Pacific Gas and Electric Company

Environmental Compliance Unit
4525 Hollis Street
Emeryville, CA 94608-2999
510/450-5710

Michelle Boscoe
Senior Environmental Coordinator

April 28, 1995

Ms. Susan Hugo
Senior Hazardous Materials Specialist
Alameda County Environmental Health Dept.
1131 Harbor Bay Parkway #250
Alameda, CA. 94502-6577

ENVIRONMENTAL PROTECTION
95 APR 31 PM 3:15

Re: Quarterly Monitoring Report for the First Quarter 1995, Former Above Ground Storage Tank Area, Emeryville, California

Dear Ms. Hugo:

Enclosed are two copies of the report 'Groundwater Monitoring and Sampling Report, Pacific Gas & Electric's Emeryville Materials Facility", prepared by PG&E in conjunction with Fred Flint, our Registered Geologist, for the first quarter of 1995. This report summarizes the groundwater flow direction, hydraulic gradient, and the results of laboratory chemical analyses of groundwater samples collected in March 1995.

Findings of the groundwater monitoring performed this quarter include:

- **The depth to groundwater ranges from 8.20 to 12.48 ft below the surface. Groundwater flow was to the north to northwest with a gradient of 0.02 ft/ft.**
- **PCBs are present in well ESE-1 at a concentration of 1.3 ug/1. TEPH is present in wells ESE-1 (500 ug/1), ESE-2 (120 ug/1) and ESE-4 (57 ug/1). All other compounds were below the method detection limit.**

Should you have any questions or comments, please call me at (510) 450-5710.

Thank You,

Michelle E. Boscoe
Registered Environmental Assessor

MEB:jd

Enclosures

cc: **Rafat A. Shahid, Director, Environmental Health**
Gil Jensen, Alameda County District Attorney's Office
Gordon Coleman, Acting Chief, Environmental Protection Division
Kevin Graves, San Francisco Bay RWQCB
Sum Arigala, San Francisco Bay RWQCB

GROUNDWATER MONITORING AND SAMPLING REPORT

PACIFIC GAS AND ELECTRIC EMERYVILLE MAINTENANCE FACILITY

EMERYVILLE, CALIFORNIA

Prepared for

Pacific Gas and Electric
Technical and Ecological Services
3400 Crow Canyon Road
San Ramon, California 94583

April 1995

Prepared by

EMCON
1921 Ringwood Avenue
San Jose, California 95131-1721

Project 0143-014.02

Groundwater Monitoring and Sampling Report
Pacific Gas and Electric Emeryville Maintenance Facility
Emeryville, California

The material and data in this report were prepared under the supervision and direction of the undersigned.

EMCON

Tom Vercoutere
Senior Geologist, R.G.

Orrin Childs
Project Manager

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TABLES AND ILLUSTRATIONS

Tables

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1 INTRODUCTION

This report presents data collected during the first quarter 1995 monitoring period at the Pacific Gas and Electric (PG&E) Maintenance facility, in Emeryville, California (Figure 1). The work was conducted consistent with EMCON's proposal P94-110.19 dated December 7, 1994.

2 GROUNDWATER GRADIENT AND DIRECTION

First quarter groundwater levels were measured at the PG&E Maintenance facility on March 13, 1995, using an electronic sounding device, and recorded on the historical monitoring well data form included in Appendix A. The groundwater elevations are summarized in Table 1. The March data were used in constructing a groundwater contour map (Figure 2). March water levels ranged from a low of 14.46 feet above mean sea level (MSL) in well ESE-3 to a high of 18.30 feet above MSL in well MW-4. The estimated groundwater gradient is approximately 0.02 foot per foot (ft/ft), to the north to northwest.

3 SAMPLING, ANALYSIS, AND MONITORING PROGRAM RESULTS

Groundwater samples were collected from wells ESE-1 through ESE-4 on March 13, 1995, consistent with the protocol presented in Figure 3, and analyzed for total petroleum hydrocarbons as gasoline (TPHG) by U. S. Environmental Protection Agency (USEPA) method 5030/8015 modified; and benzene, toluene, ethylbenzene, and xylenes (BTEX) by USEPA method 602/8020; polychlorinated biphenyls (PCBs) by USEPA method 8080; and total extractable petroleum hydrocarbons (TEPH) as kerosene, diesel, motor oil, and dielectric/transformer oil by USEPA method 3510/8015. Temperature, pH, and electrical conductivity (EC) were measured in the field and recorded on the water sample field data sheets (Appendix A). Field readings from the first quarter 1995 monitoring event are summarized in Table 1.

The analytical results are discussed below. First quarter 1995 and historical analytical data are summarized in Table 2.

TPHG and BTEX were not detected at or above the method reporting limit (MRL) in any sample collected from ESE-1 through ESE-4. PCBs were detected in well ESE-1 at 1.3 micrograms per liter (µg/l). PCBs were not detected at or above the MRL in samples collected from ESE-2, ESE-3, and ESE-4.

Petroleum hydrocarbons were detected in the diesel range in wells ESE-1, ESE-2, and ESE-4 at concentrations of 500, 120, and 57 µg/l, respectively. Chromalab, Inc., compared the peaks in the chromatograms from this event with the chromatogram for the reference standard supplied by PG&E in November 1994. The chromatogram peak in ESE-1 was identified as transformer oil. The peaks in ESE-2 do not sufficiently match the reference material peaks to be quantified specifically as transformer oil. The peaks identified in ESE-4 were too small to accurately quantify as transformer oil. Transformer oil was not detected at or above the MRL in samples collected from ESE-3. Kerosene, diesel, and motor oil were not detected in the samples collected from wells ESE-1 through ESE-4. Certified analytical reports and chain-of-custody records are included in Appendix B.

4 FIELD AND LABORATORY QUALITY CONTROL RESULTS

Analytical data were evaluated for accuracy and precision based on field and laboratory quality control (QC) sample performance. The field QC consisted of collecting one trip blank and one field blank and analyzing them for BTEX.

Field and trip blanks are collected to assess the effect of field and laboratory environments on the analytical results and to identify false positives. No parameters were detected above their respective MRLs in the field blank or trip blank, indicating no adverse effects from sampling or analytical procedures.

The laboratory QC consisted of checking adherence to holding times and evaluating method blanks, and matrix spike (MS) and matrix spike duplicate (MSD) results.

Holding times are established by the USEPA and refer to the maximum time allowed to pass between sample collection and analysis by the laboratory. These limits assist in determining data validity. The method blank results are used to assess the effect of the laboratory environment on the analytical results. The MS and MSD recoveries are used to assess accuracy, and the relative percent difference (RPD) between the MS and MSD is used to assess the precision of the analytical results.

All analyses were done within the holding times specified by the USEPA. No compounds were detected in the daily method blanks. Recoveries of MS and MSD, and the RPDs between the duplicate results, were within the laboratory acceptance limits.

The field and laboratory QC results indicate that the analytical data are of acceptable quality.

Table 1
Pacific Gas and Electric Company
Emeryville, California
Field Measurements
First Quarter 1995 and Historical Data

Sample Designation	Date	Top-of-Casing Elevation (ft, MSL)[1]	Depth to Water (feet)	Groundwater Elevation (ft, MSL)	Measured Well Depth (feet)	pH (units)	Temperature (°F)	Specific Conductance (µmhos/cm)[2]
ESE-1	03/28/94	23.66	10.06	13.60	30.8	8.48	73.1	600
ESE-1	04/07/94	23.66	10.22	13.44	NM[3]	NS[4]	NS	NS
ESE-1	12/12/94	23.66	9.18	14.48	30.6	7.26	63.4	588
ESE-1	3/13/95	23.66	8.20	15.46	30.6	7.33	63.3	548
ESE-2	03/28/94	27.80	10.13	17.67	34.2	7.67	67.5	580
ESE-2	04/07/94	27.80	14.37	13.43	NM[3]	NS	NS	NS
ESE-2	12/12/94	27.80	13.05	14.75	34.3	7.05	64.6	610
ESE-2	3/13/95	27.80	12.48	15.32	34.3	7.19	62.5	596
ESE-3	03/28/94	23.91	11.23	12.68	30.9	7.47	68.7	610
ESE-3	04/07/94	23.91	11.29	12.62	NM3	NS	NS	NS
ESE-3	12/12/94	23.91	10.62	13.29	31.0	7.19	63.9	600
ESE-3	3/13/95	23.91	9.45	14.46	31.0	6.99	62.5	600
ESE-4	03/28/94	24.33	10.63	13.70	31.4	7.77	66.3	610
ESE-4	04/07/94	24.33	10.85	13.48	NM3	NS	NS	NS
ESE-4	12/12/94	24.33	9.63	14.70	31.6	7.11	63.1	591
ESE-4	3/13/95	24.33	8.90	15.43	31.6	7.16	61.2	595
MW-4	3/13/95	28.14	9.84	18.30	14.7	NS	NS	NS

[1] ft, MSL = feet relative to mean sea level
[2] µmhos/cm = micromhos per centimeter at 77°F
[3] NM = not measured
[4] NS = not sampled

Table 2
Pacific Gas and Electric Company
Emeryville, California
Analytical Data
First Quarter 1995 and Historical Data
(µg/l)[1]

Sample Designation	Sample Date	PCB[2]	TEPH[3]	Benzene	Toluene	Ethylbenzene	Xylenes
ESE-1	03/28/94	<1[4]	340	<0.3	<0.3	<0.3	<0.3
ESE-1	12/12/94	<0.5	80	<0.5	<0.5	<0.5	<0.5
ESE-1	3/13/95	1.3	500[5]	<0.5	<0.5	<0.5	<0.5
ESE-2	03/28/94	<1	250	0.8	1.5	<0.3	2.7
ESE-2	12/12/94	<0.5	<50	<0.5	<0.5	<0.5	<0.5
ESE-2	3/13/95	<0.5	120[6]	<0.5	<0.5	<0.5	<0.5
ESE-3	03/28/93	<1	<50	<0.3	<0.3	<0.3	<0.3
ESE-3	12/12/94	<0.5	<50	<0.5	<0.5	<0.5	<0.5
ESE-3	3/13/95	<0.5	<50	<0.5	<0.5	<0.5	<0.5
ESE-4	03/28/94	<1	<50	<0.3	<0.3	<0.3	<0.3
ESE-4	12/12/94	<0.5	<50	<0.5	<0.5	<0.5	<0.5
ESE-4	3/13/95	<0.5	57[6]	<0,5	<0.5	<0.5	<0.5
Trip blank	03/28/94	<1	<50	<0.3	<0.3	<0.3	<0.3
Trip blank	12/12/94	NA[7]	NA	<0.5	<0.5	<0.5	<0.5
Trip blank	3/13/95	NA	NA	<0.5	<0.5	<0.5	<0.5
Field blank	03/28/94	NA	NA	NA	NA	NA	NA
Field blank	12/12/94	NA	NA	<0.5	<0.5	<0.5	<0.5
Field blank	3/13/95	NA	NA	<0.5	<0.5	<0.5	<0.5

1 µg/l = micrograms per liter
2 PCBs = polychlorinated biphenyls
3 TEPH = total extractable petroleum hydrocarbons
4 not detected at or above the specified method reporting limit
5 Compounds matching client supplied transformer oil were found.
6 Compounds in diesel range do not match laboratory standard for transformer oil.
7 NA = not analyzed

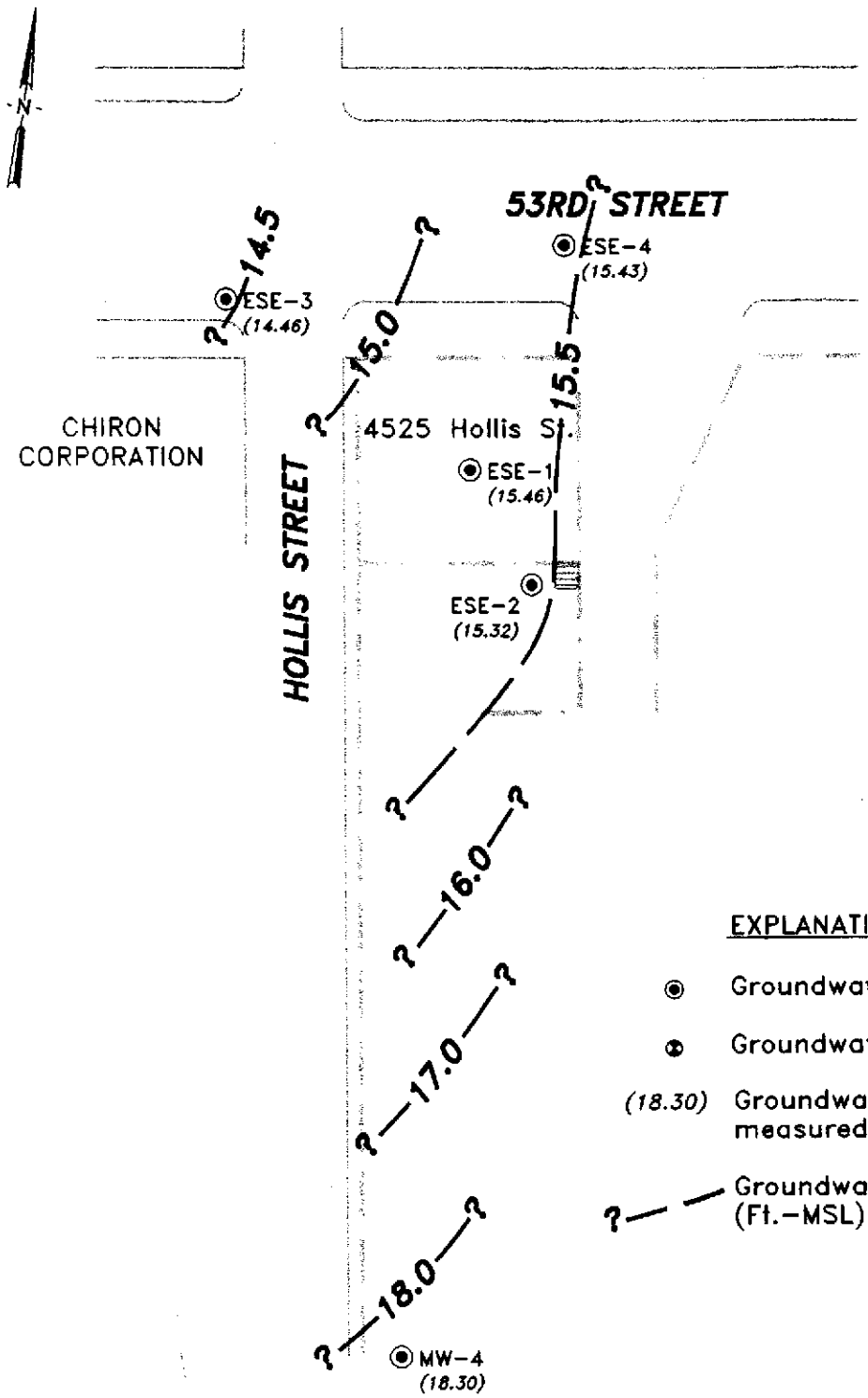
152753

EMCON Associates

PACIFIC GAS & ELECTRIC COMPANY
QUARTERLY MONITORING PROGRAM
EMERYVILLE, CALIFORNIA

SITE LOCATION

FIGURE
1
PROJECT NO.
143-014.02



EMCON Associates

PACIFIC GAS & ELECTRIC COMPANY
QUARTERLY MONITORING PROGRAM
EMERYVILLE, CALIFORNIA

GROUNDWATER CONTOURS
FIRST QUARTER 1995

FIGURE
2
PROJECT NO.
143-014.02

G:\14\REV 3/13 12:2 klt

Figure 3

MONITORING WELL PURGING PROTOCOL

EMCON ASSOCIATES

MEASURE AND RECORD DEPTH TO WATER AND WELL TOTAL DEPTH

CALCULATE PURGE VOLUME BY USING THE FOLLOWING EQUATION:

$$P = \pi r^2 h \times 7.48 \times 3$$

where:

- P = calculated purge volume (gallons)
- π = 3.14
- r = radius of well casing in feet
- h = height of water column in feet
- 4 = minimum number of casing volumes

EVACUATE WATER FROM WELL EQUAL TO THE CALCULATED PURGE VOLUME WHILE MONITORING GROUND-WATER STABILIZATION INDICATOR PARAMETERS (pH, CONDUCTIVITY, TEMPERATURE) AT INTERVALS OF ONE CASING VOLUME.

WELL EVACUATED TO PRACTICAL LIMITS OF DRYNESS BEFORE REMOVING CALCULATED PURGE VOLUME

NO

FINAL TWO SETS OF GROUND-WATER STABILIZATION INDICATOR PARAMETER MEASUREMENTS MEET THE FOLLOWING CRITERIA:

pH	= ±	0.1 pH units
COND.	= ±	10 %
TEMP.	= ±	1.0 °F

YES

WELL PURGING CRITERIA MET; PROCEED TO WELL SAMPLING

NO

CONTINUE PURGING; EVACUATE ADDITIONAL CASING VOLUME OF WATER, MONITORING INDICATOR PARAMETERS FOR STABILITY.

YES

WELL RECHARGES TO A LEVEL SUFFICIENT FOR SAMPLE COLLECTION WITHIN 24 HOURS OF EVACUATION TO DRYNESS.

YES

FIELD TEST FIRST RECHARGE WATER FOR INDICATOR PARAMETERS, THEN PROCEED TO WELL SAMPLING.

NO

RECORD WELL AS DRY FOR PURPOSES OF SAMPLING.

APPENDIX A

HISTORICAL MONITORING WELL DATA FORM AND WATER SAMPLE FIELD DATA SHEETS

EMCON - Field Services
1921 Ringwood Avenue
San Jose, California

Signature

Historical Monitoring Well Data
PG&E Emeryville
0143-014.02

Well ID	Date	Depth to Floating Product (feet)	First Depth to Water (feet)	Second Depth to Water (feet)	Floating Product Thickness (feet)	Well Total Depth (feet)	Comments
Depth to liquid : 0.01 foot							Total depth : 0.1 foot
	12/12/94	ND	9.18	9.18	NA	30.6	
ESE-1	3/13/95	ND	8.20	8.21	NA	30.6	Time: 1025 Lock: none
	12/12/94	ND	13.05	13.05	NA	34.3	
ESE-2		ND	12.48	12.48	NA	34.3	Time: 1022 Lock: [illegible]
	12/12/94	ND	10.62	10.62	NA	31.0	
ESE-3		ND	9.45	9.45	NA	31.0	Time: 1057 Lock: 3210
	12/12/94	ND	9.63	9.63	NA	31.6	
ESE-4		ND	8.90	8.90	NA	31.6	1042 / 3210
MW-4		ND	9.84	9.84	NA	14.7	1050 / none.

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 0143-014.02 SAMPLE ID: ESE-1

PURGED BY: M. Gallegos CLIENT NAME: PG&E - Emeryville

SAMPLED BY: JI LOCATION: Emeryville, CA

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ✓ 3 ___ 4 ___ 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): NR. VOLUME IN CASING (gal.): 3.65

DEPTH TO WATER (feet): 8.20 CALCULATED PURGE (gal.): 14.62

DEPTH OF WELL (feet): 30.6 ACTUAL PURGE VOL. (gal.): 15.0

DATE PURGED: 3-13-95 Start (2400 Hr) 1127 End (2400 Hr) 1151

DATE SAMPLED: 3-13-95 Start (2400 Hr) 1200 End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1132	3.5	7.31	542	62.4	BRN	Heavy
1138	7.0	7.24	552	63.1		
1143	11.0	7.31	553	63.2		
1151	15.0	7.33	548	63.3	↓	↓

D. O. (ppm): NR ODOR: None

COLOR (COBALT 0 - 500): 112

TURBIDITY (NTU 0 - 200 or 0 - 1000): NR.

Field QC samples collected at this well: NR

Parameters field filtered at this well: NR.

PURGING EQUIPMENT

___ 2" Bladder Pump ___ Bailer (Teflon®)

___ Centrifugal Pump X Bailer (PVC)

___ Submersible Pump ___ Bailer (Stainless Steel)

___ Well Wizard™ ___ Dedicated

Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump X Bailer (Teflon®)

___ DDL Sampler ___ Bailer (Stainless Steel)

___ Dipper ___ Submersible Pump

___ Well Wizard™ ___ Dedicated

Other: ___

WELL INTEGRITY: Good LOCK #: NA.

REMARKS: Sheen on top of purge water

All 5 samples taken

Meter Calibration: Date: 3/13/95 Time: 1120 Meter Serial #: 9011 Temperature °F: 61.8

(EC 1000 1040 / 1000) (DI ___) (pH 7 707 / 7000) (pH 10 10003 / 1000) (pH 4 401 / ___)

Location of previous calibration: ___

Signature: [signature] Reviewed By: KR Page 1 of 4

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 0143-014.02 SAMPLE ID: ESE-2

PURGED BY: M. Gallegos CLIENT NAME: PG&E Emeryville

SAMPLED BY: " LOCATION: Emeryville, CA.

TYPE: Ground Water V Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 X 3 ___ 4 ___ 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): N.P. VOLUME IN CASING (gal.): 3.56

DEPTH TO WATER (feet): 12.48 CALCULATED PURGE (gal.): 14.24

DEPTH OF WELL (feet): 34.3 ACTUAL PURGE VOL. (gal.): 14.5

DATE PURGED: 3-13-95 Start (2400 Hr) 1215 End (2400 Hr) 1234

DATE SAMPLED: " Start (2400 Hr) 1242 End (2400 Hr) ___

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmnos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1220	3.5	7.16	608	61.7	BRN	Hmdx
1224	7.0	7.18	590	62.0		
1229	10.5	7.22	598	62.6		
1234	14.5	7.19	596	62.5		

D. O. (ppm): N/R ODOR: Mode. COLOR: ND (COBALT 0 - 500) TURBIDITY: ND (NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well: N/R

Parameters field filtered at this well: N/R

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	X Bailer (Teflon®)
___ Centrifugal Pump	V Bailer (PVC)	___ DDL Sampler	___ Bailer (Stainless Steel)
___ Submersible Pump	___ Bailer (Stainless Steel)	___ Dipper	___ Submersible Pump
___ Well Wizard™	___ Dedicated	___ Well Wizard™	___ Dedicated
Other: ___		Other: ___	

WELL INTEGRITY: Good LOCK #: Dolphin

REMARKS: All Samples taken

Meter Calibration: Date: 3-13-95 Time: ___ Meter Serial #: 9011 Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: ESE-1

Signature: [signature] Reviewed By: KR Page 2 of 4

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 0143-014.02 SAMPLE ID: ESE-3

PURGED BY: M. Gallegos CLIENT NAME: PG+E Emeryville

SAMPLED BY: " LOCATION: Emeryville, CA.

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 X 3 ___ 4 ___ 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): N/R VOLUME IN CASING (gal.): 3.51

DEPTH TO WATER (feet): 9.85 CALCULATED PURGE (gal.): 14.07

DEPTH OF WELL (feet): 31.0 ACTUAL PURGE VOL. (gal.): 14.5

DATE PURGED: 3-13-95 Start (2400 Hr) 1310 End (2400 Hr) 1324

DATE SAMPLED: " Start (2400 Hr) 1338 End (2400 Hr) ___

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1313	3.5	6.97	583	60.5	BRN	HEAVY
1316	7.0	6.97	591	61.8	"	"
1320	10.5	6.98	595	62.0	"	"
1324	14.5	6.99	600	62.5	"	"

D. O. (ppm): N/R ODOR: Moderate

COLOR (COBALT 0 - 500): N/R

TURBIDITY (NTU 0 - 200 or 0 - 1000): N/R

Field QC samples collected at this well: N/R

Parameters field filtered at this well: N/R

PURGING EQUIPMENT

___ 2" Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Well Wizard™
X Bailer (PVC)
___ Bailer (Teflon®)
___ Bailer (Stainless Steel)
___ Dedicated
Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump
___ DDL Sampler
___ Dipper
___ Well Wizard™
X Bailer (Teflon®)
___ Bailer (Stainless Steel)
___ Submersible Pump
___ Dedicated
Other: ___

WELL INTEGRITY: Good LOCK #: 3210

REMARKS: All Samples taken

Meter Calibration: Date: 3/13/95 Time: ___ Meter Serial #: 9011 Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: ESE-1

Signature: M. C. Gallegos Reviewed By: KR Page 3 of 4

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 0143-014.02. SAMPLE ID: ESE-4

PURGED BY: M. Gallegos CLIENT NAME: PG+E

SAMPLED BY: ✓ LOCATION: Emeryville, CA

TYPE: Ground Water ✓ Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ✓ 3 ___ 4 ___ 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL):	N/A	VOLUME IN CASING (gal.):	3.70
DEPTH TO WATER (feet):	8.90	CALCULATED PURGE (gal.):	14.82
DEPTH OF WELL (feet):	31.6	ACTUAL PURGE VOL. (gal.):	15.0

DATE PURGED: 3-13-95 Start (2400 Hr) 1349 End (2400 Hr) 1403

DATE SAMPLED: ✓ Start (2400 Hr) 1415 End (2400 Hr) ___

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1352	3.5	7.08	587	59.8	BRN	Heavy
1355	7.0	7.05	597	61.0		
1359	11.0	7.13	591	61.0		
1403	15.0	7.16	595	61.2	✓	✓

D. O. (ppm): N/A ODOR: None N/A (COBALT 0 - 500) N/A (NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well: FB-1 @ 1425

Parameters field filtered at this well: NR

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	✓ Bailer (Teflon®)
___ Centrifugal Pump	✓ Bailer (PVC)	___ DDL Sampler	___ Bailer (Stainless Steel)
___ Submersible Pump	___ Bailer (Stainless Steel)	___ Dipper	___ Submersible Pump
___ Well Wizard™	___ Dedicated	___ Well Wizard™	___ Dedicated
Other: ___		Other: ___	

WELL INTEGRITY: Good LOCK #: 3210

REMARKS: All Samples Taken

Meter Calibration: Date: 3/13/95 Time: ___ Meter Serial #: 901 Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: ESE-1

Signature: [signature] Reviewed By: KR Page 4 of 4

APPENDIX B

CERTIFIED ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

CHROMALAB, INC.

Environmental Services (SDB)

March 16, 1995 *Submission #:* 9503164

EMCON ASSOCIATES

Atten: Orrin Childs

Project: PG&E/EMERYVILLE *Project#:* 0143-014-02
Received: March 13, 1995

re: 6 samples for Gasoline and BTEX analysis.

Matrix: WATER
Sampled: March 13, 1995 *Run#:* 5773 *Analyzed:* March 16, 1995
Method: EPA 5030/8015M/602/8020

Spl # CLIENT SMPL ID	Gasoline (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
80543 ESE-1	N.D.	N.D.	N.D.	N.D.	N.D.
80544 ESE-2	N.D.	N.D.	N.D.	N.D.	N.D.
80545 ESE-3	N.D.	N.D.	N.D.	N.D.	N.D.
80546 ESE-4	N.D.	N.D.	N.D.	N.D.	N.D.
80548 FB-1	N.D.	N.D.	N.D.	N.D.	N.D.
80550 TB-1	N.D.	N.D.	N.D.	N.D.	N.D.
Reporting Limits	0.05	0.5	0.5	0.5	0.5
Blank Result	N.D.	N.D.	N.D.	N.D.	N.D.
Blank Spike Result (%)	89	108	107	108	113

Jack Kelly
Chemist

Ali Kharrazi
Organic Manager

QC JACK 09:44:08

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

April 12, 1995

Submission #: 9503164

Revised from March 20, 1995

EMCON ASSOCIATES

Atten: Orrin Childs

Project: PG&E/EMERYVILLE *Project#:* 0143-014-02
Received: March 13, 1995

re: 4 samples for Total Extractable Petroleum Hydrocarbons (TEPH)

Matrix: WATER *Extracted:* March 15, 1995
Sampled: March 13, 1995 *Run#:* 5772 *Analyzed:* March 16, 1995
Method: EPA 3510/8015M

Spl #	CLIENT SMPL ID	Kerosene (ug/L)	Diesel (ug/L)	Motor Oil (mg/L)
80543	ESE-1	N.D.	N.D.	N.D.
	Note: Conc.= 500 ug/L compared with our Diesel standard.			

Matrix: WATER *Extracted:* March 15, 1995
Sampled: March 13, 1995 *Run#:* 5772 *Analyzed:* March 17, 1995
Method: EPA 3510/8015M

Spl #	CLIENT SMPL ID	Kerosene (ug/L)	Diesel (ug/L)	Motor Oil (mg/L)
80544	ESE-2	N.D.	N.D.	N.D.
	Note: Conc.= 120 ug/L compared with our Diesel standard.			
80545	ESE-3	N.D.	N.D.	N.D.
80546	ESE-4	N.D.	N.D.	N.D.
	Note: Conc.= 57 ug/L compared with our Diesel standard.			
Reporting Limits		50	50	500
Blank Result		N.D.	N.D.	N.D.
Blank Spike Result (%)		--	82	--

Sirirat Chullakorn

Sirirat (Sindy) Chullakorn
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

OCTEST SIRIRAT 12:36:08

CHROMALAB, INC.

Environmental Services (SDB)

March 20, 1995 *Submission #:* 9503164

EMCON ASSOCIATES

Atten: Orrin Childs

Project: PG&E/EMERYVILLE *Project#:* 0143-014-02
Received: March 13, 1995

re: One sample for Polychlorinated Biphenyls (PCBs) analysis.

Sample ID: **ESE-1**
Spl#: 80543 *Matrix:* WATER *Extracted:* March 15, 1995
Sampled: March 13, 1995 *Run#:* 5831 *Analyzed:* March 20, 1995
Method: MOD. EPA 608

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE RESULT (%)
AROCLOR 1016	N.D.	0.5	N.D.	--
AROCLOR 1221	N.D.	0.5	N.D.	--
AROCLOR 1232	N.D.	0.5	N.D.	--
AROCLOR 1242	N.D.	0.5	N.D.	--
AROCLOR 1248	N.D.	0.5	N.D.	--
AROCLOR 1254	N.D.	0.5	N.D.	--
AROCLOR 1260	1.3	0.5	N.D.	--

Alex Tam
Chemist

Ali Kharrazi
Organic Manager

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CHROMALAB, INC.

Environmental Services (SDB)

March 20, 1995 *Submission #:* 9503164

EMCON ASSOCIATES

Atten: Orrin Childs

Project: PG&E/EMERYVILLE *Project#:* 0143-014-02
Received: March 13, 1995

re: One sample for Polychlorinated Biphenyls (PCBs) analysis.

Sample ID: **ESE-2**
Spl#: 80544 *Matrix:* WATER *Extracted:* March 15, 1995
Sampled: March 13, 1995 *Run#:* 5831 *Analyzed:* March 20, 1995
Method: MOD. EPA 608

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE RESULT (%)
AROCLOR 1016	N.D.	0.5	N.D.	--
AROCLOR 1221	N.D.	0.5	N.D.	--
AROCLOR 1232	N.D.	0.5	N.D.	--
AROCLOR 1242	N.D.	0.5	N.D.	--
AROCLOR 1248	N.D.	0.5	N.D.	--
AROCLOR 1254	N.D.	0.5	N.D.	--
AROCLOR 1260	N.D.	0.5	N.D.	--

Alex Tam
Chemist

Ali Kharrazi
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Federal ID #68-0140157

QCYT 13:15:33

CHROMALAB, INC.

Environmental Services (SDB)

March 20, 1995 *Submission #:* 9503164

EMCON ASSOCIATES

Atten: Orrin Childs

Project: PG&E/EMERYVILLE *Project#:* 0143-014-02
Received: March 13, 1995

re: One sample for Polychlorinated Biphenyls (PCBs) analysis.

Sample ID: **ESE-3**
Spl#: 80545 *Matrix:* WATER *Extracted:* March 15, 1995
Sampled: March 13, 1995 *Run#:* 5831 *Analyzed:* March 20, 1995
Method: MOD. EPA 608

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE RESULT (%)
AROCLOR 1016	N.D.	0.5	N.D.	--
AROCLOR 1221	N.D.	0.5	N.D.	--
AROCLOR 1232	N.D.	0.5	N.D.	--
AROCLOR 1242	N.D.	0.5	N.D.	--
AROCLOR 1248	N.D.	0.5	N.D.	--
AROCLOR 1254	N.D.	0.5	N.D.	--
AROCLOR 1260	N.D.	0.5	N.D.	--

Alex Tam
Chemist

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Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

March 20, 1995 *Submission #:* 9503164

EMCON ASSOCIATES

Atten: Orrin Childs

Project: PG&E/EMERYVILLE *Project#:* 0143-014-02
Received: March 13, 1995

re: One sample for Polychlorinated Biphenyls (PCBs) analysis.

Sample ID: **ESE-4**
Spl#: 80546 *Matrix:* WATER *Extracted:* March 15, 1995
Sampled: March 13, 1995 *Run#:* 5831 *Analyzed:* March 20, 1995
Method: MOD. EPA 608

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE RESULT (%)
AROCLOR 1016	N.D.	0.5	N.D.	--
AROCLOR 1221	N.D.	0.5	N.D.	--
AROCLOR 1232	N.D.	0.5	N.D.	--
AROCLOR 1242	N.D.	0.5	N.D.	--
AROCLOR 1248	N.D.	0.5	N.D.	--
AROCLOR 1254	N.D.	0.5	N.D.	--
AROCLOR 1260	N.D.	0.5	N.D.	--

Alex Tam
Chemist

Ali Kharrazi
Organic Manager

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Federal ID #68-0140157

QC VT 13:15:33

1[illegible]/80542-80546-80548, 80550

[illegible] CLIENT EMCON
DUE 03/20/95
REF #20921

20921

CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

Chain of Custody

DATE ________ PAGE ______ OF ______

PROJ. MGR ________
COMPANY Emcon Associates
ADDRESS 1921 Ringwood Ave.
San Jose, CA. 95131

SAMPLERS (SIGNATURE) [signature] (PHONE NO.) 453-7300 (FAX NO.)

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)	LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)	NUMBER OF CONTAINERS
ESE-1	3/13/95	1200	H2O			X	X						X								6
ESE-2	↓	1242	↓			X	X						X								6
ESE-3	↓	1338	↓			X	X						X								6
ESE-4	↓	1415	↓			X	X						X								6
FB-1	↓	1425	↓			X															2
TB-1	↓	—	↓			X															2

PROJECT INFORMATION

PROJECT NAME: PG&E Emeryville
PROJECT NUMBER: 0143-014.02
P.O. #

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	
HEAD SPACE	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	

TAT: (STANDARD 5-DAY) circled | 24 | 48 | 72 | OTHER

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
[signature] 1530 (SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
Manuel Gallegos 3/13/95 (PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
Emcon Associates (COMPANY)	(COMPANY)	(COMPANY)

RECEIVED BY 1.	RECEIVED BY 2.	RECEIVED BY (LABORATORY) 3.
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	[signature] 15:29 (SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	TAHMIR ALTON 3/13/95 (PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	Chromalab (LAB)

CHROMALAB, INC.
SAMPLE RECEIPT CHECKLIST

Client Name EMCON

Project PG+E/EMERYVILLE

Reference/Subm # 20921/9503164

Checklist completed by: Clowling 3/14/95 (Signature / Date)

Date/Time Received 3/13/95 (Date) 15:29 (Time)

Received by T. Alton

Carrier name

Logged in by TA (Initials) 3/13/95 (Date)

Matrix H2O

Shipping container in good condition?			NA___	Yes___ No___
Custody seals present on shipping container?	Intact___	Broken___	Yes___	No___
Custody seals on sample bottles?	Intact___	Broken___	Yes___	No___
Chain of custody present?				Yes✓ No___
Chain of custody signed when relinquished and received?				Yes✓ No___
Chain of custody agrees with sample labels?				Yes✓ No___
Samples in proper container/bottle?				Yes✓ No___
Samples intact?				Yes✓ No___
Sufficient sample volume for indicated test?				Yes✓ No___
VOA vials have zero headspace?			NA___	Yes✓ No___
Trip Blank received?			NA___	Yes✓ No___
All samples received within holding time?				Yes✓ No___

Container temperature?_____

pH upon receipt _____ pH adjusted <2 Check performed by:_____ NA___

Any NO response must be detailed in the comments section below. If items are not applicable, they should be marked NA.

Client contacted?_____ Date contacted?_____

Person contacted?_____ Contacted by?_____

Regarding?_____

Comments:_____

Corrective Action:_____

SMPLRECD.CK