

Pacific Gas and Electric Company

Hunters Point/Potrero/
Oakland Power Plants
Steam Generation
1000 Evans Avenue
San Francisco, CA 94124
415/695-2200

Jack A. Fusco
Manager

October 27, 1994



Ms. Jennifer Eberle
Hazardous Materials Specialist
Alameda County Department of Environmental Health
UST Local Oversight Program
1131 Harbor Way Parkway, 2nd Floor
Alameda, CA 94502-6577

Dear Ms. Eberle:

Please find attached herewith a copy of the Subsurface Investigation Report for Pacific Gas and Electric Company, Oakland Power Plant at 50 Martin Luther King Jr. Way, Oakland, California, 94621. This report is submitted to your office as requested in your letter dated April 23, 1993.

All three wells were sampled and tested for total petroleum hydrocarbons. We will continue to monitor these wells on a quarterly basis.

Well No. MW-2-3 was inadvertently sampled and tested for Benzene, Toluene, Ethyl benzene, and Xylenes (BTEX). BTEX were detected in this well and the results are shown in the attached report. We will also continue to monitor this well for BTEX on a quarterly basis.

Should you have any questions regarding this matter, please contact Mr. Avtar S. Virdee of my staff at (415) 695-2205.

Sincerely,


Jack A. Fusco
Plant Manager

ASV:jrr

Attachment

60 OCT 27 03 100 76

10/27/94

GROUNDWATER MONITORING AND SAMPLING REPORT

Pacific Gas and Electric Company
Oakland Power Plant
50 Martin Luther King, Jr. Way
Oakland, California

OCT 94

PG&E Project No. 0530-EC
Alisto Project No. 10-179

HAZARDOUS
91 OCT 29 PM 3:09

October 1994



GROUNDWATER MONITORING AND SAMPLING REPORT

Pacific Gas and Electric Company
Oakland Power Plant
50 Martin Luther King, Jr. Way
Oakland, California

PG&E Project No. 0530-EC
Alisto Project No. 10-179-02-001

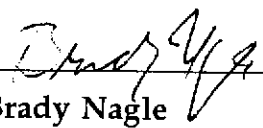
Prepared for:

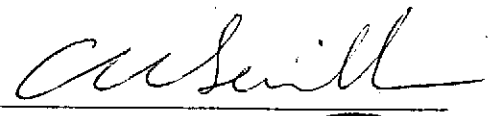
Pacific Gas and Electric Company
3400 Crow Canyon Road
San Ramon, California

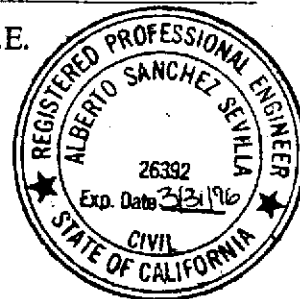
Prepared by:

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

October 24, 1994


Brady Nagle
Project Manager


Al Sevilla, P.E.
Principal



GROUNDWATER MONITORING AND SAMPLING REPORT

Pacific Gas and Electric Company
Oakland Power Plant
50 Martin Luther King, Jr. Way
Oakland, California

TESA Project No. 0530-EC
Alisto Project No. 10-179-02-001

October 24, 1994

INTRODUCTION

This report presents the results and findings of the October 7, 1994 groundwater monitoring and sampling conducted by Alisto Engineering Group at Pacific Gas and Electric Company's Oakland Power Plant, 50 Martin Luther King Jr. Way, Oakland, 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. The field procedures for groundwater monitoring well sampling are presented in Appendix A.

SAMPLING AND ANALYTICAL RESULTS

The results of monitoring and laboratory analysis of the groundwater samples for 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 field procedures for chain of custody documentation, laboratory reports, and chain of custody records are presented in Appendix B.



SUMMARY OF FINDINGS

The findings of the October 7, 1994 groundwater monitoring and sampling event are summarized as follows:

- Free product was not observed in any of the groundwater monitoring wells.
- Groundwater elevation data indicated a **southwesterly flow direction** with a hydraulic gradient of 0.01 foot per foot.
- Total petroleum hydrocarbons as diesel was detected in the sample collected from MW-1-2 at a concentration of 590 micrograms per liter (ug/L).
- Benzene, toluene, ethylbenzene, and total xylenes were detected in the sample collected from well MW-2-3 at concentrations of 16 ug/L, 13 ug/L, 5.9 ug/L, and 24 ug/L, respectively.



TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
 PACIFIC GAS AND ELECTRIC COMPANY'S OAKLAND POWER PLANT
 50 MARTIN LUTHER KING, JR. WAY, OAKLAND, CALIFORNIA

ALISTO PROJECT NUMBER 10-179

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-D (ppb)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	LAB
MW-1-2	06/22/93	13.95	5.05	8.90	1500 (c)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
MW-1-2	09/22/93	13.95	5.91	8.04	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
QC-1 (d)	09/22/93	13.95	---	---	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
MW-1-2	12/28/93	13.95	4.77	9.18	200	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
QC-1 (d)	12/28/93	13.95	---	---	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
MW-1-2	04/11/94	13.95	4.66	9.29	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
QC-1 (d)	04/11/94	13.95	---	---	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
MW-1-2	04/20/94	13.95	4.86	9.09	600	---	---	---	---	CHR
MW-1-2	06/29/94	13.95	5.18	8.77	520	---	---	---	---	CHR
MW-1-2	10/07/94	13.95	4.55	9.40	590 ✓	---	---	---	---	CHR
MW-1-3	06/22/93	14.01	5.15	8.86	160 (c)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
MW-1-3	09/22/93	14.01	5.57	8.44	430	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
MW-1-3	12/28/93	14.01	5.13	8.88	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
MW-1-3	04/11/94	14.01	5.01	9.00	---	ND<0.5	ND<0.5	ND<0.5	0.50	CHR
MW-1-3	04/20/94	14.01	5.09	8.92	ND<50	---	---	---	---	CHR
MW-1-3	06/29/94	14.01	5.30	8.71	280 (c)	---	---	---	---	CHR
MW-1-3	10/07/94	14.01	5.69	8.32	ND<50 ✓	---	---	---	---	CHR
MW-2-3	06/22/93	13.91	5.00	8.91	560 (e)	3.1	ND<0.5	ND<0.5	ND<0.5	CHR
MW-2-3	09/22/93	13.91	5.50	8.41	460	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
MW-2-3	12/28/93	13.91	4.74	9.17	ND<50 (f)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
MW-2-3	04/11/94	13.91	4.62	9.29	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
MW-2-3	04/20/94	13.91	4.83	9.08	ND<50	---	---	---	---	CHR
MW-2-3	06/29/94	13.91	5.14	8.77	920 (c/g)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
MW-2-3	10/07/94 ✓	13.91	5.50	8.41	ND<50 ✓	16 ✓	13	5.9	24	CHR

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
 PACIFIC GAS AND ELECTRIC COMPANY'S OAKLAND POWER PLANT
 50 MARTIN LUTHER KING, JR. WAY, OAKLAND, CALIFORNIA

ALISTO PROJECT NUMBER 10-179

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-D (b) (ppb)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	LAB
QC-2	(h) 06/22/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
QC-2	(h) 09/22/93	---	---	---	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
QC-2	(h) 12/28/93	---	---	---	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
QC-2	(h) 04/11/94	---	---	---	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR

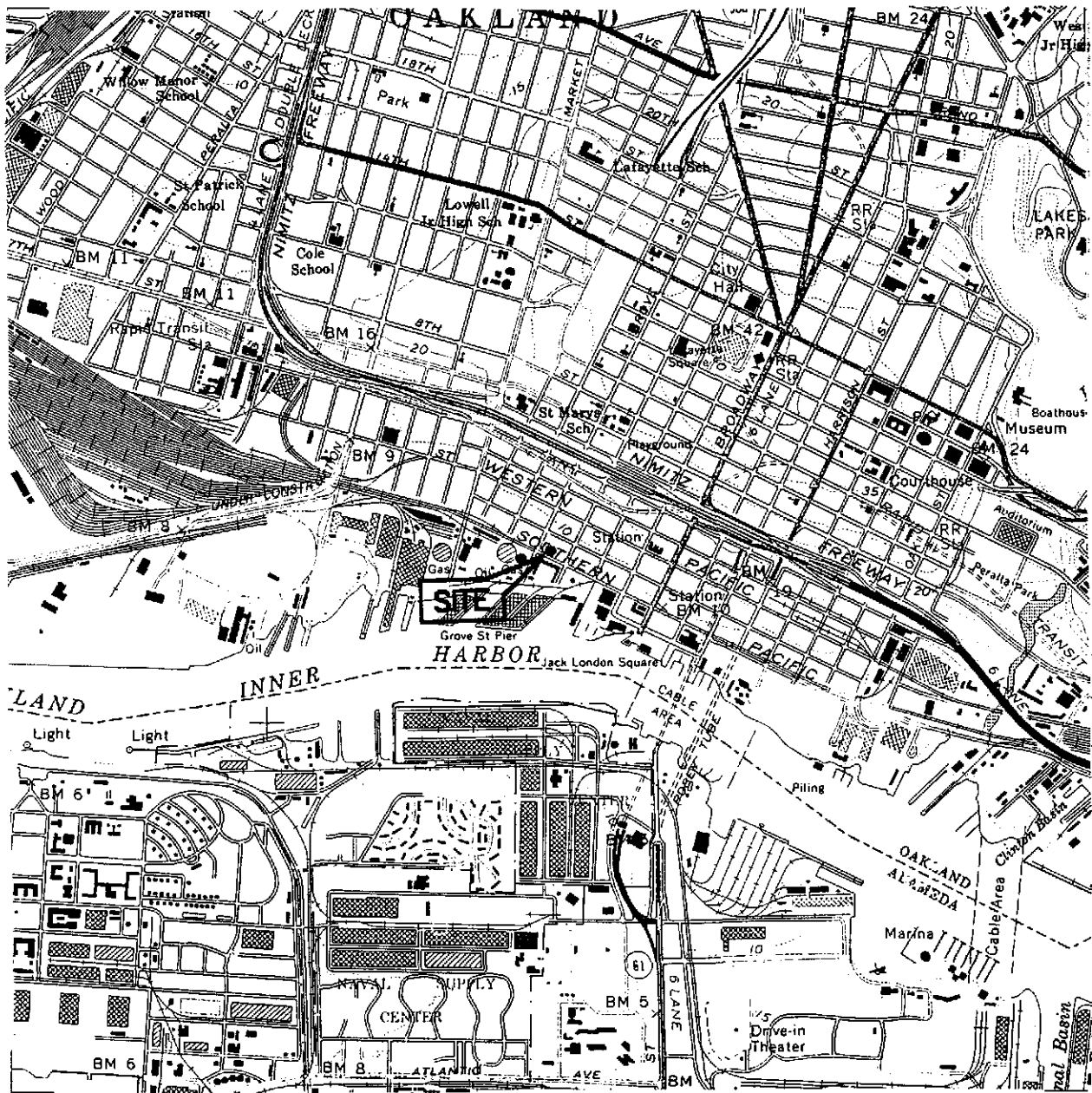
ABBREVIATIONS:

TPH-D Total petroleum hydrocarbons as diesel
 B Benzene
 T Toluene
 E Ethylbenzene
 X Total xylenes
 ug/L Micrograms per liter
 --- Not analyzed/applicable
 ND Not detected above reported detection limit
 CHR Chromalab, Inc.

NOTES:

(a) Top of casing elevations surveyed relative to mean sea level.
 (b) Groundwater elevations in feet above mean sea level.
 (c) Unknown hydrocarbon in diesel range quantified as diesel.
 (d) Blind duplicate.
 (e) Motor oil at a concentration of 3.1 mg/L detected in sample.
 (f) Motor oil at a concentration of 2.9 mg/L detected in sample.
 (g) Unknown hydrocarbon in motor oil range was also observed in sample.
 (h) Travel blank.

E:\010-179\179-1-4.WQ1



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

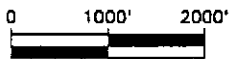


FIGURE 1

SITE VICINITY MAP

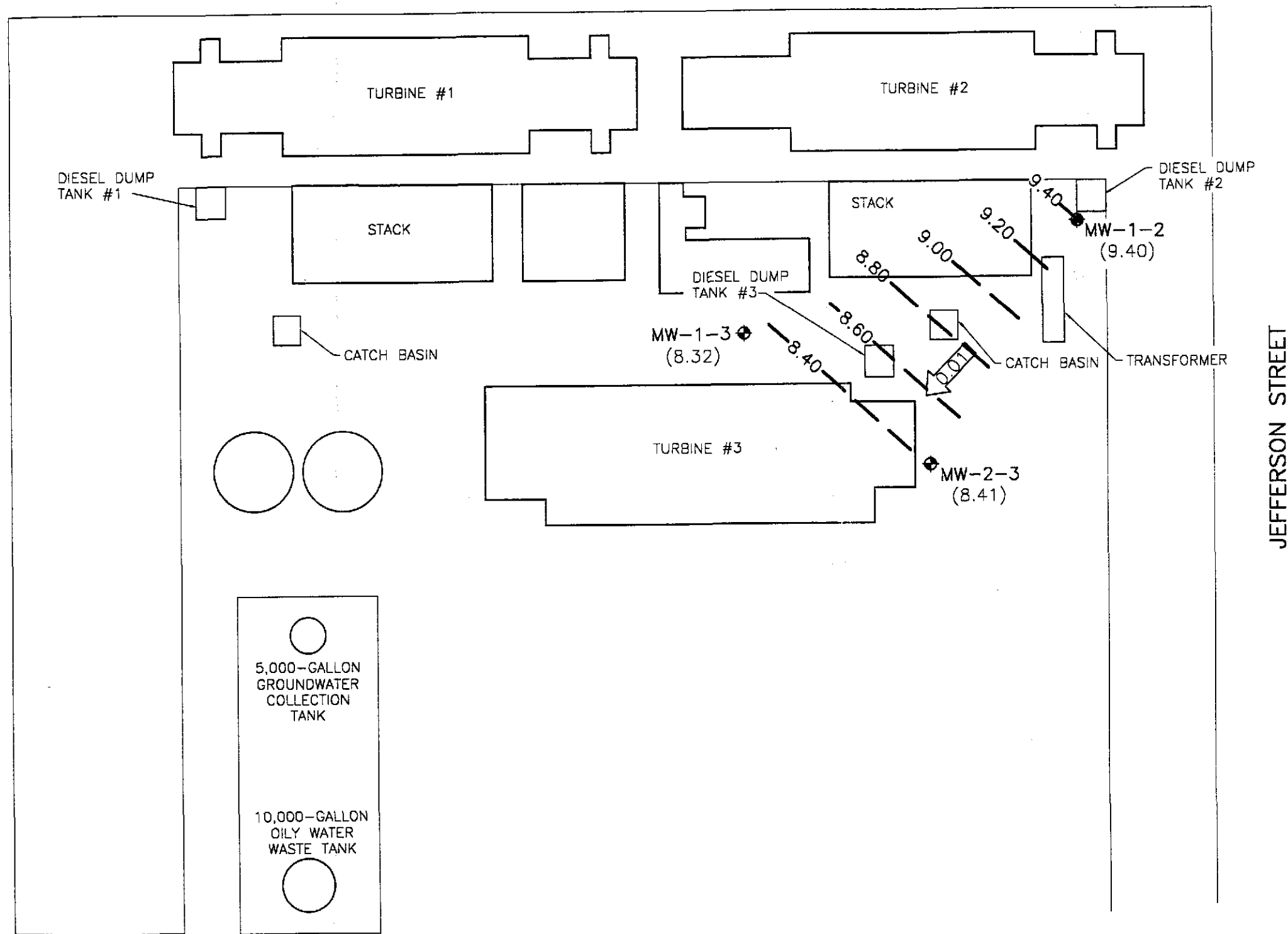
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OAKLAND POWER PLANT
50 MARTIN LUTHER KING, JR. WAY
OAKLAND, CALIFORNIA
PROJECT NO. 10-179



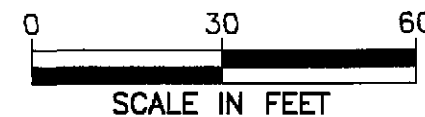
ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

MARTIN LUTHER KING, JR. WAY

EMBARCADERO WAY



JEFFERSON STREET



- LEGEND**
- ◆ GROUNDWATER MONITORING WELL
 - (8.41) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
 - 8.40 - GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL - 0.20 FOOT)
 - ← 0.01 → CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP
OCTOBER 7, 1994
PACIFIC GAS AND ELECTRIC COMPANY
OAKLAND POWER PLANT
50 MARTIN LUTHER KING, JR. WAY
OAKLAND, CALIFORNIA
PROJECT NO. 10-179



101780-LDWC 10-24-84 BRW 1-30

APPENDIX A

FIELD PROCEDURES FOR
GROUNDWATER MONITORING WELL SAMPLING
AND WATER SAMPLING FIELD SURVEY FORMS

FIELD PROCEDURES
FOR
GROUNDWATER MONITORING WELL SAMPLING

Groundwater Level Measurement

Before commencing groundwater sampling, the groundwater level in each well was measured from the marked survey reference point at the top of the well casing. Groundwater in each well was monitored for free product or sheen. The depth to groundwater was measured to an accuracy of 0.01 foot from the top of the PVC well casing using an electronic sounder.

Groundwater Monitoring Well Sampling

To ensure that the groundwater samples were representative of the aquifer, the wells were purged of 3 well casing volumes before sample collection. This purging was accomplished using a clean bailer or pump.

The samples were collected using a disposable bailer and then transferred into laboratory-supplied containers. Care was taken to avoid turbulence when transferring the water samples, and all volatile analysis vials were filled so that no air bubbles were trapped. The sampling technician wore nitrile gloves at all times during purging and well sampling. The samples were clearly labeled with the well number, site identification, date and time of sample collection, and sampler's initials, and transported in an iced cooler maintained at 4 degrees Centigrade to a state-certified laboratory following proper preservation and chain of custody protocol.

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING
GROUP

Groundwater Sampling

1777 OAKLAND BLVD, STE 200

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

Date: 10-7-94

Day: FRIDAY

Weather: clear

[Signature]

Project No.

Station No.

Address

10-179-01-004

PGE 0530-EC

50 MLK JR. WAY

OAKLAND

02-001 ✓

DEPTH TO GROUND WATER SUMMARY

Well ID	Depth to Water	Iridescence	Prod Thickness
MW-1-2	4.55'	Y (N)	None
MW-1-3	5.69'	Y (N)	None
MW-2-3	5.50'	Y (N)	None

INSTRUMENT CALIBRATION DATA

HYDRAK 9308
PH 7.00 10.00 7.00 @ 1004
COND 10000 @ 1009
TURBIDITY 0.5 NTU solution.

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.
MW-2-3	5.50'	4	ok/ok	None	None	3	1012	71.6	7.57	3480	TURB
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.						5	1015	70.6	7.59	3290	31.7
13.30' - 5.50' = 7.8 x .65 x 3 = 15.21 gal						Purged dry @ 5 gallons.					
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input checked="" type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> OSys Port						7	1030	70.2	7.61	3170	52.7
Comments: 064						Purged dry @ 7 gallons.					

EPA 601
 BTEX HCL
 TPH Diesel None
 TOG 5520 BF
Time Sampled
MW-2-3 / 1030

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.
MW-1-3	5.69'	4	ok/ok	None	None	1	1020	69.2	7.11	3210	TURB
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.						2	1024	69.5	7.07	3350	
7.24 - 5.69 = 1.55 x .65 x 3 = 3.0 gal						3	1040	69.7	7.03	3330	20.7
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input checked="" type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> OSys Port											
Comments: 064											

EPA 601
 TPH-G/BTEX HCL
 TPH Diesel None
 TOG 5520 BF
Time Sampled
MW-1-3 / 1040

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.
MW-1-2	4.55	4	ok/ok	no.	None	2	1042	68.1	6.75	1690	TURB
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.						10	1055	68.2	6.70	1720	101.7
13.62 - 4.55 = 9.07 x .65 x 3 = 17.7 gal						DRY after 10 gallons					
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> OSys Port						12	1111	67.1	6.91	1700	94.2
Comments:						DRY after 12 gallons.					

EPA 601
 TPH-G/BTEX HCL
 TPH Diesel None
 TOG 5520 BF
Time Sampled
MW-1-2 / 1111

APPENDIX B

**FIELD PROCEDURES FOR CHAIN OF CUSTODY DOCUMENTATION,
LABORATORY REPORTS, AND CHAIN OF CUSTODY RECORDS**

**FIELD PROCEDURES
FOR
CHAIN OF CUSTODY DOCUMENTATION**

The samples collected were handled in accordance with the California Department of Health Services guidelines. The samples were labeled in the field and immediately stored in coolers and preserved with blue ice for transport to a state-certified laboratory for analysis.

A chain of custody record accompanied the samples, and included the site and sample identification, date and time of collection, analysis requested, and the name and signature of the sampling technician. When transferring possession of the samples, the transferee signed and dated the chain of custody record.

CHROMALAB, INC.

Environmental Services (SDB)

October 11, 1994

Submission #: 9410076

ALISTO ENGINEERING GROUP INC

Atten: Brady Nagle

Project: MLK OAKLAND

Project#: 10-17-01-004

Received: October 7, 1994

re: 1 sample for BTEX analysis.

Sampled: October 7, 1994 ✓

Matrix: WATER

Run#: 4175

Analyzed: October 11, 1994 ✓

Method: EPA 8020

<u>Spl # CLIENT SMPL ID</u>	<u>Benzene (ug/L)</u>	<u>Toluene (ug/L)</u>	<u>Ethyl Benzene (ug/L)</u>	<u>Total Xylenes (ug/L)</u>
65529 MW-2-3	16	13	5.9	24
Reporting Limits	0.5	0.5	0.5	0.5
Blank Result	N.D.	N.D.	N.D.	N.D.
Blank Spike Result (%)	98	114	105	115



Jack Kelly
Chemist



Ali Kharrazi
Organic Manager

CHROMALAB, INC.

Environmental Services (SDB)

October 14, 1994

Submission #: 9410076

ALISTO ENGINEERING GROUP INC

Atten: Brady Nagle

Project: MLK OAKLAND
Received: October 7, 1994

Project #: 10-17-01-004

re: Three samples for Diesel analysis

Matrix: WATER
Sampled: October 7, 1994
Method: EPA 3510/8015

Extracted: October 10, 1994
Analyzed: Oct. 11, - 12, 1994

<u>Sample #</u>	<u>Client Sample ID</u>	<u>Diesel (ug/L)</u>
65529	MW-2-3	N.D. ^(a)
65530	MW-1-3	N.D. ^(b)
65531	MW-1-2	590

^(a) Unknown compounds were found in the diesel range in the estimated amount of 570 ug/L compound with the diesel standard.

^(b) Unknown compounds were found in the diesel range in the estimated amount of 240 ug/L compound with the diesel standard.

Blank	N.D.
Spike Recovery	104%
Dup Spike Recovery	95%
Reporting Limit	50

ChromaLab, Inc.

Sirirat Chullakorn

Sirirat Chullakorn
Analytical Chemist

kv

Ali Kharrazi
Ali Kharrazi
Organic Manager

