



**BP OIL**

BP Oil Company  
Environmental Resources Management  
Building 13, Suite N  
295 SW 41st Street  
Renton, Washington 98055-4931  
(206) 251-0667

December 6, 1994

MR SCOTT SEERY  
ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY  
80 SWAN WAY ROOM 200  
OAKLAND CA 94621

RE: **BP OIL FACILITY #11105**  
**3515 Castro Valley Blvd**  
**Castro Valley, CA**

Dear Mr. Seery:

Attached please find our **GROUNDWATER MONITORING AND SAMPLING REPORT DATED OCTOBER 3, 1994** for the above referenced facility.

If you should have any questions regarding this site, I may be reached at (206) 251-0689.

Respectfully,

Scott T. Hooton  
Environmental Resources Management  
Group Leader

STH:mu msword\ERM11105

cc: Mr. Eddy So, CRWQCB, San Francisco Bay Region, 2101 Webster Street, Suite 200, Oakland, CA 94612

Mr. Brady Nagle, Alisto Engineering Group, 1777 Oakland Blvd., Suite 200, Walnut Creek, CA 94596

Mr. Larry Silva, TOSCO Northwest CO, 601 Union Street, Suite 2500, Seattle, WA 98101

Site File

GROUNDWATER MONITORING AND SAMPLING REPORT <sup>NOV 14 1994</sup>

BP Oil Company Service Station No. 11105  
3515 Castro Valley Boulevard  
Castro Valley, California

Project No. 10-138-02-002

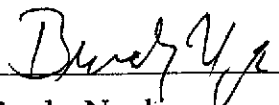
Prepared for:

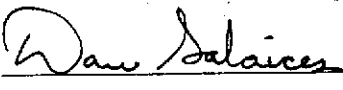
BP Oil Company  
Environmental Resources Management  
295 S.W. 41st Street  
Building 13, Suite N  
Renton, Washington

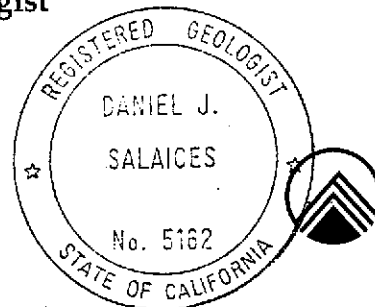
Prepared by:

Alisto Engineering Group  
1777 Oakland Boulevard, Suite 200  
Walnut Creek, California

October 3, 1994

  
\_\_\_\_\_  
Brady Nagle  
Project Manager

  
\_\_\_\_\_  
Dan Salaices  
Registered Geologist



# GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11105  
3515 Castro Valley Boulevard  
Castro Valley, California

Project No. 10-138-02-002

October 3, 1994

## INTRODUCTION

This report presents the results and findings of the August 8, 1994 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11105, 3515 Castro Valley Boulevard, Castro Valley, California. A site vicinity map is shown in Figure 1.

## FIELD PROCEDURES

Field activities were performed in accordance with the procedures and guidelines of the Alameda County Health Care Services Agency and the California Regional Water Quality Control Board, San Francisco Bay Region.

Before purging and sampling, the groundwater level in each well was measured from a permanent mark on top of the casing to the nearest 0.01 foot using an electronic sounder. The depth to groundwater and top of casing elevation data were used to calculate the groundwater elevation in each well. The survey data and groundwater elevation measurements collected to date are presented in Table 1.

Before sample collection, each well was purged of 3 casing volumes, while recording field readings of pH, temperature, and electrical conductivity. Groundwater samples were collected for laboratory analysis by lowering a bottom-fill, disposable bailer to just below the water level in the well. The samples were transferred from the bailer into laboratory-supplied containers. The water sampling field survey forms are presented in Appendix A.

## SAMPLING AND ANALYTICAL RESULTS

The results of monitoring and laboratory analysis of the groundwater samples collected during this and previous quarters are summarized in Table 1. The potentiometric groundwater elevations as interpreted from the results of this monitoring event are shown in Figure 2. The results of laboratory analysis are shown in Figure 3. The laboratory report and chain of custody record are presented in Appendix B.



TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING  
 BP OIL COMPANY SERVICE STATION NO. 11105  
 3515 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	1,2-DCA (ppb)	DO (ppm)	LAB
ESE-1	10/05/92	182.49	11.22	171.27	2100	96	370	150	17	110	ND	1.8	--	--
ESE-1D (c)	10/05/92	--	--	--	2300	--	370	160	16	110	--	--	--	--
ESE-1	04/01/93	182.49	8.79	173.70	5900	--	1500	410	110	390	--	--	--	PACE
ESE-1	06/29/93	182.49	10.34	172.15	7600	--	2900	390	130	460	--	--	--	PACE
ESE-1	09/23/93	182.49	10.91	171.58	2000	--	490	40	20	56	--	--	--	PACE
QC-1 (c)	09/23/93	--	--	--	1500	--	420	39	19	56	--	--	--	PACE
ESE-1	12/10/93	182.49	9.93	172.56	1800	--	480	42	19	66	--	--	3.2	PACE
QC-1 (c)	12/10/93	--	--	--	1500	--	380	38	17	55	--	--	--	PACE
ESE-1	02/17/94	182.49	9.64	172.85	1900	--	380	48	24	80	--	--	--	PACE
QC-1 (c)	02/17/94	--	--	--	2200	--	430	42	19	65	--	--	--	PACE
ESE-1	08/08/94	177.69	(d) 11.72	165.97	2100	--	450	46	16	50	--	--	5.1	PACE
ESE-2	10/05/92	181.95	11.68	170.27	300	--	5.4	16	3.9	45	--	--	--	--
ESE-2	04/01/93	181.95	9.17	172.78	240	--	27	ND<0.5	17	2.6	--	--	--	PACE
ESE-2	06/29/93	181.95	10.88	171.07	1700	--	260	24	110	23	--	--	--	PACE
QC-1 (c)	06/29/93	--	--	--	1300	--	240	17	110	25	--	--	--	PACE
ESE-2	09/23/93	181.95	11.56	170.39	240	--	3.1	0.5	0.6	2.5	--	--	--	PACE
ESE-2	12/10/93	181.95	10.48	171.47	250	--	2.4	2.4	1.5	11	--	--	2.6	PACE
ESE-2	02/17/94	181.95	10.06	171.89	900	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	PACE
ESE-2	08/08/94	178.23	(d) 11.11	167.12	750	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	5.1	PACE
ESE-3	10/05/92	182.00	10.58	171.42	430	--	57	31	3.6	34	--	--	--	--
ESE-3	04/01/93	182.00	8.14	173.86	2400	--	460	220	74	210	--	--	--	PACE
ESE-3	06/29/93	182.00	9.72	172.28	280	--	56	14	15	13	--	--	--	PACE
ESE-3	09/23/93	182.00	10.46	171.54	72	--	13	3.5	1.7	4.1	--	--	--	PACE
ESE-3	12/10/93	182.00	9.30	172.70	270	--	71	32	6.1	33	--	--	2.7	PACE
ESE-3	02/17/94	182.00	8.97	173.03	520	--	140	10	20	33	--	--	--	PACE
ESE-3	08/08/94	178.20	(d) 10.02	168.18	ND<50	--	8.8	1.6	1.6	2.3	--	--	6.2	PACE
ESE-4	10/05/92	182.47	10.33	172.14	98	--	7.2	1.3	1.1	6.1	--	--	--	--
ESE-4	04/01/93	182.47	7.88	174.59	550	--	93	20	23	33	--	--	--	PACE
ESE-4	06/29/93	182.07	(e) 8.33	173.74	150	--	23	0.6	5.4	0.5	--	--	--	PACE
ESE-4	09/23/93	182.07	10.05	172.02	110	--	14	1.7	3.2	4.6	--	--	--	PACE
ESE-4	12/10/93	182.07	8.95	173.12	110	--	21	7.2	4.2	10	--	--	2.8	PACE
ESE-4	02/17/94	182.07	8.65	173.42	210	--	26	1.2	4.7	11	--	--	--	PACE
ESE-4	08/08/94	177.66	(d) 9.76	167.90	76	--	9.6	ND<0.5	2.0	ND<0.5	--	--	7.0	PACE

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING  
 BP OIL COMPANY SERVICE STATION NO. 11105  
 3515 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

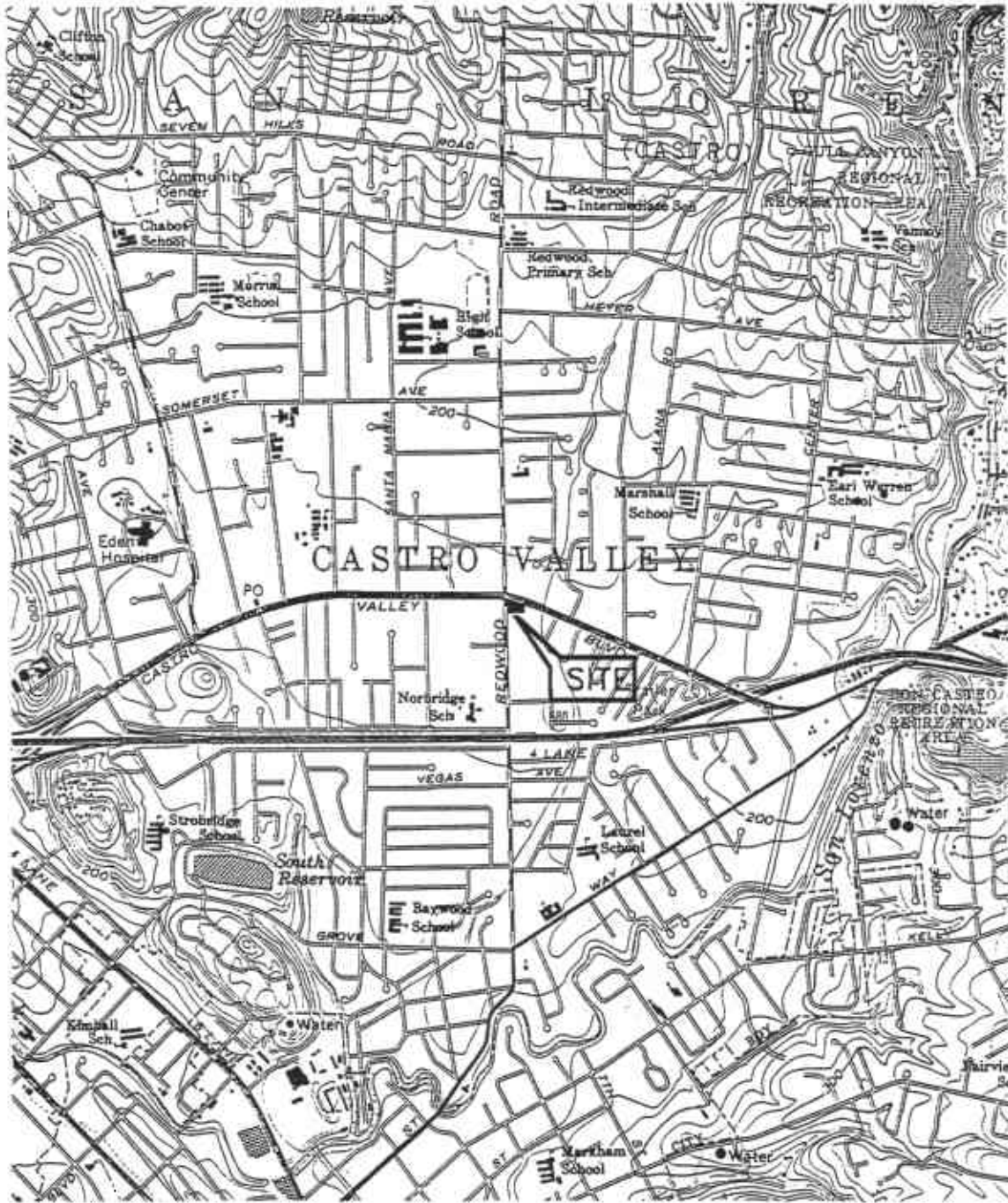
WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	1,2-DCA (ppb)	DO (ppm)	LAB
ESE-5	10/05/92	184.09	9.22	174.87	1300	---	200	3.8	1.2	18	---	---	---	---
ESE-5	04/01/93	184.09	7.02	177.07	13000	---	2200	26	730	1000	---	---	---	PACE
QC-1 (c)	04/01/93	---	---	---	13000	---	2500	25	740	1100	---	---	---	PACE
ESE-5	06/29/93	184.09	10.21	173.88	7600	---	1500	9.3	170	100	---	---	---	PACE
ESE-5	09/23/93	184.09	10.64	173.45	560	---	19	1.2	0.9	1.8	---	---	---	PACE
ESE-5	12/10/93	184.09	9.42	174.67	1700	---	300	3.0	76	110	---	---	2.5	PACE
ESE-5	02/07/94	184.09	9.35	174.74	3500	---	640	7.8	90	130	---	---	---	PACE
ESE-5	08/08/94	176.08	(d) 8.76	167.32	2600	---	210	4.6	9.4	4.4	---	---	5.8	PACE
QC-1 (c)	08/08/94	---	---	---	2500	---	230	4.6	13	4.8	---	---	---	PACE
QC-2 (f)	04/01/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	06/29/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	09/23/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	12/10/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	02/17/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	08/08/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE

ABBREVIATIONS:

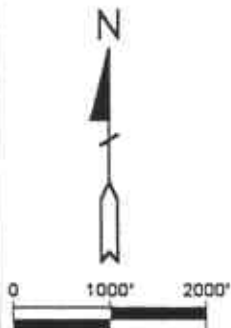
TPH-G Total petroleum hydrocarbons as gasoline  
 TPH-D Total petroleum hydrocarbons as diesel  
 B Benzene  
 T Toluene  
 E Ethylbenzene  
 X Total xylenes  
 TOG Total oil and grease  
 1,2-DCA 1,2-Dichloroethane  
 DO Dissolved oxygen  
 ppb Parts per billion  
 ppm Parts per million  
 ND Not detected above reported detection limit  
 --- Not applicable/measurable/analyzed  
 PACE Pace, Inc.

NOTES:

- (a) Top of casing elevations relative to an arbitrary datum with an elevation of 264 feet above mean sea level.  
 (b) Groundwater elevations in feet relative to mean sea level.  
 (c) Blind duplicate.  
 (d) Well resurveyed in March, 1994.  
 (e) Top of casing lowered by 0.07 foot after the 4/01/93 monitoring event.  
 (f) Travel blank.



SOURCE:  
 USGS MAP, HAYWARD QUADRANGLE,  
 CALIFORNIA, 7.5 MINUTE SERIES, 1959.  
 PHOTOREVISED 1980.

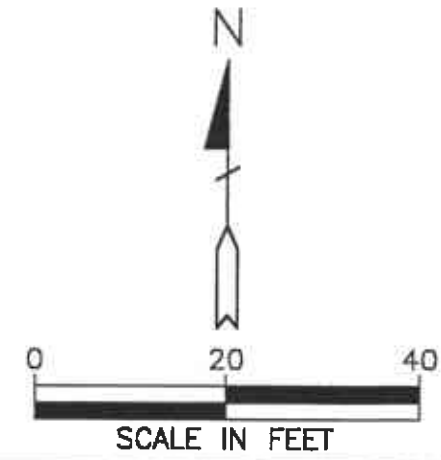
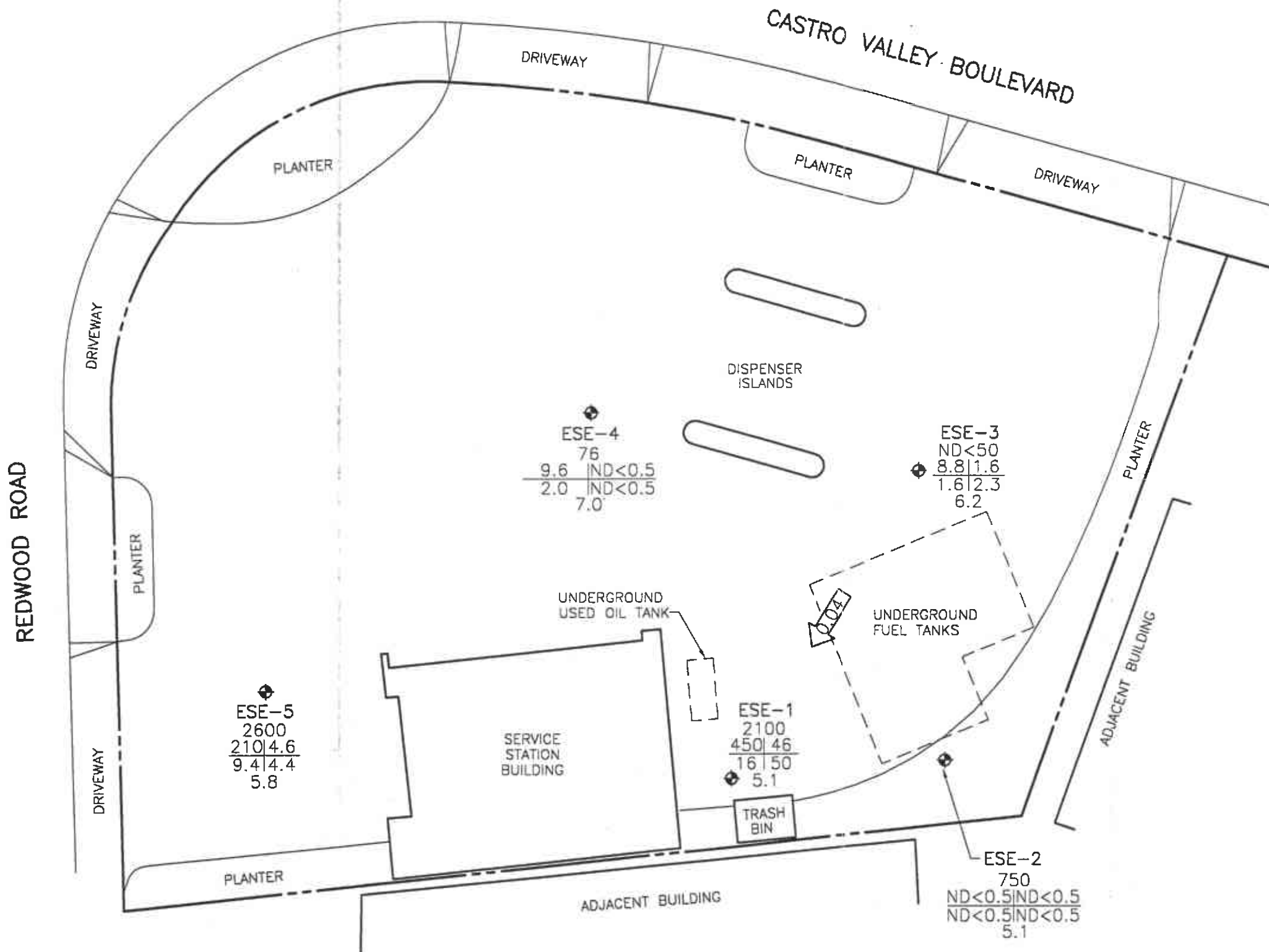


**FIGURE 1**  
**SITE VICINITY MAP**

BP OIL SERVICE STATION NO. 11105  
 3515 CASTRO VALLEY BOULEVARD  
 CASTRO VALLEY, CALIFORNIA  
 PROJECT NO. 10-138



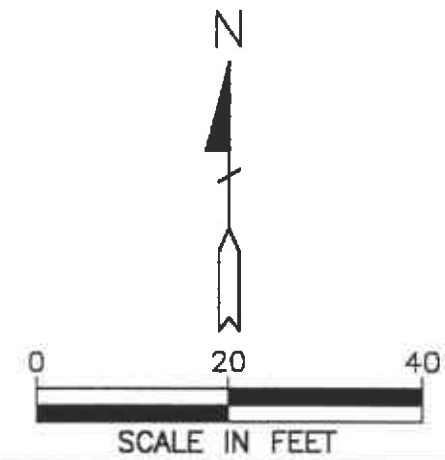
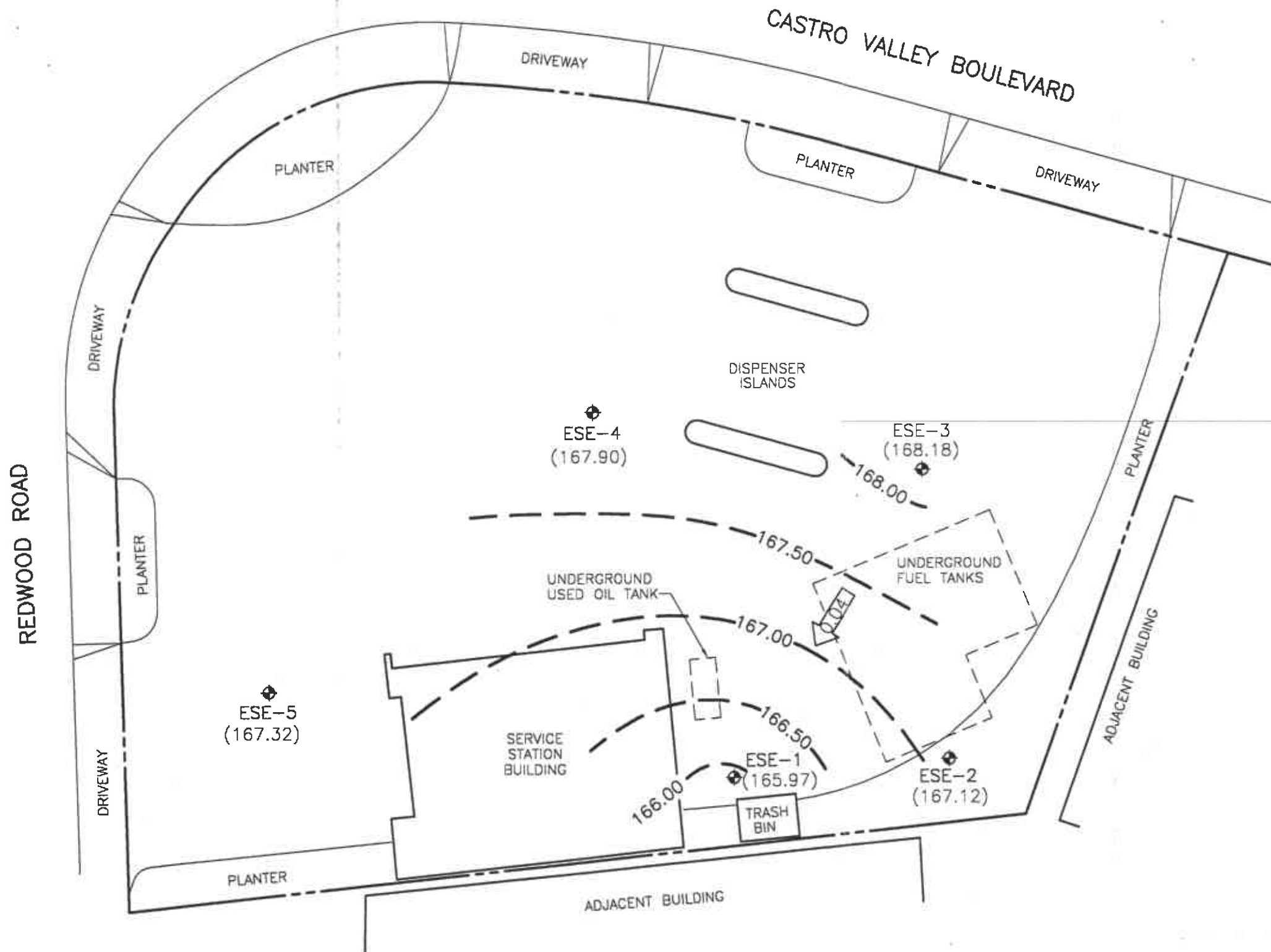
**ALISTO ENGINEERING GROUP**  
 WALNUT CREEK, CALIFORNIA



**LEGEND**

- ◆ GROUNDWATER MONITORING WELL
- TPH-G CONCENTRATION OF CONSTITUENTS IN PARTS PER BILLION, EXCEPT DISSOLVED OXYGEN, WHICH IS IN PARTS PER MILLION
- B | T BENZENE | TOLUENE
- E | X ETHYL BENZENE | TOTAL XYLENES
- DO DISSOLVED OXYGEN
- ND NOT DETECTED ABOVE REPORTED DETECTION LIMIT
- ← 0.04 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

**FIGURE 3**  
**CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER**  
**AUGUST 8, 1994**  
 BP OIL SERVICE STATION NO. 11105  
 3515 CASTRO VALLEY BOULEVARD  
 CASTRO VALLEY, CALIFORNIA  
 PROJECT NO. 10-138



**LEGEND**

- ◆ GROUNDWATER MONITORING WELL
- (168.18) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 168.00 - GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL=0.50 FOOT)
- ← 0.04 → CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

**FIGURE 2**  
**POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP**  
**AUGUST 8, 1994**  
 BP OIL SERVICE STATION NO. 11105  
 3515 CASTRO VALLEY BOULEVARD  
 CASTRO VALLEY, CALIFORNIA  
 PROJECT NO. 10-138



APPENDIX A  
WATER SAMPLING FIELD SURVEY FORMS

# ALISTO

## Field Report / Sampling Data Sheet

ENGINEERING GROUP

Groundwater Sampling

Date: 8/8/94 Project No. 10-138-02-002  
 Day: Mon Station No. 1105  
 Weather: Sunny Address Castro Valley Blvd, Castro Valley CA  
 SAMPLER: DC

1777 OAKLAND BLVD, STE 200  
 WALNUT CREEK CA 94596 (510) 295-1650 FAX 295-1823

Well ID	SAMPLE #	WATER DEPTH	Well ID	SAMPLE #	WATER DEPTH	Well ID	SAMPLE #	WATER DEPTH
232	232-2	5-1						
234	234-4	5-2						
237	237-3	5-3						
242	242-1	5-4						
250	250-5	5-5						

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	Tests
232-2	11.11	2"	replace	Φ	Φ	3	1529	75.4	6.97	1.24	4.9	<input type="checkbox"/> EPA 601 <input checked="" type="checkbox"/> TPH-G/BTEX/HCL
Total Depth - Water Level = 30.00 - 11.11 = 18.89						6	1531	72.5	7.38	1.03		<input type="checkbox"/> TPH Diesel
x Well Vol. Factor = 1.6						9.25	1533	71.7	7.29	0.99	5.1	<input type="checkbox"/> TOG 5520
x #vol. to Purge = 3												Time Sampled
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input checked="" type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailor(s) <input type="checkbox"/> OSys Port												1535
Comments:												

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	Tests
234-4	9.76	2"	replace	Φ	Φ	2.5	1548	74.5	7.29	1.08	6.0	<input type="checkbox"/> EPA 601 <input checked="" type="checkbox"/> TPH-G/BTEX/HCL
Total Depth - Water Level = 25.00 - 9.76 = 15.24						5	1551	73.3	7.37	1.04		<input type="checkbox"/> TPH Diesel
x Well Vol. Factor = 1.6						7.5	1553	72.5	7.51	1.04	7.0	<input type="checkbox"/> TOG 5520
x #vol. to Purge = 3												Time Sampled
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input checked="" type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailor(s) <input type="checkbox"/> OSys Port												1555
Comments: casing needs to be brought up to grade; will not allow a new cap because casing												

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	Tests
237-3	10.02	2"	replace	Φ	Φ	3	1612	74.3	7.62	0.96	5.8	<input type="checkbox"/> EPA 601 <input checked="" type="checkbox"/> TPH-G/BTEX/HCL
Total Depth - Water Level = 30.00 - 10.02 = 19.98						6	1614	72.9	7.57	0.99		<input type="checkbox"/> TPH Diesel
x Well Vol. Factor = 1.6						9.75	1617	72.2	7.49	1.00	6.2	<input type="checkbox"/> TOG 5520
x #vol. to Purge = 3												Time Sampled
Purge Method: <input type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailor(s) <input type="checkbox"/> OSys Port												1620
Comments:												

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	Tests
242-1	11.72	2"	replace	Φ	Φ	3	1630	73.4	7.01	1.12	5.4	<input type="checkbox"/> EPA 601 <input checked="" type="checkbox"/> TPH-G/BTEX/HCL
Total Depth - Water Level = 30.00 - 11.72 = 18.28						6	1633	73.3	7.04	1.07		<input type="checkbox"/> TPH Diesel
x Well Vol. Factor = 1.6						9	1636	71.5	7.08	1.04	5.1	<input type="checkbox"/> TOG 5520
x #vol. to Purge = 3												Time Sampled
Purge Method: <input type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailor(s) <input type="checkbox"/> OSys Port												1639
Comments:												

Hydric  
 Temp - 88°  
 Time - 318  
 6/20/94

DO 7.4  
 Time - 324  
 Temp - 40°  
 Press - 75.9

# ALISTO

## Field Report / Sampling Data Sheet

ENGINEERING

Groundwater Sampling

Date: 9/8/94

Project No. 10-138-02-002

GROUP

Day: Mon

Station No. 11105

1777 OAKLAND BLVD, STE 200

Weather: Sunny

Address Casta Valley Blvd, Casta

WALNUT CREEK CA 94596 (510) 295-1650 FAX 295-1823

SAMPLER: JDC

Valley, CA

Well ID	SAMPLE #	WATER	DEPTH	Well ID	SAMPLE #	WATER	DEPTH	Well ID	SAMPLE	WATER DEPTH

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	
<u>Ese-5</u>	<u>8.76</u>	<u>2"</u>	<u>replace</u>	<u>⊙</u>	<u>⊙</u>	<u>2.5</u>	<u>1650</u>	<u>73.7</u>	<u>6.99</u>	<u>1.38</u>	<u>5.4</u>	<input type="checkbox"/> EPA 601
Total Depth - Water Level = <u>24.00 - 8.76 = 15.24</u>						<u>5</u>	<u>1653</u>	<u>71.9</u>	<u>6.98</u>	<u>1.35</u>	<u> </u>	<input type="checkbox"/> TPH-G/BTEX <u>HCL</u>
x Well Vol. Factor = <u>4.16</u>						<u>7.5</u>	<u>1656</u>	<u>71.5</u>	<u>7.01</u>	<u>1.34</u>	<u>5.8</u>	<input type="checkbox"/> TPH Diesel
x #vol. to Purge = <u>3</u>												<input type="checkbox"/> TOG 5520
Purge Vol. = <u>7.32</u>												Time Sampled
Purge Method: <input type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailor(s) <input type="checkbox"/> Sys Port												<u>1700</u>
Comments: <u>QC-1 from this well (S-6)</u>												

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	
												<input type="checkbox"/> EPA 601
												<input type="checkbox"/> TPH-G/BTEX
												<input type="checkbox"/> TPH Diesel
												<input type="checkbox"/> TOG 5520
												Time Sampled

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	
												<input type="checkbox"/> EPA 601
												<input type="checkbox"/> TPH-G/BTEX
												<input type="checkbox"/> TPH Diesel
												<input type="checkbox"/> TOG 5520
												Time Sampled

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	
												<input type="checkbox"/> EPA 601
												<input type="checkbox"/> TPH-G/BTEX
												<input type="checkbox"/> TPH Diesel
												<input type="checkbox"/> TOG 5520
												Time Sampled

6/20/94

**APPENDIX B**

**LABORATORY REPORT AND CHAIN OF CUSTODY RECORD**



# REPORT OF LABORATORY ANALYSIS

Alisto Engineering Group  
1777 Oakland Blvd., Ste. 200  
Walnut Creek, CA 94596

August 18, 1994  
PACE Project Number: 440809518

Attn: Mr. Bill Howell

Client Reference: BP Site #11105/10-138-02-003

PACE Sample Number: 70 0369886  
Date Collected: 08/08/94  
Date Received: 08/09/94  
Client Sample ID: S-1

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
------------------	--------------	------------	----------------------

## ORGANIC ANALYSIS

### PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	08/15/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	750 HP	08/15/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	08/15/94
Benzene	ug/L	0.5	ND	08/15/94
Toluene	ug/L	0.5	ND	08/15/94
Ethylbenzene	ug/L	0.5	ND	08/15/94
Xylenes, Total	ug/L	0.5	ND	08/15/94

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August 18, 1994  
 PACE Project Number: 440809518

Client Reference: BP Site #11105/10-138-02-003

PACE Sample Number: 70 0369894  
 Date Collected: 08/08/94  
 Date Received: 08/09/94  
 Client Sample ID: S-2

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	08/16/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	76	08/16/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	08/16/94
Benzene	ug/L	0.5	9.6	08/16/94
Toluene	ug/L	0.5	ND	08/16/94
Ethylbenzene	ug/L	0.5	2.0	08/16/94
Xylenes, Total	ug/L	0.5	ND	08/16/94

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August 18, 1994  
 PACE Project Number: 440809518

Client Reference: BP Site #11105/10-138-02-003

PACE Sample Number: 70 0369908  
 Date Collected: 08/08/94  
 Date Received: 08/09/94  
 Client Sample ID: S-3

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS			
TOTAL FUEL HYDROCARBONS, (LIGHT):			
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	08/15/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			
Benzene	ug/L	0.5	08/15/94
Toluene	ug/L	0.5	08/15/94
Ethylbenzene	ug/L	0.5	08/15/94
Xylenes, Total	ug/L	0.5	08/15/94

**REPORT OF LABORATORY ANALYSIS**

Mr. Bill Howell  
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August 18, 1994  
 PACE Project Number: 440809518

Client Reference: BP Site #11105/10-138-02-003

PACE Sample Number: 70 0369916  
 Date Collected: 08/08/94  
 Date Received: 08/09/94  
 Client Sample ID: S-4

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

<u>PURGEABLE FUELS AND AROMATICS</u>			
TOTAL FUEL HYDROCARBONS, (LIGHT):		-	08/16/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	2100
PURGEABLE AROMATICS (BTXE BY EPA 8020M):		-	08/16/94
Benzene	ug/L	0.5	450
Toluene	ug/L	0.5	46
Ethylbenzene	ug/L	0.5	16
Xylenes, Total	ug/L	0.5	50



**REPORT OF LABORATORY ANALYSIS**

Mr. Bill Howell  
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August 18, 1994  
 PACE Project Number: 440809518

Client Reference: BP Site #11105/10-138-02-003

PACE Sample Number: 70 0369924  
 Date Collected: 08/08/94  
 Date Received: 08/09/94  
 Client Sample ID: S-5

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

<u>PURGEABLE FUELS AND AROMATICS</u>			
TOTAL FUEL HYDROCARBONS, (LIGHT):		-	08/16/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	2600
<u>PURGEABLE AROMATICS (BTXE BY EPA 8020M):</u>			
Benzene	ug/L	0.5	210
Toluene	ug/L	0.5	4.6
Ethylbenzene	ug/L	0.5	9.4
Xylenes, Total	ug/L	0.5	4.4

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August 18, 1994  
 PACE Project Number: 440809518

Client Reference: BP Site #11105/10-138-02-003

PACE Sample Number: 70 0369932  
 Date Collected: 08/08/94  
 Date Received: 08/09/94  
 Client Sample ID: S-6

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	08/16/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	2500	08/16/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	08/16/94
Benzene	ug/L	0.5	230	08/16/94
Toluene	ug/L	0.5	4.6	08/16/94
Ethylbenzene	ug/L	0.5	13	08/16/94
Xylenes, Total	ug/L	0.5	4.8	08/16/94

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August 18, 1994  
 PACE Project Number: 440809518

Client Reference: BP Site #11105/10-138-02-003

PACE Sample Number: 70 0369940  
 Date Collected: 08/08/94  
 Date Received: 08/09/94  
 Client Sample ID: S-7

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS			
TOTAL FUEL HYDROCARBONS, (LIGHT):		-	08/15/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND 08/15/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):		-	08/15/94
Benzene	ug/L	0.5	ND 08/15/94
Toluene	ug/L	0.5	ND 08/15/94
Ethylbenzene	ug/L	0.5	ND 08/15/94
Xylenes, Total	ug/L	0.5	ND 08/15/94

These data have been reviewed and are approved for release.



for Darrell C. Cain  
 Regional Director

Mr. Bill Howell  
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FOOTNOTES  
for pages 1 through 7

August 18, 1994  
PACE Project Number: 440809518

Client Reference: BP Site #11105/10-138-02-003

HP Hydrocarbons present do not match profile of laboratory standard.  
MDL Method Detection Limit  
ND Not detected at or above the MDL.

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QUALITY CONTROL DATA

August 18, 1994  
 PACE Project Number: 440809518

Client Reference: BP Site #11105/10-138-02-003

PURGEABLE AROMATIC COMPOUNDS, EPA 8020  
 Batch: 70 32959  
 Samples: 70 0369886, 70 0369908, 70 0369940

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	MDL	700371805	Spike	Spike Recv	Spike Dupl Recv	RPD
Benzene	ug/L	0.5	2.3	100	90%	93%	3%
Toluene	ug/L	0.5	17	100	88%	90%	2%
Ethylbenzene	ug/L	0.5	4.5	100	89%	91%	2%
Xylenes, Total	ug/L	0.5	27	300	89%	91%	2%

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Benzene	ug/L	0.5	100	92%	100%	8%
Toluene	ug/L	0.5	100	93%	98%	5%
Ethylbenzene	ug/L	0.5	100	93%	96%	3%
Xylenes, Total	ug/L	0.5	300	93%	95%	2%

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QUALITY CONTROL DATA

August 18, 1994  
PACE Project Number: 440809518

Client Reference: BP Site #11105/10-138-02-003

PURGEABLE FUELS AND AROMATICS

Batch: 70 32987  
Samples: 70 0369894, 70 0369916, 70 0369924, 70 0369932

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	MDL	750149036	Spike	Spike Recv	Spike Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	1000	106%	112%	6%

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	1000	104%	107%	3%

Mr. Bill Howell  
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FOOTNOTES  
for pages 9 through 10

August 18, 1994  
PACE Project Number: 440809518

Client Reference: BP Site #11105/10-138-02-003

MDL Method Detection Limit  
ND Not detected at or above the MDL.  
RPD Relative Percent Difference



440809.518

### CHAIN OF CUSTODY

No. 063415 Page 1 of 1

CONSULTANT'S NAME <i>Alisto Engineering Group</i>		ADDRESS <i>1777 OAKLAND BLVD STE 200</i>		CITY <i>WALNUT CA</i>	STATE <i>CA</i>	ZIP CODE <i>94596</i>
BP SITE NUMBER <i>11105</i>	BP CORNER ADDRESS/CITY <i>Castro Valley Blvd; Castro Valley CA</i>				CONSULTANT PROJECT NUMBER <i>10-138-02-003</i>	
CONSULTANT PROJECT MANAGER <i>Bill Howell</i>		PHONE NUMBER <i>(510) 295 1650</i>	FAX NUMBER <i>(510) 295 1823</i>		CONSULTANT CONTRACT NUMBER <i>6225684</i>	
BP CONTACT <i>Scott Hooton</i>		BP ADDRESS <i>Renton WA</i>		PHONE NUMBER		FAX NO.
LAB CONTACT <i>Pace Inc</i>		LABORATORY ADDRESS <i>Noronto CA</i>		PHONE NUMBER <i>(415) 883 6100</i>		FAX NO. <i>(415) 883 2673</i>
SAMPLED BY (Please Print Name) <i>David Casack</i>		SAMPLED BY (Signature) <i>David Casack</i>		SHIPMENT DATE		SHIPMENT METHOD <i>Carrier</i>

TAT:  24 Hours  48 Hours  1 Week  Standard 2 Weeks

#### ANALYSIS REQUIRED

AIRBILL NUMBER

SAMPLE DESCRIPTION	COLLECTION DATE	MATRIX SOIL/WATER	CONTAINERS		PRESERVATIVE	HCL TEL Gas Pres														COMMENTS
	COLLECTION TIME		NO.	TYPE (VOL.)	LAB SAMPLE #															
<i>S-1 time 1535</i>	<i>8/9/94</i>	<i>H<sub>2</sub>O</i>	<i>3</i>	<i>NON</i>	<i>36988.6</i>	<i>X</i>														
<i>S-2 1555</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	<i>36989.4</i>	<i> </i>														
<i>S-3 1620</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	<i>36990.8</i>	<i> </i>														
<i>S-4 1639</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	<i>36991.6</i>	<i> </i>														
<i>S-5 1700</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	<i>36992.4</i>	<i> </i>														
<i>S-6 -</i>	<i> </i>	<i> </i>	<i> </i>	<i> </i>	<i>36993.2</i>	<i> </i>														
<i>&amp; S-7 -</i>	<i> </i>	<i> </i>	<i>2</i>	<i> </i>	<i>36994.0</i>	<i> </i>														

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	ADDITIONAL COMMENTS
<i>David Casack Alisto</i>	<i>8/9/94</i>	<i>1500</i>	<i>Ed Kelly - Pace</i>	<i>8/9/94</i>	<i>1500</i>	<i>5/2</i>
<i>Ed Kelly Pace</i>	<i>8/9/94</i>	<i>1630</i>	<i>David Casack</i>	<i>8/9/94</i>	<i>1630</i>	