

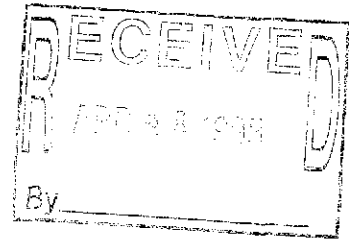
Pacific Gas and Electric Company

San Francisco Bay Power Plants
1000 Evans Avenue
San Francisco, CA 94124
415/695-2200
Fax 415/695-2267

Gregg L. Lemler
Manager



April 27, 1995



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 Quarterly 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.

Results of the quarterly sampling show that total petroleum hydrocarbons as diesel (TPH-D) were not detected in all three wells except unknown compounds in the diesel range were reported in all three wells as shown in the report. We will continue to monitor these wells on a quarterly basis.

Well No. MW-2-3 was sampled and tested for Benzene, Toluene, Ethyl benzene, and Xylenes (BTEX), BTEX were not detected in this well. We will 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.

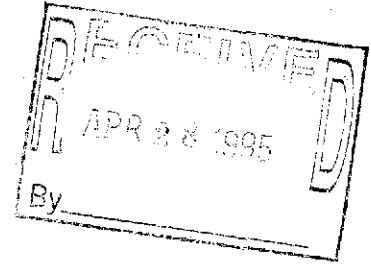
Sincerely,

A handwritten signature in cursive script that reads 'Gregg L. Lemler'.

Gregg L. Lemler
Plant Manager

ASV:dms

Attachment



**GROUNDWATER MONITORING AND
SAMPLING REPORT
SECOND QUARTER - 1995**

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

*April
95*

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

April 1995



GROUNDWATER MONITORING AND SAMPLING REPORT
SECOND QUARTER - 1995

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. 10-179-02-003

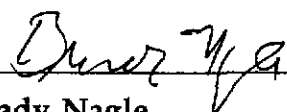
Prepared for:

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

April 20, 1995



Brady Nagle
Project Manager



Al Sevilla, P.E.
Principal



GROUNDWATER MONITORING AND SAMPLING REPORT SECOND QUARTER - 1995

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

TESA Project No. 0530-EC
Alisto Project No. 10-179-02-003

April 20, 1995

INTRODUCTION

This report presents the results and findings of the March 24, 1995 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 March 24, 1995 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 northwesterly flow direction with a hydraulic gradient of 0.006 foot per foot. **Groundwater elevations increased an average of 0.63 foot** since the last sampling event on January 3, 1995.
- Total petroleum hydrocarbons as diesel were not detected from any of the samples collected from the groundwater monitoring wells. **Unknown hydrocarbons in the diesel range were reported in MW-1-2 at 740 micrograms per liter (ug/L), MW-1-3 at 210 ug/L, and MW-2-3 at 110 ug/L.**
- Benzene, toluene, ethylbenzene, and total xylenes were not detected in the sample collected from well MW-2-3.
- Analysis of the travel blank, QC-2, detected toluene at a concentration of 0.5 ug/L.



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 (b) (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-1-2	01/03/95	13.95	4.11	9.84	ND<50 (c)	---	---	---	---	CHR
MW-1-2	03/24/95	13.95	3.57	10.38	ND<50 (c)	---	---	---	---	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-1-3	01/03/95	14.01	4.62	9.39	ND<50 (c)	---	---	---	---	CHR
MW-1-3	03/24/95	14.01	3.92	10.09	ND<50 (c)	---	---	---	---	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
MW-2-3	01/03/95	13.91	4.11	9.80	ND<50 (c)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
MW-2-3	03/24/95	13.91	3.47	10.44	ND<50 (c)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
QC-1 (d)	03/24/95	13.91	---	---	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	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 (b) (Feet)	TPH-D (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
QC-2	(h) 01/03/95	---	---	---	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	CHR
QC-2	(h) 03/24/95	---	---	---	---	ND<0.5	0.5	ND<0.5	ND<0.5	CHR

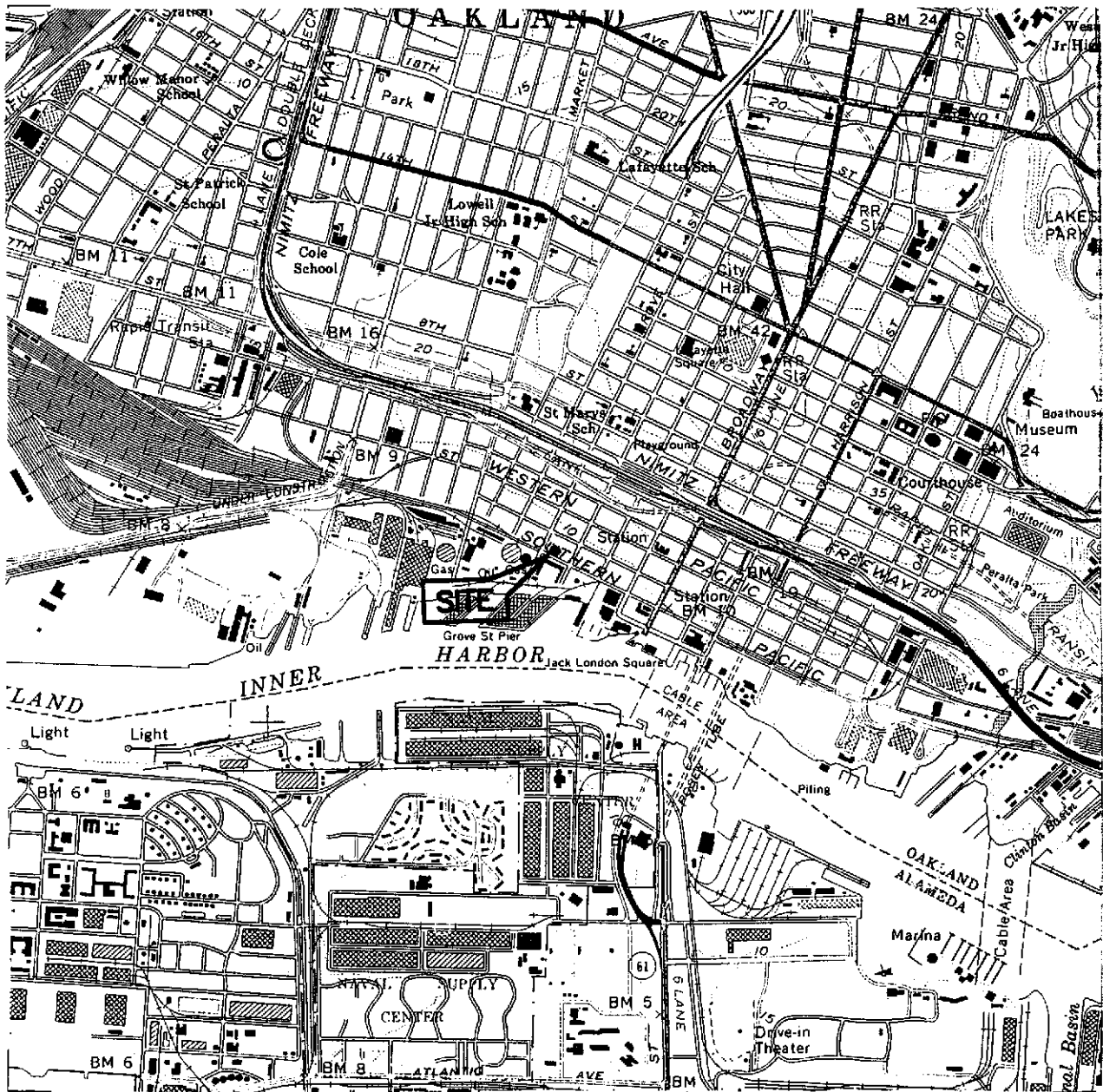
ABBREVIATIONS:

TPH-D Total petroleum hydrocarbons as diesel
 B Benzene
 T Toluene
 E Ethylbenzene
 X Total xylenes
 ug/L Micrograms per liter
 ND Not detected above reported detection limit
 --- Not analyzed/applicable
 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:\10-179\179-2-3.WQ1



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

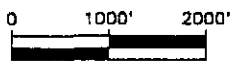


FIGURE 1

SITE VICINITY MAP

**PACIFIC GAS AND ELECTRIC COMPANY
 OAKLAND POWER PLANT
 50 MARTIN LUTHER KING, JR. WAY
 OAKLAND, CALIFORNIA**

PROJECT NO. 10-179



ALISTO ENGINEERING GROUP
 WALNUT CREEK, CALIFORNIA

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 or until indicator parameters stabilized, 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

ENGINEERING

GROUP

1777 OAKLAND BLVD, STE 200

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

Field Report / Sampling Data Sheet

Groundwater Sampling

Date: 3/21/95 Project No. 10-179-02-003

Day: M T W Th (F) Facility No. 0530-EC

Temp. 58°F Address 50 Martin L. King Jr Way,

SAMPLER: DC Oakland CA

Barometric pres. NA

Well ID	SAMPLE #	WATER	l/m	Well ID	SAMPLE #	WATER/	l/m	Well ID	SAMPLE	WATER / l/m
MW-1-3	-	3.92	1002							
MW-1-2	-	3.57	1008							
MW-2-3	-	3.47	1105							

FIELD INSTRUMENT CALIBRATION DATA

PH METER Hydra 4.00 7.00 10.00 TIME 1030 TEMPERATURE COMPENSATED N

TURBIDI METER 5.0 NTU STANDARD OTHER

CONDUCTIVITY METER Hydra 10,000 OTHER

Well ID	Depth to Water	Diam	Cap/Lock	Depth to prod.	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	EPA 601	TPH-G/BTEX	TPH Diesel	TOG 5520	Time/Sample
MW-1-3	3.52	4"	OV	Φ	Y (N)	2	1041	62.4	6.99	2.07		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Total Depth - Water Level =						4	1043	61.9	6.41	1.82		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
7.24 - 3.52 = 3.32 x .65 = 2.16 x 3 = 6.47						6.5	1045	61.8	6.37	1.76		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		1047
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> ODisp.Tube <input type="checkbox"/> OWinch <input type="checkbox"/> ODisp. Bailor(s) <input type="checkbox"/> OSys Port																
Comments:																

Well ID	Depth to Water	Diam	Cap/Lock	Depth to prod.	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	EPA 601	TPH-G/BTEX	TPH Diesel	TOG 5520	Time/Sample
MW-1-2	3.57	4"	OV	Φ	Y (N)	6	1058	63.3	6.39	1.26		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Total Depth - Water Level =						12	1105	62.2	6.15	1.20		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
13.62 - 3.57 = 10.05 x .65 = 6.53 x 3 = 19.60						19.75	dry	-	-	-		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		1125
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> ODisp.Tube <input type="checkbox"/> OWinch <input type="checkbox"/> ODisp. Bailor(s) <input type="checkbox"/> OSys Port																
Comments: <u>dry @ 149galls; wait until 80% recovery to sample</u>																

Well ID	Depth to Water	Diam	Cap/Lock	Depth to prod.	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	EPA 601	TPH-G/BTEX	TPH Diesel	TOG 5520	Time/Sample
MW-2-3	3.47	4"	OV	Φ	Y (N)	6	1115	63.7	6.43	1.48		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Total Depth - Water Level =						10	1120	64.8	6.67	1.80		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
13.30 - 3.47 = 9.83 x .65 = 6.39 x 3 = 19.17												<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		1145
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> ODisp.Tube <input type="checkbox"/> OWinch <input type="checkbox"/> ODisp. Bailor(s) <input type="checkbox"/> OSys Port																
Comments: <u>dry @ 129galls; wait until 80% recovery to sample</u>																

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)

April 3, 1995

Submission #: 9503398

ALISTO ENGINEERING GROUP INC

Atten: Brady Nagle

Project: PGE-OAKLAND POWER PLANT

Project#: 2876

Received: March 27, 1995

re: 3 samples for Diesel analysis.

Sampled: March 24, 1995

Matrix: WATER

Extracted: March 31, 1995

Run#: 6018

Analyzed: April 1, 1995

Method: EPA 3510/8015M

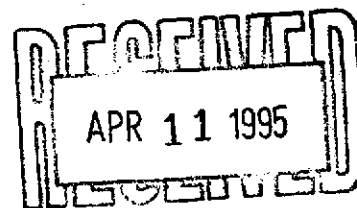
Spl #	CLIENT SMPL ID	DIESEL (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE RESULT (%)
82721	MW-1-2	N.D.	50	N.D.	89
Note: Compounds in the Diesel range do not match any of our petroleum hydrocarbon standard profiles. Compared to our Diesel standard, amount is 740 ug/L.					
82722	MW-1-3	N.D.	50	N.D.	89
Note: Compounds in the Diesel range do not match any of our petroleum hydrocarbon standard profiles. Compared to our Diesel standard, amount is 210 ug/L.					
82723	MW-2-3	N.D.	50	N.D.	89
Note: Compounds in the Diesel range do not match any of our petroleum hydrocarbon standard profiles. Compared to our Diesel standard, amount is 110 ug/L.					

Sirirat Chullakorn

Sirirat (Sindy) Chullakorn
Chemist

Ali Kharyazi

Ali Kharyazi
Organic Manager



CHROMALAB, INC.

Environmental Services (SDB)

April 3, 1995

Submission #: 9503398

ALISTO ENGINEERING GROUP INC

Atten: Brady Nagle

Project: PGE-OAKLAND POWER PLANT

Project#: 2876

Received: March 27, 1995

re: 3 samples for BTEX analysis.

Matrix: WATER

Sampled: March 24, 1995

Run#: 6022

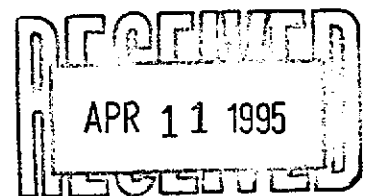
Analyzed: April 3, 1995

Method: EPA 602/8020

Spl #	CLIENT SMPL ID	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
82723	MW-2-3	N.D.	N.D.	N.D.	N.D.
82724	QC-1	N.D.	N.D.	N.D.	N.D.
82725	QC-2	N.D.	0.5	N.D.	N.D.
Reporting Limits		0.5	0.5	0.5	0.5
Blank Result		N.D.	N.D.	N.D.	N.D.
Blank Spike Result (%)		106	109	115	111

Jack Kelly
Chemist

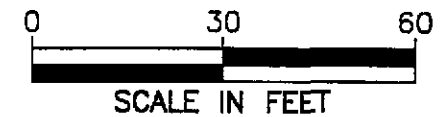
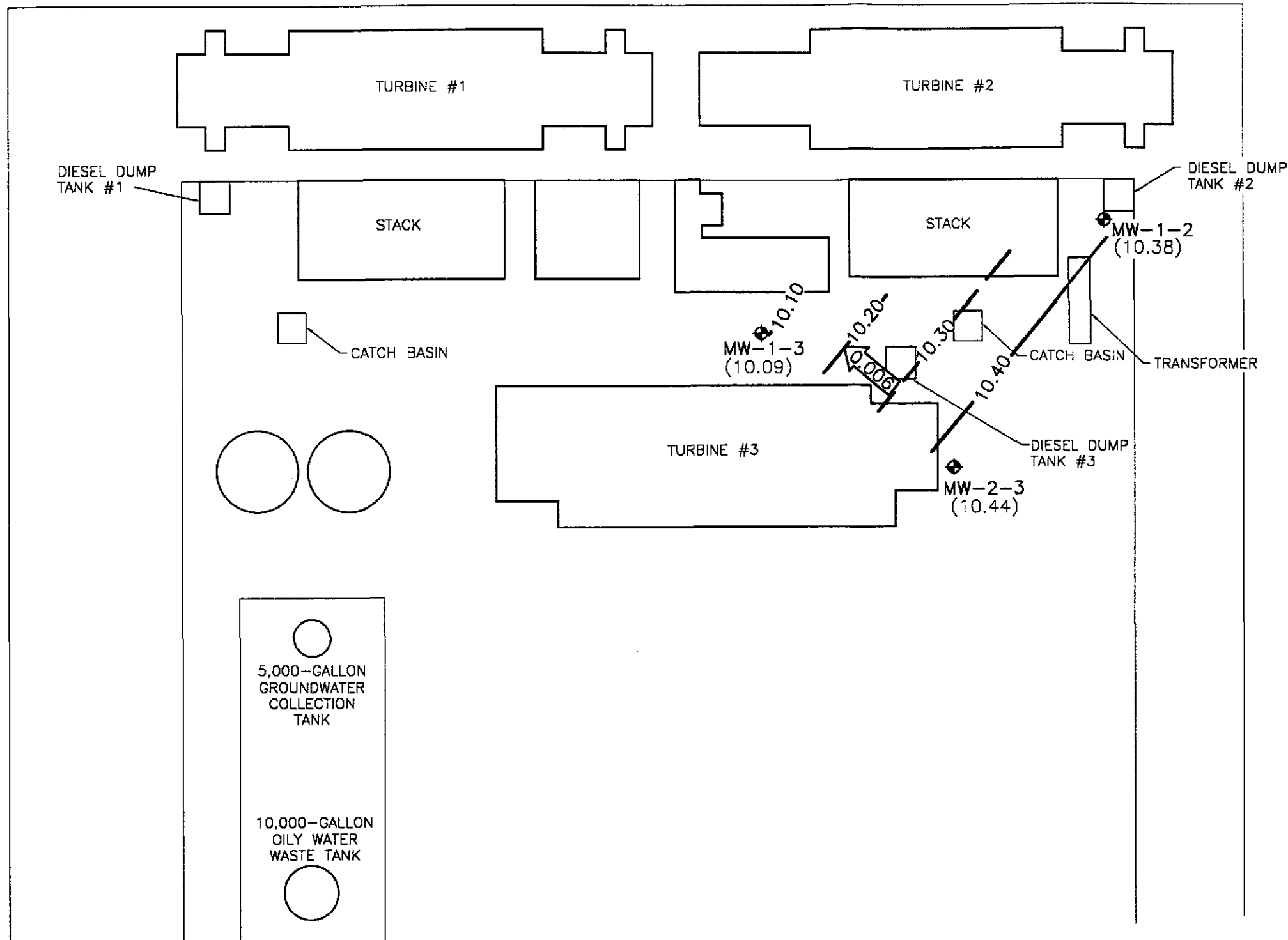
Ali Kharrazi
Organic Manager



EMBARCADERO WAY

MARTIN LUTHER KING, JR. WAY

JEFFERSON STREET



LEGEND

- ◆ GROUNDWATER MONITORING WELL
- (10.38) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 10.40 - GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL - DASHED WHERE INFERRED (CONTOUR INTERVAL-0.10 FOOT)
- ←0.006← CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

MARCH 24, 1995

PACIFIC GAS AND ELECTRIC COMPANY
OAKLAND POWER PLANT
50 MARTIN LUTHER KING, JR. WAY
OAKLAND, CALIFORNIA

PROJECT NO. 10-179



101790002.DWG 4-19-95 REF 1-30