PACIFIC
ENVIRONMENTAL
GROUP, INC.

92 AUG - 6 P 9:49

August 5, 1992
Project 330-40.03

Mr. Michael Whelan
ARCO Products Company
P.O. Box 5811
San Mateo, California 94402

Re: ARCO Service Station 276 Off Site
10600 MacAuthur Boulevard
Oakland, California

Dear Mr. Whelan:

Pacific Environmental Group, Inc. (PACIFIC) presents this summary of the operation of the catalytic oxidation (Cat-Ox) unit located at the above referenced site. Included is a discussion of the results of the Tedlar bag sample analysis for the period of operation between May 27 and July 6, 1992.

The Cat-Ox unit was sampled three times during this period; June 8, 24, and July 6, 1992. Tedlar bag samples were obtained from the influent and effluent vapor streams, and the well field. These samples were analyzed for total volatile hydrocarbons calculated as gasoline (TVH-g), and its components: benzene, toluene, ethlybenzene, and xylenes (BTEX compounds).

The influent vapor samples indicated a TVH-g concentration of 7.8 micrograms per liter (ug/L) on June 8, 6.5 ug/L on June 24, and <5.0 ug/L on July 6, 1992. The effluent TVH-g concentration was reported as <6.0 ug/L on June 24, and <5.0 ug/L on July 6, 1992. The influent and effluent vapor samples from June 24 and July 6 indicated <0.060 and <0.050 ug/L of benzene, respectively. The corresponding destruction rates for TVH-g and benzene for the June 24 and July 6 sample was calculated at 99+ percent. Soil vapor extraction data is presented in Table 1. Certified analytical reports and chain-of-custody documents are attached.

The Cat-Ox system operated at a flow rate of 500 cubic feet per minute (cfm), with a well field vacuum pressure of 4 inches of water. The extraction rate between

May 27 and July 6, 1992 was approximately 0.25 pounds per day for TVH-g and 0.00 pounds per day for benzene (Table 1).

During this period the Cat-Ox unit was inoperable from May 27 through June 8, 1992. The system was shut down to determine if soil vapor concentrations would increase after a period of inoperation. The system was restarted on June 8, 1992. The system had an automatic shut down occurrence on June 20 for 4 days. The cause of the down time has not been determined.

The analytical results, after the system was restarted, indicated a slight increase in the level of contaminants. After a short period of time the contaminant levels fell once again to low concentrations. Therefore, the system has been scheduled to be shut down until construction of the new treatment system is complete.

If you have any questions, please call.

Sincerely,

Pacific Environmental Group, Inc.

Steve Towle
Staff Scientist

Daniel J. Landry
Project Engineer

Attachments: Table 1 - Soil Vapor Extraction Data Evaluation
Certified Analytical Results
Chain-of-Custody Documentation

cc: Mr. Chris Winsor, ARCO Products Company
Mr. Brad Jones, ARCO Products Company
Mr. Barney Chan, Alameda County Environmental Health Department
Mr. Alex Saschin, Bay Area Air Quality Management District

Table 1

Soil Vapor Extraction Data Evaluation

ARCO Service Station 276 Off site
10600 MacArthur Boulevard
Oakland, California

Sample Date	t (days)	td (days)	TVH-g (ug/L)	Benzene (ug/L)	Sample Flow Rate (scfm)	Well Flow Rate (scfm)	TVH-g (lb/day)	Benzene (lb/day)	Hours of Operation	TVH-g Net (lb)	Benzene Net (lb)	TVH-g Total (lb)	Benzene Total (lb)
06/12/91	0	0	0	0.1	500	25	0.00	0.00	0.0	0.0	0.0	0.0	0.0
06/19/91	7	0	140	2.8	500	25	3.15	0.06	168.0	22.1	0.9	22.1	0.9
07/11/91	22	0	140	4.0	500	25	6.30	0.15	528.0	138.6	4.0	160.7	4.8
08/22 91	42	0	130	3.4	500	25	6.08	0.17	1008.0	255.2	6.4	415.8	11.3
09/05/91	14	0	86	3.2	500	25	4.86	0.15	336.0	68.0	2.0	483.8	13.3
11/22/91	78	48	130	2.5	500	25	4.86	0.13	720.0	145.8	3.4	629.6	16.7
12/06/91	14	2	35	0.5	500	25	3.71	0.07	288.0	44.6	0.3	674.2	16.9
12/20/91	14	0	32	0.4	500	25	1.51	0.02	336.0	21.1	0.3	695.3	17.2
01/03/92	14	0	7.5	0.1	500	25	0.89	0.01	336.0	12.4	0.1	707.7	17.2
01/17/92	14	0	6	0.1	500	25	0.30	0.00	336.0	4.3	0.0	712.0	17.3
02/03/92	17	0	7.5	0.1	500	25	0.30	0.00	408.0	5.2	0.1	717.2	17.4
02/18/92	15	0	6	0.1	500	25	0.30	0.00	360.0	4.6	0.0	721.7	17.4
03/02/92	13	13	9.7	0.1	500	25	0.35	0.00	0.0	0.0	0.0	721.7	17.4
03/17/92	15	0	6	0.1	500	25	0.35	0.00	360.0	5.3	0.0	727.0	17.4
03/31/92	14	8	6	0.1	500	25	0.27	0.00	144.0	1.6	0.0	728.6	17.5
04/27/92	27	6	6	0.1	500	25	0.27	0.00	504.0	5.7	0.1	734.3	17.5
05/11/92	14	8	8.2	0.1	500	25	0.32	0.00	144.0	1.9	0.0	736.2	17.5
05/27/92	16	16	0	0.0	500	25	0.18	0.00	0.0	0.0	0.0	736.2	17.5
06/08/92	12	12	7.8	0.2	500	25	0.18	0.00	0.0	0.0	0.0	736.2	17.5
06/24/92	16	4	6.5	0.1	500	25	0.32	0.01	288.0	3.9	0.0	740.1	17.6
07/06/92	12	0	5	0.1	500	25	0.26	0.00	288.0	3.1	0.0	743.2	17.6
TOTAL POUNDS REMOVED:												743.2	17.6
TOTAL GALLONS REMOVED:												111.4	
TOTAL HOURS OF OPERATION:									6552				
% OF OPERABLE HOURS:									70%				

t = time of period since last sampling
td = down time during period since last sampling
TVH-g = total volatile hydrocarbons (calculated as gasoline)
ug/L = micrograms per liter
scfm = standard cubic feet per minute
lb/day = pounds per day
Net = net pounds removed during period
Total = total pounds removed to date

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SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Dan Landry

Project: 330-40.03/ARCO 276, Oakland

Enclosed are the results from 3 air samples received at Sequoia Analytical on July 7,1992. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
2070612	Air, Well INFL	7/6/92	EPA 5030/8015/8020
2070613	Air, INFL	7/6/92	EPA 5030/8015/8020
2070614	Air, EFFL	7/6/92	EPA 5030/8015/8020

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Christine L. Middleton
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group	Client Project ID:	330-40.03/ARCO 276, Oakland	Sampled:	Jul 6, 1992
1601 Civic Center Drive, Suite 202	Sample Matrix:	Air	Received:	Jul 7, 1992
Santa Clara, CA 95050	Analysis Method:	EPA 5030/8015/8020	Reported:	Jul 14, 1992
Attention: Dan Landry	First Sample #:	207-0612		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 207-0612 Well INFL	Sample I.D. 207-0613 INFL	Sample I.D. 207-0614 EFFL
Purgeable Hydrocarbons	5.0	85	N.D.	N.D.
Benzene	0.050	1.5	N.D.	N.D.
Toluene	0.050	0.81	N.D.	0.073
Ethyl Benzene	0.050	0.21	N.D.	N.D.
Total Xylenes	0.050	1.2	N.D.	N.D.
Chromatogram Pattern:		Gas & Non-Gas Mix (<C6)	--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0
Date Analyzed:	7/7/92	7/7/92	7/7/92
Instrument Identification:	GCHP-3	GCHP-3	GCHP-3
Surrogate Recovery, %: (QC Limits = 70-130%) *Coelution confirmed	187*	95	85

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Christine L. Middleton
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Dan Landry

Client Project ID: 330-40.03/ARCO 276, Oakland

QC Sample Group: 2070612-14

Reported: Jul 14, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M. Nipp	M. Nipp	M. Nipp	M. Nipp
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Jul 7, 1992	Jul 7, 1992	Jul 7, 1992	Jul 7, 1992
QC Sample #:	GBLK070792 MS/MSD	GBLK070792 MS/MSD	GBLK070792 MS/MSD	GBLK070792 MS/MSD
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	9.5	9.4	9.5	29
Matrix Spike % Recovery:	95	94	95	97
Conc. Matrix Spike Dup.:	9.6	9.7	9.7	29
Matrix Spike Duplicate % Recovery:	96	97	97	97
Relative % Difference:	1.0	3.1	2.1	0.0

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Christine J. Middleton

Christine L. Middleton
Project Manager

$$\text{\% Recovery:} \quad \frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$$

$$\text{Relative \% Difference:} \quad \frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}} \times 100$$

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
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Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Dan Landry

FILE COPY

Project: 330-40.03/ARCO 0276, Oakland

Enclosed are the results from 3 air samples received at Sequoia Analytical on June 24,1992. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
2064379	Air, INFL	6/24/92	EPA 5030/8015/8020
2064380	Air, EFFL	6/24/92	EPA 5030/8015/8020
2064381	Air, Well Field	6/24/92	EPA 5030/8015/8020

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Christine L. Middleton
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group	Client Project ID:	330-40.03/ARCO 0276, Oakland	Sampled:	Jun 24, 1992
1601 Civic Center Drive, Suite 202	Matrix Descript:	Air	Received:	Jun 24, 1992
Santa Clara, CA 95050	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Jun 24, 1992
Attention: Dan Landry	First Sample #:	206-4379	Reported:	Jun 29, 1992

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L	Benzene µg/L	Toluene µg/L	Ethyl Benzene µg/L	Xylenes µg/L
206-4379	INFL	6.5	N.D.	0.10	0.11	0.44
206-4380	EFFL	N.D.	N.D.	N.D.	N.D.	0.34
206-4381	Well Field	110	0.35	0.64	0.23	1.4
Detection Limits:		**6.0**	**0.060**	**0.060**	**0.060**	**0.060**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Christine L. Middleton
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
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Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Dan Landry

Client Project ID: 330-40.03/ARCO 0276, Oakland

QC Sample Group: 2064379-81

Reported: Jun 29, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M. Nipp	M. Nipp	M. Nipp	M. Nipp
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Jun 24, 1992	Jun 24, 1992	Jun 24, 1992	Jun 24, 1992
QC Sample #:	GBLK062492 MS/MSD	GBLK062492 MS/MSD	GBLK062492 MS/MSD	GBLK062492 MS/MSD
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	10	10	10	30
Matrix Spike % Recovery:	100	100	100	100
Conc. Matrix Spike Dup.:	11	11	11	32
Matrix Spike Duplicate % Recovery:	110	110	110	107
Relative % Difference:	9.5	9.5	9.5	6.5

SEQUOIA ANALYTICAL

Christine L. Middleton
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}}$	x 100
Relative % Difference:	$\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}}$	x 100

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: PEG
REC. BY (PRINT): MW

MASTER LOG NO. / PAGE:
DATE OF LOG-IN: 6/24

CIRCLE THE APPROPRIATE RESPONSE	
1. Custody Seal(s):	Present / (Absent) Intact / Broken*
2. Custody Seal Nos.:	X
3. Chain-of-Custody Records:	(Present) / Absent*
4. Traffic Reports or Packing List:	Present / (Absent)
5. Airbill:	Airbill / Sticker Present / (Absent)
6. Airbill No.:	X
7. Sample Tags:	(Present) / Absent*
Sample Tag Nos.:	(Listed) / Not Listed on Chain-of-Custody
8. Sample Condition:	(Intact)/Broken*/Leaking*
9. Does information on custody reports, traffic reports and sample tags agree?	(Yes) / No*
10. Proper Preservatives Used:	(Yes) / No*
11. Date Rec. at Lab:	6/24
12. Time Rec. at Lab:	1600

LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION (ETC)
206479	—	infl	air bag	A	6/24	
80	"	effl.	"	"	"	
81	"	well field	"	"	"	

* If Circled, contact Project Manager and attach record of resolution

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: PEG
REC. BY (PRINT): [illegible]
MASTER LOG NO. / PAGE:
DATE OF LOG-IN: 6/24

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION (ETC)
1. Custody Seal(s): Present / ~~Absent~~ Intact / Broken*	2064379	—	infl.	air bag	A	6/24	
2. Custody Seal Nos.: X	80	"	effl.	"	"	"	
3. Chain-of-Custody Records: (Present) / Absent*	81	"	well field	"	"	"	
4. Traffic Reports or Packing List: Present / (Absent)							
5. Airbill: Airbill / Sticker Present / (Absent)							
6. Airbill No.: X							
7. Sample Tags: (Present) / Absent* Sample Tag Nos.: (Listed) / Not Listed on Chain-of-Custody							
8. Sample Condition: (Intact)/Broken*/Leaking*							
9. Does information on custody reports, traffic reports and sample tags agree? (Yes) / No*							
10. Proper Preservatives Used: (Yes) / No*							
11. Date Rec. at Lab: 6/24							
12. Time Rec. at Lab: 1600							

* If Circled, contact Project Manager and attach record of resolution

ARCO Products Company ◆ Division of AtlanticRichfieldCompany — 330-40.03 — **Task Order No.** 276-90-2A — **Chain of Custody**

ARCO Facility no. 0276	City (Facility) Oakland.	Project manager (Consultant) DAN LANORY	Laboratory name Sequoia.
ARCO engineer Chuck Carmel	Telephone no. (ARCO)	Telephone no. (Consultant) 408-984-6536	Fax no. (Consultant) 243-3911	Contract number 07-073
Consultant name Pacific Env. Group	Address (Consultant) 1601 Civic Center Dr. #202 Santa Clara		Method of shipment

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Water	Other: AIR	Preservation: Ice	Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	
TANK FL		1			X			6-24-92	10:30		X						2064379				
EFL		1			X			↓	10:30		↓								80		
Well Field		1			X			↓	10:30		↓								81		

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Turnaround time

- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Expedited 5 Business Days ☐
- Standard 10 Business Days ☒

Condition of sample: Good		Temperature received: Cool	
Relinquished by sampler	Date 6-24-92 Time 1:40	Received by Amy McDonald	
Relinquished by Amy McDonald	Date 6/24/92 Time 4PM	Received by	
Relinquished by	Date Time	Received by laboratory	Date 6/24 Time 4PM

Distribution: White copy — Laboratory: Canary copy — ARCO Environmental Engineering: Pink copy — Consultant

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Dan Landry

Project: 330-40.03, Arco 0276, Oakland

Enclosed are the results from 1 special matrix sample received at Sequoia Analytical on June 8,1992. The requested analysis is listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
2061329	Air, Influent	6/8/92	EPA 5030/8015/8020

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group	Client Project ID:	330-40.03, Arco 0276, Oakland	Sampled:	Jun 8, 1992
1601 Civic Center Drive, Suite 202	Matrix Descript:	Air	Received:	Jun 8, 1992
Santa Clara, CA 95050	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Jun 8, 1992
Attention: Dan Landry	First Sample #:	206-1329	Reported:	Jun 11, 1992

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L	Benzene µg/L	Toluene µg/L	Ethyl Benzene µg/L	Xylenes µg/L
206-1329	Influent	7.8	0.17	0.10	N.D.	N.D.
Detection Limits:		**6.0**	**0.060**	**0.060**	**0.060**	**0.12**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

N.D.H.

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Dan Landry

Client Project ID: 330-40.03, Arco 0276, Oakland

QC Sample Group: 206-1329

Reported: Jun 11, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M. Nipp	M. Nipp	M. Nipp	M. Nipp
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Jun 8, 1992	Jun 8, 1992	Jun 8, 1992	Jun 8, 1992
QC Sample #:	GBLK060892	GBLK060892	GBLK060892	GBLK060892
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	9.5	9.4	9.3	28
Matrix Spike % Recovery:	95	94	93	93
Conc. Matrix Spike Dup.:	9.3	9.3	9.3	28
Matrix Spike Duplicate % Recovery:	93	93	93	93
Relative % Difference:	2.1	1.1	0.0	0.0

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: PEG
REC. BY (PRINT): MIL

MASTER LOG NO. / PAGE:
DATE OF LOG-IN: 6/8

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION (ETC)
1. Custody Seal(s): Present / Absent Intact / Broken*	266329	A1B	Inf	air bag	A	6/8	
2. Custody Seal Nos.: X							
3. Chain-of-Custody Records: Present / Absent*							
4. Traffic Reports or Packing List: Present / Absent							
5. Airbill: Airbill / Sticker Present / Absent							
6. Airbill No.:							
7. Sample Tags: Present / Absent*							
Sample Tag Nos.: Listed / Not Listed on Chain-of-Custody							
8. Sample Condition: Intact / Broken* / Leaking*							
9. Does information on custody reports, traffic reports and sample tags agree? Yes / No*							
10. Proper Preservatives Used: Yes / No*							
11. Date Rec. at Lab: 6/8							
12. Time Rec. at Lab: 1647							

* If Circled, contact Project Manager and attach record of resolution

ARCO Products Company Division of AtlanticRichfieldCompany — 330-40.03 — Task Order No. 276-90-2A — **Chain of Custody**

ARCO Facility no. 276	City (Facility) Oakland	Project manager (Consultant) Dan Landry	Laboratory name Sequoia
ARCO engineer Chuck Carmel	Telephone no. (ARCO)	Telephone no. (Consultant) 984-6536	Fax no. (Consultant) 243-3911
Consultant name PEG	Address (Consultant) 1601 Civic Center #202 Sunnyvale		Contract number 07-07-3

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other AIR	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH / GCMS EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
INFL		2			X			6-8-92	1129/1130		X				200329							

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Turnaround time

Priority Rush 1 Business Day ☐

Rush 2 Business Days ☐

Expedited 5 Business Days ☐

Standard 10 Business Days AIR ☒

Condition of sample: good		Temperature received: cool	
Relinquished by sampler	Date 6/8/92	Time 1615	Received by
Relinquished by	Date 6/8/92	Time 1647	Received by
Relinquished by	Date	Time	Received by laboratory — Date 6/8 — Time 1647

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant

APPC-3292 (2-91)

FIELD SERVICES/O and M REQUEST

SITE INFORMATION FORM

Identification

Project # 330-40.03 276
Station # ____
Site Address: 10600 MacArthur Blvd, Oakland, CA
County: Alameda
Project Manager: Dan Landry
Requestor: John M.
Client: ARCO
Client P.O.C.: C. Carmel
Date of request: 10/15/91

Project Type

- ☐ 1st Time visit
- ☐ Quarterly
  - ☐ 1st ☐ 2nd ☐ 3rd ☐ 4th
- ☐ Monthly
- ☒ Semi-Monthly
- ☐ Weekly
- ☐ One time event
- ☐ Other: ____

Ideal field date(s): Monday, every 2 weeks

Prefield Contacts/Permits

- ☐ Cal Trans ____
- ☐ County ____
- ☐ City ____
- ☐ Private ____
- ☐ Multi-Consultant Scheduling
  Date(s): ____

FILE COPY

Site Safety

Concerns

Field Tasks

☒ System Sampling ☐ System Start-up ☐ System Repair ☐ System Modification ☐ System Resample ☐ System Shut-down
☐ Tank Pull ☐ Soil Sampling ☐ Subcontractor Observation ☐ SPH Bailing
☒ Report required for: ARCO monthly ☐ Data summary required for: ____

Sample/use FID according to the following schedule:

	FID	Bag Sample (Gas/BTEX)
Probes	(M)	
Well Field	S/M	(M)
INFL	S/M	(M, S/M)
EFFL	S/M	(M)

M = monthly, first visit of the month
S/M = every 2 weeks (each sit visit)

(Please attach: Site Map, Process and Instrumentation Diagram, Site Safety Plan, Well logs, Other information as appropriate)

Budgeted hours: ____ Actual hours; On-Site: ____ Mob-de-Mob: ____

Comments, remarks, etc. from Field Staff (include problems encountered and out-of-scope work)

took samples
could not access well probes A-L due to parked vehicle
See field notes

Completed by: HLL Date: 7-6-92

PACIFIC ENVIRONMENTAL GROUP, INC.

Checked by: ____ PITS Update: ____

Vapor Extraction System
Oakland ARCO 0276
10600 MacArthur Blvd.
Oakland, California
330-40.03

Name: MLO Date/Time: 7-6-92 @ 1100

Soil Vapor Extraction System Measurements

1.	Natural gas meter	899C
2.	Flame voltage	18.2
3.	Natural gas pressure (psi)	2"
4.	Vacuum pressure from well field (inches of Hg)	1.75
5.	Applied pressure to Anguil unit (psi)	35 scfm
6.	Flow rate to Anguil unit	625
7.	Inlet temperature	619
8.	Outlet temperature	
9.	FID readings (ppm)	

Well Field 79
INFL 6.5
EFFL 5

Soil Probes: (Indicate valve position as C or O)

See field notes

10.	Inspect/replace dilution intake filter (initials)	THW
11.	Check all piping and gas shutoff valves for leaks (initials)	THW
12.	Check all wiring and disconnects (initials)	THW
13.	Sweep enclosure (initials)	THW

Comments need enclosure to install Auto dialer
will install next visit

Distribute a copy of this form to the project supervisor and file the original in the project file.

330-40.03 7-6-92

A-L | M-X | Y-4

System

well infl - 78

infl - 6.5

effl - 5

DC volts - 18

inlet temp - 625

outlet " - 619

LEL 0%

GAS psi .2

Applied psi 1.75

Flow rate - 35 scfm

Vacuum psi - 2" Hg

Background - 4.5

VOC only - 5

GAS 8980

A - Blocked by vehicle

B -

C -

D -

E -

F -

G -

H -

I -

J -

K -

L -

CM - 60

CN - 55

CO - 58

CP - 72

CQ - 55

CR - 68

CS - 62

CT - 52

CU - 46

CV - 16

CW - 40

CX - 46

CY - 65

CZ - ~~3480~~ 250

C1 - 65

C2 - 61

C3 - 81

C4 - 52

PACIFIC ENVIRONMENTAL GROUP, INC.
1601 Civic Center Drive., Suite 202
Santa Clara, California 95050
(408) 984-6536

PROJECT 330-40.03 JOB NO.

PREPARED BY TLW DATE 7-6-92

CHECKED BY DATE

SCALE SHEET OF

Vapor Extraction System
Oakland ARCO 0276
10600 MacArthur Blvd.
Oakland, California
330-40.03

Name: Scott Pisle Date/Time: 6-24-92 10:00

Soil Vapor Extraction System Measurements

1.	Natural gas meter	8739
2.	Flame voltage	18.0
3.	Natural gas pressure (psi)	0.2 psi
4.	Vacuum pressure from well field (inches of Hg)	2 in Hg
5.	Applied pressure to Anguil unit (psi)	1.75 psi
6.	Flow rate to Anguil unit	230 scf m.
7.	Inlet temperature	626
8.	Outlet temperature	619
9.	FID readings (ppm) Background reading 6 ppm. (100 ppm. from sample bag) 350 ppm. from direct line to well field	

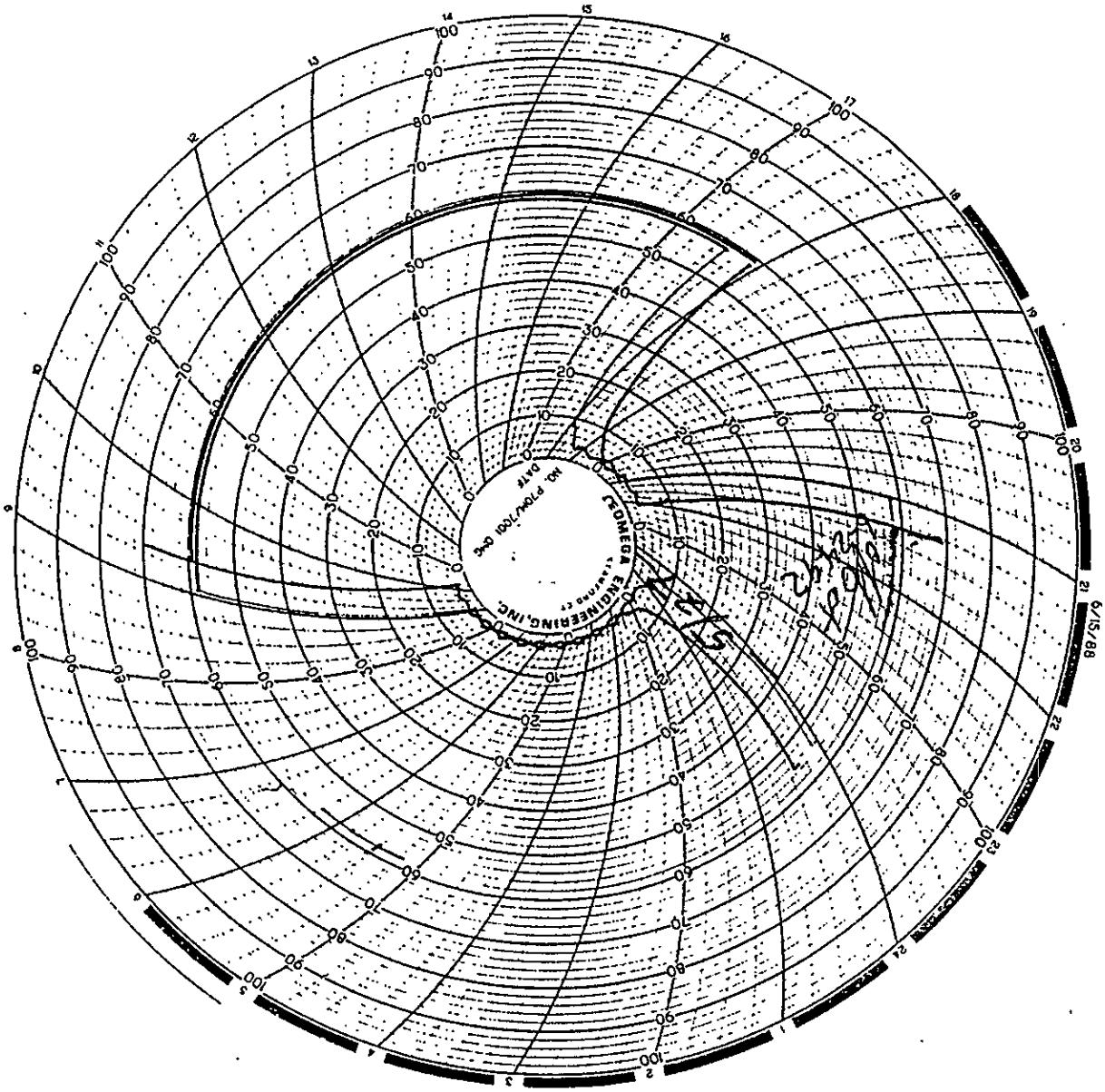
Well Field
INFL 14ppm
EFFL 7ppm.

Soil Probes: (Indicate valve position as C or O)
Not recorded this event.

10.	Inspect/replace dilution intake filter (initials)	SP
11.	Check all piping and gas shutoff valves for leaks (initials)	SP
12.	Check all wiring and disconnects (initials)	SP
13.	Sweep enclosure (initials)	SP

Comments System was shut down upon arrival
Replaced Recorder disk (paper)

Distribute a copy of this form to the project supervisor and file the original in the project file.


ENGINEERING, INC.
6/15/88

FIELD SERVICES/O and M REQUEST

5F

INFORMATION FORM

Identification

ect # 330-40.03

on # 276

Address: 10600 MacArthur Blvd. Oakland, CA

ity: Alameda

ect Manager: D.L.

uestor: D.L.

nt: ARCO

nt P.O.C.: C. Carmel

e of request: 10/15/91

Project Type

- ☐ 1st Time visit
- ☐ Quarterly
  - ☐ 1st ☐ 2nd ☐ 3rd ☐ 4th
- ☒ Monthly
- ☒ Semi-Monthly
- ☐ Weekly
- ☐ One time event
- ☐ Other: _____

Ideal field date(s): _____

Prefield Contacts/Permits

- ☐ Cal Trans _____
- ☐ County _____
- ☐ City _____
- ☐ Private _____
- ☐ Multi-Consultant Scheduling Date(s): _____

Site Safety

Concerns

_____

_____

_____

Field Tasks

ystem Sampling ☐ System Start-up ☐ System Repair ☐ System Modification ☐ System Resample ☐ System Shut-down

ank Pull ☐ Soil Sampling ☐ Subcontractor Observation ☐ SPH Bailing

Report required for: ARCO ☒ Data summary required for: ARCO

CAT-OX unit requires semi-monthly sampling of influent, effluent and well field. A Bag Sar INFLU. will be taken once a month with the use of the FID on the other sample points for the remainder of the month. Also the individual wells will be ~~sent~~ sampled with the FID on a monthly basis.

Also take gas meter reading monthly.

A report to ~~the~~ ARCO will be issued monthly. and recorder. FID readings will be kept in O&M binder

(Please attach: Site Map, Process and Instrumentation Diagram, Site Safety Plan, Well logs, Other information as appropriate)

geted hours: 12 | Actual hours; On-Site: 2 Mob-de-Mob: 2

ments, remarks, etc. from Field Staff (include problems encountered and out-of-scope work)

Sampled Infl (AIR)

See field notes

left System running

Equip

FIC ENVIRONMENTAL GROUP, INC.

Completed by: THL Date: 6-8-92

Checked by: JM PITS Update: CL

Vapor Extraction System
Oakland ARCO 0276
10600 MacArthur Blvd.
Oakland, California
330-40.03

Name: HW / SP Date/Time: 6-8-92 1130

Soil Vapor Extraction System Measurements

1. Natural gas meter 8504
2. Flame voltage 12.5 v
3. Natural gas pressure (psi) ~2 psi
4. Vacuum pressure from well field (inches of Hg) 2 "Hg
5. Applied pressure to Anguil unit (psi) 1.35 psi
6. Flow rate to Anguil unit 230 scfm
7. Inlet temperature 624°
8. Outlet temperature ~619°
9. FID readings (ppm)

   Well Field 175 ppm
   INFL 15 ppm
   EFFL 8 ppm

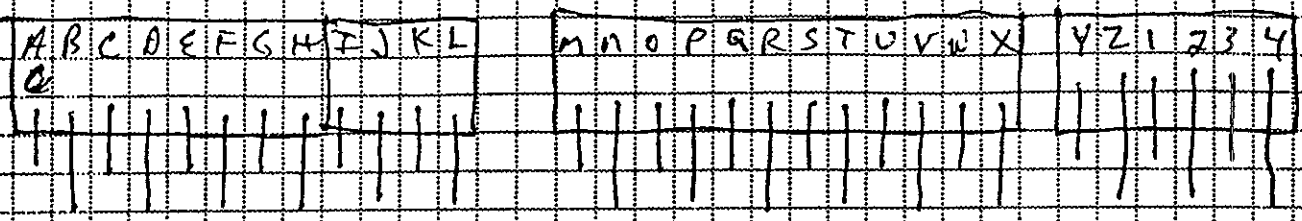
   Soil Probes: (Indicate valve position as C or O)

10. Inspect/replace dilution intake filter (initials) HW
11. Check all piping and gas shutoff valves for leaks (initials) HW
12. Check all wiring and disconnects (initials) HW
13. Sweep enclosure (initials) SP/HW

Comments_____

Distribute a copy of this form to the project supervisor and file the original in the project file.

Site



C A - Broken	C M - 300	C Y - 2,000
C B - Broken	C N - 300	C Z - 500
C C - Clogged	C O - 400	C 1 - 550
C D - 200	C P - 300	C 2 - 400
C E - 4	C Q - 200	C 3 - 450
C F 225 - 0	C R - 300	C 4 - 400
C G - Broken	C S - 250	
C H - 250 - 0	C T - 300	
C I - 325 - 0	C U - 225	
C J - 250	C V - 40	
C K - 350	C W - 200	
C L - 300	C X - 250	

Background - 3.5

VAC only - 4

PACIFIC ENVIRONMENTAL GROUP, INC.
1601 Civic Center Drive., Suite 202
Santa Clara, California 95050
(408) 984-6536

PROJECT 330-48.03 JOB NO. _____
PREPARED BY JHW DATE 6-8-92
CHECKED BY _____ DATE _____
SCALE _____ SHEET _____ OF _____