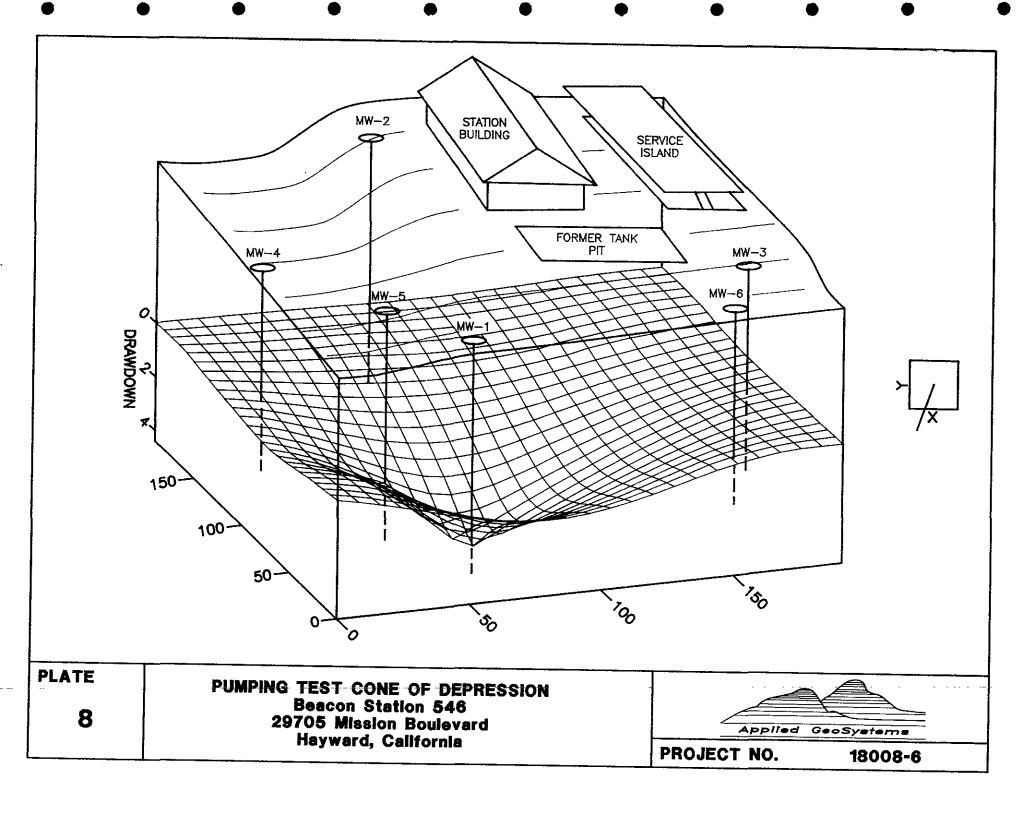


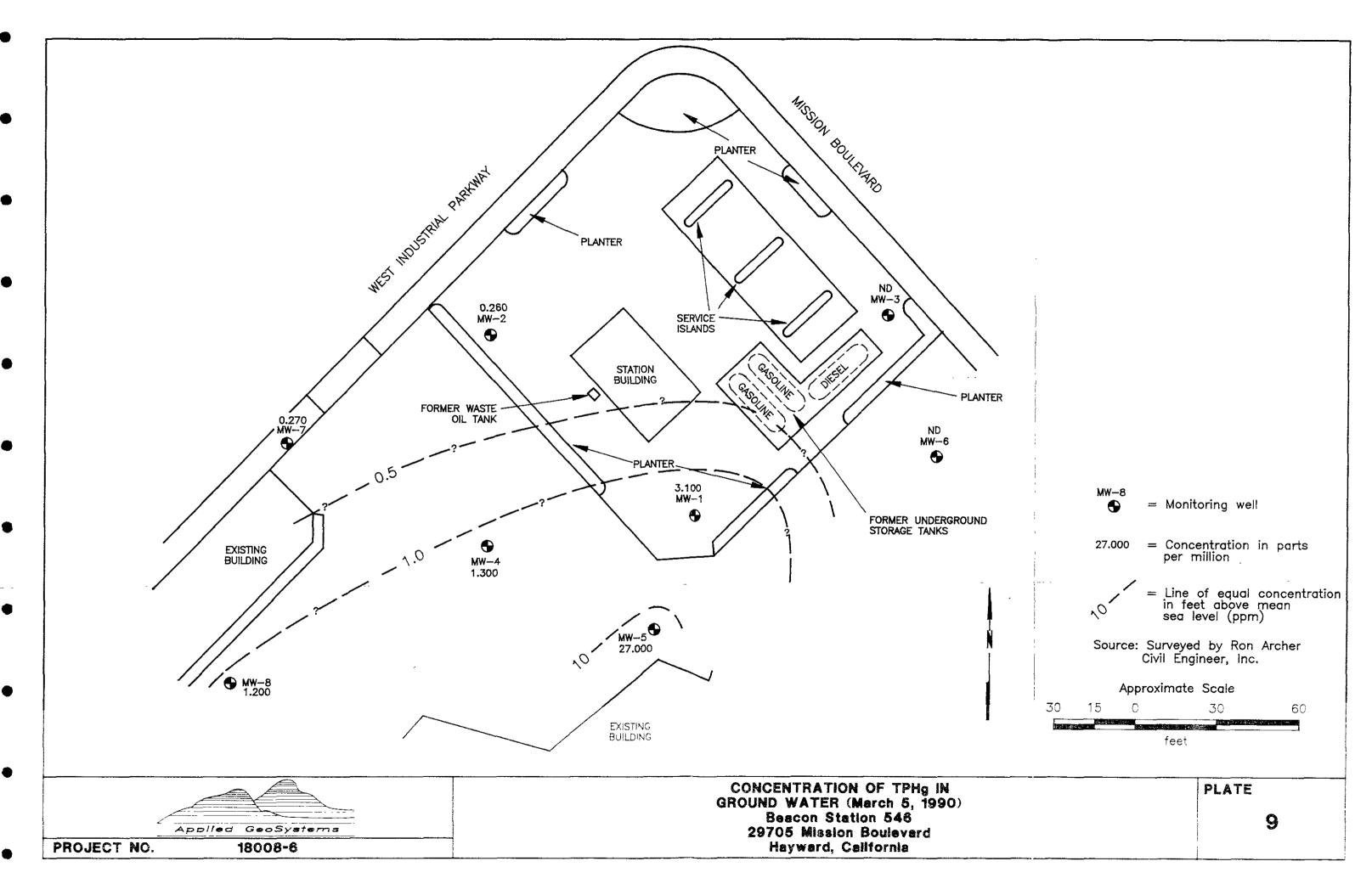


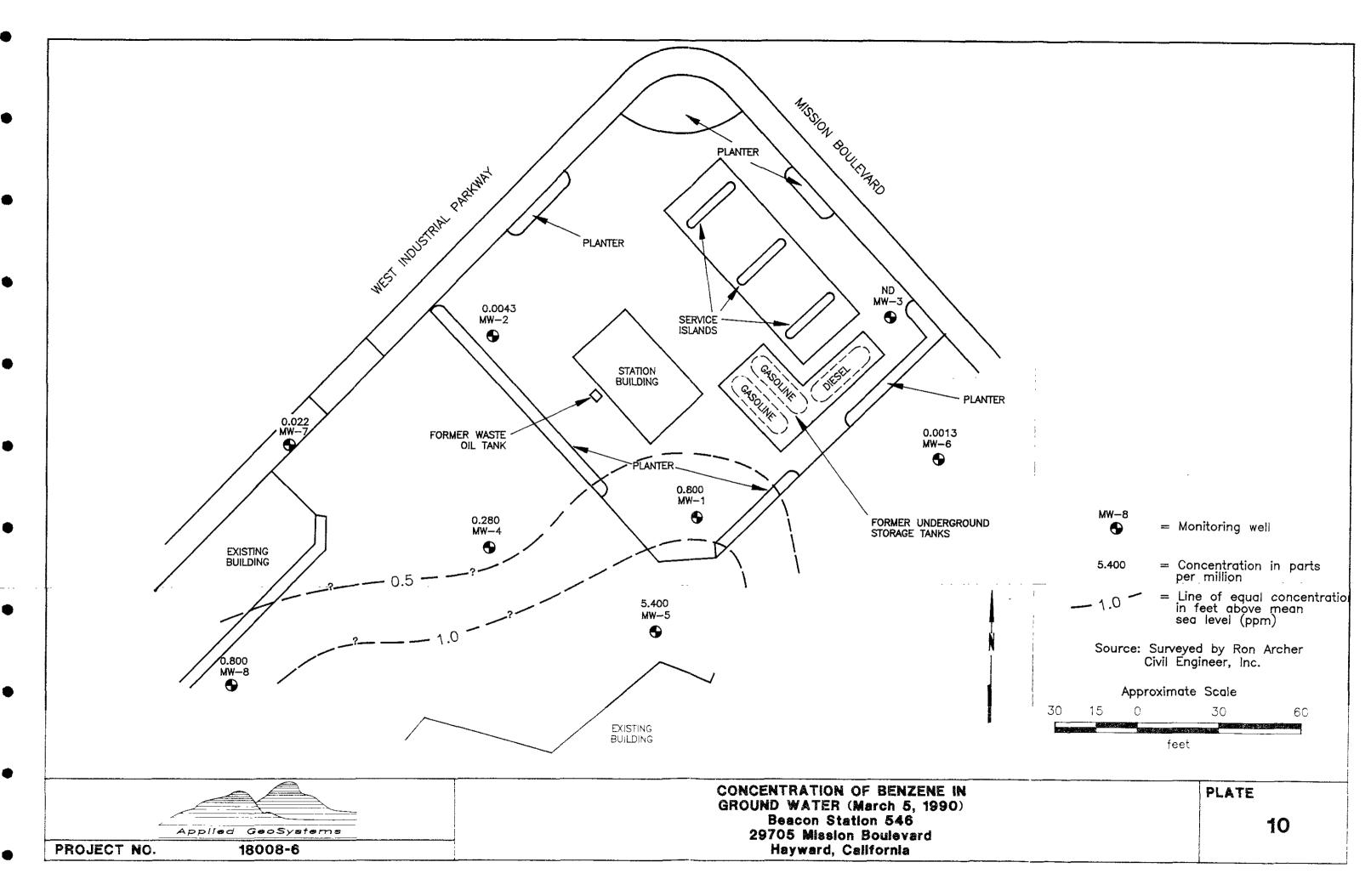












APPENDIX A PROCEDURES

OPERATING PROCEDURES

Work conducted during this investigation was performed according to the following operating procedures.

Site Safety Plan

Applied GeoSystems performed field work at the site, on behalf of Ultramar, in accordance with AGS' Site Safety Plan 18008-4S, dated June 1, 1989. This safety plan describes the basic safety requirements for the subsurface environmental investigation, for drilling soil borings, and for installation of monitoring wells at the site. The Site Safety Plan is applicable to personnel and subcontractors of AGS. The personnel and subcontractors of AGS scheduled to perform work at the site were briefed on the contents of the Site Safety Plan before work began. A copy of the Site Safety Plan was kept at the site and was available for reference by appropriate parties during work at the site.

Drilling and Soil Sampling

Applied GeoSystems personnel acquired well installation permits from the Alameda County Flood Control and Water Conservation District. AGS contacted Underground Service Alert to delineate public utility lines before drilling begun. Each borehole was hand-augered to an approximate depth of 5 feet as an added safety measure.

The well borings were drilled with a Mobil B-53 truck-mounted drill rig. Ten-inch-diameter, continuous flight, hollow-stem augers were used to drill each boring. The augers were steam-cleaned prior to each use to minimize the possibility of cross-contamination. Drilling was performed under the observation of a field geologist, and the earth materials in the boring were logged as drilled. Soil samples were logged in accordance with the Unified Soil Classification System.

During drilling, soil samples were collected at 2-1/2- to 5-foot intervals with a California-modified, split-spoon sampler (2.5-inch-inside-diameter) equipped with clean brass sleeves. The samples were collected by advancing each boring to a point just above the sampling depth, then driving the sampler through the

hollow center of the auger and into the native soil. The sampler was driven 18 inches with a standard 140-pound hammer dropped 30 inches. The number of blows required to drive the sampler each successive 6 inches was counted and recorded to give an indication of soil consistency. A soil sample from each recovered sample interval was analyzed in the field with a PID or a similar instrument and those data are recorded on the boring logs.

Soil samples selected for potential laboratory analysis were sealed with aluminum foil, plastic end caps, and tape. The samples were labeled and promptly placed in iced storage for transport to a laboratory that is certified by the State of California to perform the required chemical analyses. The field geologist initiated a Chain of Custody Record and it accompanied the samples to the laboratory. A copy of the Chain of Custody Records are included in Appendix C.

Soil Cuttings

While drilling was in progress, the relative concentration of hydrocarbons in the cuttings were assessed with a PID or a similar instrument. Soil cuttings were placed on and covered with plastic. At Ultramar's request, AGS can arrange to have soil cuttings with acceptable levels of hydrocarbons removed to an appropriate disposal facility.

Construction of Monitoring Wells

The monitoring wells were constructed of flush thread-jointed, 4-inch-inside-diameter, Schedule 40 PVC casing. No chemical cements, glues, or solvents were used in well construction. The screened portion of each well consisted of factory-perforated casing with 0.010-inch-wide slots. Approximately 20 feet of screened casing was placed from total depth to 20 feet below grade in MW-4 and MW-6, and to 15 feet below grade in MW-5. Approximately 15 feet of well screen was placed from the total depth to 18 feet below grade in MW-7. Well MW-8 was screened from total depth (40 feet) to 20 feet below grade.

The annulus of each well will was packed with No. 2 sorted sand from total depth to approximately 2 feet above the screened interval. A 2-foot-thick bentonite plug was placed above the

sand to keep neat cement out of the sand pack. The remaining annulus was backfilled with a slurry of water and neat cement to a few inches below grade.

A locking well cap and padlock was installed on each wellhead, and a traffic-rated, cast-aluminum or steel utility box with a PVC apron was placed over each well and set with concrete flush with the surrounding surface. The box has a watertight seal to protect against surface-water infiltration and requires a specially designed wrench to open. This design discourages vandalism and reduces the possibility of accidental disturbance of the well.

Rescreening of Well MW-4

The well was drilled out, and rescreened with 4-inch-diameter casing. The cement seal was drilled out using 10-inch continuous flight hollow stem augers. A casing lift was attached to the existing casing and it was pulled out of the well in 20 foot sections. The boring was reamed to the original depth with 10-inch augers. The well was then reconstructed using the techniques described above.

Well Development and Ground Water Sampling

The neat cement surrounding the non-perforated section of the well casing was allowed to set for at least 72 hours prior to well development. Before the wells were developed, a sample was collected from near the static surface of the ground water. Samples were collected by gently lowering approximately half the length of a Teflon bailer, cleaned with Alconox (a commercial detergent), past the air-water interface. Water samples were evaluated subjectively for the presence of hydrocarbons.

The wells were developed by a combination of surging and pumping techniques. The wells were pumped until the extracted water appeared free of sediment.

After the wells were developed, the water in the wells were allowed to equilibrate for at least 72 hours prior to being purged and sampled. The wells were purged of a minimum of 4 well volumes of water or until temperature, pH, and conductivity readings stabilized.

Ground water in each of the wells were allowed to recover to greater than 80 percent of static condition before a water sample was collected. Approximately half the length of a clean bailer was lowered gently past the air-water interface to collect a sample from near the ground-water surface. No subjective evidence of hydrocarbons except for odor was observed in the wells. The water samples were decanted slowly into laboratory-cleaned, 40-milliliter glass vials and covered with Teflon-lined lids. The samples were visually checked for air bubbles, sealed, labeled, and promptly placed in iced storage. The geologist initiated a Chain of Custody Record to accompany the samples to a laboratory certified in the State of California for the analysis requested. A copy of the Chain of Custody Record is included in Appendix C to this report.

Purged Water

Water purged during the development and sampling of the monitoring wells was collected in Department of Transportation Type 17E, 55-gallon waste-liquid drums, labelled, and stored onsite. At Ultramar's request, AGS can arrange for the removal of the water to an appropriate facility.

Laboratory Analyses

The PID readings of individual soil samples collected in the field assisted in the selection of the samples to be analyzed. In addition, the selection was based on the matrix of the sample, subjective evaluation of the sample, and the stratigraphic position of the sample. In each boring, the sample displaying the highest PID reading and the sample collected just above ground water was among the samples analyzed. The selected samples were analyzed in the laboratory for TPHg by modified EPA Method 8015, for the purgeable hydrocarbon constituents BTEX by EPA Method 8020.

Water samples were analyzed for TPHg and TPHd by modified EPA Method 8015, and for BTEX by EPA Method 602. Detection limits suitable for the soil and water tests requested and concentrations present are stated on the laboratory reports. Copies of the laboratory reports are included in Appendix C to this report.

Ground-Water Gradient Evaluation

Depth-to-water and survey data were used to evaluate the hydraulic gradient and ground-water flow direction. A licensed land surveyor surveyed the wellhead elevations and locations of the new wells. Elevations are referenced to mean sea level. Elevation differences between the wells were combined with measurements of the depths to static water (measured to the nearest 0.01 foot) in the respective wells to calculate the ground-water elevation in each well. Those data were used to prepare a hydraulic gradient map for the site area. From this map, the ground-water flow direction is inferred.

Aquifer Test - Data Evaluation Methods

Two methods were used to evaluate the parameters hydraulic conductivity (K), transmissivity (T), and storativity (S). The two methods used were the curve matching method, and by an analytical method developed by Theim (1906). The derivation of the equations in each method are based on Theim assumptions.

Curve Matching Method

The curve matching method follows the same procedures as developed by Theis (1935). An appropriate elastic response water table type curve was used for the drawdown data from each observation well. The ß curves used included 0.01, 0.03, and 0.004. The curve was matched to the early-late drawdown data for each well. A matchpoint was picked and the corresponding W_{ij} values recorded. Transmissivity was then calculated using the following equation:

$$T = \frac{114.6 (0) (W_u)}{s}$$

where

T = transmissivity, in gpd/ft

Q = discharge, in gpm

 $W_u = Well function$

s = drawdown at matchpoint, in feet

After determining T, storativity (S) was calculated using the following relationship:

$$S = \underbrace{u \ Tt}_{1.87} r^2$$

where

S = storativity, dimensionless

 $u = corresponding value from W_u$

T = as described above

t = time at matchpoint, in days

r = distance to observation well, in feet

Hydraulic conductivity was estimated assuming a saturated thickness of 20 feet (amount of well screen) and the following relationship:

$$K = T/B$$

where

K = hydraulic conductivity, in gpd/ft

B = saturated thickness, in feet

Five separate values of T, K, and S were derived at from the aforementioned method. The average value for each of these parameters were reported. T and K were converted to cm/sec.

Analytical Method

The equations for the analytical method are not as well known and are listed here:

$$K = 1055 Q log_{12} r_{2}/r_{1}$$

 $(h_{2}^{2} - h_{1}^{2})$

where

K = hydraulic conductivity, in gal/day/ft²

Q = discharge of pumping well, in gpm

h₂ = saturated thickness, in feet, at the farthest
 observation well

 h_1 = saturated thickness, in ft, at the nearest observation well

Transmissivity can be found by

$$T = K/B$$

where

T = transmissivity, in gal/day/ft

K = as defined above

B = saturated thickness

Storativity can be found by the equation

$$S = 0.3 (T) (to)$$

where

S = coefficient of storativity,

T = as described above

t_o = intercept of the straight line at zero drawdown, in days

r = distance, in feet, from the pumped well to the
 observation well where the drawdown measurements were
made

After the calculation of K, T, and S, the values for K and T were multiplied by 0.0003527 to convert the values to cm/sec.

APPENDIX B LOGS OF BORINGS

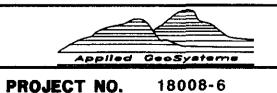
UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR	OMSIONS	LTR	DESCRIPTION	MAJOR DIVISIONS			DESCRIPTION
		GW	Wall-graded gravels of gravel-sand mixtures, little or no fines			ML	inorganic sitts and very fine sands, rock flour, sitty or clayey fine sands
	Gravel and gravely soils GM Sitty gravels, gravel—eand—sitt mixtures	GP	Poorly—graded gravels or gravel—sand mixtures, little or no fines		Silte		or cloyey silts with slight plosticity
		†	and claye LL<50	ત	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, sifty clays, lean clays		
Cogres-		GC	Clayey gravele, gravel—sand—clay mixtures	Fine— grained		OL	Organic sits and organic sit—citys of low plasticity
sois		SW	Weil—graded sand of gravelly sands, little or no fines	soils		мн	Inorganic sits, micaceous or distornaceous fine sandy or sity soils. Elastic sits
	Send and	SP	Poorly—graded eands or gravelly sonds, little or no fines		Silte and clays U>50	러	inorganic clays of high plasticity, fat clays
	acedy soils	SM	Slity sands, sand—silt mixtures		1500	он	Organic clays of medium to high plasticity, organic sits
			Clayey sands, sand—clay mixtures	Highly organic soils		ΡŤ	Peat and other highly organic soils

I	Depth through which sampler is driven		Sand pack
I	Relatively undisturbed sample		Bentonite annular seal
Ī	No sample recovered	▼ ▼	Neat cement annular seal
X	·		Caved native soil
₹	Static water level observed in well		Blank PVC
<u>=</u>	Initial water level observed in boring		Machine—slotted PVC
S-10	Sample number	P.I.D.	Photoionization detector

BLOWS REPRESENT THE NUMBER OF BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES TO DRIVE THE SAMPLER THROUGH EACH & INCHES OF AN 18-INCH PENETRATION.

DASHED LINES SEPARATING UNITS ON THE LOG REPRESENT APPROXIMATE BOUNDARIES ONLY. ACTUAL BOUNDARIES MAY BE GRADUAL LOGS REPRESENT SUBSURFACE CONDITIONS AT THE BORING LOCATION AT THE TIME OF DRILLING ONLY.



UNIFIED SOIL CLASSIFICATION SYSTEM AND SYMBOL KEY

Beacon Staion No. 546 29705 Mission Boulevard Hayward, California PLATE B1

Total depth of bor	ing: <u>40-1/2</u> feet D	lameter of	boring: 8 incl	nes_ Date drilled:	6-26-89
Casing diameters_	2 inches	Length:	40 feet	Slot size:	0.020—inch
Screen diameteri_	2 inches	Lengthı	20 feet	_ Material type:	Sch 40 PVC
Drilling Company	loon Drilling	<u> </u>	riller. Jim an	d Greg	
Method Usedi Holld	ow—Stem Auger			Field Geologist	Dan <u>Kirkman</u>
Signa	iture of Register	ed Professio	onal:		
	Registration N	lo.1	State:	CA	

Depth	Sempi No.		Blows	P.I.D.	USCS Code	Description	Well Const.
- 0 -						Asphalt (3 inches) over baserock (3 inches).	
2 -					CL	Silty clay, trace fine to coarse sand, trace fine gravel, dark brown, slightly damp, medium plasticity, hard.	▼
4 -		Ŧ	12 17 22				
6 -	S5		22				7
- 8 -			8				∇
- 10-	S-10		11 22				
- 12-							
- 14 -	S-15		8 12 20				
- 16 - - 18 -							2
20-	S-20		17 22 25			Light brown with green mottling, damp.	
	3-20		25	· ·		(Section continues downward)	



LOG OF BORINGB-4/MW-4

Beacon Station No. 546
29705 Mission Blvd.

Hayward, Ca.

PLATE B2

Depth	Sample No.	BLOWS	P.I.D. USCS Code	Description	Well Const
-22-			<u></u> CL	Silty clay, trace fine to coarse sand, trace fine gravel, light brown, with green mottling, damp, medium plasticity, hard.	
-24 <i>-</i> -26-	S-25	12 17 27		Brown with blue—green mottling, wet.	
-28 -					
-30 -	S-30	38 32 27		Trace medium sand.	
-32 -					
-34	S-35	5 7 8		Trace fine gravel, stiff.	
-36-					
-38-	ļ ļ	777			
	S-40	8		Total Depth = 40-1/2 feet.	
-42 -					
-44 -					
-48-					
-50 -					



LOG OF BORING B-4/MW-4

Beacon Station No. 546 29705 Mission Bivd. Hayward, Ca. PLATE

B3

Total depth of bork	ng: 35-1/2 feet D	lameter o	f boring:	8 inch	es Date drilledi	6-27-89
Casing diameter	2 inches	Lengthi	3.	5 feet	Slot size:	0.020-inch
Screen dismeteri	2 inches	Length	20	feet	Material type:_	Sch 40 PVC
Drilling Company, Jo	on Drilling		Driller	Jim and	l Greg	
Method Usedi Hollo	w—Stem Auger				Field Geologisti	Dan Kirkman
Signat	ture of Register	ed Profes	Blonalı			
	Registration N	lo.ı	St	tate:	CA	

Depth	Sampl No.	•	Blows	P.I.D.	USCS Code	Description	Well Const.
- 0 - - 2 -					CL	Silty clay, trace fine gravel, black, slightly damp, medium plasticity, hard.	V V V V V V V V V V V V V V V V V V V
- 4 -	S-5		8 18 20				V
- 8 - - 10 -	S-10		7 8 20			Trace fine to coarse sand, brown, very stiff.	V V V V V V V V V V V V V V V V V V V
- 12-							7
- 14 - - 16 -	S-15		7 7 12				
- 18 -	0.00	+	5 7 12			Some fine gravel, blue—green.	
	S-20	•	12			(Section continues downward)	



LOG OF BORING B-5/MW-5

Beacon Station No. 546
29705 Mission Bivd.
Hayward, Ca.

PLATE

B4

Depth	Sample No.	ROWS	P.J.D	Code USC8	Description	Well Const
				CL	Silty clay, trace fine gravel, blue—green, slightly damp, medium plasticity, hard.	
-22-				₽		
-24 -	S-25	7 17 22	7		Wet	
-26-						
-28 -		Н 9				
-30 -	S30	17	7		Some fine to coarse sand, hard.	
-32 -						
-34 -	S-35	F 6			Trace fine gravel, trace fine to coarse sand, medium plasticity, very stiff.	
- 36 -					Total Depth = 35-1/2 feet.	
-38-						
- 40 -						
-42-						
-44	-					
- 46 -						
_ 48-	-					
- 50 -						



LOG OF BORING B-5/MW-5

Beacon Station No. 546
29705 Mission Bivd.
Hayward, Ca.

PLATE B5

Total depth of bori	ng:40-1/2 feet D	lameter o	f boring	8 incl	nes Date drilled.	6-26-89
Casing diameter	2 inches	_ Length:	4	0 feet	Siot size:	0.020-inch
Screen diameteri	2 inches	_ Length:	20	feet	_ Material type:	Sch 40 PVC
Drilling Companyi_J	con Drilling		Driller:_	Jim an	d Greg	
Method Usedi Hollo	w—Stem Auger				_ Fleid Geologistı	Dan Kirkman
Signa	ture of Register	d Profes	slon a lı			
	Registration N	O.ı		tate:	CA	

Depth	Sampl No.	•	Blows	P.I.D.	USCS Code	Description	Well Const.
- 0 +						Asphalt (2 inches) over baserock (4 inches).	V V
- 2 -					CL	Silty clay, trace fine gravel, dark brown, dry, medium plasticity, hard.	7
- 4 -	S-5		10 17 19				7
- 6 -							
- 8 - - 10 -	S-10		6 11 12			Trace fine to medium gravel, brown, slightly damp, very stiff.	△ △ △ △ △ △ △ △ △ △
- 12-							A A A
- 14 - - 16 -	S-15		19 25 30			Less gravel, hard.	7
- 18 -							▼
- 20 -	S-20		6 11 30			Trace fine gravel, trace fine to coarse sand, light brown, with green mottling. (Section continues downward)	



LOG OF BORING B-6/MW-6

Beacon Station No. 546 29705 Mission Blvd. Hayward, Ca. **PLATE**

B6

Clienti	Z'F1 (c	xille	day) BC CHA	AIN OF CUST	ГODY			j	NO.	L-	<i>.</i> .	τ			
							A	naly	sis l	Requ	ested	:			
Name: PECICO 1 (Address: Attn:	oil (b)	Name: Address	ABASS Hiss	Water Soil Sludge Oil	<u>×</u>	Other: (specify)	EPA 502.1/8010	EPA 503.1/8020	EPA 502.2/8010	EPA 504 EDB/DBCP	EPA 625/8270	РСВ	BTX/TPH Gas	BTX/TPH Diese	EPA 608/8080
Lab # Description:	FXC 1	<u> </u>	85		Other	Tests			/802	Ď C					
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<u>4w-33</u>								$\langle \rangle$	\dashv		+			\dashv	\dashv
-5W 2A				- R JVIA	19 101	Itiis san ple.		\forall		_	╂—			_	_
-6W-121		<u> </u>					\vdash	$\langle \rangle$	_	_	╂—		_	_	_
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White: Return to Customer with Report

Yellow BC Lab Copy

Lab Sample ID No. _-3275-1

J. J. EGLÍN, REG. CHEM, ENGR.

4100 PIERCE RD.. BAKERSFIELD. CALIFORNIA 93308 PHONE 327-4911

Applied GeoSystems Attention: Leigh Reem

Tate of Report: 3.00.39

43255 Mission Elvd Fremont, CA 24539

FURGEABLE ORGANIC ANALYSIS

Laborat	tory	Signature Lab		
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Date	/Time of Gample: /	Tree	er ID!_!	
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	Promoform Chloroform Dibromochloromesnane Total tribal:methanes	32104 22106 22105 22080		0.5.0 0.5.0 0.5.0 0.5.0
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<u>F03.1</u>	Promodern Chloroform Dibromochlorometase Total tribal methenes Bensene Carbon tetrachloride	32104 22106 22105 22080		0.5.0 0.5.0 0.5.0 0.5.0
<u>F03.1</u>	Promodorm Chloroform Dibromochloromethenes Total tribalimethenes Bensene	32104 22106 22105 32080 34030 32102		100 0.50 100 0.50 100 0.50 1 0.50
F03.1 503.1	Promodern Chloroform Dibromochlorometase Total tribal methenes Bensene Carbon tetrachloride	32104 22106 22105 32080 34030 32102 34371	. 2: 2: 2: 2 0	190 0.50 190 0.50 1 0.50 5 0.50 680 9.50
F03.1 503.1 503.1	Promoform Chloroform Dibromochloromernane Total tribal methenes Bensene Carbon tetrachloride Ethylbensene 1.4-Dichlorobensene (n-DCB)	32104 22106 22105 22080 34030 32102 34371 34571		1.50 1.50 1.50 1.50 1.50 5.50 680 1.50 5.00
F03.1 503.1 103.1	Promoform Chloroform Dibromohloromethere Total tribal metheres Bensene Carbon tetrachloride Ethylbensene 1.4-Dichlorotensene (b-DCB) 1.2-Dichloroethane (1.3-DCA)	32104 22106 22105 22080 34030 32102 34371 34531		1.50 1.50 1.50 1.50 1.00 1.00 1.00 1.00
503.1 503.1 503.1	Promodorm Chloroform Dibromochloromethenes Total tribalimethenes Pensene Carbon tetrachloride Sthylbensene L.4-Dichlorotensene (b-DCB) L.2-Dichloroethane (1,2-DCA) L.1-Dichloroethylene (1,1-DCE)	32104 22106 22105 32080 34030 32102 34371 34571 34531 34501		1.50 1.50 1.50 1.50 1.00
F03.1 503.1 503.1	Promodorm Chloroform Dibromochlorometheres Total tribal metheres Bensene Carbon tetrachloride Sthylbensene L.4-Dichlorotene (b-DCB) L.2-Dichlorotene (1.5-DCA) L.1-Dichlorotethere (1.1-DCE) Total 1.3-Dichloropropene	32104 22106 22105 32080 34030 32102 34371 34571 34501 34561		100 0.50 100 0.50 1 0.50 5 0.50 880 0.50 5 0.50 6 0.50 6 0.50 7 50 8 0.50
F03.1 503.1 503.1	Promodorm Chloroform Dibromochlorometames Total tribal methenes Bensene Carbon tetrachloride Sthylbensene L.4-Dichlorotensene (b-DCB) L.4-Dichlorotensene (1.4-DCE) L.1-Dichlorotensene (1.1-DCE) Total 1.3-Dichloropropene Monochlorotensene (Chlorotensene	32104 22106 32105 32080 34030 32102 34371 34571 34531 34561 34301		100 0.50 100 0.50 1 0.50 5 0.50 680 0.50 6 0.50 6 0.50 6 0.50 6 0.50 7 0.50 8 0.50 9 50
503.1 503.1 503.1	Promoform Chloroform Dibromohlorometheres Total tribal metheres Pensene Carbon tetrachloride Ethylbensene 1.4-Dichlorotensene (r-DCB) 1.2-Dichlorotensene (1.1-DCE) Total 1.3-Dichloropropene Monochlorotensene (Chlorobensene 1.1.2.2-Tetrachloroethane	32104 22106 22105 32080 34030 32102 34371 34571 34531 34501 34561 34301 34516	NID: 1	190 0.50 190 0.50 1 0.50 5 0.50 680 0.50 5 0.50 6 0.50 6 0.50 6 0.50 7 0.50 8 0.50 9 0.50 1 0.50
F03.1 503.1 503.1	Promoform Chloroform Dibromochlorometheres Total tribal metheres Bensene Carbon tetrachloride Ethylbensene 1.4-Dichlorotene (b-DCB) 1.2-Dichlorotene (1.2-DCA) 1.1-Dichlorotethylene (1.1-DCE) Total 1.3-Dichloropropene Monochlorotensene (Chlorotensene 1.1.2.2-Tetrachlorotethane Tetrachlorotethylene (PCE)	32104 22106 22105 32080 34030 32102 34371 34571 34531 34501 34561 34516 34475	NID: 1	1.00 0.50 1.00 0.50 1.00 0.50 1.00 0.50 5.0 0.50 6.0 0.50 6.0 0.50 6.0 0.50 7.50 8.0 0.50 9.50 1.0 0.50 1.0 0.50 1.0 0.50 1.0 0.50
F03.1, 503.1 503.1	Promoform Chloroform Dibromochloromethenes Total tribal methenes Rensene Carbon tetrachloride Ethylbensene 1.4-Dichlorotensene (b-DCB) 1.2-Dichlorotensene (b-DCB) 1.1-Dichlorotensene (1.1-DCE) Total 1.3-Dichloropropene Monochlorotensene (Chlorotensene 1.1.2.2-Tetrachloroethane Tetrachloroethylene (PCE)	32104 22106 22106 22105 32080 34030 32102 34371 34531 34501 34561 34301 34516 34475 40 34506	NID: 1	190 0.50 190 0.50 1 0.50 5 0.50 680 0.50 5 0.50 6 0.50 6 0.50 6 0.50 7 0.50 8 0.50 9 0.50 1 0.50

^{*} Detection Limit for Reporting purposes

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Tage C of C

Lab #: 6275-1 | cont. `

REGULATED ORGANIC CHEMICALS (CONTINUED)

TEST ! CONSTITUENT	ENTRY!	ANALYSIS !	MUL	,
METHOD ALL CONSTITUENTS REPOPTED DEVL	#	FESULTS :	19/1	* DRL
Trichlomethylene (TCE)	39180	1 1 1 1	r	0.50
Vinvl Chloride (VC)	39175		F,	7.50
503.1 m.p-Xylene	A-014	Parallel Toll		i
*()3.1!o-Xylene	77125	3 5 0 19		·
703.1 Total Mylen-s m.p. 3:1	31551		100,1	· TEN
Bentacen (Eggs Eran)	287101	/ 1 am / 1 ar / 1		·
Dibromochloropropane - DECP'	38761			1,11
Ethylene Dibromide (EDE)	77651		100)	0.02
(AAtrazine (AAtrax)	390331	, , , , , , , ,	<u></u>	· · · · · · · · · · · · · · · · · · ·
	32199		C. ()	· · · · · · · · · · · · · · · · · · ·
; Simazine (Princep)	29055	.,		1.:)
(Thiobencarb (Bolero)	A-001		(٦٢)	0.80
Endrin	39390		13	() ()
(Lindane (gamma-BHC)	39340	, -, -, -, -, -, -, -, -, -, -, -, -, -,	_1 :	(), 4()!
: Methoxychlor	39480	; = = = ; = ; = ; = ;	100	1()
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<u></u>	remochloremethane	A-012		1,50
The state of the s	compmethane (Methyl Eromide)	34412		1), 5()
' <u>n-</u>	-Butvlbensene	A-010		0.50
, se	ec-Putylbensece	77350		0.50
<u> </u>	ert-Butylbensene	77353	,	() (56)
:C1	lcroethane	34311		2.50
;_ ********************************	Chloroethylvinyl ether	34576		1 1 1
1 (%	aloromethane Methyl Chlomide)	34418		0.50
1 ° 1	-Chlorotoluene	A-008		0,50
	-Chlaratoluene	A-009		0.50
; Di	bromomethane	775961		0.50
	C-Dichlerobergene (1-10B)	34536		1 (1.50
	3-Dichlorobensene (m-DCB)	34566		9.50
<u> </u>	chlorodifluoromethane	34668		0.50
·	1-Dichlorcethane (1,1-DCA)	34496		0.50
<u> </u>	<u>x-1,2-Dichloroethylene</u>	77093	1-1-1-1-1-	0.50
· + y	rans-1.2-Dichloroethylene	34546		0.50
1	2-Dichloropropane	34541	: -: -: -: -: -: -: -: -: -: -: -: -: -:	0.50
[1	3-Dichloropropane	77173	[-;-;-;-]	0.50
			1 1 1 1 1 1 1 1	

Page / Hin

Lab #: 6275-1 (cont.

UNREGULATED ORGANIC CHEMICALS (CONTINUED)

TEST	CONSTITUENTS	. ENTRY!	ANALYSIS :	1
METHOD	ALL CONSTITUENTS REPORTED BE/L	-!#!-	RESULTS ;	: K CRL
	2.2-Dichloropropane	77170	1 1 1 1 1 1	1 0,50
'	1.1-Dichloropropene	77168		1 0 50
	<u>Hexachlorobutadiene</u>	34391		(),50
	Isopropylbendene	77323		; .) FO
	p-[sopropy] toluene	A-011	1 1 1	1 Fa1
	Methylene shleride	244221	, , , , , , , , , , , , , , , , , , , ,	
,,	<u>Vaphthal-ne</u>	4696!		1 0,50
	r-Propylbencene	1772241		1 0.50
	Etyrene	771281		_1 <u>a 5a</u> :
	1.1.1.2-Tetrachloroethane	77562		0,50
503.1	Toluene	34010		0.50
	1,2.2-Trichlorobenzene	77613		0.50
{	1,0,4-Trichlerobenzene	34551		i) F.f)
	Trichloroflucromethane (Freen 11)	34438		1 () 5()
	1.2.3-Trichloropropane	77443		0.50
	Trichlorotriflouroethane (Freen 113)	31611	1717,717	TO FO
	1. 1. 4- minethy hondens	77000		<u> </u>
	1.2.5-Trimethylbensens	77226		10.50
	Methyl Ethyl Ketone (MEK, Putanone)	21595	1	
	Mathyl Lycbutyl Katone (MTPK)	41596		
	Disphi + (Densy)	COCOL		
	The property	293501		1 4
	Heptachlor	39410		· · · · · · · · · · · · · · · · · · ·
	Heptachlor Epoxide	394201		: 1) 111
	Eronacil (Hyrar)	92198		· i
	Diaminon.	39570		
	Prometryn (Saparol)	39057	<i>i</i>	
	Chlorothalonal (Daconil, Brave)	70314	·	
	Dimethoate (Cygon)	28458	· · · · · · · · · · · · · · · · · · ·	
	Diethylbexyigothalate (DEHP)	39100		- F - N
	Aldicarb (Temik)	390531		
	Carbofuran (Furadan)	81405		
7,	lyphosate	79743		

PD - None Detected California D.O.H.S. Cert. #81

Note any unidentified peaks below.

Total Petroleum Hydrocarbons = 1500. mg/L Minimum Reporting Level = 0.50 mg/L TPH value is in addition to the above named compounds.

Analyzed by GC MC Netbod 504.1

J. J. EGLIN, REG. CHEM, ENGR.

4100 PIERCE RD.. BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Applied GeoSystems Attention: Leigh Beem

43255 Mission Plva Fremont, CA 94539

PURGEABLE ORGANIC ANALYSIS

Tate of Report: <u>3/22/39</u>	Lab Sample ID No <u>6275-2</u>	
Laboratory	Signature Lab	
Mame: BC Laboratories	Director: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	beul
Mame of	Sampler	
Sampler:	Employed By:	
Date/Time dample Date/Time Sampl	e Date Analysis	
Collected: 3/10/89 Received @ Lab:	8/14/89 Completed: 8/	18/89
Tystem ECC #18008-5 Hayward. A	.Pystem _ Number:	
Name or Number of Sample Source. Water Type: (9/8)	_ _ _ User ID: _ _ _	8 1 3 M D D
TEST ' ONSTITUENT	'ENTRY! ANALYSIS : MCL	
METHOD ALL CONSTITUENTS REPOSTED DE/	# SESULTS WE/I	k PRI
Promodichloremethane		0.501
Bromform	32104	0.50
Chleroform	32196	0.50
Dibromochloromethane	32105	(2.50)
Total tribalomethanes	82080	
F03_1 Renzene		$\frac{1}{1}$ 0.50
Carbon tetrachloride	32102	,
F03.1 Ethylbensene	24271 6 7 0 680	
503.1(1.4-Dichlorobensene (b-DCB)	24571 NIP 5	— ,
1.2-Dichloroethane (1.2-DA)	34531	
1.1-Dichloroethylene (1.1-DCE)		1 1
Total 1.3-Dichloropropene		
103.1 Monochlorobenzene (Chlorobenzen		(
1.1.2.2-Tetrachloroethane		_ ,,
Tetrachloroethylene (PCF)	34516	0:50
	34475	
1.1.2-Trichlorcethane 1.1.1-TC		
	A) 34511 32	[0.50]

^{*} Detection Limit for Reporting purposes

J. J. EGLIN, REG. CHEM, ENGR.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Page Didf 8

Lab #:6275-2 (cont.)

REGULATED ORGANIC CHEMICALS (CONTINUED)

TEST	CONSTITUENT ALL CONSTITUENTS REPORTED Mg/L	ENTRY!	ANALYSIS :	MCL .g/L	* DRL
	Trichlorgethylene (TCE)	!39180!	· · · · · · · · · · · · · · · · · · ·	<i>t</i> *,	1 0.501
·	Vinyl Chloride (VC)	39175		5	0.50
503.1	m.p-Xylene	A-0141	350		
	o-Xylene	77135	Fidition		1
110 11	Total Vyl-nes (m.p. y	31551		17FI)	1 1 501
	Rentacon Basagran;	138710		* 17	: 04.
	Pibromochloropropane (DECF)	28761!			0,011
1	Ethylene Dibrowide (EDB)	77651		. 02	1.02
	Atrazine (AAtrex)	29033		*,	1.001
	Molinate (Ordram)	82199		-11	2.0
	Simazine (Princep)	39055		1 (1)	1.0
	Thiobencarb (Bolerc)	A-001		7()	0.80
`	Endrin	39390		<i>(</i> -)	0.01
	Lindane (Bauma-EHC)	39340	· · - · - · - · - · - · - · ·	4	0.40
	Methoxychlor	39480		100	10.
	Toxaphene	39400		5-	0.50
	2,4-D	297301	: - : - : - : - :	100	1()
1	1.4 F-TP (313 yev)	39045		171	1 ()

IMPEGULATED OPCANIC CHEMICALS

E.G.L	्रश्रीदण गुणाम् भूकट्ट -	! ENTRY!	ANALYSIS !	·
METHOD	ALL CONSTITUENTS SEPOSTED Ne/I	#!	SEGIT TO	' k DRI
! [romokencene	<u> 81555 </u>		1 (1 50)
	Promochlorcmethane	$-\frac{15-900}{4-012}$		<u> </u>
	Brownethane (Methyl Fromide)	34413		0.50
	r-Butylbensene	A-010		1) E()
	rec-Butylbensene	77350		0.50
	ert-Butyltensene	77353		0.50
	<u>Chlomethane</u>	34311		0.50
	C-Chlorcethylvinyl -ther	34576		1.0
	hloromethane (Methyl Chloride)	34418		0.50
	2-Chlorotoluene	<u>A-008</u>		0.50
	-Chlorotoluene	<u>A-009</u>		0.50
	dibromomethane	77596		0.50
	.C-Dichlerobensene (:-DCB)	<u> </u>		0.50
	.3-Dichlorobenzene (m-FCB)	34566		0.50
	Dichlorodifluoromethane	34668	.,_;_,_ _	0.50
	1-Dichloroethane (1,1-DCA)	<u> </u>		0.50
	is-1,2-Dichlorcethylene	_ 77093 _	_ : _ : _ : _ !	0.50
, <u>i</u> ‡	rans-1.2-Dichlorcethylene	34546		0.50
. ———]	,2-Dichloropropane	34541 _	_	0.50
1	.3-Dichloropropane	<u> 77173 _</u>	!_!_	0.50

J. J. EGLIN. REG. CHEM. ENGR.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Page 3 of 3

Lab #:0275-0 /cont.

UNREGULATED ORGANIC CHEMICALS (CONTINUED)

TEST CONSTITUENTS	ENTRY	ANALYSIS :	1 '
METHOD ALL CONSTITUENTS PEPORTED g/L	# :	FESULTS	L DRL
(O. D. 1.2			
2.2-Dichloropropane	_! 77170 _	· · · · · · · · · · · · · · · · · · ·	0.50
1.1-Dichloropropene	<u> </u>	-! - - -	<u> </u>
Hexachlorobutadiene	<u> 34391 </u>	· · · · · · · · · · · · · · · · · · ·	0.50
<u> </u>	772221		0.50
n-Isopropyltaluene	<u> A-1)11 </u>	<u> </u>	3.50
Matherland the mide	. 244221		<u> </u>
<u>Maphthalene</u>	1346961	· · · · · · - · · - · · - · · - ·	0.50
:a-Propylbensene	1772241	· ,	0.50
:Styrene	1771001		0.50
:1:1:2-Tetraphlomethane	77562		0.50
503.1 Teluene	340101	1 3 5 10	0.50
'	77613		0.50
1,2,4-Trichlorobenzene	34551		0.50
Trichloroflucromethane (Freon 11)	34488		0.50
11.2.3-Trichloropropane	77443		() 50
Trichlorotrif curoethane (Freen 113)	81611		7.50
1.C.4-Trimethylbensene	77000	: : - : - : - : - : - : - : - : -	0.50
1.0.5-Trimethylbensene	77226	, , - , , ,	0.50
Methyl Ethyl Metone (MEK, Butanone)	31595		5 N
Methyl Lobutyl Karona MIPK)	81596		5,0
ligohlor (Alenay)	GG GOE		
Calondane	29350		7 17
Heptachlor	39410		0.01
Heptachlor Spoxide	394201	1 1 1 1	0.01
Browacil (Hyvar)	321981		
Diazinon	395701	· - · - · - · - · - · - · - · - · - · -	
Prometryn (Caparol)	39057		1 ,
Chlorothalonil (Daconil, Bravo)	70314		
Dimethoate (Cygon)	384581	!	
. Diethylhexylphthalate (DEHP)	391001		5.0
Aldicarb (Temik)	139053!		—;— ——;
Carbofuran (Furadan)	31405	· - - -	
- I make a separate of the second of the sec	, <u>2150</u>		:

ID - Mone Detected Falifornia D.O.H.S. Cart. #81

Note any unidentified peaks below.	
Total Petroleum Hydrocarbons = 950, ug/L Minimum Peporting Level = 0.50 ug	1.
TPH value is in addition to the above named compounds.	(e_L
Analyzed by GC/MS Method 524.3	

_____Lab Sample ID No.___ 5075-3

J. J. EGLIN, REG. CHEM, ENGR.

4100 PIERCE RD. BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Applied GeoSystems Attention: Leigh Beem

Date of Peport: 2/02/89

43255 Mission Flyd Fremont, CA P4539

PHRGEABLE ORGANIC ANALYSIS

tume: <u>EC Laboratories</u> Dir	nature Lak ector:	i cut.	Leana	ne
Sampler: Sample Date/Time Sample	pler loyed By: .	Date Analys		
Collected: 3/10/89 Received @ Lab: 3	/14/89	Completed:		789
	vstem Vster			
ame : Number of Sample Source:	·	····		
Water Type: (G/S) (1) Station Number:			1 1	,
Pate/Time of Sample:	. _ Us	er ID: :_!_	1 1	
Y Y M M D D'T T'T Analyzing Agency Code: '5(2(0)6) Date	n'ma' 			
2/2/2/(i) Sale	midtysts (cmbrenea:)	表 表 W W 以及	D D [7]2]
Submarted by:	Dhana +.			
	THERE AS			****
time on 'X" in box to delete all data for	this stat	icn/late/ti	 10 0 .	
There we 'X" in box to delete all fata for PEGULATED PEGANIC C	PEMICALS			
TEST CONSTITUENT		ANALYSIS	1 vitat ,	- 12/Fot
PEGULATED BEGANIC C TEST CONSTITUENT STHOOL ALL CONSTITUENTS REPORTED REAL	PEMICALS		1 vitat ,	t lara
TEST CONSTITUENT STHOOD ALL CONSTITUENTS REPORTED ORAL Promodichloromethane	HEMICALS	ANALYSIS	1 vitat ,	
TEST CONSTITUENT STHOOD ALL CONSTITUENTS REPORTED ORAL Promodichloromethane	HEMICALS SITEMATICALS STATEMATICALS	ANALYSIS	1 vitat ,	11.5
TEST CONSTITUENT STHOOD ALL CONSTITUENTS REPORTED ORAL Promodichloromethane	HEMICALS SNTPY 3 22101 32104	ANALYSIS	1 vitat ,) F
PEGULATED BEGANIC C TEST CONSTITUENT STHOOL ALL CONSTITUENTS REPORTED REAL	PMICALS ENTPY 30104 22106	ANALYSIS	1 vitat ,	1) 5 0 5
TEST CONSTITUENT "ETHOD) ALL CONSTITUENTS REPORTED 18/1 Promodichloromethane Promoform Caloroform Dibromochloromethane Total tribalomethanes	PMTCALS PNTPY 22101 32104 22106 20105	ANALYSIS RESULTS	MCT) 5°
TEST CONSTITUENT "ETHOD) ALL CONSTITUENTS REPORTED 18/1 Promodichloromethane Promoform Caloroform Dibromochloromethane Total tribalomethanes	PMTCALS PNTPY 22101 32104 22106 20105	ANALYSIS RESULTS	MCT	0.5 0.5 0.5 0.5
TEST CONSTITUENT GETHOD MIL CONSTITUENTS REPORTED 18/1 Promoform Chloroform Chloroform Cibromobloromethage Total tribalomethage Tarbon tetrachloride	PMTCALS PNTPY 22101 32104 22106 20105	ANALYSIS RESULTS	MCT	1) 5 0 F 0 S 0 F 0 F 0 E
TEST CONSTITUENT GETHOD MIL CONSTITUENTS REPORTED 18/1 Promoform Chloroform Chloroform Cibromobloromethage Total tribalomethage Tarbon tetrachloride	CNTPY	ANALYSIS RESILTS	1 Mar	1), 5° 0, 5° 0, 5° 0, 6° 0, 6° 9, 5°
TEST CONSTITUENT SETHOD ALL CONSTITUENTS REPORTED REAL Promoform Chloreform Chloreform Dibromochloremethane Total tribalomethanes 503.1 Benzene Carbon tetrachloride E03.1 Ethylbensene	SNTPY	ANALYSIS SESULTS	100 100 100	13 5 0 5 0 5 0 5 0 5 0 5 0 5
TEST CONSTITUENT SETHOD ALL CONSTITUENTS REPORTED REAL Promoficing Chloroform Chloroform Dibromochloromethane Total tribalomethanes 503.1 Senzene Carbon tetrachloride 503.1 Sthylbensene 503.1 Sthylbensene 503.1 Sthylbensene	ENTPY 32104 22106 22105 32080 34020 34371 34571	ANALYSIS RESILTS	1 MOT 2/T 1	11.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5
TEST CONSTITUENT SETHOD ALL CONSTITUENTS REPORTED 08/L Promoform Chloroform	ENTPY 3	ANALYSIS SESULTS	1 Mar. 27. 100 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5
TEST CONSTITUENT GETHOD MIL CONSTITUENTS REPORTED 188/L Promoform Chloreform Chloreform Chloreform Chloreform Chloreform Chloreboleromethage Total trihalomethages 503.1 Benzene Carbon tetrachloride 503.1 Ethylbenzene 603.1 Ethylbenzene 603.1 C-Dichloroethage (p-DCB) 1.2-Dichloroethage (1.2-DCA) 1.1-Dichloroethylene (1.1-DCE)	22101 32104 32106 32106 32108 34030 34030 34571 34531 34501	ANALYSIS SESULTS	100 100 100 100 100 100 100 100 100 100	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5
TEST CONSTITUENT GETHOD ALL CONSTITUENTS REPORTED RE/ Promoform Chloroform Chloroform Dibromochloromethane Fold trihalomethanes Fold 1 Fenzene Carbon tetrachloride FOLD 1 La-Dichloroethane (1.2-DCA) 1.1-Dichloroethane (1.1-DCE) Total 1.3-Dichloropropene	22101 32104 32105 32105 32105 32080 34020 32102 34571 34531 34501 34561	ANALYSIS RESHITS	100 100 100 100 100 100 100 100 100 100	13.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0
TEST CONSTITUENT SETHOD ALL CONSTITUENTS REPORTED REAL Promoform Caloreform Caloreform Dibromochloromethane Total tribalomethanes Fold 1 Henzene Sug 1 Henzene 1 Carbon tetrachloride 1 Carb	22101 32104 32104 32105 32106 32105 32080 34030 34571 34531 34501 34561 34301	ANALYSIS SESULTS	100 100 100 100 100 100 100 100 100 100	13.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0
TEST CONSTITUENT SETHOD ALL CONSTITUENTS REPORTED RE/I Promoform Chloroform Chloroform Chloroform Dibromochloromethane Total tribalomethanes 503.1 Renzene Carbon tetrachloride 503.1 Ethylbensene 203.1 Ethylbensene 1.1-Dichloroethane (1.2-DCA) 1.1-Dichloroethylene (1.1-DCE) Total 1.3-Dichloropropene 503.1 Monochlorobensene (Chlorobensene) 1.1.2.2-Tetrachloroethane	20101 32104 32104 22106 22106 22105 32080 34020 34020 34571 34571 34561 34561 34516	ANALYSIS RESHITS	100 100 100 100 100 100 100 100 100 100	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50
TEST CONSTITUENT SETHOD ALL CONSTITUENTS REPORTED RE/I Promotion remethane Promotion Chloroform Chloroform Dibromochloromethanes Total tribalomethanes 503.1 Renzene Carbon tetrachloride 503.1 Sthylbensene 503.1 Sthylbensene 1.1-Dichloroethane (1.2-DCA) 1.1-Dichloroethylene (1.1-DCE) Total 1.3-Dichloropropene 503.1 Monochlorobensene (Chlorobensene) 1.1.2.2-Tetrachloroethane Tetrachloroethylene (PCE)	22101 32104 32104 32105 32106 32105 32080 34030 34571 34531 34501 34561 34301	ANALYSIS RESHITS	100 100 100 100 100 100 100 100 100 100	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50
TEST CONSTITUENT SETHOD ALL CONSTITUENTS REPORTED RE/I Promoform Chloroform Chloroform Chloroform Dibromochloromethane Total tribalomethanes 503.1 Renzene Carbon tetrachloride 503.1 Ethylbensene 203.1 Ethylbensene 1.1-Dichloroethane (1.2-DCA) 1.1-Dichloroethylene (1.1-DCE) Total 1.3-Dichloropropene 503.1 Monochlorobensene (Chlorobensene) 1.1.2.2-Tetrachloroethane	20101 32104 32104 22106 22106 22105 32080 34020 34020 34571 34571 34561 34561 34516	ANALYSIS RESHITS	1 MOT 1 2 2T 1 2	0 F1

Detection Limit for Perforting purposes

J. J. EGLIN, REG. CHEM, ENGR.

4100 PIERCE RD. BAKERSFIELD. CALIFORNIA 93308 PHONE 327-4911

Page 2 of 3

Lab #:6275-9 - cent.

REGULATED ORGANIC CHEMICALS (CONTINUED)

TEST CONSTITUENT METHOD ALL CONSTITUENTS REPORTED DE/L	ENTRY!	ANALYSIS SESULTS	MCL ng/L	* DBL
Trichloroethylene (TCE)	[39180]	: 111	<u>, , , , , , , , , , , , , , , , , , , </u>	[_0.50]
Vinyl Chloride (VC)	39175	1-1-1-1-	F,	0.50
[03.1 m,p-Xylene	A-014	1 5 3		·
<u>503.1 o-Xylene</u>	77135			· · · · · · · · · · · · · · · · · · ·
702 1 Total Kylenes m.p. V	81551	·- 취수[취-	175.1	101:
Pentacon (Basagran)	.38710			
Dibromochloropropane - IECPY	28761			3.011
Ethylene Dibromide (EDP	77651	: -; -; -; -; -; -;	12	11.02
'Atrazine (AAtrex)	39033!	(ر.	1.00
Molinate (Ordrem)	82199	! - : - : - : - : - :		2.0
Simazine (Princep)	39055	; - - - -	10	10
Thiobencarb (Polero)	A-001	- - - -	70	0.80
Endrin	39390		7	0.01
Lindane gamma-EHC)	39340	!-!-!-!-!-!	4	0.40
Methoxychlor	39480		100	10
Toxaphene	39400			0.50
10,4-10	39730		.00	11)
12.4.5-TP (31) V=Y)	39045			

"NREGULATED OFGANIC CHEMICALS

<u></u> .	- 1111- 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	· EMTRY: AMALYSIG :	
<u> सहतान्।</u>	O ALL TONGTITUTENTS REPORTED US/I	= ≠ ' FRUNG !	· DRL
	Brombensene	1815551 1 1 1 1 1 1	1 0.50
	Promochloromethane	A-012	0.50
	(Erromomethane (Methyl Erromide)	34413	0.50
	n-Butylbensene	A-010	0.50
	sec-Eutylbenzene	77350	2,50
·	tert-Butylbenzene	77353	0.50
	Chloroethane	34311	0.50
·	12-Chloroethylvinyl ether	34576	1.0
	(Chloremethane (Methyl Teloride)	34418	0.50
	12-Chlomtoluers	A-008	3.50
	4-Chlorotoluene	Δ-009	0.50
	Dibromomethane	77596	0.50
·	1.0-Dichlorobensene (c-10B)	34536	11.50
	11.3-Dichlorobensene (m-ICB)	34566	0.50
· —	Dichlorodifluoromethane	34668	0.50
·	1.1-Dichloroethane (1.1-DCA)	34496	0.50
·	cis-1,2-Dichlorgethylene	77093	0.50
	trans-1,2-Dichloroethylane	34546	0.50
	1.2-Dichloropropane	34541	0.50
!	1.3-Dichloropropane	77173	0.50

LABORATORIES, INC

J. J. EGLIN, REG, CHEM. ENGR.

4100 PIERCE RD.. BAKERSFIELD. CALIFORNIA 93308 PHONE 327-4911

Page 2 of 2

Lab #:6275-3 (cont.)

UNREGULATED ORGANIC CHEMICALS (CONTINUED)

TEST	CONSTITUENTS	ENTEY:	ANALYSIS	i
METHOD	ALL CONSTITUENTS REPORTED DE/L	<u> </u>	SESULTS	- PEL
. 10	2 Disklama	1001001		
	2-Dichloropropane	- <u>77170</u> _		0.50!
	1-Dichlerepropene	<u> 77168 </u>	-	0.50
	exachlorobutadiene	34391!		0.50
	cpropylbencene	77223		0.50
	Isopropyltoluene	! <u>A-()11</u> !_	'	<u> </u>
	thylene inlamide	1344231	, _ ! _ ,	7 50
	<u>iphthalene</u>	<u> </u>	· ; _ ; _ ;	<u> </u>
	Propylhensene	772241	!_!_!	(0.50)
:	yrene	77128		0.50
1	1.1.C-Tetrachlorosthane	775621		0.50
503.1 Tc		34010	: 51.171	0.50
1 1_3	2.3-Trichlorobensene	<u> </u>		9.50
	2.4-Trichlorchensene	34551		0.50
Tr	ichlerofluoromethane (Freen 11)	1344881		0.50
1	C.2-Trichloropropane	77443		0.50
T	ichlorotriflouroethane (Freon 113)	31611		0.50
11	2.4-Trimethylbenzene	77222		0.50
11.	2.5-Trimethylbensene	77226		0.50
! Me	thyl Ethyl Ketone (MEK, Butanone)	81595		5.0
Me Me	thyl Icobutyl Ketone (MIBK)	31596		E ()
	yorden Alanevi	77825		
Ch	Lordane	1.79350		1 ,7 + 6
He	ptachlor	3941()		0.01
u _e	ptachlor Epoxide	39420	-,	0.01
	omacil (Hynyan)	32198		
	aginon	39570	; ; ; ; ; ;	1
	ometryn (Caparol)	39057		
	lerothal mil (Daccmil, Brave)	703141		
	methoate (Cygon)	38458		;
	ethylicxylphthalate (DEHP)	39100		(5.0)
	dicarb (Temik)	390531	-;-,-::::::::::::::::::::::::::::::::::	
	rbofuran (Furadan)			
	Abhasa+5	<u>81405 </u>		

My - None Detected

California D.O.H.S. Cert. #81

Note any unidentified peaks below.

Total Petroleum Hydrocarbons = 25.0 mg/L Minimum Reporting Level = 0.50 mg/L

TPH value is in addition to the above named compounds.

Analyzed by GC/MS Method 504.0

Lab Sample ID No. -8075-4

J. J. EGLIN. REG. CHEM. ENGR.

4100 PIERCE RD., BAKERSFIELD. CALIFORNIA 93308 PHONE 327-4911

Applied ReoBystems Attention: Leigh Beem

Laboratory

late of Seport: <u>5/22/89</u>

13CE5 Mission Plvd Fremont, CA 94589

PURGEABLE ORGANIC ANALYSIS

	Fignature Lab		12	
Name: P.C. Laboratories	Pirector:	· cui	معرب سر	mul-
Mame of	Sampler			
isopler:	Employed By: _			
Tate/Time Sample Pate/Time Sample	€ .	ate Analys	is	
"llected: 3/10/89 Received @ Lab:	3/14/89	implated:	3/19	739
		========	======	========
Typtem ECC #18008-5 Hayward, CA	Gystem			
Tatos: N-03-MW4 R 00 20	_ Number			
Thme of Number of Sample Source:				
Water Type: (G/S) Station Numb	er: '_!_!_!		· · · · · · · · · · · · · · · · · · ·	1_1_1
Date/Time of Hample:	_ _ _ Use	r II·		
Analyzing Agency Tide: [5]8[9]6] Da	ite Analysis Co	mplemed: /	2121018	11/21
			Y Y M M	Ti Ti
Dubmitted by:	Phone #:			1
- 10-114-6 C 10-10-6 C 10-	FROME #			 -
Flore on "Y" in box to delete all data	for this stati	an Ants/44	·	
and the same of th	TOT STATE SPECIES	111 (d. d 111	· · · · · · · · · · · · · · · · · · ·	
GEGULATED ORGANI	C CHEMICALS			
	y camaritation.			
TEST CONSTITUENT	ENTRY	ANALYGIS:	'40T	
METHOD: ALL CONSTITUENTS SEPORTED USAL	# :	PECIT TO		
. Bromodichloromethane	32101!	' '		9.50!
Promoform	32104	, -, - , - ; - ;		0.50
(Ch. Losson del a servi	32106	·,- <u> </u> -		0.50
Dibromochloromethane Total tribalomethanes	32105			0.50
Total tribalcmethanes	82080		190	
(1)3.1 Penzene	34030		1	
[farbon tetrachloride	32102	# · · · · · · · · · · · · · · · · ·	Ę	
E03.1 Ethylbensene	34371	4-4-1-1-1	330	0.50
193.111.4-Dichlorobensene DCB)	34571	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		0.501
1,2-Dichlorcethane (1,2-DCA)	34531		÷,	1.501
:1,1-Dichloroethylene (1,1-ICE)	34501		G 1	0.50
'Total 1,3-Dichloropropens	34561		=	0,50
103.1 Monochlorobenzene (Chlorobenzene			20	<u>0,50</u>
1.1.2.2-Tetrachloroethane	34516		1	0.50
Tetrachloroethylene (PCE)	34475	-:-:-:-:	5	0,50
1.1.1-Trichloroethane (1.1.1-TCA	34506		<u> </u>	0.50
1.1.2-Trichloroethane (1.1.2-TCA			SC	0.50
				- 12 x C/ }

[·] Detection Limit for Reporting purposes

LABORATORIES, INC.

J. J. EGLIN, REG. CHEM, ENGR.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Orașe C of C

Lab #:6275-4 (cont.)

REGULATED ORGANIC CHEMICALS (CONTINUED)

TEST	CONSTITUENT	ENTRY	ANALYSIS	MCL	!
METHOD	ALL CONSTITUENTS REPORTED HE/L	# 1	RESULTS	ns/L	* DRL
	Trichlorgethylene (TCE)	39180	1 1 1 1 1	e,	. 0.50
	Vinyl Chloride (VC)	39175			() 50
<u>503.1</u>	m.p-Xylene	A-014		·	، كىلىقىدىد ، ا
502 1	<u>n-Wylene</u>	77135			,
	Total Volence mp. :	91551	[419](01][1	4000	1
	Fentacin (Basegran)	28710		, 3	(7)
	Tibromonloropropane TECP)	28761		-	9 11
	Ethylene Dibromide (ETB)	77651		1.7	ומה מ
	Atrazine (AAtrex)	39033		?	1.00
1	Molinate (Ordram)	32199		20	2.0
	Gimazine (Princep)	39055		10	1.0
;;	Thiobencarb (Bolero)	A-001		70	0.30
·	Endrin	39390	-1-:	2	0.011
	Lindane (gamma-BHC)	39340		4	(), 40]
!	Methoxychlor	39480		100	10.
·	Toxaphene	394001			0.50!
	2, 4-1)	39730		100	11)
	2,15-TP (Silvey)	129045	-1 -1 -1	10 1	1 ()

"MBEGITATED OPGANIC CHEMICALS

METHOD)	COMSTITUENTS ALL CONSTITUENTS REPORTED US/L	ENTEX	FESHTAS :	* DRL:
, 17	romobensene	!31555!	t ' - 1	11,50 .
	romochloromethane	A-012		11 6.0
· 12	romomethane Methyl Promide)	34413		O.FO
10	-Putvlbensere	A-010		0.50
	ec-Eutylbenzene	77350		0.50
	ert-Butylbengene	77353		0.50
	hloroethane	34311		1 0 FO 1
2	-Chloroethylvinyl ether	34576		1.0
· (C	hloromethane (Methyl Chloride)	34418		0.50
	-Chlorotoluene	A-008		1), 50
14-	-Chlorotoluene	A-009 _		0.50
<u> </u>	i bromomethane	_ 77596 _		0.50
	.2-Dichlorobensene (:-IVP)	24536		2.50
	.3-Dichlorobenzene (m-DCB)	34566		9.50
	ichlorodifluoromethane	34668		0.50
	.1-Dichloroethane (1,1-UCA)	34496		0.50
	is-1,0-Dichlomethylene	77093		0.50
	rans-1,C-Fichlorcethylene	34546		0.50
	.2-Dichloropropane	!34541		0.50
]	2-Dichloropropane	_! <u>77173</u>		9.50

Page 3 of 3

Lab #:6275-4 (conit.)

"NREGULATED OFGANIC CHEMICALS (CONTINUED)

TEET		ENTRY!	ANALYSIS	
ETHOD	ALL CONSTITUENTS REPORTED ug/L	# #	RESULTS	DRL
		· · · · · · · · · · · · · · · · · · ·		
	2.2-Dichloropropane	[77170]	-!-!-!-!-!-!	1.0,50
	1.1-Dichloropropene	77168		0.50
	Hexachlorobutadiene	34391		0.50
	Isopropylbenzene	77223		0.50
	's-Tsopropyltoluene	4-011		7.50
	Methylene chiloride	344231		2,50
	Naphthalene	1346961		0 50
·	la-Propylbensene	772241		0.50
	Styrene	77128		0.50
	1.1.1.C-Tetrachlorcethane	775621		0.50
<u> 103.1</u>	Toluene	34010	460.	0.50
	1.2.3-Trichlorobensene	77613		0.50
	1.2.4-Trichlorobenzene	34551		0.50
	Trich orofluoromethane (Freon 11)	34488		9.50
	1.2.3-Trichloropropane	774431		0.50
	Trichlorotriflouroethane (Freor 113)	31611		0.50
	1.2.4-Trimethylbensene 1.2.5-Trimethylbensene	77222		0.50
	1.2.E-Trimethylbensene	772261	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.50
	Methyl Ethyl Ketone (MEK, Butanone)	81595		5, n
	Methyl Isobutyl Katone (MIRK)	315961		5 1
	llashlar Alsney	:7790F1		
	Contract	39350		() 17
	Heptackler	1394101	· · · · · · · · · · · · · · · · · · ·	0.01
	Meptachlor Spexide	394201	· · · · · · · · · · · · · · · · · · ·	0.01
1	Promacil (Hyvar)	321981		
	Diazinon	395701	! - ! - ! - ! - ! - !	
i	Prometrym (Caparol)	390571	<u> </u>	i
	Chlorothalonil (Daconil, Bravo)	70314	:-:-:-:	1
	Dimethoate (Cygon)	334581		
	Diethylbexylphthalate (TEHP)	39100		F. 0
	Aldicarb (Temik)	390531	, -: -: -: -: -:	
	Carbofuran (Buradan)	314051	: -: -: -: -: -: -: -: -: -: -: -: -: -:	i
	* ************************************	<u>、 主張した</u> 。		

M - None Detected California D.O.H.S. Tert. #81

Note any unidentified peaks below.

Total Petroleum Hydrocarbons = 2500, ug/L Minimum Reporting Level = 0.50 ug/L

TPH value is in addition to the above named compounds.

Analyzed by GC/MS Method 524.3

J. J. EGLIN, REG. CHEM, ENGR.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Applied GeoSystems Attention: Leigh Beem

Date of Report: 3/22/39

43255 Mission Plvd Fremont, CA 94539

PURGEABLE ORGANIC ANALYSIS

	Feport: <u>3/22/39</u>	Lab Sampi	e ID	V: 20	78-8	
Laborat		Gignature	e Lab	· · · · · · · · · · · · · · · · ·		
Name:	B C Laboratories	Director		ill	t - un	uni-
Name of		Sampler			····	
Campler	:	Employed	Bv:			
	me Sample Tate/Time Sampl	le	1 .	Date Ana	lveie	
Collect	ed: <u>8/10/89</u> Peceived @ Lab:	3/14/89	}	Complete	17010 3: 3:/1:	3 /90
-======					· · · · · · · · · · · · · · · · · · ·	
ystem	BOC #18008-5 Hayward, TA	System				
Tame:	<u>N-04-MW5 3710789</u>	ີ່ນຫ່ວ ວ ກ:				
	Number of Sample Source:	ber:				1 1 1
Date	/Time of Sample: '_:_!!_ _ _/ 7 Y M M D D T	ا ا ا ا ا	Ne	er II:	-	
anar	ysing Agency Code: 5 2 4 6 D	ate Analy	sis ()	cumplemed:	18 9 10 18 Y Y M M	1 1 2 D
.Pulbra	itted by:	Phone	н.			
			** ,			
	n "M" in box to 3-lete cll data FEGWLATED (PGAN			acia da Mili	.ine	
WETHOD	CONSTITUENT	· E	NTRY:	ENALYSI	S ' MOL	
		· E	NTRY:	ANALYSI FESHLTS	3 MOL	' K FRL
	ALL CONSTITUENTS REPORTED HEAD	· E	NTRY:	enalysi ershiys	3 ' MCL : pg/L	' K FIRE
	ALL CONSTITUENTS SEPORTED Hg/	r !	NTRY:	इष्ट्राम् कट	: ::::::::::::::::::::::::::::::::::::	
	ALL CONSTITUENTS REPORTED Hg/ Eromodichloromethane Promoform	1 1 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	NTRY:	<u> </u>	: :::8/[1,501
	ALL CONSTITUENTS REPORTED HEAD	L : : : : : : : : : : : : : : : : : : :	NTRY: 1 2101 2104 2106	FESHITS	::::8/[1.50
	ALL CONSTITUENTS REPORTED Hg/ Eromodichloromethane Promoform	1	NTRY: 10111210412106121051	FESHITS		1,501 1,501 0,501
	ALL CONSTITUENTS REPORTED Hg./	1	NTRY: 10111210412106121051	EPS(II IVS	100	0.50 0.50 0.50
	ALL CONSTITUENTS SEPCETED Hg./	1 33 33 33 33 33 33 33	NTRY: 12101 12104 12106 12105 12080	EPS(II IVS	100	1,501 1,501 2,501 0,501 0,50
503.1	ALL CONSTITUENTS REPORTED Mg/M Eromodichloromethane Promoform Chloroform Dibromochloromethane Total tribalomethanes Pensene	132 33 33 33 34 34 34 34	NTRY:	EPS(II IVS	100	1,501 1,501 0,501 1,501 0,501 2,501
503.1	ALL CONSTITUENTS REPORTED Mg./ Eromodichloromethane Eromoform Chloroform Dibromochloromethane Total trihalomethanes Renzene Carbon tetrachloride	3 3 3 3 3 3 3 3 3 3	NTRY:	- Term me	100	0.50 0.50 0.50 0.50 0.50 0.50
503.1	ALL CONSTITUENTS REPORTED Hg.// Eromodichloromethane Eromoform Chloroform Dibromochloromethane Total trihalomethanes Pensene Carbon tetrachloride Ethylbensene	E E S	NTRY:		100	7,50 0,50 0,50 0,50 0,50 0,50 0,50 0,50 0,50
503.1 F03.1 503.1	ALL CONSTITUENTS REPORTED Hg./ Eromodichloromethane Eromoform Chloroform Dibromochloromethane Total tribalomethanes Pensene Carbon tetrachloride Ethylbensene 1.4-Dichlorobensene (p-PCB)	E E	NTRY:	- Term me	100 100 1 1 5 	7,50 9,50 9,50 9,50 9,50 9,50 9,50 9,50 9,50
503.1 503.1 503.1	ALL CONSTITUENTS REPORTED Hg.// Eromodichloromethane Eromoform Chloroform Dibromochloromethane Total trihalomethanes Renzene Carbon tetrachloride Ethylbenzene 1.4-Dichlorobenzene (p-DCB) 1.2-Dichloroethane /1,2-DCA)	E E	NTRY: 1		100 100 1 5 280 5	7,50 0,50 0,50 0,50 0,50 0,50 0,50 0,50 0,50 0,50
503.1 503.1 503.1	ALL CONSTITUENTS REPORTED Hg.// Eromodichloromethane Eromoform Chloroform Dibromochloromethane Total trihalomethanes Renzene Carbon tetrachloride Ethylbenzene 1.4-Dichlorobenzene (p-DCB) 1.2-Dichloroethane (1.2-DCA) 1.1-Dichloroethylene (1.1-DCE)	TE TE TE TE TE TE TE TE	NTRY:		100 100 1 5 	7,50 1,50 0,50 1,50 0,50 0,50 0,50 0,50 0,50 0,50 0,50
503.1 503.1 503.1	ALL CONSTITUENTS REPORTED bg/ Eromodichloromethane Eromoform Chloroform Dibromochloromethane Total trihalomethanes Benzene Carbon tetrachloride Ethylbenzene 1.4-Dichlorobenzene (p-PCS) 1.2-Dichloroethane (1.2-DCA) 1.1-Dichloroethylene (1.1-PCE) Total 1.2-Dichloropropene	32 34 34 34 34 34 34 34	NTRY: 1 2101: 2104: 2106: 2105: 2080: 1030: 1571: 1571: 1561:	5 EST 4 C	100 100 1 5 680 5 5	7,50 9,50 9,50 0,50 0,50 0,50 0,50 0,50 0,50 0,50 0,50 0,50
503.1 503.1 503.1	ALL CONSTITUENTS REPORTED Ng./ Eromodichloromethane Eromoform Chloroform Dibromochloromethane Total trihalomethanes Renzene Carbon tetrachloride Ethylbenzene 1.4-Dichlorobenzene (p-DCB) 1.2-Dichloroethane (1.2-DCA) 1.1-Dichloroethylene (1.1-DCE) Total 1.2-Dichloropropene Mcnochlorobenzene (Chlorobenzene	130 331 332 334	NTRY:	SESTING 2.2.01 2.2.01 2.101 2.101 2.101	100 100 1 5 280 5 5 5 5 30	7,50 0,50 0,50 0,50 0,50 0,50 0,50 0,50 0,50 0,50 0,50 0,50 0,50
503.1 503.1 503.1	ALL CONSTITUENTS REPORTED Mg.// Eromodichloromethane Eromoform Chloroform Dibromochloromethane Total trihalomethanes Pensene Carbon tetrachloride Ethylbensene 1.4-Dichlorobensene (p-PCB) 1.2-Dichloroethane (1.2-DCE) Total 1.2-Dichloroperopene Monochlorobensene (Chlorobensene 1.1.2.2-Tetrachloroethane	130 33 33 33 34 34 34 34 34	NTRY: 2101: 2104: 2106: 2106: 2106: 2102: 1030: 2102: 1571: 1531: 1561: 301: 516:	5 EST 4 C	100 100 5 680 5 5 5 30	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50
503.1 503.1 503.1	ALL CONSTITUENTS REPORTED Hg.// Eromodichloromethane Eromoform Chloroform Dibromochloromethane Total trihalomethanes Pensene Carbon tetrachloride Ethylbensene 1.4-Dichlorobensene (p-PCB) 1.2-Dichloroethane (1.3-DCA) 1.1-Dichloroethylene (1.1-DCE) Total 1.2-Dichloropropene Monochlorobensene (Chlorobensen 1.1.2.2-Tetrachloroethane Tetrachloroethylene (PCE)	E E E	NTRY: 1	SESTING 2.2.01 2.2.01 2.101 2.101 2.101	100 100 1 5 280 5 5 5 5 30	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50
503.1 503.1 503.1	ALL CONSTITUENTS REPORTED Hg.// Eromodichloromethane Eromoform Chloroform Chloroform Dibromochloromethane Total trihalomethanes Renzene Carbon tetrachloride Ethylbensene 1.4-Dichlorobensene (p-DCS) 1.2-Dichloroethane (1.2-DCA) 1.1-Dichloroethylene (1.1-DCE) Total 1.2-Dichloropropene Monochlorobensene (Chlorobensen 1.1.2.2-Tetrachloroethane Tetrachloroethylene (PCE) 1.1.1-Trichloroethane (1.1.1-TC)	E E E E E E E E E E	NTRY: 2101: 2104: 2106: 2106: 2106: 2102: 1030: 2102: 1571: 1531: 1561: 301: 516:		100 100 1 5 680 5 5 30 1	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50
503.1 503.1 503.1	ALL CONSTITUENTS REPORTED Hg.// Eromodichloromethane Eromoform Chloroform Dibromochloromethane Total trihalomethanes Pensene Carbon tetrachloride Ethylbensene 1.4-Dichlorobensene (p-PCB) 1.2-Dichloroethane (1.3-DCA) 1.1-Dichloroethylene (1.1-DCE) Total 1.2-Dichloropropene Monochlorobensene (Chlorobensen 1.1.2.2-Tetrachloroethane Tetrachloroethylene (PCE)	1 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	NTRY: 1	SESTING 2.2.01 2.2.01 2.101 2.101 2.101	100 100 1 5 680 5 5 30 1	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50

k Detection Limit for Peporting purposes

LABORATORIES, INC.

4100 PIERCE RD.. BAKERSFIELD. CALIFORNIA 93308 PHONE 327-4911

Fage 0 of 3

Lab #:6275-5 (cont.)

REGULATED ORGANIC CHEMICALS (CONTINUED)

TEST : CONSTITUENT METHOD ALL CONSTITUENTS PEPORTED ug/L	ENTRY!	ANALYSIS :	MCL ug/L	! * DRL :
Trichlomethylene (TCE)	39180			10.501
Vinyl Chloride (VC)	39175		F	0.50
503.1 m.p-Xvlene	A-014	<u>ាខ្យែត</u> ្រៅក្រា		1
503.1 o-Xylene	77135			1
103.1 Total Xylenes (m.p. x)	31551		1751	7.50
Bentazon (Basagran)	38710!		4.4	1 1
: Dibromochleropropane DECP)	38761	· _ , - , , - ,		0.01
Ethylene Dibromide (EDB)	77651!		J.O.	0.02
(Atrasine (AAtrex)	390331		0	1.00
Molinate (Ordram)	82199		20	2.0
Simazine (Frincep)	39055		10	1.0
Thiobencarb (Polero)	A-001		77	0.80
Endrin	39390			0.01
Lindane (gamma-PHC)	39340		<u></u>	0.40
Methoxychlor	39480		100	10
Toxaphene	39400		5	0.50
(1-□)	39730!	1	<u>: 00</u>	10.
C.4.5-TP (Silvex)	39045		1 1	1 (1

"MREGULATED OFGANIC CHEMICALS

nahenda Alberta	CMSTITUENTS	ENTRY	ANALYFIC	
METHODA	ALL CONSTITUENTS REPORTED USAL	<u> </u>	PRSHIES !	k DRL
. ;	Promobencene	81555!	1 1 1 1	0.50
Ţ: :::::::::::::::::::::::::::::::::::	Promochloromethane	A-012		0.50
, <u>T</u>	Bromomethane (Methyl Bromide)	34413		0.50
! ;	-Butylbenzene	A-010		0.50
	ec-Butylbensene	77350		0.50
į _†	ert-Butylbenzene	77353		0.50
	"hlomethane	34311		0.50
	-Chloroethylviny: -ther	34576		1.0
	hloromethane (Methyl Chloride)	34418		0.50
	'-Chlorotoly:ene	A-008	; _ ; _ ; _ ; _ ; _ ;	0.50
	-Chlorotoluene	A-009		0.50
	ibromomethane	77596		0.50
	.C-Dichlorobenzene (p-PCE)	34536		0.50
	3-Dichlorobensene (m-DCB)	34566		0.50
	ichlerodifluoromethane	346681		0.50
	.1-Dichlorcethane (1,1-DCA)	34496		0.50
	is-1.2-Dichloroethylene	77093	:-:-:-:-	0.50
t	rans-1,2-Dichloroethylene	34546		0.50
	.2-Dichloropropane	34541		0.50
	.3-Dichloropropane	77173	:- - - - -	0.50

LABORATORIES, INC.

J. J. EGLIN, REG. CHEM. ENGR.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Page 7 of 3

Lab #:6275-5 /cont.1

UNREGULATED ORGANIC CHEMICALS (CONTINUED)

FEST		ENTRY	ANALYSIS '	1 1
METHOL	ALL CONSTITUENTS REPORTED HE/L	# .	PESULTS	K ERL
1	12,2-Dichloropropane	1991901	2 1 1 1 1	
,	1.1-Dichloropropene	<u> 77170 </u>		<u> </u>
,	Hexachlorobutadiene	<u>77168 </u>		
	Isopropylbenzene	<u> 34391 </u> 77223	_ - - - -	<u> </u>
	'p-Isopropyltoluene	_! <u>4-011</u> !	-	
	Methylene chloride	-; <u>8=011</u> ;; - 344231		1 50
	Maphthalene	<u>34433</u> _		1.50
	'n-Propylbencene	.: <u>24030</u> 1_ !772241	-	1.E0 1
	Styrene		- -,-!- -	
	11.1.1.2-Tetrachlorcethane	-: <u>/ / 1 20 </u> -! 77562!		1.50
503.1	Toluene	34010		<u>0.50 </u> 0.50
	1.2.3-Trichlorobensene	77613	- 2 - 2 - -	0.50
1	1.2.4-Trichlorobenzene	34551	- - - - - -	0.50
1	Trichlorofluoromethane (Freon 11)	34488	1-1-1-1-1-1	$\frac{(r.50)}{0.50}$
1	1.2.3-Trichloropropane	77443	- - - - - -	0.50
;	Trichlorotriflouroethane (Freon 113)	81611	-	0.50
,	1.2.4-Trimethylbensene	772221		0.50
	1.3.5-Trimethylbensene	77226		0.50
1	Methyl Ethyl Ketone (MEK, Butanone)	81595		
	Methyl Isobutyl Ketone (MIEK)	81596		- 1 - E 1)
	Alachlor (Alanex)	1773751		
	Chlordane	393501		0.10
	Heptachlor	394101	1-,	11.111
	Heptachlor Empride	394201	1-,-;-;-;-;-;-	1 11 114
	Promacil (Hyvar)	32198	1-1-1-1-1-1	
	Diazinon	39570		
	Prometryn (Caparol)	39057		
	Chlorothalonil (Daconil, Brave)	70314		
	Dimethoate (Cygon)	38458		
;	Diethylhexylphthalate DEHP)	39100		F.1
	Aldicarb (Terrik)	390531	1-1-1-1-1-	1
	Carbofuran (Furadan)	31405		1
· · · · · · · · · · · · · · · · · · ·	Glyphosate	79743		

ID - None Detected

California D.O.H.S. Cert. #81

Mote any unidentified peaks below.

Total Petroleum Hydrocarbons = 2300, pg/L Minimum Reporting Level = ().50 pg/L

TPH value is in addition to the above named compounds.

Enalyzed by GC/MS Method 504.2

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Applied GeoSystems Attention: Leigh Beem

43255 Mission Plvd Fremont, CA 34539

PURJEABLE ORG	BANIC ANALYSIS
Pate of Report: <u>3/22/89</u> L	ab Sample ID No 6275-6
Laboratory	Dignature Lab / // // Cananal
Name: BC Laboratories D	irector: Juil Januar
Name of Sampler:E Date/Time Sample	mployed By:
Date/Time Sample Date/Time Sample	Date Analysis
Collected: 8/10/89 Received @ Lab:	<u>3/14/89</u>
Tystem POC #18008-5 Hayward, CA	Quetor
"ame: 9-Blant //10/39	Number:
Name or Number of Sample Source:	
Water Type: (G/S) Station Numb	er: '_ _ _ _ _
Date/Time of Sample: {_ _ _ _ _ _ _	
Analysing Agency Code: 5 8 0 6 Da	te Analysis Completed: <u> 8 9 0 8 1 8 </u>
·	A, A, W, W, D, D
2.1	T70
Submitted by:	Phone #:
"lace an "Y" in how to delete all data t	for this station (date (time))
mand the state of	our ones soadim/dade/fime.
FEGULATED ORGANIO	CHEMICALS
TEST CONSTITUENT	ENTRY ANALYSIS MCL
METHOD! ALL CONSTITUENTS PEPORTED LEVE.	# PESULTS : we/L k DBL ;
	[32101] :
Promoform	32101 _
Chloroform	32104
Dibromochloromethane	32105
Total tribalomethanes	82080 1 100 0.50
503.1 Benzene	34030 : 26 . 0 1 0.50
Carbon tetrachloride	32102 5 0,50
F03 1 Ethylbenzene	· · · · · · · · · · · · · · · · · · ·
503.1(1.4-Dichlorobensene (p-DCB)	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
1.C-Dichlomethane (1.2-DCA)	
1.1-Dichlorgethylene (1.1-DCE)	· · · · · · · · · · · · · · · · · · ·
Total 1.3-Dichloropropene	
503.1 Monochlorobenzene (Chlorobenzene	
1,1,2,2-Tetrachloroethane	
Tetrachloroethylene (PCE)	
1,1,1-Trichloroethane (1,1,1-TCA	
1.1.2-Trichloroethane (1.1.2-TCA	
) 34511

^{*} Detection Limit for Reporting purposes

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Page 2 of 3

Lab #:6275-6 (cont. '

REGULATED ORGANIC CHEMICALS (CONTINUED)

TEST CONSTITUENT	ENTRY	ANALYSIS	MCL	:
METHOD ALL CONSTITUENTS REPORTED DE/L	# .	FESULTS	ue/L	* DRL
Trichloroethylene (TCE)	1201001		Ę	
Yinvl Chloride (YC)	<u>39180 </u> 39175	-::- -		0.50
503.1 m.p-Xylene	A-014			0.50
503.1 o-Xvlene	771351	5 4		;
503.1 Motal Mylenes (m.p. % c	81551	111 3	1750	0.501
Pentacon (Basagran)	28710		1.3	20
Dibromochloropropane (TPCP)	38761:			0.01
Ethylene Dibromide (EDB)	77651		. 42	0.02
Atrazine (AAtrex)	39033 _:			1.00!
Molinate (Ordram)	82199		20	201
	39055 _	_ ' _ ! _ ! _ !	10	1.0
Thiobencarh (Bolero)	A-001 _ !		7()	0.80
Endrin	39390			0.01
Lindane (samma-BHC)	39340		4	(), 4()
Methoxychlor	39480		100	10.
Toxaphene	39400		5	0.501
12.4-D	397301		100	10.
2.4.5-TP (3120ex)	39045		.0	1 (1

INREGULATED OPGANIC CHEMICALS

TET ' CONSTITUENTS	ENTRY! ANALYSIS	1
METHOD ALL MOSTITUENTS REPORTED US/L	# PESILTS	K DEL
promobensene	181555! ' ' ! ! ! !	. 0.50 !
Bromochloromethane	A-012	0.50
Bromomethane (Methyl Bromide)	34413	0.50
n-Butylbenzene	A-010	0.50
sec-Futvlbenzene	77350	0.50
: tert-Butylbenzene	77353	0.50
Chloroethane	34311	0.50
!2-Chloroethylvinyl ether	34576	1.0
Chloromethane (Methyl Chloride)	34418	0.50
2-Chlorotoluene	A-008	0.50
4-Chlorotoluene	A-009	0.50
Dibromomethane	77596	0.50
1.2-Dichlorobenzene (c-DCB)	34536	0.50
1.3-Dichlorobenzene (m-DCB)	34566	0.50
Dichlorodifluoromethane	34668	0.50
1.1-Dichloroethane (1.1-DCA)	34496	0.50
cis-1,2-Dichloroethylene	77093	0.50
trans-1.2-Dichlorcethylene	245461	0.50
1.2-Dichloropropane	34541	0.50
1,3-Dichloropropane	77173	0.50

LABORATORIES, INC

J. J. EGLIN, REG. CHEM, ENGR.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Fage 3 of 3

Lab #: 6275-6 (cont.)

UNREGULATED ORGANIC CHEMICALS (CONTINUED)

TEST	CONSTITUENTS	ENTRY!	ANALYSIS :	
METHOD	ALL CONSTITUENTS REPORTED us/L	# 1	BESULTS	* DRL
				, <u></u>
	2.2-Dichloropropane	771701		1 0.50 !
	1.1-Dichloropropene	77168		0,50
	<u>Hexachlombutadiene</u>	34391		0.50
***	<u>Isopropylbensene</u>	772231		9.50
	p-Isopropyltoluene	A-011		0 53
	Methylene chloride	344231		0.50
	<u>Naphthalene</u>	346961		0,50
	n-Propylbenzene	77224		0.50
	Styrene	77128		0.50
= % * endirentation unum (1.1.1.1.1-Tetrachlorcethane	77562		0.50
<u> 7)3 1</u>	Toluene	34010	1 101.11	0.50
,	1,2,3-Trichlorobenzene	77613		0.50
	1.2.4-Trichlorobenzene	34551		0.50
	Trichlorofluoromethane (Freon 11)	34488		0.50
	1.2.3-Trichloropropane	77443		0.50
·	Trichlorotriflouroethane (Freon 113)	81611		0.50
	1.2.4-Trimethylbenzene	772221		0.50
**************	1.3.5-Trimethylbenzene	77226		0.50
	Methyl Ethyl Ketone (MEK, Butanone)	81595		5.0
1 	Methyl Isobutyl Ketone (MIRK)	81596		5.0
	Alachler (Alanex)	77835		1
	Chlordane	39350		11,10
·	Heptachlor	39410		0.01
	Heptachlor Epoxide	39420		0.01
·	Bromacil (Hyvar)	82198		
	Diazinon	39570		, 1
	Prometryn (Caparol)	39057		
Ì	Chlorothalonil (Daconil, Pravo)	70314		
	Pimethoate (Cygon)	38458		
	Diethylhexylphthalate (DFHP)	39100		5.0
	Aldicarb (Temik)	39053		,
	Carbofuran (Furadan)	81405		
	Glyphosate	79743		
	· · · · · · · · · · · · · · · · · · ·			

MD - None Detected

"alifornia D.O.H.S. Cert. #81

Thte any unidentified peaks below.

Total Petroleum Hydrocarbons = 75. µg/L Minimum Reporting Level = 0.50 µg/L TPH value is in addition to the above named compounds.

Analyzed by GC/MS Method 524.0

LABORATORIES, INC.

4100 PIERCE RD.. BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Applied GeoSystems Attention: Leigh Beem

43255 Mission Flvd Fremont, CA 34539

FURGEARLE ORGANIC ANALYSIS

Tate of Report: 3/22/89	Lab Sample ID No 6275-7
Laboratory	Gignature Lab.
Mame: <u>R.C. Laboratories</u>	Director: Aug Linsung
Name of	Sampler
Sampler:	_ Employed By:
Date/Time Sample Date/Time Sam	ole Pate Analysis
.oriected: 1/10/89 Received @ Lai	o: <u>8/14/89</u>
Tystem FOC #18008-5 Hayward, 1A Name: <u>W-25-MW6 8710789</u>	Ystam
Name or Number of Bample Bourse.	
Water Type: 'G/S') _' Station N	umber: _ _ _ _ _ _ _ _ _
Date/Time of Sample: '_ _ _!_!_ _ Y Y M M D D	_ _ _ _ User ID: _ _
Y Y M M D D	بْسَ بْلْ شُرْشِ
Analyzing Agency Code: 5 8 0 6	Date Analysis Completed: 8 9 0 8 1 8
	A A W W D, D,
Submitted by:	770a a.u
EMBIN COSC Sy.	Phone #:
Floce on 'Y" in box to delete all dat	es for this station/date/time
	at and made because descripting,
PEGULATED ORGA	NIC CHEMICALS
TEST CONSTITUENT	'ENTRY' ANALYSIS MCL
METHOD SIL CONSTITUENTS REPORTED DE	/L
Promodichleromethane) 201011
Bromoform	32101
Chloroform	
Pibromochloromethane	32106 0.50 32105 0.50
	32105
Total tribalomethanes	<u>82080</u> 190 0.50
703.1 Benzene	34030 1 3 3 7 1 0.50
Carbon tetrachionide	32102 .5 0.50
503.1 Ethylbenzene	34371 ND 880 0.50
503 1 1.4-Dichlorobencene (p-DCB)	
1.2-Dichlorcethane (1.2-DCA)	34531 5 3.50
! ! ! ! - Dichloroethylene (1, 1-DCE) 34501 4 0.50
Total 1.3-Dichleropropene	34561 5 0,50
503.1 Monochlorobenzene (Chlorobenz	
1.1.2.2-Tetrachloroethane	34516 1 0.50
Tetrachloroethylene (PCE)	34475
1.1.1-Trichloroethane (1,1,1-	
1.1.C-Trichleroethane (1.1.2-	
	TCA) 34511

^{*} Detection Limit for Reporting purposes

LABORATORIES, INC.

4100 PIERCE RD.. BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Page 2 of 3

Lab #:6275-7 (cont.)

PEGULATED ORGANIC CHEMICALS (CONTINUED)

TEST CONSTITUENT	ENTEY	ANALYSIS	MCL	!!!
METHOD ALL CONSTITUENTS REPORTED HEAL	-!!	FESULTS	JJB/L	* DBL ;
Trichlorcethylene (TCE)	39130			1_0.501
Vinyl Chloride (VC)	[39175]	-1-1-1-1-1	F,	0.50
503.1(m.p-Xylene	A-014	1 121 918		
503.1 o-Xylene	77105			1
503.1!Total Xvlenes (m.p. 6 1)	81551	_''이나의원	1750	0.501
Pentazon : Basagran)	28710		- Q	500
Dibromochloropropane (IBCP)	38761		-,	0.011
:Ethylene Dibromide (EDB)	77651		<u>. 55</u>	1 0 12
Atrazine (AAtrex)	<u> 29033 </u>		<u> </u>	1,00
(Molinate (Ordram)	32199		<u></u>	<u> 3.0 </u>
Simasine (Drincep)	39055		1()	1.0
(Thiobencarb (Bolero)	<u>A-001</u>	, _ _ _ _	70	0.30
Endrin	<u> 39390 </u>	-:-!	<u> </u>	0.01
Lindane (Bamma-BHC)	[29340]		4	0.40
Methoxychlor	39480		100	10.
:!Toxaphene	394001		#	0.50
4-11	29720	1 1 1 1	1()()	10
(O. 1. C. TD 212 (CAY)	29045			1 1

"MREGULATED ORGANIC CHEMICALS

TEST	CONSTITUENTS	'EMTBA!	ANALYSIS	,
METHOD!	ALL CONSTITUENTS REPORTED DE/L	<u> </u>	PESULTS .	i + DRI
;]	Promobenzene	<u> 31555 </u>	1 1 1	1 (1,50)
	Bromochloromethane	4-012		0.50
'i J	Gromomethane (Methyl Promide)	<u> 34413 </u>	_'_!	1 0.50
·	n-Butylbenzene	A-010		0,50
· · · · · · · · · · · · · · · · · · ·	sec-Butylbensene	77250!		1 () (F() 1
11	tert-Butyltensene	<u> </u>	.:_!_ _ _ _	0.50
1 (Thloroethane The Control of the Cont	34311		7.50
!:	2-Chloroethylvinyl ether	34576	.;_!_!_ _	1.0
·	Thloromethane (Methyl Chloride)	34418	.:_:_!_ _ _ _	0.50
	R-Chlomotoluene	A-003		0.50
	1-Chlorotoluene	<u> A-009 </u>	.: _! _	0.50
: [libromomethane	77596		9.,50
1 1 1	.2-Dichlorobenzene (o-DCB)	34536		0.50
'! <u> </u>	.3-Dichlorobenzene (m-DCB)	34566	.'_ _ _ _	0.150
:	Vichlorodifluoromethane	34668		0.50
1	.1-Dichloroethane (1,1-DCA)	34496		0.50
· ; <u></u>	ris-1.2-Dichloroethylene	<u> 77093</u> _		0.50
·	rans-1.2-Dichloroethylene	34546		0.50
11	.2-Dichloropropane	34541		0.50
; ; <u>1</u>	.3-Dichloropropane	77173	!_!_ _	2.50

LABORATORIES, INC. J. J. EGLIN. REG. CHEM. ENGR.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Free 2 of 3

Lab #:6275-7 (cont.)

UNREGULATED OBGANIC CHEMICALS (CONTINUED)

TEST	CONSTITUENTS	ENTRY!	ANALYSIS !	1 ;
METHOL	ALL CONSTITUENTS REPOSTED ME/L	#	PESULTS	* DRL
		<u> </u>		
1	2.2-Dichloropropane	<u> 77170 </u>		
;	1.1-Dichloropropene	77168	1 : 1	0.50
	<u>Hexachlorobutadiene</u>	34391	1 1 1	0.50
· · · · · · · · · · · · · · · · · · ·	!Isopropylbensene	772231	1 1 1 1	0.50
	n-[sopropy]toluene	<u> A-011 </u>		0.50
	Methylene chloride	344221		0.50
	Naphthalene	246961		0.50
	h-Propylbenzene	177224		0.50
	Styrene	177128		9.50
	11.1.1.2-Tetrachloroethane	77562		0.50
F()3, 1	Toluene	34010	1168	0.50
1	1.2.3-Trichlorobensene	77613		0.50
:	1,2,4-Trichlorobenzene	34551		0.50
1	Trichlorofluoromethane (Freon 11)	344881		0.50
1	1,2,3-Trichloropropane	77443		2,50
:	Trichlorotriflouroethane (Frech 113)	81611		0.50
	1.2.4-Trimethylbensene	77222		0.50
	1.3.5-Trimethylbensene	77226		0.50
	Methyl Ethyl Ketone (MEK, Butanone)	81595		5.0
	Methyl Isobutyl Ketone MIBK)	81596		F. ()
	Alachler (Alanex)	77325		,
	. Thlordane	39350		0.10
	Heptachlor	39410		(), ()1
	Heptachlor Epoxide	39420		0.01
	Bromacil (Hyvar)	821981		
	Diazinon	39570		
	Prometryn (Caparol)	39057	; - ; - ; - ; - ; - ; - ;	1
	'Chlorothalenil (Daconil, Prave)	70314	-;-;-;-	
	Dimethoate (Cygon)	33458		
	Diethylbexylphthalate DEHP)	39100		5.0
	Aldicarb (Temik)	39053	1-1-1-1	1
	Carbofuran (Furadan)	81405	(-) - -	
	Glyphosate	79743		

MD - Mone Detected California D.O.H.S. Cert. #81

note any unidentified reaks below.	
Tital Petroleum Hydrocarbons = 5.5 µg/L Minimum Reporting Level = 0.50 µg/	L
TPH value is in addition to the above named compounds.	
loalyzed by GC/MS Method 504.0	

			CHA	AIN OF CUS	STOD	Y REC	CORE)							
Client/Project Name	Project Locat	ion	-			-	-						-		7 7
BOC / SS#	HAY	WARD,	CA	1						· •	A	NAL	YSES		
Project No.	Field Logboo	k No.					•		1 8 /	· /	11/	/ X/	//	<u> </u>	
18008-5									? /_/		P/2	X/ -	//		
Sampler: (Signature)	Chain of Cus	stody Tape N	o. 		·	-	/	Sty /	8-/		£5/		///		
Kuth Wich								/x/			"/	//	ainer		
Jacob Williams							57 _			5/	(m)	•/	Contr		
Sample No./Identification	Date	Time		Lab No.		X 3			X /		6/	/,	AO of Container	REMARKS	
W-25-MW1	8-10-89		(3-)	(75-)	X	1	X			X		ſ			
W-24-MW2	KM			3	K	1	x			X					
1-28-MW3		<u>-</u>		<u>3</u> 3	1	K	k		-	1 7	-		r ¥anta f	vial recei	147 CAL
W-23-MW4				-4	1	1	1	•		1 7	ļ		_	13 160en	
W-24-MW5				-5	1	X	*		<u> </u>	X				102 1 (2021)	<u> </u>
W-BLANIZ	KW			-6	*	K		<u> </u>		1		†		· · · · · · · · · · · · · · · · · · ·	
W-25-mw6	8107			-7				<u> </u>		X				···	
·	7*										 		Total		
Relinquished by: (Signature)		Dat	e	Time	Rece	ived by	: (Sign	ature)	1	1	L	1		Date	Time
Kuth M. Viele		8-	10-89	9	/	Sil1.	Nove	M						8/19/89	12:00
Relinquished by: (Signature)		Dat	e	Time		ived by:								Date	Time
Bill Howell					1	134	00	>						8/11/84	1603
Relinquished by: (Signature)		Dat	e	Time	Rece	ived by	: (Sign	ature)		·- ·-··				Date Souturdouy	Time
		-			1 11	/ Lt_^ \	01	11:	10 1	ŧ	P.O	MY	itis	81784	8:WA
Relinquished by: (Signature)	•	Dat	e	Time		ived by:			<u> </u>	1	· / · ·	. , ,.		Date	Time
														ļ	
Report To: Bue Smeet Leigh	Been	Bill	То:	GLENN E	EMI	BROF								NO:	<u> </u>
APPLIED GED SYSTEMS 43255 MISSION BLUD				BENCON C	214	۷o.									
73255 MISSION BLVD				525 W.	THIR	20.57	;			-					\sim
FREMONT, CA. 94539				HANFORD	CA	1. 93	してい)						∃В.	C.

White: Return to Customer with Report
Yellow: BC Lab Copy
Pink: Originator Copy

BC Laboratories

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
-22-				CL	Silty clay, trace fine gravel, trace fine to coarse sand, light brown, with green mottling, slightly damp, medium plasticity, hard.	
-24-		11				
-26-	C 05	11 14 20			Wet.	
-28 -						
-30 -	S-30	14 21 31				
-32						
-34 -		12				
-36-	S-36	12 20 32			Some fine sand, trace fine to medium gravel.	
-38-		7				
- 40 -	S-40	8 10			Very stiff. Total Depth = 40-1/2 feet.	
-42-					10tdi Boptii — 40 1/2 100ti	
-44-						
-46-	-				:	
-48-						
-50 -						



LOG OF BORING B-6/MW-6

Beacon Station No. 546
29705 Mission Bivd.
Hayward, Ca.

PLATE B7

Total depth of bor	Ing: <u>34-1/2</u> feet Dis	meter o	f boring	10	inches	Date drilled	2-	22-90
Casing diameter	4 inches	Length	3	3 fee	et	Slot size	0.0	20-inch
Screen dlameteri	4 inches	Length	15	feet	Ma	terial type:	Sch	40 PVC
Drilling Company.	(vilhaug Well Drilling,	lnc.	Driller:_	Rod	and Pa	ıul		1
Method Usedi_Hollo	w—Stem Auger				Fle	id Geologisti	Keith	 McVicker
Signa	ture of Registered	Profes	sional:					
	Registration No.	I <u></u>	8	tate	CA	<u> </u>		

Depth	Sample No.	Blows	P.I.D.	USCS Code	JSCS Code Description				
- 0 - - 2 -				CL	Silty clay, brown, damp, medium plasticity.	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7			
- 4 -	S-5		0.3						
- 8 -	S-7.5		0.3	ML	Clayey silt, some sand and gravel, brown, damp, slight plasticity.	7			
- 10 - - 12 - - 14 -	S-12.5		0.3	CL	Silty clay, trace sand and gravel, brown, damp, slight plasticity.	7			
- 16 - - 18 -			0.3		Dark brown.				
- 20 -	S-20		110		(Section continues downward)				

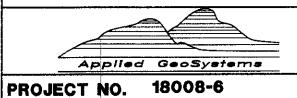


LOG OF BORING B-7/MW-7

Former Beacon Station 546 29705 Mission Boulevard Hayward, California **PLATE**

B8

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
				CL	Silty clay, trace gravel, dark brown, moist, medium plasticity.	
-22-	S-22.5		<u>▽</u> 0.2		Fractured, brown with green staining in fracture, slight to medium plasticity.	
-24 –	S-24.5		0.3	СН	Silty clay, minor sand, green—black, wet, high plasticity, fractured.	
-26-				CL	Silty clay, minor sand, green—black, wet, medium plasticity.	
-28	S-27		0.2			
-30 –	S-29.5		0		Moist.	
-32						
-34 –	S⊣34		0		Some sand and gravel. Total Depth = 34-1/2 feet.	
-36-					10tal Bopal — 04 1/2 100t.	
-38						
40 –						
42 -						
-44 –						
•46-						
48-						
.50 -						



LOG OF BORING B-7/MW-7

Former Beacon Station 546 29705 Mission Boulevard Hayward, California PLATE

B9

Total depth of bo	ring: <u>40-1/2</u> feet Die	meter o	f boring: 10	inches [ate drilledı	2-	22-90
Casing diameter	4 inches	Length	40 f€	et	Slot size:	0.0	20-inch
Screen diameteri_	4 inches	Length	20 feet	Mate	orial type:	Sch	40 PVC
Drilling Company.	Kvilhaug Well Drilling,	Inc.	Driller: Rod	and Pau	<u> </u>		*
Method Usedi_Holl	low—Stem Auger			Field	l Geologistı	Keith	McVicker
Sign	ature of Registered	Profes	sionalı				ļ
	Registration No.	.1	State	CA			

Depth	Sampl No.	•	Blows	P.I.D.	USCS Code	Description	We	
- 0 -					CL	Silty clay, trace sand and gravel, dark brown, damp, medium plasticity,		₽.₩
- 2 -							▼	∇ ∇ ∇ ∇
4 -	S-4			0			7 ♥ ∇ . ∇ .	△ △ △ △ △ △ △ △ △ △ △ △ △
- 6			ŀ	,			∇ ∇ ∇ ∇	2 A A A
8 -							v ∨ ∨ ∨ ∨ ∨	D D D D D D D D D D D D D D D D D D D
- 10-	S-9.5			0		Increase in silt, trace sand, brown.	7 ∨ 7 ∨ 7 ∨	∇
12-						·	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
14 -	S-15	T 1	8 8	47.5		Trace sand and gravel, hard.	1	7 7
- 16 -								
- 18 -			8 20 25					
- 20 -	S-20	2	25	33.7		Green-brown. (Section continues downwo	ard)	



LOG OF BORING B-8/MW-8

Former Beacon Station 546 29705 Mission Boulevard Hayward, California

B10

PLATE

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
				CL.	Silty clay, trace sand and gravel, green—brown, damp, medium plasticity, hard.	
-22						
-24-	S-24.5	10 15	27		Wet, very stiff, fractured, visible water in fractures.	
-26						
- 28				СН	Silty clay, with trace grvel, tan, wet, high plasticity,	
·30 –	S-30	4 5 20	2.7	CL	very stiff.	
32-					Silty clay, with trace gravel, tan, wet, medium plasticity, very stiff.	
-34	 	7		СН	Silty clay, some gravel, brown, wet, high plasticity, very stiff.	
-36	S-35	15 25	7.9			
38-				CL.	Silty clay, some gravel, tan, moist, medium plasticity, very stiff.	
40-	H	7 12				
	S-40	18	6.8		Total Depth = 40-1/2 feet.	
42-						
44-					t end of the second of the sec	
46-						
48-						
.50 —					; !	
ľ						



LOG OF BORING B-8/MW-8
Former Beacon Station 546
29705 Mission Boulevard
Hayward, California

PLATE B11

APPENDIX C LABORATORY REPORTS



KAPREALIAN ENGINEERING, INC.

Consulting Engineers 535 Main Street Martinez, Ca. 94553 (415) 372-5444

> April 1, 1987 KEI-J87-0310

> > 10-JAG

Mobil Oil Corporation P. O. Box 127 Richmond, CA 94807

Attention: Mr. Tim Ross

RE: Subsurface investigation Beacon Service Station

Mission Blvd. and Industrial Parkway Hayward, California

Dear Mr. Ross:

This letter summarizes the results of exploratory drilling and soil and water sampling performed by Kaprealian Engineering, Inc. at the referenced site.

KEI conducted its field work on March 25, 1987. Five (5) exploratory borings, labeled B-1 through B-5 on the attached sketch, were made to a depth of 30 feet. Soil samples were taken at five (5) foot intervals to determine if gasoline odor and/or sheen were present. The samples were collected using a California modified split-spoon sampler. Selected samples were saved for chemical analysis. Groundwater was encountered in all five borings at a depth of approximately 26 feet. Water samples were taken from borings B-2, B-3, B-4 and B-5 after drilling was complete. KEI's geologist logged the stratigraphy of the five borings. Copies of the logs are attached.

A total of fourteen (14) soil samples and four (4) water samples were analyzed for total hydrocarbons (THC) and benzene, toluene and xylene (BTX) concentrations. Copies of the laboratory analyses are enclosed, and the results are summarized below.

KEI-J87-0310 April 1, 1987 Page 2

<u>Sample</u>	Type	THC*		<u>T*</u>	X *
B-1 (15')	soil	17	0.17	<0.1	0 .59
B-1 (20')	soil	59	2.2	3.9	3 .3
B-1 (25')	soil	1600	5.8	36	64
B-2 (15')	soil	7.3	<0.1	<0.1	0.21
B-2 (25')	soil	16	0.81	<0.1	
B-3 (15')	soil	28	0.34	0.43	0.77
B-3 (20')	soil	140	1.6	2.2	11
B-3 (25')	soil	940	2.7	11	32
B-4 (15')	soil	190	0.15	0.78	14
B-4 (20')	soil	260	0.93	2.1	4.5
B-4 (25')	soil	1100	4.7	46	130
B-5 (5')	soil	1100	6.1	77	230
B-5 (15')	soil	550	<0.27	22	94
B-5 (25')	soil	1400	7.5	68	140
B-2 (W) B-3 (W) B-4 (W) B-5 (W)	water water water water	84000 2000 130000 1700000	4900 760 3000 31000		5200 230 16000

^{*} Soil analyses in parts per million (ppm), water analyses in parts per billion (ppb)

THC = Total hydrocarbon

B = Benzene

T = Toluene

⁼ Xylene

KEI-J87-0310 April 1, 1987 Page 3

Should you have any questions regarding this letter, please feel free to call me at $(415)\ 372-5444$.

Sincerely,

Kaprealian Engineering, Inc.

Me Kprin

Mardo Kaprealian

Attachments: Laboratory analyses

Boring logs



KAPREALIAN ENGINEERING, INC.

Consulting Engineers 535 Main Street Martinez, Ca. 94553 (415) 372-5444

Industrial Parkway Existing Mission Blvd. Structure Pump Islands B-5 B-4 B-1 Existing B-3 Underground Fuel Tanks 1 LOCATION PLAN location of (not to scale) boring

Beacon Service Station
Mission Blvd. & Industrial
Hayward, California

		CHA	IN OF CU	STOD	YREC	CORD	,							
Client/Project Name	Project Location													/ /
BEACON	HAY	WARD, C	A .							Λ	NAL	YSES		
Project No.	Field Logbook 1	No.						5/		,	, ,	, ,	//	
18008-4							/9	35/0	15			//		
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5-10-135	6-26-89		<u>. 4</u>	X	×			_				SOIL		
s - 1 5 - 135	6-26-89		-5	X	X		ļ					SOIL		
s-20-B5	6-26-87		-(_	X	×	X	1					SOLL		
S-25-B6	6-26-89		~7	X	X					-		SOLL		-
			<u> </u>						$\neg \dashv$			Total		
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1.1/2		6-29-89	f	,	nr/	_	illicy						Date	Time
Relinquished by: (Signature)		Date	Time	D. X.	π	$\left(\frac{1}{2}\right)$;						6-29-89	
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Polinguishadt (C'								·						3:40 AM
Relinquished by: (Signature)		Date	Time	Receiv	red by	(Signat	ure) -			_			Date	Time
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Report To: LEIGH BEEM		Bill To:	- 5-LENN	D		O = *		-4					NO:	
APPLIED GEOSYST	eus,		522NN Beacon					r cl						
43255 Mission	1810g		525 t	ر مرد	1. TH	روي روي	~~~ ~~	4 7 1055 :	T .	-	-	= =		
Fremont, CA.) 4539		HANFOR	-D , C	A.	932	30	~~	•				B	('
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White: Return to Customer with Report Yellow: BC Lab Copy Pink: Originator Copy

nec'd: (O	30-	34	
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BC CHAIN OF CUSTODY

Client:	-Sampler:-	To the			NC). L	-			
		Sample Type:		Ar	nalysi	s Rec	jueste	ed:		
Name: 595 w 3rd 31 Address: Lainford, Ch. Attn: 93230	Report-Ophied Consusta Name: 43255 M195ion Address: Fren a 11, Ch. 94539 Leigh Beern	Water Soil Sludge Oil	Other: (specify)	EPA 502.1/8010	EPA 502.2/8010/8020 EPA 503.1/8020	EPA 504 EDB/	EPA 524.2/8240	PCB	BTX/TPH Gas	EPA 608/8080 BTX/TPH Diesel
Lab # Description:		Other	Tests)/8020	DBCF				<u>e</u>
	2:37-89	BTEX(8020)	TPH-GAS)-(8015)		1		+		X	
	0-27-89								X	1
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·	0-26-89			1	1		+	++	\forall	
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Relinquished By: Date:	Ti D			l	1		Щ	<u> 1 1 1 </u>		
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			J)	<u> </u>	

White: Return to Customer with Report Yellow. BC Lab Copy

BC Laboratories

Date of

Report:

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

07-Jul-89 -

Purgeable Aromatics (SOIL)

Applied GeoSystems 43255 Mission

Fremont, CA 94539

Attention: Leigh Beem

Lab No: 5114-1

Sample Desc: S-10-B4 6/27/89

DATE SAMPLE COLLECTED:

DATE SAMPLE

DATE ANALYSIS

27-Jun-89

RECEIVED @ LAB: 30-Jun-89

COMPLETED: 06-Jul-89

Minimum Reporting Analysis Reporting Constituent. Units Results Level Benzene ug/g None Detected 0.04 Toluene ug/g None Detected 0.04 Ethyl Benzene ug/g None Detected 0.04p-Xylene None Detected ug/g 0.04 m-Xylene None Detected ug/g 0.04o-Xylene ug/g None Detected 0.04Total Pet. Hydrocarbons ug/g None Detected 5.00

TEST METHOD: TPH for gasoline by D.O.H.S. L.U.F.T. method. Individual constituents by EPA method 8020.

Dry Matter Basis

Comments:

California D.O.H.S. Cert. #102

J. J. EGLIN, REG. CHEM. ENGR.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Date of

Report:

07-Jul-89

Purgeable Aromatics (SOIL)

Applied GeoSystems

43255 Mission

Fremont, CA 94539 Attention: Leigh Beem

Lab No:

5114-2

Sample Desc: S-15-B4 6/27/89

DATE SAMPLE

COLLECTED: 27-Jun-89

DATE SAMPLE

RECEIVED @ LAB:

30-Jun-89

DATE ANALYSIS

COMPLETED: 06-Jul-89

Constituent	Reporting Units	Analysis Results	Minimum Reporting Level
Benzene Toluene Ethyl Benzene p-Xylene m-Xylene o-Xylene	ug/g ug/g ug/g ug/g ug/g ug/g	None Detected None Detected None Detected None Detected None Detected None Detected	0.04 0.04 0.04 0.04 0.04
Total Pet. Hydrocarbons	ug/g	None Detected	5.00

TEST METHOD: TPH for gasoline by D.O.H.S. L.U.F.T. method.

Individual constituents by EPA method 8020.

Dry Matter Basis

Comments:

California D.O.H.S. Cert. #102

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308: PHONE 327-4911

Petroleum Hydrocarbons (SOIL)

Applied GeoSystems 43255 Mission Blvd Fremont, CA 94539

Date of

Report: 08-Jul-89

Attention:

Leigh Beem

Lab No.:

5114-3

Sample Desc:

S-20-B4 6/27/89

DATE SAMPLE	DATE SAMPLE	DATE SAMPLE	DATE ANALYSIS
COLLECTED:	RECEIVED @ LAB:	EXTRACTED:	COMPLETED:
26-Jun-89	30-Jun-89	1)6-Jul-89	07-Jul-89
			Mázaázman

Constituent	Reporting Units	Analysis Results	Minimum Reporting Level
Benzene Toluene Ethyl Benzene p-Xylene m-Xylene o-Xylene	ug/g ug/g ug/g ug/g ug/g	1.27 0.92 0.59 0.75 1.28 0.99	0.04 0.04 0.04 0.04 0.04
Total Pet. Hydrocarbons	ug/g	none detected	10.00

TEST METHOD: TPH for Diesel by D.O.H.S. L.U.F.T Manual Method (Carbon Disulfide Extraction). Individual constituents by EPA Method 8020.

Dry Matter Basis

Comments:

Sample exhibits

Gasoline Chromatographic Fingerprint

TOTAL PETROLEUM HYDROCARBONS: Quantification of petroleum hydrocarbons utilizing a diesel standard as outlined by the California D.O.H.S. The petroleum hydrocarbons are in addition to the constituents specifically defined.

California D.O.H.S. Cert. #102

By J. J. Colonia

Analyst

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Date of

Report:

07-Jul-89

Purgeable Aromatics (SOIL)

Applied GeoSystems

43255 Mission Fremont, CA 94539

Attention: Leigh Beem

Lab No:

5114-4

Sample Desc: S-10-B5 6/26/89

DATE SAMPLE

DATE SAMPLE

DATE ANALYSIS

COLLECTED: 26-Jun-89

RECEIVED @ LAB:

COMPLETED:

30-Jun-89

06-Jul-89

Constituent	Reporting Units	Analysis Results	Minimum Reporting Level
Benzene Toluene Ethyl Benzene p-Xylene m-Xylene o-Xylene	ug/g ug/g ug/g ug/g ug/g	None Detected None Detected None Detected None Detected None Detected None Detected	0.04 0.04 0.04 0.04 0.04
Total Pet. Hydrocarbons	ug/g	None Detected	5.00

TEST METHOD: TPH for gasoline by D.O.H.S. L.U.F.T. method. Individual constituents by EPA method 8020.

Dry Matter Basis

Comments:

California D.O.H.S. Cert. #102

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Purgeable Aromatics (SOIL)

Applied GeoSystems 43255 Mission

Fremont, CA 94539

Attention:Leigh Beem

Date of

Report:

07-Jul-89

Lab No:

5114-5

Sample Desc: S-15-B5 6/26/89

DATE SAMPLE

COLLECTED: 26-Jun-89

DATE SAMPLE

RECEIVED @ LAB:

30-Jun-89

DATE ANALYSIS

COMPLETED: 06-Jul-89

Constituent	Reporting Units	Analysis Results	Minimum Reporting Level
Benzene Toluene Ethyl Benzene p-Xylene m-Xylene o-Xylene	ug/g ug/g ug/g ug/g ug/g ug/g	None Detected None Detected None Detected None Detected None Detected	0.04 0.04 0.04 0.04 0.04
Total Pet. Hydrocarbons	ug/g	None Detected	5.00

TEST METHOD: TPH for gasoline by D.O.H.S. L.U.F.T. method. Individual constituents by EPA method 8020.

Dry Matter Basis

Comments:

California D.O.H.S. Cert. #102

LABORATORIES, INC

J. J. EGLIN, REG. CHEM, ENGR.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Petroleum Hydrocarbons (SOIL)

Applied GeoSystems 43255 Mission Blvd Fremont, CA 94539

Date of

Report:

08-Jul-89

10.00

Attention:

Leigh Beem

Lab No.:

5114-6

Sample Desc:

S-20-B5 6/26/89

ug/g

DATE SAMPLE DATE SAMPLE DATE SAMPLE DATE ANALYSIS COLLECTED: RECEIVED @ LAB: EXTRACTED: COMPLETED: 26-Jun-89 30-Jun-89 06 - Jul - 8907-Jul-89 Minimum Reporting Analysis Reporting Constituent Units Results Level Benzene ug/g none detected 0.04Toluene ug/g none detected 0.04 Ethyl Benzene ug/g none detected 0.04p-Xylene ug/g none detected 0.04m-Xylene ug/g none detected 0.04o-Xylene ug/g none detected 0.04Total Pet.

TEST METHOD: TPH for Diesel by D.O.H.S. L.U.F.T Manual Method (Carbon Disulfide Extraction). Individual constituents by EPA Method 8020.

Dry Matter Basis

Hydrocarbons

Comments:

TOTAL PETROLEUM HYDROCARBONS: Quantification of petroleum hydrocarbons utilizing a diesel standard as outlined by the California D.O.H.S. The petroleum hydrocarbons are in addition to the constituents specifically defined.

California D.O.H.S. Cert. #102

By J. Berin

Analyst

none detected

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Purgeable Aromatics (SOIL)

Applied GeoSystems

43255 Mission

Fremont, CA 94539 Attention: Leigh Beem Date of

Report:

07-Jul-89

Lab No:

5114-7

Sample Desc: S-25-B6 6/26/89

DATE SAMPLE

DATE SAMPLE

DATE ANALYSIS

COLLECTED: 26-Jun-89

RECEIVED @ LAB:

COMPLETED:

30-Jun-89

06-Jul-89

Constituent	Reporting Units	Analysis Results	Minimum Reporting Level
Benzene Toluene Ethyl Benzene p-Xylene m-Xylene o-Xylene	ug/g ug/g ug/g ug/g ug/g ug/g	None Detected None Detected None Detected None Detected None Detected None Detected	0.04 0.04 0.04 0.04 0.04 0.04
Total Pet. Hydrocarbons	ug/g	None Detected	5.00

TEST METHOD: TPH for gasoline by D.O.H.S. L.U.F.T. method. Individual constituents by EPA method 8020.

Dry Matter Basis

Comments:

California D.O.H.S. Cert. #102

TPH DIESEL GUALITY CONTROL

Date: 7/7/89

Instrument: v3700a

QC Set: 5114-3

Date of

Lab #'s: 5114-3

Calibration: 6/29/89

Daily Standard

Calib CF: 69289.8657

RPD: 8.3876

Daily CF: 63478.0856

Spike Recovery

Spiked Lab #: 5114-3

Spike Conc: 3032.0000

Spike Wt: 30.18

Spike PR:

91.8595

(in grams)

Spike Dup Wt: 30.22

Spike Dup PR:

86.9966

(in grams)

COMMENTS:

CF - Calibration Factor

PR - Percent Recovery

RM: - nelative Fercent Diff: neme-

THE DIESEL QUALITY CONTROL

Date: 7/7/89

Instrument: v3700b

QC Set: 5114-6

Date of

Lab #'s: 5114-6

Calibration: 6/29/89

Daily Standard

.

Calib CF: 108401.2210

RPD: 11.1301

Daily CF: 120466.3833

Spike Recovery

Spiked Lab #: 5114-3

Spike Conc: 3032,0000

Spike Wt: 30.18

107.6710 Spike PK

(in grams)

Spike Dup FR: 112.5815

Spike Dup Wt: 30.22 (in grams)

COMMENTS:

CF - Calibration Factor

Pk - Percent Recovery

Rith - Relative Percent Lifterens

Client:			BC CHAIN OF CUSTODY						NO. L-								
			Sampler:		Sample	Sample Type:			Analysis Requested:								
Name: Address: Attn:	top lied Ge Fremontic Beam Description:			Dan Kiekman	Water Soil Sludge Oil	<i>V</i>	Other: (specify)	EPA 502.1/8010	EPA (503.1)/8020	EPA 502.2/8010/8020	EPA 504 EDB/DE	EPA 524 2/8240	PCB	BTX/IPH Gas	BTX/TPH Diesel	EPA 608/8080	
			ication-	Hayward, CA#18008-4		Othe	r Tests			020	Ĝ					Ī	
5245-1	M-52-	mw4	6-30-	89	į	d .	TPH		Х			1					
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Yellow. BC Lab Copy

ENVIRONMENTAL

CHEMICAL ANALYSIS

JETROLEUM

NOTE

ND = NONE DETECTED



LABORATORIES, INC.

J. J. EGLIN, REG. CHEM, ENGR.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Applied GeoSystems Attention: Leigh Beem

43255 Mission Blvd Ste B Fremont, CA 94539

PURGEABLE ORGANIC ANALYSIS (Volatiles)

System	Laboratory Name: B C Laboratories Name of Sampler: Date/Time Sample Date/Time Sample Collected: 7/06/89 Received @ Laboratories	Lab Sample ID No. 5245-1 Signature Lab Director Sampler Employed By: mple Were Holding ab: 7/06/89 Times Observed? YES Were all the Constituents listed below quantified? YES
REPORTING CONSTITUENT	System Project Location - Hayward Name: W-22-MW4 Description of Sampling Point: Name/No. Of Sample Source: Date &	Number: Number: Station
wg/L	Date Analysis Completed	T STORET ANALYSIS DETECTION T CODE RESULTS LIMIT LIMIT

LABORATORIES, INC

J. J. EGLIN, REG. CHEM, ENGR.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Applied GeoSystems Attention: Leigh Beem 43255 Mission Blvd Ste B Fremont, CA 94539

PURGEABLE ORGANIC ANALYSIS (Volatiles)

	\ ,	010011.207								
Date of Report	t: <u>7/10/89</u>	Lab Samol	<u> </u>	ID No	51	245-9	,			
Laboratory		Signature	- Tue	ib 110	<u> </u>	-70-5				-
Name: B.C.Lah	coratories	Director	- 24		ر مید	31		,	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Name of		Sampler			<u></u>	A			<u> </u>	/ c. /
Sampler:		Employed 3	D.,	•						ł
Date/Time Samo	ple Date/Time Sam	mle	L.y	Were	Hol	ding				
Collected: 7/0	06/89 Peceived ® La	b: 770878	9	η i roe	()} .< ()}	∖⇔⊶≀≀ -⟨⊁±₽₽	'ed? '	সেৎ		
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Test Methods:	<u>EPA 503.1</u> b	elow quan	t.i f	fied? YF	'S	,,,				
		========	===						===:	1====
System Projec	et Location - Hayward	, CA #180	08-	-4 Syste	Tf)					
Name: W-24-M										
Description of										
Sampling Point	···	Cot	unt	y Name:						
Name/No. Of Sa	umple	Station		•						
Source:		Number:		_ _ _	171	.1 1_	- _		1	
Date &										
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NOTE ND = NONE DETECTED

LABORATORIES, INC

J. EGLIN, REG. CHEM, ENGR.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Applied GeoSystems Attention: Leigh Beem 43255 Mission Blvd Ste B Fremont, CA 94539

PURGEABLE ORGANIC ANALYSIS (Volatiles)

		,			
Date of Re	port: <u>7/10/89</u>	Lab Sample	ID No.	5245-3	
Laboratory		Signature	Lab		
Name: B C	Laboratories	Director		ر رسلم سلمان	Company .
Name of		Sampler			
Sampler:			tor:		'
Date/Time	Sample Date/Time Sam	mle	Ware	Holding	
Collected:	7/06/89 Received @ La	b: 7/06/89	Time		YES
	W	ere all th	e Constit	uents listed	
Test Method	ds: <u>EPA 503.1</u> b	elow quant	ified? <u>YE</u>	<u>S</u>	
System Pr	oject Location - Hayward	, CA ♯1800	8-4 Syste		
Name: W-	24-MW6		Numbe	r:	
Description	n of				
Sampling Po	oint:	Cou	nty Name:		!
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Source:		Number:	_ _ _		- - - - -
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ug/L	Benzene		34030	8375	
ug/L	Chlorobenzene		34301	ND	
ug/L	1.4-dichlorobenzene		34571	П Д Д	
ug/L	Ethvl Benzene		34371	26 9	
ng/L	Toluene	-	34010	5 8 7	
ug/L	m-xvlene		81551		
ug/L	o-xylene		81551	_ 3 5 . 4	
,,	p-xylene		81551	31.4	
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18008-4								(\$) \$\)	(2)	//	/ /	/	//		
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Fremont, CA. 94	1539		~	Hanto	rd.	CA.	93	230	· }					∣ В.	.U.

White: Return to Customer with Report Yellow: BC Lab Copy Pink: Originator Copy



BC Xab # 5245-1 thru 3



SAMPLEA (signa	h Koehler			pplied	GeoSys	tems	
	51-1906		43255 Mission Biva	Suite B	Fremont, C.3	94539 415	651-190
ASCRATORY:	obil Chem	n hab	SHIPPING INFO				
THRMAROUND	TIME: Beacon	Standard	Service Used				
Project Leader:	L.B.		Airbill No.		1	No	
Relinquished by	(signatures) . Koehlen	-	Received by: (signature	B)		Date	Tim
		F	leceived for laboratory		-	10/19/20	7 3:5
LABORATORY S	SHOULD SIGN UP	ON RECEIPT	AND RETURN A COP TORY RESULTS	Y OF T	HIS FORM	WITH TH	Ε
Sample No.	Site Identification	Date Sampled	Analyses Requested			pie Condi pon Recei	
W-26-MW1	18008-5	10-18-89	TPH9, BTEX	· · · · · · · · · · · · · · · · · · ·	Hel	- ICE	
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Applied Geosystems 43255 Mission Blvd.

Suite B

Fremont, CA 94539 Attn: Leigh Been

Date Sampled: 10-18-89 Date Received: 10-19-89 Date Reported: 10-30-39

Sample Number V109100

Sample Description SITE # 18008-5

W-26-MW1 WATER

ANALYSIS

	Detection Limit	Sample Results
	dqq	ppb :
Total Petroleum Hydrocarbons as Gasoline	50	79
Genzene	0.5	0.5
7.luene	0.5	ე, ₹
Kylenes	ა.5	4.0.5
Ethylbenzene	0.5	0.5
		<0.5

Note: Analysis was performed using EPA methods 5030. TPH LUFT and 602

HOBILE CHEM LABS

Applied Geosystems 43255 Mission Blvd.

Suite B

Fremont, CA 94539

Date Sampled: 10-18-89 Date Received: 10-19-89

Attn: Leigh Been

Date Reported: 10-30-89

Sample Number
V109101

Sample Description

SITE # 18008-5

W-24-MW2

WATER

ANALYSIS

	Detection Limit	Sample Results		
	dqq	dqq		
Total Petroleum Hydrocarbons as Gasoline	50	930		
Ben tene	0.5	0.40		
Toluene).5	, 		
Xylenes	0.5	74		
Ethylbensene	0.5	64		

Note: Analysis was performed using EPA methods 5030, TPH LUFT and 602

MOBILE CHEM LABS



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Applied Geosystems 43255 Mission Blvd.

Suite B

Fremont, CA 94539 Attn: Leigh Been

Date Sampled: 10-18-89 Date Received: 10-19-89

Date Reported: 10-30-89

Sample Number V109100

Sample Description SITE # 18008-5

MATER WATER

AMALYSIE

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	× 50
Benzene	0.5	· O.5
Tiluene	0.5	.0.5
"vlenes	9.6	0.5
Athylbenzen-	O.E.	<0.5

Note: Analysis was performed using FPA methods 5030, TPH LUFT and 602

MOBILE CHEM LAES



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Applied Geosystems 43255 Mission Blvd.

Suite B

Fremont, CA 94539

Date Sampled: 10-18-89 Date Received: 10-19-89

Attn: Leigh Been

Date Reported: 10-30-89

Sample Number V109103

Sample Description

SITE # 18008-5

W-28-MW4 NATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	dqq
Total Petroleum Hydrocarbons as Gasoline	50	8.100
~engene	0.5	1.500
T:lame	0.5	7,70
Arlanes	0.5	550
Trhylbenzene	0.5	120

lote: Analysis was performed using EPA methods 5030. TPH LUFT and 602

HOBILE CHEM LABS



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Applied Geosystems 43255 Mission Blvd. Suite B

Fremont, CA 94539 Attn: Leigh Been

Date Sampled: 10-18-89 Date Received: 10-19-89 Date Reported: 10-30-89

Sample Number 7109104

Sample Description

SITE # 18008-5

W-05-MW5 WATER

ANALYFIE

	Detection Limit	Jample Results
	dąg	dąg
Total Petroleum Hydrocarbons as Masoline	50	8,800
^l enzene	0.5	2,000
₹ene	0.6	370
(m) unua	0.5	13.)
Ethylbensene	0.5	38 6 - 1

Pre: Analysis was reriormed using EPA methods 5030. TPH DUFT and 602

HOBILE CHEM LARS

1678 Reliez Valley Road Lafavette, CA 94549 • (415) 945-1266

Asplied Geosystems

:3255 Mission Blvd. Suite B

Fremont, CA 94539 Attn: Leigh Been

Date Sampled: 10-18-89 Date Received: 10-19-89

Date Reported: 10-30-89

Sample Number

71.09105

Sample Description

SITE # 18008-5

W-25-MW6 WATER

ANALYSIS

	Detection Limit	Cample Results
	ddd	dqc
Total Petroleum Hydrocarbons 18 (aso.lue	50	50
7-ccene	0.5	· 0.5
ு நிருத்துக்	0.5	0.5
injage.	0.5	.0.5
Uthwlbensene	0.5	70.5

More: Analysis was performed using EPA methods 5030, TPH LUFT and 802

MOPILE THEM LABS



FREMONT MAR 19 1990

RECEIVED

1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied Geosystems 43255 Mission Blvd. Fremont, Ca. 94539 Attn: Bill Short

Date Sampled: 02-22/23-90 Date Received: 02-27-90 Date Reported: 02-28-90

Sample Number	Sample Description	Detection Limit	SOIL Total Petroleum Hydrocarbons as Diese		
	Ultramar # 546 29 Project # 18008-		ppm Blvd., Hayward		
B020168	S-20-B8	5	<5		
B020169	S-25-B8	5	<5		
B020171	S-20-B7	5	<5	'	
B020172	S-221/2-B7	5	<5		

Note: Analysis was performed using EPA methods 3550 and TPH LUFT

MOBILE CHEM LABS

Coepee av Dishneau
Ronald G. Evans

Applied	Geesystems

CHAIN-OF-CUSTODY RECORD

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1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied GeoSystems 43255 Mission Blvd. Fremont. CA 94539 Attn: Bill Short

> Sample Number B020170

Date Sampled: 02-23+90 Date Received: 02-27+90 Date Reported: 03-07-90

ANALYSIS

	Detection Limit	Sample Results		
	ppm	ppm		
Total Petroleum Hydrocarbons as Gasoline	1.0	1.5		
Benzene	0.1	<0.1		
Toluene	0.1	0.1		
Mylenes	0.1	<0.1		
Ethylbenzene	0.1	<0.1		

Note: Analysis was performed using EPA methods 5020 and TPH LUFT with method 5020 used for BTX distinction.

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Applied GeoSystems 43255 Mission Blvd. Fremont, CA 94539 Attn: Bill Short

Date Sampled: 02-23-90 Date Received: 02-27-90 Date Reported: 03-07-90

Sample Number
B020171

ANALYSIS

•	Detection Limit	Sample Results
	ppm	mqq
Total Petroleum Hydrocarbons as Gasoline	1.0	9.9
Bendene	0.1	0.1
Toluene	0.1	0.1
Hylenes	0.1	2.1.
Ithylbenzene	0.1	0.1

Note: Analysis was performed using EPA methods 5020 and TPH LUFT with method 8020 used for BTX distinction.

MOBILE CHEM LABS

Joyce aV Dishneau



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Applied GeoSystems 43255 Mission Blvd. Fremont, CA 94539 Attn: Bill Short

Date Sampled: 02-23+90 Date Received: 02-27+90 Date Reported: 03-07-90

Sample Number
B020172

Sample Description

Project # 18008-6
Ultramar Station # \$46
29705 Mission Blvd.; Hayward
5-221/2-B7 SOIL

ANALYSI3

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons	1.0	<1.0
Benzene	0.1	< 0.1
Tolkiene	0.1	0.5
Tvlenes	$\alpha_* 1$	0.1
Ethylbenzene	0.1	.0.1

Note: Analysis was performed using EPA methods 5020 and TPH LUFT with method 8020 used for BTX distinction.

MOBILE CHEM LABS



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Applied GeoSystems 43255 Mission Blvd. Fremont. CA 94539 Attn: Bill Short

Date Sampled: 02-22+90 Date Received: 02-27+90 Date Reported: 03-07+90

Sample Number
B020167

Sample Description

Project # 18008-6

Ultramar Station # \$46

29705 Mission Blvd. Hayward

7-15-88

SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	mqc
Total Petroleum Hydrocarbons as Gasoline	1.0	14
Benzene	0.1	0.9
Toluene	0.1	0.1
Mylanes	0.1	0.1
Ethvlbenzene	0.1	0.1

Note: Analysis was performed using EPA methods 5020 and TPH LUFT with method 8020 used for BTX distinction.

Prope av. Distractive



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Applied GeoSystems 43255 Mission Blvd. Fremont, CA 94539 Attn: Bill Short

Date Sampled: 02-22-90 Date Received: 02-27-90 Date Reported: 03-07-90

Sample Number
B020168

Sample Description

Project # 18008-6 Ultramar Station # 546 29705 Mission Blvd., Hayward S-20-B8 SOIL

ANALYSIS

	Detection Limit	Samplė Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	150
Benzene	0.1	1.7
Poluene	9.4	0.1
Mylenes	0.1	ð.ß
Ethylbenzene	0.1	2.7

Note: Analysis was performed using EPA methods 5020 and TPH LUFT with method 8020 used for BTX distinction.

MOBILE CHEM LABS

upe aV Dushneau



1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied GeoSystems 43255 Mission Blvd. Fremont, CA 94539 Attn: Bill Short

Date Sampled: 02-22-90 Date Received: 02-27-90 Date Reported: 03-07-90

Sample Number B020169

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	2.6
Senzene	0.1	0.3
Toluene	0.1	:0.1
Kylenes	0.1	0.3
Ethylbenzene	0.1	<0.1

Note: Analysis was performed using EPA methods 5020 and TPH LUFT with method 8020 used for BTX distinction.

MOBILE CHEM LABS



INVOICE

Invoice to: Ultramar Inc.

525 W. 3rd. St. Hanford, CA. 93230 Invoice # 01176

Attn: Glenn Dembroff

Invoice Date:03-16-90 P.O. #

Terms: NET 30 DAYS

QUANTITY	DESCRIPTION	UNIT COST	EXTENSION
	Ultramar - Hayward Project # 18008-6 rec'd 03-07-90	Applied Geos Eric Twitty	ystems
8	Total Petroleum Hydrocarbons as Gasoline with ETX Distinction WATER	\$90.00	\$720.00
32	VOA'S @ \$1.47 each		\$47.04
3	Total Petroleum Hydrocarbons as Diesel WATER	\$90.00	\$720.00
	Analytical Discount		: <\$432.00>
	Courier Charge		\$20.00

AMOUNT DUE

\$1,075.04

^{2 %} PER MONTH INTEREST CHARGES ON ACCOUNTS OVER 30 DAYS ALL ACCOUNTS ARE SUBJECT TO COLLECTION & LEGAL FEES AFTER DUE DATE

	leoSystems
PROJ. NO.	PROJECT NAME

CHAIN-OF-CUSTODY RECORD

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3/5	380	W-26-MJ3	4	X	λ						HCLY			
3/5	3:00	W-26-MW3	(İ						1			
3/S	3:36	W-23-MLX	4	λ	×	 ~	11						<u> </u>	
1 /	3:30	W-23-MUG				X							·	
7	4.00	W-23-MWZ		\	_	 	╅┥				1K/Ica	 		
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1- 7- 1	4:00	W-Z2-MW2				X								
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3/6	4:30	W-17 - MW7	4	X	λ							<u> </u>	· · · · · · · · · · · · · · · · · · ·	
3/6	4:30	V-17 - MW7	1			X	++					 	······································	
, ,	4:15			$\overline{}$	_		+-+							
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	4:15	W-21-MULY				X	\perp							
	4:30	W-23-MWS		X	\leq									
1 7		W-23 - MWS				X	_] [I						
$\vdash \downarrow \downarrow \rightarrow \downarrow$	4.00	W-ZY - MW1	4	×	X									
7-		W-24-MUI				X	 		_					
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						-	+		\dashv	-				
RELINQUISHED	D BY (Signatur	e): DATE TIME RECEIVED BY	Signature): _	1			1					<u> </u>	Table 1	
			121				>	La	bor	ator	y:		SEND RESULTS TO	
RELINQUISHED	BX (Signatur	o): DATE / TIME RECEIVE BY (S	Signature):	#				1						ieoSystems on Boulevard
			2	1)									Fremont, Ca	lifornia 95826
REUNQUISHER	D BY (Signatur	PATE / TIME RECEIVED FOR	LABORATORY BY	151000	<u> </u>	سرر		1					(A1E) 654 40	nne
		/ /	- JOINTON BI	raign	aurej:			<u> </u>	···				(415) 651-19	
				···				ĮΤι	ırn .	Arc	ound: 2	with	Proj. Mgr.	: Bill Short

1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied Geosystems

43255 Mission Blvd. Ste. B

Fremont, CA 94539 Attn: Eric Twitty

Date Sampled: 03-06-90 Date Received: 03-07-90 Date Reported: 03-15-89

Sample Number
B030079

Sample Description
-----Project # 18008-6
Ultramar Hayward
W-24-MW1 WATE

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	3,100
Benzene	0.5	800
Toluene	0.5	190
Xylenes	0.5	380
Ethylbenzene	0.5	0.6

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS

ype UV Dishneau



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Applied Geosystems 43255 Mission Blvd. Ste. B

Fremont, CA 94539 Attn: Eric Twitty

Date Sampled: 03-06+90 Date Received: 03-07+90 Date Reported: 03-13-89

Sample Number B030074 Sample Description
Project # 18008-6
Ultramar Hayward
W-23-MW2 WATER

ANALYSIS

	Detection Limit	Sample Results	
	ppb	ppb	
Total Petroleum Hydrocarbons as Gasoline	50	260	
Benzene	0.5	4.3	
Toluene	0.5	2.5	
Xylenes	0.5	44	
Ethylbenzene	0.5	<0.5	

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS

Ronald G. Evans

7th 1



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Applied Geosystems

43255 Mission Blvd. Ste. B

Fremont, CA 94539 Attn: Eric Twitty

Date Sampled: 03-05-90 Date Received: 03-07-90 Date Reported: 03-12-89

Sample Number B030072 W-26-MW3 WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS

Dishneru



1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied Geosystems 43255 Mission Blvd. Ste. B

Fremont, CA 94539 Attn: Eric Twitty

Date Sampled: 03-06-90 Date Received: 03-07-90 Date Reported: 03-14-89

Sample Number
B030077

Sample Description
Project # 18008-6
Ultramar Hayward
W-21-MW4 WATER

ANALYSIS

	Detection Limit	Sample Results	
	ggg	ppb	
Total Petroleum Hydrocarbons as Gasoline	50	1,300	
Benzene	0.5	280 ,	
Toluene	0.5	71	
Xylenes	0.5	190	
Ethylbenzene	0.5	0.6	

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS

yce UV Dishneau



Applied Geosystems 43255 Mission Blvd. Ste. B

Fremont, CA 94539 Attn: Eric Twitty Date Sampled: 03-06+90 Date Received: 03-07+90 Date Reported: 03-15+89

Sample Number
B030078

Sample Description
Project # 18008-6
Ultramar Hayward
W-23-MW5 WATER

ANALYSIS

	Detection Limit	Sample Results	
	ppb	ppb	
Total Petroleum Hydrocarbons as Gasoline	50	27,000	
Benzene	0.5	5,400	
Toluene	0.5	980	
Xylenes	0.5	3,400	
Ethylbenzene	0.5	1,300	

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS



1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied Geosystems 43255 Mission Blvd. Ste. B

Fremont, CA 94539

Attn: Eric Twitty

Date Sampled: 03-05+90

Date Received:03-07-90

Date Reported:03-12-89

Sample Number

B030073

Sample Description

Project # 18008-6 Ultramar Hayward

W-23-MW6

WATER

ANALYSIS

Detection Sample Limit Results ppb ppb: Total Petroleum Hydrocarbons 50 <50 as Gasoline Benzene 0.5 1.3 Toluene 0.5 1.4 Xylenes 0.5 1.7 Ethylbenzene 0.5 1.2

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS



1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied Geosystems

43255 Mission Blvd. Ste. B

Fremont, CA 94539 Attn: Eric Twitty

Date Sampled: 03-06+90 Date Received: 03-07+90 Date Reported: 03-14-89

Sample Number

B030076

Sample Description

Project # 18008-6 Ultramar Hayward

W-17-MW7 WATER

ANALYSIS

	Detection Limit	Sample Results
	dqq	dqq
Total Petroleum Hydrocarbons as Gasoline	50	270
Benzene	0.5	22
Toluene	0.5	<0.5
Xylenes	0.5	1.4
Ethylbenzene	0.5	<0.5

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS

Applied Geosystems 43255 Mission Blvd. Ste. B

Fremont, CA 94539 Attn: Eric Twitty

Date Sampled: 03-06-90 Date Received: 03-07-90 Date Reported: 03-15-89

Sample Number
B030075

ANALYSIS

	Detection Limit	Sample Results	
	dad	ppb	
Total Petroleum Hydrocarbons as Gasoline	50	1,200	
Benzene	0.5	800	
Toluene	0.5	190	
Xylenes	0.5	380	
Ethylbenzene	0.5	0.6	

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS

APPENDIX D SIEVE ANALYSIS

SIEVE ANALYSIS DATA SHEET

Job No.: 18008-5 Client/Location: Bed	acon Herward
Sample No.: <u>S-25-B5</u> Boring No.: <u>B5</u>	Depth:
Soil Description: Silt day (C. Sed)	
Pan: Amount Tested (Dry V	≲∞/५26 Veight): gms.

Sieve Number (Circle)	Cumulative Weight Retained (gms.)	Cumulative Percent Retained (%)	Cumulative Percent Passing (%)
4"			
2"			
1"			
1/2"			
1/4"		***************************************	
#10			
#20	Ç.	201	0,8
#40	,	2.7	96.3
#60	22	~	94 0
#100	30	2.0	93.0
#140	37	2,5	91,4
#200	47	9.8	90.27

#200 Wash Analysis

gms		
43	gms.	
10	%	
90	%	
	43	

CHECKED BY _____ DATE ______

3.5. STANDARO SIEVE SIZE
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	GRA	VEL		SAND		SILT OR CLAY
COBBLES	COARSE	FINE	COARSE	MEDIUM	FINE	
()	NIFIE	D SO	1 L	CLAS!	SIFICA	TION SYSTEM)

LEGEND		,	
BORING NUMBER	5		
DEPTH (FEET)	25		
SOIL DESCRIPTION	<u> </u>		
EFFECTIVE SIZE, D ₁₀			
COEFFICIENT OF UNIFORMITY			
COEFFICIENT OF CURVATURE 030 ² /(0 ₁₀ x0 ₆₀)			

GRADATION TEST DATA

LOCATION LACY WAY A

RON ARCHER

CIVIL ENGINEER, INC.

CONSULTING • PLANNING • DESIGN • SURVEYING

4133 Mohr Ave., Suite E • Pleasanton, CA 94566 (415) 462-9372

MAR 2 1990

JOB NO.1574 JOB NO 1574.1

JULY 5, 1989 * REVISED FEBRUARY 27, 1990

ELEVATIONS OF EXISTING MONITOR WELLS LOCATED AT AND AROUND THE BEACON GAS STATION AT 29705 MISSION BOULEVARD AT WEST INDUSTRIAL PARKWAY, CITY OF HAYWARD ALAMEDA COUNTY, CALIFORNIA.

FOR APPLIED GEOSYSTEMS
PROJECT NO. 18008-4
18008-6

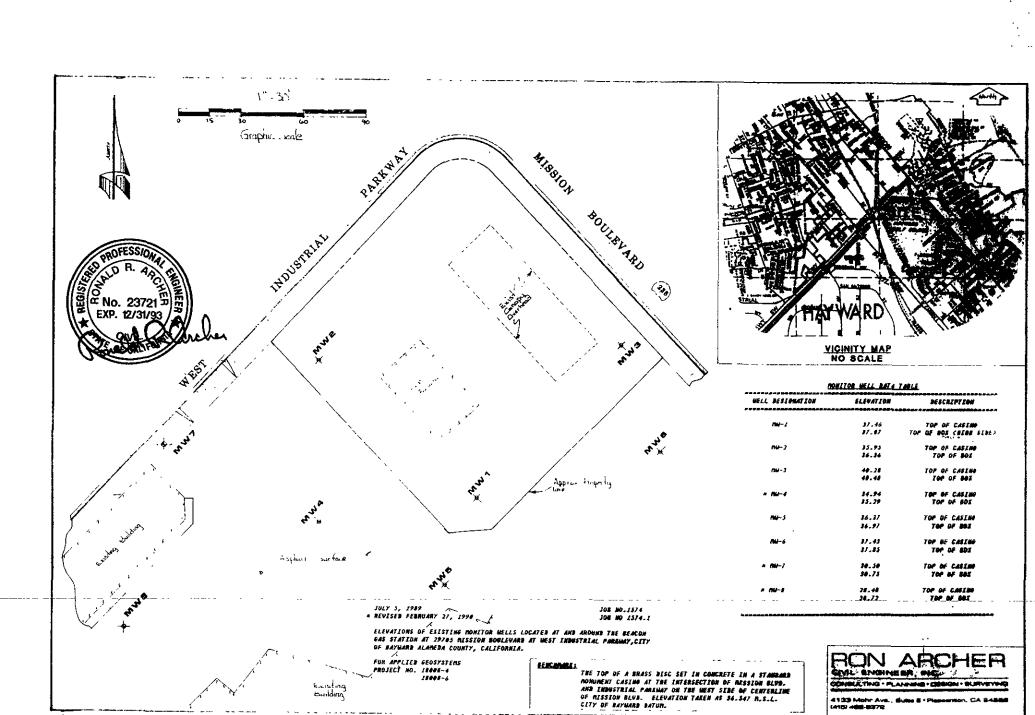
BENCHMARK:

THE TOP OF A BRASS DISC SET IN CONCRETE IN A STANDARD MONUMENT CASING AT THE INTERSECTION OF MISSION BLVD. AND INDUSTRIAL PARKWAY ON THE WEST SIDE OF CENTERLINE OF MISSION BLVD. ELEVATION TAKEN AS 36,547 M.S.L. CITY OF HAYWARD DATUM.

MONITOR WELL DATA TABLE

	; 		
WELL	DESIGNATION	ELEVATION	DESCRIPTION
>			
	MW-1	37.46	TOP OF CASING
		37.87	TOP OF BOX (HIGH SIDE)
	MW-2	35.95	TOP OF CASING
		36.36	TOP OF BOX
	MU-3	40 _ 28	TOP OF CASING
	•	40.48	TOP OF BOX
*	MU-4	34_94	TOP OF CASING
	,,,,,	35.29	TOP OF BOX
	M W →5	3637	TOP OF CASING
	11 5	36.97	TOP OF BOX
	MW-6	37.43	TOP OF CASING
	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	37.85	TOP OF BOX
	MU-7	30_50	TOP OF CASING
K	nw-/	3 0. 75	TOP OF BOX
*	MM-8	28 - 48	TOP OF CASING
		28.72	TOP OF BOX

APPENDIX E SURVEYORS REPORT



ABORATORIES, INC.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Page 1 of 3

Lab #:6275-2 'cont.'

REGULATED ORGANIC CHEMICALS (CONTINUED)

TEST CONSTITUENT METHOD ALL CONSTITUENTS REPORTED ug/L	ENTRY!	ANALYSIS	MCL ug/L	* DRL
Trichloroethylene (TCE) Vinyl Chloride (VC) 503.1 m.p-Xylene	39180 39175 A-014		5	0.50
503.1 o-Xylene 503.1 Total Yylenes (m.p. v.: Pentazon (Basagran)	77135 81551		+ 17 E ·)	1.50
Dibromochlerspropane IECP) Ethylene Dibromide (EDP)	<u>38710 </u>		.02	0.01
Atrazine (AAtrex) Molinate (Ordram) Simazine (Princep)	<u>39033</u> _ 82199 _ 39055		$\frac{3}{20}$	2.0
Thiobencarb (Polero) Endrin Lindane (gamma-BHC)	A-001 39390 39340		70	0.30
Methoxychlor Toxaphene	39480 39400	· - · - · - · - · - · - · - · - · - · -	100 5	0.40
2.4.5-TP (312vex)	39730!_ 39045 _		10	10.

"NREGULATED OFGANIC CHEMICALS

"EE!		· EMLEA ·	2020000	
Andril	DI ALL CONSTITUENTS SEPORTED LEVE		Indiana ;	DRL:
1	Promobensene	LOAFFE		
		<u> 81555 </u>		0.50
	Promochloromethane	A-012 _	-, -, -, -, -, -, -, -, -, -, -, -, -, -	1 10,50
	Promomethane (Methyl Eromide)	34413 _		0,50
1	n-Butvlbenzene	A-010		0.50
	<u>sec-Butylbenzene</u>	77350		2,50
	tert-Butylbenzene	77353		1.50
1	Chloroethane	34311		0(50)
*	2-Chlomethylvinyl ether	34576		1 0
	(Chloromethane (Methyl Chloride)	34418		7,50
	C-Chlorotoluene	A-0081		<u> </u>
·	4-Chlorotoluene	<u>A-009</u>		0.50
	Dibromomethane	77596		0 50
	1.C-Dichlorobensene (c-JCB)	34536		0.50
,	1.3-Dichlorobensene (m-ECB)	345661		,
•	Dichlorodifluoromethane	34668	· - · - : - - -	0.50
i	1.1-Dichloroethane (1.1-DCA)		· - - -	0.50
1	loigut 2 Digital and Digital	_ 34496 _	· _ ; _ ; _ ; _ ; ;	0.50
,	cis-1,2-Dichloroethylene	_ 77093 _	· - · - · · · · · · · · · · · · · · · ·	0.50
·	trans-1.2-Dichlomethylene	34546		0.50
!	1.2-Dichlompropane	34541		0.50
!	1.3-Dichloropropane	77173		0.50

PETROLEUM

LABORATORIES, INC.

J. J. EGLIN, REG. CHEM. ENGR.

4100 PIERCE RD.. BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Page 3 of 3

Lab #:6275-3 -cont. \

UNREGULATED ORGANIC CHEMICALS (CONTINUED)

TEST	1 1/2 4/2 T T 1 1/2 T L T	ENTRY	ANALYSIS	:
METHOD	ALL CONSTITUENTS REPORTED US/L	<u> </u>	PESULTS	* DRL
	0.0.00			
·	2.2-Dichloropropane	<u> 77170 </u>		1 10.50
	1.1-Dichloropropene	77168	-!-!-!-!	0.50
	Hexachlorobutadiene	34391		0.50
	Isopropylbenzene	77223		0.50
 .	p-Isopropyltoluene	A-011!		0.50
	Methylene inloride	34423!		0.50
	Naphthalene	1346961		0.50
·'	n-Propylhensene	[77224]		0.50
······································	Styrene	77128		h 5-1)
	1.1.1.2-Tetrachloroethane	1775621		0.50
<u>503.1</u> 1	Toluene	34010	[5] [7] []	0.50
	1.2.3-Trichlorobenzene	776131	; = ; = ; = ; = ; = ;	5.50
!	1.2.4-Trichlorobensene	34551	; -! -! -! -!!	0.50
	Trichlorofluoromethane (Freon 11)	34488		0.50
	1.2.3-Trichloropropane	77443		0.50
!	Trichlorotriflourcethane (Freon 113)	81611	:-:-:-:-	0.50
	1.2.4-Trimethylbensene	772221	·	0.50
	1.3.5-Trimethylbensene	772261	· - · - · - · - · - · · - · · - · · - · · - ·	0.50
	Methyl Ethyl Ketone (MEK, Butanone)	81595		5.0
	Methyl Lobutyl Ketone (MIBK)	91596		
	Alachien Alacey)	1778251	· — — — · · · · · · · · · · · · · · · ·	
	Micriane	19350		7 40
	Heptachlor	39410		1 // 11
	Heptachlor Spoxide	39420		
	Promacil (Hyvar)	<u>20240</u> 22198		— · - 4 · · · · .
	Diazinon	39570		
	Prometryn (Caparol)	39057	-,	
	Thlorothal.r.il (Daconil, Brave)	70314		
· j	Dimethoate (Cygon)	38458		
	Diethylhexylphthalate (DEHP)	39100		<u> </u>
	Aldicarb (Temik)	39()531		
	Carbofuran (Furadan)	81405		
		797431		
	Cate I Take San Letters as a second s	1214.	1 ; ;	!

IT - Mone Detected

Talifornia D.O.H.S. Cert. #81

Total Petroleum Hydrocarbons = 25.0 µg/L Minimum Reporting Level = 0.50 µg/L TPH value is in addition to the above named compounds.

Analyzed by GC/MS Method 534.2

LABORATORIES, INC.

J. J. EGLIN, REG. CHEM, ENGR.

4100 PIERCE RD., BAKERSFIELD. CALIFORNIA 93308 PHONE 327-4911

implied HeoSystems 48055 Mission Blvd Attention: Leigh Beem Fremont, A 94529 PURGEABLE ORGANIC ANALYSIS Tate of Seport: 8/22/89 Lab Sample ID No. -8275-4 Laboratory Signature Lab Name of Sampler -ampler: _____ Employed By: Date/Time Sample Date/Time Sample Date Analysis Callected: 8/10/89 Received Date: 3/14/89 Campleted: 3/13/89 Notem FOC #18008-5 Hayward, IA System Table: 19-03-MW4 8 1 1/39 Mamber: Name or Number of Sample Source: Date/Time of Sample: '_|_!_...|_|_|_|_|_| User ID: '_!_!_| Analyzing Agency Tide: [5]8[2]6] Date Analysis Completed: [5]9[0]8[1]8 Submitted by: ______ Phone #: Place an "Y" in box to delete all data for this station date/time. REGULATED REGANIC CHEMICALS CONSTITUENT ENTRY: AMALYSIS MCL METHOD: ALL CONSTITUENTS REPORTED UZ/L Bromodichloromethane 321011 0.50!Bromoform 32104 d.501 Chloroform ! 321061 | 0.50!Dibromochloromethane 9.50 32105 !Total tribalcmethanes |8<u>2080|</u>_ 100___ gi, 501 503.1 Pensene 34030 1 | <u>0.50</u> Carbon tetrachloride 32102 F03.1|Ethvlbenzene 134371 330 0.501303.111.4-Dichlorobensene -- MB) |34571|_; 0.501 1.2-Dichlorgethane (1.2-DCA) 34531 0.5011.1-Dichlorcethylene (1.1-ICE) 34501|_:_ 0.501

34561

34516

34475 | !

34506

34301 ____!

34511

0.50

01501

01501

<u>0.50</u>

9/501

20 1

200 1

Total 1.3-Dichloropropens

1,1,1-Trichloroethane (1,1,1-TCA)

1.1.2-Trichlorcethane (1.1.2-TCA)

703.1 Monochlorobenzene (Chlorobenzene)

Tetrachloroethylene (PCE)

1.1.2.2-Tetrachloroethane

^{*} Detection Limit for Reporting purposes

ABORATORIES, INC.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Page 2 :f 3

PETROLEUM

Lab #:6275-4 'cont.'

REGULATED ORGANIC CHEMICALS (CONTINUED)

TEST CONSTITUENT METHOD ALL CONSTITUENTS REPORTED UZ/L	ENTRY	ANALYSIS	MCL ue/L :	* DRL
	!			
Trichloroethylene (TCE)	39180	1,111	٤ ١	0.501
Vinyl Chloride (VC)	39175	-!-:-!-!-!-!	=	() 50
503.1 m.p-Xylene	<u>3-014</u>			1
503.1 c-Xvlene	77135			··································
5)3 1:Total Yylenes m.p.	91551	- 4. 31/11	1.425(1	1
Gentacin (Basagran)	287101		, ä	(7)
: Fibromonioropropage IECP1	23761			13 19 1
Ethylene Dibromide (EDB)	77651	-,, -; -; -;	10	ונית ר
Atrazine (AAtrex)	39033		7 1	1 ()()
Molinate (Ordram)	32199	-; ; ; ; ;	20 1	1 0 0 t
Simazine (Princep)	39055		* ()	1 ()
Thiobencarb (Bolero)	A-001	-1-:-:-	70	0.80
Endrin	39390	-; -: -; -; -; -;		0.01
'Lindane (garma-BHC)	39340		4	0.40
Methoxychlor	39480		100	10.
Toxaphene	39400	-;;		0.50
2 4-0	39730		100	113
(0,4,5-TP /Silvex)	1290451			1)

UNBEGULATED OPGANIC CHEMICALS

TEST CONSTITUENTS [ETHOD) ALL CONSTITUENTS PERCEPTED 102/L	ENTRY: -MALYSIS:	¢ URL
Promotenzene	81555	() 50
Promochloromethane	A-0121 ,	1 50
Promomethane (Methyl Promide)	34413	0.50
a-Butylbenzene	(A-010)	2.50
sec-Butylbensene	77350	1.50
:tert-Butvlbensene		7,50
Chloroethane	34311	0.50
C-Chloroethylvinyl ether	34576	1 1 ()
(Chloromethane (Methy) (Chloride)	34418	0.50
2-Chlorotoluene	A-008	0,50
4-Chlorotoluene		0.50
Dibromomethane	77596	0[50
1.2-Dichlorobenzene (:-IVE)	24536	7 50
1.3-Dichlorobenzene (m-DCE)	34566	2150
Dichlorodifluoromethane	34668	0.50
1.1-Dichloroethane (1.1-DCA)	34496	2,50
cis-1,2-Dichloroethylene	77093	2 50
frans-1.C-Dichlorcethylene	345461	0.50
1.2-Dichloropropane	34541	0.50
1.3-Dichloropropane	77173	9.50

PETROLEUM

LABORATORIES, INC.

J. J. EGLIN, REG. CHEM. ENGR.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Page 3 of 3

Lab #:6275-4 (cont.)

"NREGULATED OFGANIC CHEMICALS (CONTINUED)

TEST CONSTITUENTS	ENTRY! AN	ALYSIS :	
ETHOD ALL CONSTITUENTS REPORTED Mg/L		SULTS	PRL
		,	· · · · · · · · · · · · · · · · · · ·
2.2-Dichloropropane	!77170! ' !	1 1 1	0.50
1,1-Dichloropropene	77168	-;-;-;	0.50
Hexachlorobutadiene	34391		0.50
Isopropylbenzene	77223	-;-;-;-;	n 50 l
's-Isopropyltoluene	(A-011)		7.50
Methylene chloride	34423		n.50
	34696		n F(1)
n-Propylbensene	77224		0.50
Styrene	77128	-;-;-;-;	0.50
11.1.1.2-Tetrachlorcethane	77562		0.50
03.1 Toluene	34010 416	3171717	0.50
1.2.3-Trichlorobenzene	77613	= - - -	0.50
1.2.4-Trichlorobenzene	34551	-:-!-!-!	1.50
!Trichlorofluoromethane (Freon 11)	34488		0.50
1.2.3-Trichloropropane	1774431	-;-;-;-;	0.50
Trichlorotriflouroethane (Freon 113)	81611	-;-;-;-	0.50
1.C.4-Trimethylbenzene	1772221	-, - - -	7.50
1.0.5-Trimethylbencene	77226	· · · · · · · · · · · · · · · · · · ·	0.50
Methyl Ethyl Ketone (MEK, Butanone)	81595	- -	
Methyl Isobutyl Katone (MIRK)	815961		
Alachlar (Alamay)	770061		
"nlordane	29350	· · · · · · · · · · · · · · · · · · ·	1 - 4
Heptachlor	39410		0.01
Heptachlor Spexide	29420!	· · · · · · · · · · · · · · · · · · ·	0 01
Promacil (Hyvar)	32198	, -, -, -, -	
Diaziron	39570	;-;-;-;	
Prometrym (Caparol)	39057		
Chlorothalonil (Daconil, Pravo)	70314		 :
!Dimethcate (Cygon)	_ 38458		 :
		1 1	1 E O
Diethylhexylphthalate (TEHP)	39100	- -	_ 5 2
			_ 5 0

TD - None Detected California D.O.H.S. Cert. #81

Note any unidentified peaks below.

Total Fetroleum Hydrocarbons = 2500, ug/L Minimum Reporting Level = 0.50 ug/L TPH value is in addition to the above named compounds.

Analyzed by GC/MS Method 524.2

J. J. EGLIN, REG. CHEM. ENGR.

4100 PIERCE RD. BAKERSFIELD, CALIFORNIA 93308 PHONE 327-491

Applied GeoSystems Attention: Leigh Beem

43255 Mission Blvd Fremont, CA: 34539

PURGEABLE ORGANIC ANALYSIS

Name of Sampler Date/Tir	ory BC Laboratori : me Sample		Lab Sample ID Signature Lab Director: Sampler Employed By: .e _3/14/89	Tare Analys	i anami	
'vetem	30C #18008-5 H	esassassassassas eywerd. A	Eystem			= :
	N-24-MW5 9/10/	39	_ 'danjoer:			
Name ir	Number of Samp.	le Source:			4	
						_
Water	: Type: (G/S) :	_! Etation Mun	ber:	-!! -! -!		
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Analy	zing Agency Cod	de: '5 3 0 6 D	ate Analysis (completed:	319101811181	
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		Table THITTE (1979)	IC CHEMICALS		'	
'NEIGH						•
MERITOD I	CONST	TITHENT	'ENTRY;	ANALYSIS		
TEST METHOD!	CONSTITUEN		'ENTRY;		' MCL 'k PRL	•
METHOD	ALL CONSTITUEN	TTHENT TTS PEPORTED Hg/	ENTRY:	FESHITS	: Je/L : k PRL	
METHODI	ALL CONSTITUEN Bromodichlorome	TTHENT TTS PEPORTED Hg/	ENTRY: ± 32101	उद्यक्ता एड	1871 k.PBL 0.50	1
METHOD	ALL CONSTITUEN Bromodichlorome Bromoform	TTHENT TTS PEPORTED Hg/	ENTRY: 32101 32104	FESIT TS	187.4 1/8: 0.50 0.50	1
METHOD	ALL CONSTITUEN Eremodichlorene Bremoform Chloroform	TITHENT TS PEPORTED g/ thane	ENTRY: 3 32101 32104 32106	FESILTS	0.50 0.50 0.50	-
METHOD	ALL CONSTITUEN Eremodichlorouse Bremoform Chloroform Dibromochlorouse	TITHENT NTS PEPORTED Hg/I thane thane	ENTRY: 32101 32104 32106 32105	FESILTS	0.50 0.50 0.50 0.50	
METHODI	ALL CONSTITUEN Eremodichlorome Eremoform Chloroform Dibromochlorome Total tribalome	TITHENT NTS PEPORTED Hg/I thane thane	ENTRY: 32101 32104 32106 32105	FESILTS	0.50 0.50 0.50 0.50	11
METHOD!	ALL CONSTITUEN Eremodichlorome Bremoform Chloroform Dibromochlorome Total tribalome Renzene	TITHENT ITS SEPORTED Hg/! thane thane	ENTRY	FESILTS	0.50 0.50 0.50 0.50 100 0.50	
METHOD!	ALL CONSTITUEN Eremodichlorome Eremoform Chloroform Dibromochlorome Total trihalome Benzene Carbon tetrachl	TITHENT ITS SEPORTED Hg/! thane thane	ENTRY	FESILTS	0.50 0.50 0.50 0.50 100 0.50 1 0.50 5 0.50	
F03.1	ALL CONSTITUEN Eremodichlorome Eremoform Chloroform Dibromochlorome Total tribalome Penzene Carbon tetrachl Ethylbenzene	TITHENT THE PEPORTED Hg/! Thane thane thanes oride	ENTRY	72 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 0.50 0.50 0.50 0.50 1.00 0.50 0.50 0.50 680 0.50	
F03.1 F03.1	ALL CONSTITUEN Bromodichlorome Bromoform Chloroform Dibromochlorome Total tribalome Penzene Carbon tetrachl Ethylbenzene 1.4-Dichloroben	TITHENT ITS PEPORTEDg/! thane thane cride zene (r-MCB)	ENTRY	FESILTS	1 0.50 5 0.50 1 0.50 1 0.50 1 0.50 5 0.50 5 0.50 5 0.50	
503.1 503.1	ALL CONSTITUEN Bremodichlorome Bremoform Chloroform Dibremochlorome Total tribalome Penzene Carbon tetrachl Ethylbenzene 1.4-Dichloroben 1.2-Dichloroeth	TITHENT ITS PEPORTED Hg/I thane thane thanes oride zene (p-DCB) ane (1.2-DCA)	ENTRY	72 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	10.50 0.50 0.50 0.50 1.0.50 5.0.50 680 0.50 5.0.50 5.0.50 5.0.50	
F03.1	Second Constituent	CITHENT ITS PEPORTED mg/ Ethane Ethane cride cene (p-DCB) ane (1,2-DCA) vlene (1,1-DCE)	ENTRY	72 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.50 0.50 0.50 0.50 1.050 1.050 5.050 680 0.50 5.050 5.050 6.50 6.50 6.50	
F03.1 503.1	ALL CONSTITUEN Eremodichlorome Eremoform Chloroform Chloroform Dibromochlorome Fotal trihalome Penzene Larbon tetrachl Ethylbenzene 1.4-Dichloroben 1.2-Dichloroeth L1-Dichloroeth Total 1.3-Dichl	TITHENT WIS PEPORTED mg/ Thane thane thanes oride zene (p-DCB) ane (1,2-DCE) vlene (1,1-DCE)	ENTRY	FESILTS	0.50 0.50 0.50 0.50 0.50 1 0.50 1 0.50 5 0.50 680 0.50 5 0.50 6 0.50 6 0.50 6 0.50 6 0.50 6 0.50	
503.1 503.1	ALL CONSTITUEN Eremodichlorome Eremoform Chloroform Chloroform Dibromochlorome Fotal tribalome Penzene Carbon tetrachl Ethylbenzene 1.4-Dichloroeth 1.1-Dichloroeth Fotal 1.3-Dichloroeth Conochlorobenzene	TITHENT TE PEPORTED mg/ thane thane thanes oride zene (r-DCB) ane (1,2-DCE) oropropene ne (Thlorobensen	ENTRY	72 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.50 0.50 0.50 0.50 0.50 1.00.50 5.00.50 680 0.50 5.00.50 5.00.50 6.00.50 6.00.50 6.00.50 6.00.50 6.00.50 6.00.50 6.00.50	
F03.1 F03.1	Sremodichlorome Bremodichlorome Bremoform Chloroform Chloroform Dibremochlorome Total tribalome Penzene Carbon tetrachl Ethylbenzene 1.4-Dichloroeth 1.1-Dichloroeth Intal 1.3-Dichloroeth Intal 1.3-Dichloroeth Intal 1.3-Dichloroeth Intal 1.3-Dichloroeth Intal 1.3-Dichloroeth Intal 1.3-Dichloroeth	rifuent The percent of the percent	SNTRY	FESILTS	0.50 0.50 0.50 0.50 0.50 100 0.50 100 0.50 5 0.50 5 0.50 5 0.50 5 0.50 5 0.50 5 0.50 30 0.50 1 0.50	
F03.1 1 1 1 1 1 1 1 1 1	Sremodichlorome Bremodichlorome Bremoform Chloroform Chloroform Dibremochlorome Total tribalome Penzene Carbon tetrachl Ethylbenzene 1.4-Dichloroeth 1.1-Dichloroeth Intal 1.3-Dichloroeth Conochlorobenzene 1.1.2.2-Tetrach Tetrachloroethy	rifuent The Percetted mg/ Thane Thane Thane Thanes Oride Sene (p-DCB) ane (1,2-DCE) Oropropene ne (Chlorobensen loroethane	SNTRY 3 32101 32104 32106 32105 32080 34030 32102 34571 34571 34531 34561 34561 34516 34475	FESILTS	0.50 0.50 0.50 0.50 0.50 1.0.50 5.0.50 5.0.50 5.0.50 5.0.50 6.50 6.50	
F03.1 503.1	Sremodichlorome Bremodichlorome Bremoform Chloroform Chloroform Dibremochlorome Total tribalome Penzene Carbon tetrachl Ethylbenzene 1.4-Dichloroeth 1.1-Dichloroeth Intal 1.3-Dichloroeth Conochlorobenzene 1.1.2.2-Tetrach Tetrachloroethy	cituent Thane thane thane cride zene (p-DCB) ane (1,0-DCA) vlene (1,1-DCE) oropropene ne (Chlorobenzen loncethane lene (DCE) ethane (1,1-TC)	SNTRY 3 32101 32104 32106 32105 32080 34030 32102 34571 34571 34561 34561 34516 34475 A) 34506	FESILTS	0.50 0.50 0.50 0.50 0.50 100 0.50 100 0.50 5 0.50 5 0.50 5 0.50 5 0.50 5 0.50 5 0.50 30 0.50 1 0.50	

k Detection Limit for Reporting purposes

ABORATORIES, INC.

4100 PIERCE RD. BAKERSFIELD. CALIFORNIA 93308 PHONE 327-4911

Page 2 of 3

Lab #:6278-F (cont.)

REGULATED ORGANIC CHEMICALS (CONTINUED)

TEST : CONSTITUENT ETHOD ALL CONSTITUENTS PEPOPTED UZ/L	ENTRY! ANALYSIS MCL
THE CONDITIONAL SERVICION NEVER CONTRACTOR OF SERVICIONAL PROPERTY OF SERVICIO	! # ! BESULTS we/L : * DRI
Trichlomethylene (TCE)	39180
Vinyl Chloride (VC)	39175
503.1 m.p-Xylene	A-0141 3 8 0 1
103.1 o-Xvlene	77135 21310
93.1 Total Mylenes (m.p.)	21551
Bentacon (Basagran)	38717
:Dibromochloropropane TECP)	38761
Ethylene Dibromide (FDB)	77651
Atracine (AAtrex)	39033
Molinate (Ordram)	82199
Simazine (Princep)	39055
Thiobencarb (Bolero)	A-001
Endrin	39390 2 0.0
Lindane (gamma-PHC)	39340
Methoxychlor	39480 100 10
Toxaphene	39400
C, 4-D	39730
0.4.5-TP 311vex)	39045

TECT VETHOL	CONSTITUENTS LIL CONSTITUENTS FEFORTED LOVE	EMTRY:	२ ००० ।	' * DRL'
·	Dyomohou			
	Promobensene	<u> 81555 </u>		111_50 :
	Bromochloromethane	A-012		1 0,50 €
	Bromomethane (Methyl Bromide)	34413		9.50
	n-Butylbensene	_ A-010	-, -; -; -; -; -	0.50
	sec-Butylbensene	77350		0.50
***	tert-Butylbenzene	77353		0.50
	Chloroethane	_!34311!		$\frac{-0.50}{0.50}$
	C-Chloroethylvinyl -ther	34576		1 1 0
	(Chloromethane (Methyl Chloride)	34418		0(50
	2-Chlorotolyene	<u>A-008</u> 1		2 50
	4-Chlorotoluene	A-009		0 50
	Dibromomethane	77596!		0 50
	1.2-Dichlorobensene (a-DCB)	345361		0.50
	1.3-Dichlorobenzene (m-DCB)	345661	! _ ! _ ! _ !	9,50
	Dichlerodifluoromethane	34668	!-!-!-!-!-	
····	1.1-Dichlorcethane (1.1-DCA)	34496	; ~ [- [- [-] -]	0.50
	cis-1.2-Dichloroethylene	77093		0.50_
'	trans-1,2-Dichloroethylene	34546		0.50
	1.2-Dichloropropane	-\ <u>34546</u> _ -\34541	· - - - - -	0.50
!	1.3-Dichloropropane	77173	· - - - _! - - 	0.50
		- 	· - (- : - : - : - :	!_0.50_

LABORATORIES, INC.

J. EGLIN, REG. CHEM. ENGR.

4100 PIERCE RD.. BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Fage 3 of 3

Lab #:6275-5 /cont.

UNREGULATED ORGANIC CHEMICALS (CONTINUED)

TEST	インペトがつ と ボ アンスコレー エ デン	ENTRY	ANALYSIS	,
METHOL	ALL CONSTITUENTS REPORTED ug/L	# :	FESULTS :	! * ERL!
	10 0 71 12			
	2.2-Dichloropropane	<u> 77170 </u>		1 9.50
	1.1-Dichloropropene	_ <u>77168 </u> _		0.50
	Hexachlorobutadiene	<u> 34391</u>		0.50
	Isopropylbenzene	77223		0.50
	.p-Isopropyltoluene	14-011		p1 5 1
	Methylene shlimide	24423		1 711
	Maphthalene	134696		() (5.)
	n-Propylbensene	1772241		0.50
	Styrene	[77128]) 50
700 4	1.1.1.2-Tetrachlorcethane	775621		0.50
<u>:03.1</u>	Toluene	34010	4/3/0 .	0.50
	1.2.3-Trichlorobenzene	77613		0.50
	1.2.4-Trichlorobenzene	34551		0 50
	Trichlorofluoromethane (Freon 11)	34488		0.50
	1.2.3-Trichloropropane	77443		0 50 1
	Trichlorotriflouroethane (Freon 113)	81611		0.50
	1.2.4-Trimethylbensene	772221		-
	1.3.5-Trimethylbencene	772261		1) F()
	Methyl Ethyl Ketone (MEK, Butanone)	31595		- ; - ; - ;
	Methyl Isobutyl Ketone (MIRK)	31596		
	Alachlor (Alanex)	773051		
	Chlorgage	393501	; 	
	Heptachlor	394101	;-;-;-;-	1 11
:	Heptachlor Emwide	39420		0 01
	Promacil (Hyvar)	32198		!
	Diazinon	395701		: :
· · · · · · · · · · · · · · · · · · ·	Prometryn (Caparol)	39057		
<u> </u>	Chlorethalenil (Dacenil, Brave)	70314	:- - -:	_;:
;	Dimethoate (Cygon)	:		— ; —
	Diethvihexvirithalate THP)	: <u>2040</u> 21	::	
! 	Aldicarb (Temik)	390531	-:-!-[-[-[-	
<u> </u>	Carbofuran (Furadan)	314051	-, -, - <u>i - ii</u>	-;;
i,	Glyphosate	797431		

ND - None Detected California D.O.H.S. Cert. #81

Note any unidentified peaks below.

Total Petroleum Hydrocarbons = 2300. pg/L Minimum Reporting Level = 0.50 pg/L TPH value is in addition to the above named compounds.

Enalyzed by GC/MS Metrod 504.9

ABORATORIES, INC.

4100 PIERCE RD. BAKERSFIELD. CALIFORNIA 93308 PHONE 327-4911

Applied GeoSystems Attention: Leigh Beem

43255 Mission Flvd Fremont, CA 24532

PURGEABLE ORGANIC ANALYSIS

Name of Sa		Date Analys	is	3/89
	System Number:			
Water Type: (G/S) Station Number Date/Time of Sample:	1			-; -;
YYMMDDTT Analyzing Agency Code: 5 8 0 6 Date	'T'T' ≥ Analysis C	ompleted:		3 1 8 4 D D
Flace an 'M' in box to delete all data fo	or this stat:	im/date/+im	n=. ';	
PEGULATED OPGANIC				!
TEST : CONSTITUENT METHOD! ALL CONSTITUENTS PEPORTED Mg/L	CHEMICALS ENTRY #	ANALYSIS :		E DBL
TEST CONSTITUENT METHOD: ALL CONSTITUENTS PEPORTED Hg/L Eromodichloromethane	ENTRY			· · · · · · · · · · · · · · · · · · ·
TEST CONSTITUENT METHOD: ALL CONSTITUENTS PEPORTED Hg/L Eromodichloromethane	ENTRY 32101			1.50
TEST CONSTITUENT METHOD ALL CONSTITUENTS PEPORTED ME/L Eromodichloromethane Bromoform	ENTRY #			0.50 0.50
TEST CONSTITUENT METHOD ALL CONSTITUENTS PEPORTED ME/L Eromodichloromethane Spromoform Chloroform	ENTRY #			(1.50) (0.50) (0.50)
TEST CONSTITUENT METHOD SLL CONSTITUENTS PEPORTED ug/L Eromodichloromethane Promoform Chloroform Dibromochloromethane	ENTRY #	PERILTS	2/.	0.50 0.50 0.50 0.50
TEST CONSTITUENT METHOD SLL CONSTITUENTS PEPORTED ug/L Eromodichloromethane Eromoform Chloroform Dibromochloromethane Total tribalomethanes	ENTRY #	PERILTS	100	0.50 0.50 0.50 0.50 0.50
TEST CONSTITUENT METHOD ALL CONSTITUENTS PEPORTED ug/L Promodichloromethane Promoform Chloroform Dibromochloromethane Total tribalomethanes 503.1 Penzene	ENTRY #	PERILTS	100	0.50 0.50 0.50 0.50 0.50 0.50
TEST CONSTITUENT METHOD ALL CONSTITUENTS REPORTED ug/L Promodichloromethane Bromoform Chloroform Dibromochloromethane Total tribalomethanes 503.1 Penzene Carbon tetrachloride	ENTRY # 32101 32104 32105 32080 34030 32102	75911.73	100	0.50 0.50 0.50 0.50 0.50 0.50 0.50
TEST CONSTITUENT METHOD ALL CONSTITUENTS REPORTED Mg/L Fromodichloromethane Bromoform Chloroform Dibromochloromethane Total trihalomethanes 503.1 Penzene Carbon tetrachloride 503.1 Ethylbenzene	ENTRY #	PERILTS	100	0.50 0.50 0.50 0.50 0.50 0.50
TEST CONSTITUENT METHOD SLL CONSTITUENTS PEPORTED ug/L Promodichloromethane Promoform Chloroform Dibromochloromethane Total trihalomethanes 503.1 Penzene Carbon tetrachloride 503.1 Ethylbenzene 503.1 L4-Dichlorobenzene (p-DCB)	ENTRY # 32101 32104 32105 32080 34030 32102	PERILTS	100	0.50 0.50 0.50 0.50 0.50 0.50 0.50
TEST CONSTITUENT METHOD ALL CONSTITUENTS REPORTED Mg/L Fromodichloromethane Bromoform Chloroform Dibromochloromethane Total trihalomethanes 503.1 Penzene Carbon tetrachloride 503.1 Ethylbenzene	ENTRY #	75911.73	100 100 1 .5 .630	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50
TEST CONSTITUENT METHOD SLL CONSTITUENTS PEPORTED ug/L Promodichloromethane Promoform Chloroform Dibromochloromethane Total trihalomethanes 503.1 Penzene Carbon tetrachloride 503.1 Ethylbenzene 503.1 L4-Dichlorobenzene (p-DCB)	ENTRY #	PERILTS	100 1 5 680 6	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50
TEST CONSTITUENTS PEPORTED ug/L Promodichloromethane Promoform Chloroform Chloroform Dibromochloromethane Total tribalomethanes 503.1 Penzene Carbon tetrachloride 503.1 Ethylbenzene 503.1 L4-Dichlorobenzene (p-DCB) 1.2-Dichloroethylene (1.2-DCA) 1.1-Dichlorocethylene (1.1-DCE)	ENTRY #	PERMITS	100 100 1 .5 .630	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50
TEST CONSTITUENT METHOD ALL CONSTITUENTS REPORTED ug/L Promodichloromethane Bromoform Chloroform Chloroform Dibromochloromethane Total trihalomethanes 503.1 Penzene Carbon tetrachloride 503.1 Ethylbenzene 503.1 L4-Dichlorobenzene (p-DCB) 1.2-Dichloroethane (1.2-DCA) 1.1-Dichloroethylene (1.1-DCE) Total 1.3-Dichloropropene	ENTRY	PERILTS	100 1 5 680 5	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50
TEST CONSTITUENT METHOD ALL CONSTITUENTS PEPORTED mg/L Fromodichloromethane Bromoform Chloroform Chloroform Dibromochloromethane Total trihalomethanes 503.1 Benzene Carbon tetrachloride 503.1 Ethylbenzene 303.1 1.4-Dichlorobenzene (p-DCB) 1.2-Dichloroethane (1,2-DCA) 1.1-Dichloroethylene (1,1-DCE) Total 1.3-Dichloropropene 503.1 Monochlorobenzene (Chlorobenzene)	ENTRY	PERMITS	100 100 1 680 6 5 7 8	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50
TEST CONSTITUENT METHOD SLL CONSTITUENTS REPORTED Mg/L Fromodichloromethane Scholoroform Chloroform Dibromochloromethane Total trihalomethanes 503.1 Penzene Tarbon tetrachloride 503.1 Ethylbenzene 503.1 L4-Dichlorobenzene (p-DCB) 1.2-Dichloroethane (1,2-DCA) 1.1-Dichloroethylene (1,1-DCE) Total 1.3-Dichloropropene 503.1 Monochlorobenzene (Chlorobenzene) 1.1,2,2-Tetrachloroethane	ENTRY # 32101 32104 32106 32105 82080 34030 32102 34371 34571 34531 34501 34561 34301 34516	PERMITS	100 100 5 890 6 5 7 30	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50
TEST CONSTITUENT METHOD SLL CONSTITUENTS REPORTED Mg/L Eromodichloromethane Summoform Chloroform Chloroform Dibromochloromethane Total trihalomethanes 503.1 Senzene Carbon tetrachloride 503.1 Ethylbenzene 503.1 L.4-Dichlorobenzene (p-DCB) 1.2-Dichloroethane (1,2-DCA) 1.1-Dichloroethylene (1,1-DCE) Total 1.3-Dichloropropene 503.1 Monochlorobenzene (Chlorobenzene) 1.1,2,2-Tetrachloroethane Tetrachloroethylene (PCE)	ENTRY # 32101 32104 32106 32105 32080 34030 32102 34571 34571 34531 34501 34561 34516 34475	PERMITS	100 100 1 830 5 .5 .6 .7 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50
TEST CONSTITUENT METHOD SLL CONSTITUENTS REPORTED Mg/L Fromodichloromethane Scholoroform Chloroform Dibromochloromethane Total trihalomethanes 503.1 Penzene Tarbon tetrachloride 503.1 Ethylbenzene 503.1 L4-Dichlorobenzene (p-DCB) 1.2-Dichloroethane (1,2-DCA) 1.1-Dichloroethylene (1,1-DCE) Total 1.3-Dichloropropene 503.1 Monochlorobenzene (Chlorobenzene) 1.1,2,2-Tetrachloroethane	ENTRY # 32101 32104 32106 32105 82080 34030 32102 34371 34571 34571 34561 34301 34516 34475 34506	PERMITS	100 100 5 890 6 5 7 30	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50

k Detection Limit for Reporting purposes

LABORATORIES, INC.

4100 PIERCE RD., BAKERSFIELD. CALIFORNIA 93308 PHONE 327-4911

Page 2 of 3

Lab #:6275-6 (cent.)

REGULATED ORGANIC CHEMICALS (CONTINUED)

TEST CONSTITUENT METHOD ALL CONSTITUENTS REPORTED BE/L	ENTRY!	ANALYSIS FESULTS	MCL ug/L	* DRL
Trichloroethylene (TCE)	39180	. !_	5.1	0.501
Vinyl Chloride (VC)	_ 39175 _ _ A-014	- 3 14		9.50
503.1 G-Xylene 503.1 Total Zylenes .m.p. 9	77135 31551	1 5 - 4	177F()	1. 50
Eentacon (Pasagran) Dibromochloropropane (IPCP)	29710		13	1.50!
(Ethylene Dibromide (EDB)	_ 38761 _ _ 77651 _	;;; !;;	12	0.02
Atrazine : AAtrex) Molinate (Ordram)	_ 39033 _ _!82199	!	$\frac{2}{20}$	1.00!
Simacine (Princep) Thiobencarb (Bolero)	39055 _ A-001		70	1.0
Endrin Lindane (gamma-BHC)	39390		0	0.80
Methoxychlor	_ 39340 _ _ 39480 _		<u> </u>	$\frac{0.40}{10.}$
Toxaphene	_ <u>39400 </u> _ <u>39730 </u>		100	0.501 10
24 F-TP (312 1/24)	39045		10	10

"NREGULATED OBGANIC CHEMICALS

TEET METHOI	"NSTITUENTS ALL TONSTITUENTS REPORTED HEALT	ENTRY	STAINSTS	! NEL!
	I Discousing the second			
	Promobencene	<u> 81555 </u> _		
	Bromechloromethane	!A-012		0.50
· -—	Bromomethane (Methyl Bromide)	34413		0.50
	n-Butylbensene	A-010		2,50
	sec-Eutylbensene	77350		0.50
	.tert-Butylbensene	77353		0.50
	Chloroethane	34311		0.50
	2-Chloroethylvinyl ether	34576	·	1 1 0
	(Chloromethane (Methyl Chloride)	24418	·	0.50
	C-Chlorotoluene	A-008	; -: -: -; -; -; -;	0.50
	4-Chlcrotoluene	A-009		0.50
ra 	Dibromomethane	77596		0.50
	1.2-Dichlorobenzene (c-DCB)	34536	:-::- -	0.50
	1.3-Dichlorobensene (m-DCB)	34566		
	Dichlorodifluoromethane	34668	-,-:- - -	$-\frac{0.50}{0.50}$
	1.1-Dichloroethane (1.1-DCA)		· - · - · - · - · - · - · - · - · - ·	<u> </u>
	cis-1.2-Dichloroethylene	34496	- - - - -	0.50
	twone 1 2 Division	<u> </u>	· - · - · - · - · - · - · - · - · - · -	0.50
,	trans-1,2-Dichlorcethylene	_ 34546 _		0.50
<u>:</u>	1.2-Dichloropropane	34541	<u> </u>	0.50
!	1.3-Dichloropropane	77173		0.50

J. J. EGLIN, REG. CHEM, ENGR.

4100 PIERCE RD., BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Fage 3 35 3

Lab #:6275-8 /cont. \

UNREGULATED ORGANIC CHEMICALS (CONTINUED)

TEST ! CONSTITUENTS METHOD ALL CONSTITUENTS REPORTED DEVL		TARIE .	
TAND! HER SMELLIABILE REPORTED DEVI		ULTS :	DRL
2.2-Dichloropropane	77 17 9		1 0.50
1.1-Dichloropropene	77168	[-]-[-	0.50
Hexachlombutadiene	34391		0.50
Isopropylbenzene	77223	:- -:-:	0.50
p-Isopropyl+cluene	A-011		1 50
	344231		50
Naphthalene	346961		3 60
n-Propylbensene	77224		0.50
Styrene	771281	; ; ; ;	1.50 i
11.1.C-Tetrachlorcethane	77562	'- - - -	1.50
703 1 Toluene			0.50
1,2,3-Trichlorobencene	77613	, , , , , , , , , , , , , , , , , , , 	9.50
1.2.4-Trichlorobensene	34551	!= = -	0.50
:Trichlorofluoromethane (Freon 11)	34488	:-;-;-:	0.50
1.2.3-Trichloropropane	77443	· - - -	1,50
Trichlorotriflourgethane (Freen 113)	191611	· — · — · — · — · — · — · — · · — ·	0.50
1.2.4-Trimethylbenzene	77000	_;_;_;	7.50
1.3.5-Trimethylbensene	77226		.50
Methyl Ethyl Ketone (MEK, Butanone)	81595		FIN
Methyl Isobutyl Ketone (MIRK)	315961		F 0
Alachlor (Alanev)	77805		
Chlordane	293501		
Heptachlor	39410		กฏา
Heptachlor Epoxide	39420	-;-;-	0,01
Promacil (Hyvar)	32198		
Diasinon	395701		
Prometryn (Caparol)	39057		-1
Chlorothalonil (Paconil, Brave)	70314	-1-(-)	
Dimethoate (Cygon)	38458		
Diethylhexylphthalate (DEHP)	39100		5 .1
Aldicarb (Temik)	39053		-1-217
(Carbofuran (Furadan)	81405!		;
Glyphosate	79743		-;- ;

MD - None Detected

Taliformia D.O.H.S. Cert. #81

Cote any unidentified peaks below.
Total Petroleum Hydrocarbons = 75. pg/L Minimum Reporting Level = 0.50 pg/L TOH value is in addition to the above named compounds. Analyzed by GC/MS Method 524.2

LABORATORIES, INC. J. J. EGLIN, REG. CHEM. ENGR.

4100 PIERCE RD.. BAKERSFIELD. CALIFORNIA 93308 PHONE 327-4911

Applied GeoSystems Attention: Leigh Beem

43255 Mission Blvd Fremont, CA 94539

FURGEABLE ORGANIC ANALYSIS

Name: B.C. Laboratories Name of	Sampler Employed By: e Pate Analysis
Tystem FOC #18008-5 Hayward, 1A Tyme: <u>W-25-MW6 8/10/89</u>	'vstem Number:
Date/Time of Sample:	ber: - - - - - - - - - - - - - - - - - - -
Analyzing Agency Code: 5 8 0 6 De Gubmitted by: Those on 'M" in box to delete all data PEGULATED ORGANI	for this station/date/time.
TEST CONSTITUENT METHODI ALL CONSTITUENTS PEPORTED 12/1	'ENTRY' ANALYSIS MOT
Promodichloromethane Bromoform Chloroform Tibromochloromethane	32101 0.50

^{*} Detection Limit for Reporting purposes

ABORATORIES, INC.

4100 PIERCE RD.. BAKERSFIELD, CALIFORNIA 93308 PHONE 327-4911

Dage 0 -8 0

TEST ! CONSTITUENT	ENTRY	ANALYSIS	MCL	!!
THOD ALL CONSTITUENTS REPORTED Hg/L		SESULTS	JJB/L	Y DRL
Trichloroethylene (TCE)	(39130)		<u>-</u>	1 0.50
Vinyl Chloride (VC)	(39175)		È.	1 0.50
503.1 m.p-Xylene	A-014	121.918		
03.1\c-Xvlene	77135	AD	***************************************	1
103.1 Total Mylenes (m.p. 2011)	81551		1750	1 11.51
<u> Pentazon Pasagran</u>	28710		1.3	10.0
Dibromochleropropane (TBCP)	. 28761		,,,	10.01
Ethylene Dibromide (EDB)	77651		3.5	0.00
(Atrazine (AAtrex)	29033			1.00
Molinate (Ordram)	32199		20	2.0
Gimazine (Princep)	39055		10	1.0
Thiobencarb (Folero)	A-001		70	0.30
Endrin	39390	- - -	?	0.01
Lindane (Samma-BHC)	39340		4	0.40
Methoxychlor	39480	! - ! - ! - ! - !	100	10.
Toxaphene	39400	; = , = ; = ; = ; = ;	Ξ. Ι	9,50
'2,4-D	39730		100	10.
(C. 1 C. de (515 NeX)	29045			1 1

TET	- 1.0.11	ENTRY: EMALYSIS	
<u> यद्यम्</u>	P ALL ENSTITUENTS REPORTED DE/L	# FESULTS	· FPL!
	Eromobenzene	!81555 :	1 (1.50)
	Bromochloromethane	A-012	0.50
	Eromomethane Methyl Promide)	344131	i il Fri
	n-Butylbenzene	A-010	0.50
	'sec-Butylbensene	77250	1 0 50
·	tert-Butylbengene	77353	0.50
	Chloroethane	34311	7.50
**	:2-Chloroethylvinyl ether	34576	1 1 1 1
	Chloromethane (Methyl Chloride)	34418	0.50
·	:2-Chlomtoluene	A-008	0.50
	:4-Chlorotoluene	A-009	0.50
***	Dibromomethane	77596	0 .50
!	11.2-Dichlorobenzene (p-DCB)	34536	0,50
'	1.3-Dichlorobenzene (m-ICB)	34566	0.50
!	Pichlorodifluoromethane	34668	9.50
!	1.1-Dichloroethane (1.1-DCA)	34496	9(50
	cis-1.2-Dichloroethylene	77093	0[50
1	trans-1.2-Dichloroethylene	34546	0 50
1	1.2-Dichloropropane	34541	0.50
<u> </u>	1.3-Dichloropropane	77173	0.50
•			

LABORATORIES, INC.

J J. EGLIN, REG. CHEM, ENGR.

4100 PIERCE RD.. BAKERSFIELD. CALIFORNIA 93308 PHONE 327-4911

Tage 1 of 3

lab #:6275-7 / cont.

UNREGULATED OBGANIC CHEMICALS (CONTINUED)

TEST CONSTITUT		ENTRY	ANALYSIS :	* 1
METHOD ALL CONSTITUENTS	REPORTED ug/L	#	PESULTS	* DRL
12 2-Diobles				
2.2-Dichloropropane		<u> 77170</u> _		_0.50
1.1-Dichloropropene		_ 77168 _	. -!-'-!- - -	0.50
Hexachlorobutadiene		34391	.,	<u> </u>
<u> </u>		77202	.!	<u> </u>
n-Isopropyltoluene		<u> </u>	. — — — — — — — — — — — — — — — — — — —	<u>, [0.50 '</u>
Methylene chloride		34420 _	_ 	1,50
Naphthalene		<u> </u>		<u></u>
a-Propylbengene		_ <u> </u>		10.50
Styrene		<u> </u>	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	<u> </u>
1.1.1.2-Tetrachlorce	ethane	<u> </u>		0.50
F03.1 Toluene		<u> 34010 </u>	1_11,16181	0.50
1.2.3-Trichlorobense	ne	<u> </u>		1_0.50_!
1.2.4-Trichlorobenze	ne	34551		0,50
Trichlorofluorometha	me (Freon 11)	34488		0.50
1.2.3-Trichlcropropa	ne	_ 77443 _		0.50
Trichlomtriflouroet	hane (Freon 113)	31611		0.50
1.3.4-Trimethylbense	ene	770001		0.50
1.3.5-Trimethylbence	ne	77226	; -, -, -, -, -, -, -, -, -, -, -, -, -,	0.50
netayl stayl ketone	(MEX. Butanone)	81595!		F 0
Methyl Isobutyl Keto	re MIBK)	181596		F ()
Alachler (Alaney)		77325		
Thlordane		39350		5.10
<u> Heptachlor</u>		394101		() ()1
Heptachlor Epoxide		39420		0 01
Bromacil (Hyvar)		32198		
Diazinon		39570		; ;
Prometryn (Caparol)		39057		:
Chlorothalonil (Daco	nil, Prave)	703141	-;-,-;-;-;-	
Dimethoate (Cygon)		38458		
Diethylhexylphthalate	e DEHP)	39100		+ 1)
Aldicarb (Temik)		1390531	-;-;-;-;	
Carbofuran (Furadan)		81405	-:	
Glyphosate		79743	-:-:-:-:-:	 ;;

MD - Mone Detected California D.O.H.S. Cert. #81

Note any unidentified peaks below.

Total Petroleum Hydrocarbons = 5.5 µg/L Minimum Reporting Level = 0.50 µg/L TPH value is in addition to the above named compounds.

Analyzed by GC/MS Method 504.0

<u> </u>			СНА	IN OF CU	STOD	Y RE	CORE)							
Client/Project Name	Project Location)				-				/					7 /
Boc/53#	HAYL	VARD	CA	Ļ							F	NAL	YSES		
Project No.	Field Logbook N				•					7 ,	77-	17	, _/ -	-,/	
18008-5	_	_						/£	& /_,		P /2	L)	//		
Sampler: (Signature)	Chain of Custoo	Iv Tane N	io.				/	The state of the s	25°/		/5°/	" /	///		
Kuth Which		_									3.7	/ ,		5	
July 19 Table						/	6°/			5°/	1/2	•/	Contair		
Sample No./Identification	Date	Time	ī	∟ab No.			7 5 */		16 X	/ /	50%	//,	No. of Consider	REMARKS	
W-25-MW1			-			7	\leftarrow		\leftarrow	_	<u>/_</u>	\leftarrow	<u>/</u>	KEMAKKS	
W-24-MW2	8-10-89	··· ••	103	75-1	1	1.4.	1			X					
1 - 28 - MW 3	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			(XII)	16	11	1		-	X	1			-	
W - 23 - MW4	<i> </i>		}	$\frac{1}{\sqrt{2}}$	4	K	1			1			* (ग्राच्	lvial recei	ust of
	 		-		★	<u> </u>	1	[1		ļ		113 1600	
W-24-MW5					<u>↓</u> ⊀_	<u> </u>	<u> </u>			X	<u> </u>				
W-BLAMIL	Kul		ļ	-6	*	K				X	<u>L</u>				
W-25-mw6	8 10 37 34			<u> </u>		<u> </u>				X					
Polinguished by (Cinner)						<u></u>							Total		,
Relinquished by: (Signature)		Dat	le	Time	Rece	ived by:	(Signa	iture)						Date	Time
Kuth M. Vielen		8-	10-89	,]	1	Sill 1	Nove	ll						8/19/89	12:00
Relinquished by: (Signature)		Dat	e	Time		ived by:		_/						Date	Time
Bill Howell					10	134	20.								
Relinquished by: (Signature)		Dat	e	Time	Rece	ived by:	(Signa	ature)						8/11/87 Date	760 z
							+ 1		* -	£ .	00	づか	. .	Date Schurday	Coco
Relinquished by: (Signature)		Dat	 ie	Time	Paca	ived by:			cli	 		<u>(ノ).</u> -	(())	1	8:WA
					Race	ived by:	(Signa	ture)						Date	Time
Report To: Bree Signer Leigh 1	Been	Bill	To:	15444 5	1	7.4.5.4.								10	
APPLIED GEDSYCTEMS	- 0,		7	LENN D	· <u>-</u> · / .	SICOZZ	- -i							NO:	
12425 MISSION RLUD				SEACON C 525 W.	716 1	CO.									
FREMONT, CA. 94539			-	HANFORD	, CA	<u>0 57</u>	7 30							R	
				<u> </u>										B .	U.

White: Return to Customer with Report Yellow: BC Lab Copy Pink: Originator Copy



Phone: C	Lh Kothle 151-1906 lobil Chen TIME: Beacon	n hab		43255 Nission Siver—Suite SHIPPING INFORMAT Shipper Address Date Shipped Service Used	ION:	04530 415; (
Project Leader:	651-1906			Airbiil No	Cooler N	10	
Reijnquished by	(:(signatures)		Recei	ved by: (signatures)		Date	Tir
LABORATORY S	SHOULD SIGN U	ON RECEIPT	AND	RETURN A COPY OF	THIS FORM	10/19/79 WITH /THE	
Sample No.	Site Identification	Date Sampled		Analyses Requested		pie Conditi on Receipt	
W-26-MW1 W-24-MW2	18008-5	10-18-89		X378, PHQT	Hc1-	ICE ICE	
W-28-MW3	18008-5	10~18-89 10~18~89			<u> Hel-</u> <u>Hel-</u> I	•	
W-25-MW5 W-25-MW6	18008-5	10-18-89	-		<u> HCL-I</u> HCL-I	.ce	
			• •				
				`			
			. <u> </u>				

Applied Geosystems 43255 Mission Blvd.

Suite B

Fremont, CA 94539 Attn: Leigh Been

Date Sampled: 10-18+89 Date Received: 10-19+89

Date Reported: 10-30+89

Sample Number V109100

Sample Description

SITE # 18008-5

W-26-MW1 WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb !
Total Petroleum Hydrocarbons as Gasoline	50	79
Senzene	0.5	0.5
Tiluene	0.5	>.∫€
Mylenes	0.5	0.5
Ethylbenzene	0.5	-0. 5
		<0.5

Note: Analysis was performed using EPA methods 5030. TPH LUFT

and 602

HOBILE CHEM LABS

Applied Geosystems 43255 Mission Blvd.

Suite B

Fremont. CA 94539 Attn: Leigh Been

Date Sampled: 10-18-89
Date Received: 10-19-89
Date Reported: 10-30-89

Sample Number
----V109101

Sample Description
----SITE # 18008-5

W-24-MW2 WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petrcleum Hydrocarbons as Gasoline	50	930
Benzene	0.5	040
Toluene	0.5	os
Kvlenes	0.5	74
Ethylbensene	0.5	34

Note: Analysis was performed using EPA methods 5030, TPH LUFT and 602

MOBILE CHEM LABS

1678 Reliez Valley Road

Applied Geosystems 43255 Mission Blvd.

Fremont, CA 94539 Attn: Leigh Been

Date Sampled: 10-18-89 Date Received: 10-19-89 Date Reported: 10-30-89

Sample Number V109102

Sample Description _____ SITE # 18008-5

WHIPHMUS WATER

ANALYSIS

	Detection Limit	Sample Results
	dqq	ppb
Total Petroleum Hydrocarbons as Gasoline	50	× 50
Benzene	0.5	- 0 5
Toluene	0.7)),5
%ylenes	0.5	ა¦ <u>.</u>
Ethylbenzene	0.5	<0∫5

Note: Analysis was performed using EPA methods 5030, TPH LUFT and 602

MOBILE CHEM LABS



1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied Geosystems 43255 Mission Blvd.

Fremont, CA 94539 Attn: Leigh Been

Date Sampled: 10-18-89 Date Received:10-19-89

Date Reported:10-30-89

Sample Number V109103

Sample Description

SITE # 18008-5

W-28-MW4 NATER

ANALYSIS

Detection Limit	Sample Results
dqq	bbp.
50	3.100
0.5	1,500
٦.5	77.7
0.5	550
0.5	120
	Limit ppb 50 0.5 0.5

Note: Analysis was performed using EPA methods 5030. TPH LUFT and 602

MOBILE CHEM LABS

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applied Geosystems 43255 Mission Blvd. Suite B

Fremont, CA 94539 Attn: Leigh Been

Date Sampled: 10-18-89 Date Received: 10-19-89

Date Reported: 10-30-89

Sample Number 7109104

Sample Description

SITE # 18008-5

W-CE-MWS NATER

-MALYSIS

	Detection Limit	Jample: Results
	ppb	- dqq
Total Petroleum Hydrocarbons as Masoline	50	3,800
Panzene	0.5	2,000
- Luane	0.5	270
hri anes	()	13)
Tth://oenzene	0.5	230

Analysis was performed using EPA methods 5030. TPH LUFT and 602

HORILE CHEM LABS



1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Asplied Geosystems

13255 Mission Blvd. Fremont, CA 94539

Attn: Leigh Been

Suite B

Date Sampled: 10-18-89

Date Received: 10-19-89

Date Reported: 10-30-89

Sample Number

77.59105

Sample Description |

SITE # 18008-5

₩-25**-MW**6

WATER |

ANALYSIS

	Detection Limit	Cample Results
	dqq	dqc
Total Petroleum Hydrocarbons os (asolika	50	50
?-ccene	0.5	0.5
T : and	0.5	nj=
	0.5	.0.]5
Tthylbenzene	2.5	rn . 5

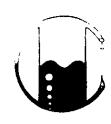
Note: Analysis was performed using EPA methods 5030. TPH [LIFT] and 602

MORTLE THEM LABS



CHAIN-OF-CUSTODY RECORD

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_		DATE / TIME RECEIVED BY (Sign)	store)				·								43255 Mission Fremont, Cali	n Boulevard
RELINQUISHED BY (S	Signature)	DATE / TIME RECEIVED FOR CORE	गर्का, अस छ	(Signa	ilizie)	<u> </u>									(415) 651-190	
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BECKIVED

1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied Geosystems 43255 Mission Blvd. Fremont, Ca. 94539 Attn: Bill Short

Date Sampled: 02-22/23-90 Date Received: 02-27-90

Date Reported:02-28-90

Sample Number	Sample Description	Detection Limit	SOIL Total Petroleum Hydrocarbons as Diesel			
	Ultramar # 546 2 Project # 18008-	ppm 29705 Mission -6	ppm Blvd., Hayward			
3020168	S-20-B8	5	<5			
B020169	S-25-B8	5	<5			
B020171	S-20-B7	5	<5			
B020172	S-221/2-B7	5	<5			

Note: Analysis was performed using EPA methods 3550 and TPH LUFT

MOBILE CHEM LABS

Cocpe Cl U. Dishneau
Ronald G. Evans
Lab Director



1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied GeoSystems 43255 Mission Blvd. Fremont, CA 34539 Attn: Bill Short

Date Empled: 02-23-90 Date Received: 02-27-90 Date Reported: 03-07-90

Sample Number 3020170

Sample Description

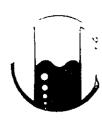
Project # 18008-6
Ultramar Station # 546
C9705 Mission Blvd. Hayward
S-171 C-87 COIL

ANALYEIE

	Detection Limit	Sample Results
	ppm	 mqq
Total Fetroleum Hydrocarbons	1.0	1.5
Sendene	7.1	10.
luane	- 1	G . N
Wienes	7.2	· 11 - 1
Ethylbenzene	0.1	<0.1

Note: Analysis was performed using EPA methods 5020 and FPH LUFT with method 8020 used for BTX distinction.

MOBILE CHEM LABS



1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied GeoJystems 43255 Mission Blvd. Fremont, CA 94539 Attn: Bill Short

Date Sampled: 02-23-90 Date Received: 02-27-90 Date Reported: 03-07-90

Sample Number 5020171

Sample Description | Project # 18008-6 | Ultramar Station # 546 | 29705 Mission Blvd. Hayward | 301L

ANALYSIS

	Detection Limit	Sample Results
	ppm	mag
Total Petroleum Hydrocarbons	1.0	9.9
Cantene .	r <u>. 1</u>	7. [2
This years	11_1	
Wlenes	• •	·. <u>-</u>
Drhvlbenzene	6.1	18 1

Note: Analysis was performed using EPA methods 5020 and TPH LUFT with method 1020 used for BTX distinction.

MODILE CHEM LABS

Ronald G. Evans



1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied GeoSystems 43255 Mission Blvd. Fremont, CA 94539 Attn: Bill Short

Date Sampled: 02-23-90 Date Received: 02-27-90 Date Reported: 03-07-90

Sample Number E020172

Sample Description

Project # 18008-6 ; Ultramar Station # 546 19705 Mission Blvd . Havward 1-111 C-87 JULL

ANALYSIC

	Detection Limit	Sample Results
	ppm	ppm!
Total Petroleum Hydrocarcons Gasoline	1.0	. 1.5
.?enzene	0.1	
"· (+n+		
v.enes	.:	
Ethvlbendene	9.1	() , †

Note: Analysis was performed using EPA methods 5030 and TPH BUFT with method 5000 sea for BTM distinction.

1908ILE CHEM LABS

orper W Diskneau



1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied GeoSystems 43255 Mission Blvd. Fremont. CA 94539 Attn: Bill Short

Date Sampled: 02-22-90 Date Received: 02-27-90 Date Reported: 08-01-90

Eample Number 5020167

Sample Description

Project # 18008-6

Witnamar Station # 546

13705 Mission Blvd. Hayward

-MALICIA

	Detection Limit	Sample Results
	ppm	mac
Total Petroleum Hydrodarbons as Gasoline	1.0	1.4
Sencene	0.1	.
Driuene	• •	· .
Winter =		· - -
Sthylbenzene	0.1	;),

Note: analysis was performed using EPA methods 5020 and TPH NUFT with method 3020 used for STX distinction.

MOBILE CHEM LABS

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Ronald J. Evans



1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied GeoSystems 48055 Mission Blvd. Fremont. CA 94539 Attn: Bill Short

Tate Sampled: 02-24-90 Date Received: 02-27-90 Date Reported: 03-07-90

Jample Number 3020168

Sample Pescription

Freject # 18008-6
Ultramar Station # 546
19715 Mission Blvd. Havward
7-21-58

ANALYEIS

	Detection Limit	Sample Results
	ppm	ppm
Dital Petroleum Mydrocarbons -s Masoline	1.0	150
i-ngene	0.1	,
, mane	. 1	
Vi-nes		5.
Ithvibensene	1.1	2.17

Note: Enalysis was performed using EPA methods 5020 and TPH LUFT with method 9020 used for BTX distinction.

MOBILE CHEM LABS

Fonald G. Evans



1678 Reliez Valley Roaa Lafayette, CA 94549 • (415) 945-1266

Page 190 Jeodystems Place Mission Blvn. Fremont. "A 94539 Pattn: Bill Short

> Jampie Number 3020188

Tate dampled: 2-32-90 Date Reperved:00-27-90 Date Reported:3-47-90

Sample Rescription

-----Erriect # 18007-8

Ultramar Station # 546

237 % Missin Flor. . Havward

HHALTFIN

	Teteofiin Limit	Samp _{le} Results
	ppm	mqc
Total Termileum Eugroparn da Belastiche	1.0	150
1404		1 ~
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-na-		1
In twicendene	.:	. : -

one: Induvers was derinamed using EPA methods 5020 and TPH CUFT with method 3000 (sed for STX distinction.

HERLE HEM LABS

y Finald 3. Evans .₩ lao Director



1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied GeoSystems 43255 Mission Blvd. Fremont. CA 94539 Attn: Bill Short

Date Sampled: 02-22-90 Date Received: 02-27-90 Date Reported: 03-07-90

Sample Number B020169

ANALYFID

	Detection Limit	Sample Results
	Ďbw 	mqq
T tal Fetroleum Hydrocarbons -s Gasoline	1.0	2.6
-ende n =	0.1	γ . $\dot{\vec{\beta}}$
್ಲಿಬ್ಲಿಸ್	· . <u>.</u>	1
enes). <u>:</u>	÷.5
Tthvibenzene	0.1	0.5

Mota: Analysis was performed using EPA methods 5020 and TPH LUFT with method 5020 used for BTX distinction.

MOBILE CHEM LAES

oyce a V Dushneau

Ronald G. Evans

INVOICE

Invoice to: Ultramar Inc.

525 W. 3rd. St. Hanford, CA. 93230 Attn: Glenn Dembroff Invoice # 01176

Invoice Pate:03-16-90 P.O. #

Terms: NET 30 DAYS

QUANTITY	DESCRIPTION	UNIT COST	EXTENSION	
	Ultramar - Hayward Project # 18008-6 rec'd 03-07-90	Applied Geos Eric Twitty	ystems	
3	Total Petroleum Hydrocarbons as Gasoline with BTX Distinction WATER	\$90.00	\$720.00	
32	VOA'S @ \$1.47 each		\$47.04	
3	Total Petroleum Hydrocarbons as Diesel WATER	.\$90.00	\$720.00	
	Analytical Discount		< \$432. 00>	
	Courier Charge		\$20.00	

AMOUNT DUE

\$1,075.04

Applied	OsoSys!		HAIN	-OF	=-C	USTO	DΥ	REC	ORD)			
PROJ. NO. 18008 P.O. NO.	-6 B	EGT NAME ACUN HAYWAZU LERS (Signature) TWITTE			BTEV (8015)	7PHdiese/ (802/8)	7	ANALY	/SIS		603		
DATE MM/DD/YY	TIME		No. of Cont- ainers	70Hor	BIE	PHdies (//	Preser	REM	ARKS	LABORATORY I.D. NUMBER
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3	4:00	W-24-MUI	1			X							
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RELINQUISHE		Tivitty 3/2/ a): DATE / TIME RECEIVE BY (Signal)	ature)	(Signa	ature):			Labora	itory:			43255 Missic	ReoSystems on Boulevard Ilifornia 95826

Turn Around: 2 w t Proj. Mgr.: Bill Short



1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

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1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied Geosystems 43255 Mission Blvd. Ste. B

Fremont, CA 94539 Attn: Eric Twitty

Date Sampled: 03-06-90 Date Received: 03-07-90 Date Reported: 03-15-89

Sample Number
B030079

Sample Description
Project # 18008-6
Ultramar Hayward
W-24-MW1 WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	3,100
Benzene	0.5	800
Toluene	0.5	190
Xylenes	0.5	380
Ethylbenzene	0.5	0.6

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS

Jupe ill Dishmean

Applied Geosystems 43255 Mission Blvd. Ste. B

Fremont, CA 94539 Attn: Eric Twitty

Date Sampled: 03-06-90 Date Received: 03-07-90 Date Reported: 03-13-89

Sample Number
----B030074

Sample Description
Project # 18008-6
Ultramar Hayward
W-23-MW2 WATER

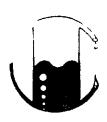
ANALYSIS

	Detection Limit	Sample Results	
	ppb	ppb	
Total Petroleum Hydrocarbons as Gasoline	50	260	
Benzene	0.5	4.3	
Toluene	0.5	2.5	
Xylenes	0.5	44	
Ethylbenzene	0.5	<0.5	

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS

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1678 Reliez Valley Road Lafayette, CA 94549 • (415) 945-1266

Applied Geosystems

43255 Mission Blvd. Ste. B

Fremont, CA 94539 Attn: Eric Twitty Date Sampled: 03-05-90 Date Received: 03-07-90 Date Reported: 03-12-89

Sample Number
B030072

ANALYSIS

	Detection Limit	Sample Results	
	ppb	ppb	
Total Petroleum Hydrocarbons as Gasoline	50	<50	
Benzene	0.5	<0.5	
Toluene	0.5	<0.5	
Kylenes	0.5	<0.5	
Ethylbenzene	0.5	<0.5	

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS



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Applied Geosystems

43255 Mission Blvd. Ste. B

Fremont, CA 94539 Attn: Eric Twitty

Date Sampled: 03-06-90 Date Received: 03-07-90 Date Reported: 03-14-89

Sample Number
B030077

ANALYSIS

	Detection Limit	Sample Results	
	ppb	dqq	
Total Petroleum Hydrocarbons as Gasoline	50	1,300	
Benzene	0.5	280	
Toluene	0.5	71	
Kylenes	0.5	190	
Ethylbenzene	0.5	0 - \$	

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS



Applied Geosystems 43255 Mission Blvd. Ste. B

Fremont, CA 94539 Attn: Eric Twitty Date Sampled: 03-06-90 Date Received: 03-07-90 Date Reported: 03-15-89

Sample Number
----B030078

ANALYSIS

	Detection Limit	Sample Results
	ppb	 dqq
Total Petroleum Hydrocarbons as Gasoline	50	27,000
Benzene	0.5	5,400
Toluene	0.5	980
Xylenes	0.5	3,400
Ethylbenzene	0.5	1,300

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS

Applied Geosystems

43255 Mission Blvd. Ste. B

Fremont, CA 94539 Attn: Eric Twitty Date Sampled: 03-05-90 Date Received: 03-07-90 Date Reported: 03-12-89

Sample Number B030073

ANALYSIS

	Detection Limit	Sample Results
	dqq	ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	1.3
Toluene	0.5	1.4
Xylenes	0.5	1.7
Ethylbenzene	0.5	1.2

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS



Applied Geosystems

43255 Mission Blvd. Ste. B

Fremont, CA 94539 Attn: Eric Twitty Date Sampled: 03-06-90 Date Received: 03-07-90 Date Reported: 03-14-89

Sample Number
B030076

Sample Description
Project # 18008-6
Ultramar Hayward
W-17-MW7 WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ррф
Total Petroleum Hydrocarbons as Gasoline	50	270
Benzene	0.5	22
Toluene	0.5	<0.5
Kylenes	0.5	1.4
Ethylbenzene	0.5	<0.5

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS

Applied Geosystems

43255 Mission Blvd. Ste. B

Fremont, CA 94539 Attn: Eric Twitty

Date Sampled: 03-06-90 Date Received:03-07-90 Date Reported: 03-15-89

Sample Number B030075

Sample Description Project # 18008-6

Ultramar Hayward W-16-MW8

ANALYSIS

	Detection Limit	Sample Results	
	ppb	ppb	
Total Petroleum Hydrocarbons as Gasoline	50	1,200	
Benzene	0.5	800	
Toluene	0.5	190	
Kylenes	0.5	380	
Ethylbenzene	0.5	0.6	

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

MOBILE CHEM LABS

APPENDIX D SIEVE ANALYSIS

SIEVE ANALYSIS DATA SHEET

Sieve Number (Circle)	Cumulative Weight Retained (gms.)	Cumulative Percent Retained (%)	Cumulative Percent Passing (%)
4"			
2"			
1"			
1/2"			
1/4"			
#10			
#20	Ĵ	- 0	93
#40	2		3,6.7
#60	22	Ξ,	- L C
#100	25	= 5	-2.5
#140	37	7.0	91,4
#200		5	0.2

LIS STANDARO SIEVE SIZE ^{,∞}∏∏ 3/4 IN. No 10 40.200 1 : 1 i 1 III ì H 1 - | 111 WEIGHT 1 · || PERCENT FINER BY ŀ 1 1:11 | | 1| li 30 ZOH + \square 0.01 GRAIN SIZE IN MILLIMETERS GRAVEL SAND SILT OR CLAY COBBLES FINE COARSE MEDIUM COARSE FINE SYSTEM) (UNIFIED CLASSIFICATION \$ 0 1 L LEGEND BORING NUMBER DEPTH (FEET) SOIL DESCRIPTION EFFECTIVE SIZE, DIO COEFFICIENT OF UNIFORMITY D60/D10 COEFFICIENT OF CURVATURE 030²/(010×060)

LOCATION INC. JULIENT IN LOCATION INC. JULIENT

UALE

DHAWN BY

GRADATION TEST DATA

RON ARCHER

CONSULTING • PLANNING • DESIGN • SURVEYING

4133 Mohr Ave., Suite E • Pleasanton, CA 94566 415) 462-9372

MAR 2 199

RECEIVED

JOB NO. 1574 JOB NO 1574.1

a No. 2372

JULY 5, 1989 * REVISED FEBRUARY 27, 1990

ELEVATIONS OF EXISTING MONITOR WELLS LOCATED AT AND AROUND THE BEACON GAS STATION AT 29705 MISSION BOULEVARD AT WEST INDUSTRIAL PARKWAY, CITY OF HAYWARD ALAMEDA COUNTY, CALIFORNIA.

FOR APPLIED GEOSYSTEMS PROJECT NO. 18008-4 18008-6

BENCHMARK:

THE TOP OF A BRASS DISC SET IN CONCRETE IN A STANDARD MONUMENT CASING AT THE INTERSECTION OF MISSION BLVD. AND INDUSTRIAL PARKWAY ON THE WEST SIDE OF CENTERLINE OF MISSION BLVD. ELEVATION TAKEN AS 36.547 M.S.L. CITY OF HAYWARD DATUM.

MONITOR WELL DATA TABLE

WELL DESIGNATION	ELEVATION	DESCRIPTION
MW-1	37.46	TOP OF CASING
	37.87	TOP OF BOX (HIGH SIDE)
MW-2	35.95	TOP OF CASING
	36.36	TOP OF BOX
M u -3	40 - 28	TOP OF CASING
	40.48	TOP OF BOX
* MW-4	34.94	TOP OF CASING
	35.29	TOP OF BOX
MW-5	36.37	TOP OF CASING
	36.97	TOP OF BOX
MW-6	37 - 4 3	TOP OF CASING
	37.85	TOP OF BOX
* M G -7	30 - 50	TOP OF CASING
	30.75	TOP OF BOX
* 19648	28 - 48	TOP OF CASING
	28.72	TOP OF BOX

APPENDIX E SURVEYORS REPORT

