



PACIFIC
ENVIRONMENTAL
GROUP, INC.

September 21, 1993
Project 305-79.01

Be 10/19/93

Mr. Robert E. Cave
Permit Services Division
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109

Re: BAAQMD Authority to Construct 10111 Start-up Results
Shell Service Station
285 Hegenberger Road at Leet Drive
Oakland, California
WIC No 204-7620-1502

Dear Mr. Cave:

On behalf of Shell Oil Company, Pacific Environmental Group, Inc. (PACIFIC) is operating a soil vapor extraction (SVE) and treatment system (S-1 and A-1, respectively) at the site referenced above. This letter presents source emission test results for the first 3 days of SVE system operation, as required by the referenced Authority to Construct. Source test data, summarized in Table 1, verify that the SVE system is in compliance with permit conditions.

Condition 4 of the referenced Authority to Construct requires that the influent and effluent vapor from the SVE system be sampled and analyzed for benzene and total volatile organic compounds (VOCs) during the first 3 days of operation. In addition, Condition 4 requires that the benzene emission rate be calculated in pounds per day (lbs/day), based on the effluent vapor analysis results and the SVE system flow rate.

Influent and effluent vapor samples were collected on August 31 through September 2, 1993 and sent to Sequoia Analytical (Sequoia), a California State-certified laboratory. The samples were analyzed for total petroleum hydrocarbons calculated as gasoline (TPH-g) and benzene, toluene, ethylbenzene, and xylenes (BTEX compounds) using EPA Method 8015/8020. SVE flow rate during the first

September 21, 1993

Page 2

3 days of operation was monitored via a Pitot tube assembly at the inlet to S-1. Certified analytical reports and chain-of-custody documentation for both influent and effluent samples are included as Attachment A.

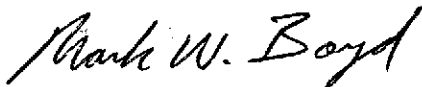
If you have any questions or require addition information, please do not hesitate to call me.

Sincerely,

Pacific Environmental Group, Inc.



Suzanne McClurkin-Nelson
Engineering Technician



Mark W. Boyd
Staff Engineer

Attachments: Table 1 - Soil Vapor Extraction System Start-up Data
Attachment A - Certified Analytical Reports and Chain-of-Custody
Documentation

cc: Mr. Dan Kirk, Shell Oil Company
Mr. Barney Chan, Alameda County Health Care Services Agency

Table 1
Soil Vapor Extraction System Start-up Data

Shell Service Station
285 Hegenberger Road at Leet Drive
Oakland, California

Date Sampled	Flow Rate (scfm)	TPH as Gasoline				Benzene			
		Influent Concentration (ppmv)	Effluent Concentration (ppmv)	Destruction Efficiency (%)	Emmision Rate (lbs/day)	Influent Concentration (ppmv)	Effluent Concentration (ppmv)	Destruction Efficiency (%)	Emmision Rate (lbs/day)
08/30/93	33.5	7,901	NS	--	--	124	NS	--	--
08/31/93	37.3	2,364	57	97.60	3.405	28	0.15	99.47	0.006
09/01/93	30.1	3,073	19	99.99	0.904	49	0.07	99.85	0.002
09/02/93	46.3	2,080	15	99.27	1.126	55	0.49	99.11	0.025

TPH = Total petroleum hydrocarbons
 scfm = Standard cubic feet per minute
 ug/L = Micrograms per liter
 lbs = Pounds
 NS = Not sampled
 Destruction efficiency [%] = $[(1 - (\text{effluent concentration}/\text{influent concentration})) * 100]$
 August 30, 1993 system start-up terminated due to equipment malfunctions.

*200 gall / day
24 hr
24 (60) min → .14 gal/min*

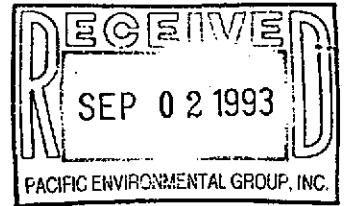
ATTACHMENT A

**CERTIFIED ANALYTICAL REPORTS
AND CHAIN-OF-CUSTODY DOCUMENTATION**



SEQUOIA ANALYTICAL

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



Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Justin Hawkins

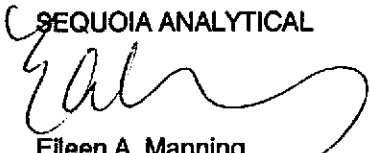
Project: 305-79.01/Shell, Oakland

Enclosed are the results from 2 air samples received at Sequoia Analytical on August 31, 1993. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
3HE7101	Air, Infl	8/31/93	EPA 5030/8015/8020
3HE7102	Air, Effl	8/31/93	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

Eileen A. Manning
Project Manager



SEQUOIA ANALYTICAL

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

Pacific Environmental Group	Client Project ID: 305-79.01/Shell, Oakland	Sampled: Aug 31, 1993
2025 Gateway Place, Suite 440	Sample Matrix: Air	Received: Aug 31, 1993
San Jose, CA 95110	Analysis Method: EPA 5030/8015/8020	Reported: Sep 1, 1993
Attention: Justin Hawkins	First Sample #: 3HE7101	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

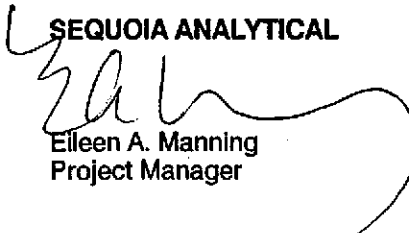
Analyte	Reporting Limit µg/L	Sample I.D. 3HE7101 Infl	Sample I.D. 3HE7102 Effl
Purgeable Hydrocarbons	5.0	10,000	240
Benzene	0.050	99	0.52
Toluene	0.050	47	0.76
Ethyl Benzene	0.050	110	8.1
Total Xylenes	0.050	170	14
Chromatogram Pattern:		Gas + Non-gas < C8	Gas

Quality Control Data

Report Limit Multiplication Factor:	100	2.5
Date Analyzed:	8/31/93	8/31/93
Instrument Identification:	GCHP-3	GCHP-3
Surrogate Recovery, %: (QC Limits = 70-130%)	102	100

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

SEQUOIA ANALYTICAL


Eileen A. Manning
Project Manager

3HE7101.PPP <1>



SEQUOIA ANALYTICAL

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

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Client Project ID: 305-79.01/Shell, Oakland

Attention: Justin Hawkins

QC Sample Group: 3HE7101-02

Reported: Sep 1, 1993

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
Conc. Spiked:	10	10	10	30
Units:	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	GBLK083193	GBLK083193	GBLK083193	GBLK083193
Date Prepared:	N.A.	N.A.	N.A.	N.A.
Date Analyzed:	8/31/93	8/31/93	8/31/93	8/31/93
Instrument I.D.#:	GCHP-3	GCHP-3	GCHP-3	GCHP-3
LCS % Recovery:	99	100	99	100
Control Limits:	80-120	80-120	80-120	80-120

MS/MSD	Batch #:	3HD6202	3HD6202	3HD6202	3HD6202
Date Prepared:	N.A.	N.A.	N.A.	N.A.	N.A.
Date Analyzed:	8/31/93	8/31/93	8/31/93	8/31/93	8/31/93
Instrument I.D.#:	GCHP-3	GCHP-3	GCHP-3	GCHP-3	GCHP-3
Matrix Spike % Recovery:	100	100	100	100	
Matrix Spike Duplicate % Recovery:	100	100	110	107	
Relative % Difference:	0.0	0.0	9.5	6.8	

SEQUOIA ANALYTICAL

EAM
Eileen A. Manning
Project Manager

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.



Site Address: 285 Hegenberger Rd OAKLAND

Analysis Required

LAB: SEQUOIA

WIC#: 204-5508-5504

Shell Engineer: DAN KIRK Phone No.: 675 468 (510)
 Fax #: 675 6172

Consultant Name & Address:
 PACIFIC ENVIRONMENTAL GROUP, INC.
 2025 GATEWAY PLACE, Ste. 440 SAN JOSE, CALIFORNIA 95110

Consultant Contact: JUSTIN HAWKINS Phone No.: 408 441-7500
 Fax #: 441-7539

Comments:

Sampled by: Joe V...

Printed Name: JOE V...

Sample ID	Date	Sludge	Soil	Water	Air	No. of confs.
IAFL	8/31/93				X	1
VEW-1						
VEW-2						
VEW-3						
VEW-4						
VEW-5						
EFFL						

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 G/S	Asbestos	Container Size	Preparation Used	Composite Y/N
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CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
G.W. Monitoring <input type="checkbox"/>	4461	24 hours <input checked="" type="checkbox"/>
Site Investigation <input type="checkbox"/>	4441	48 hours <input type="checkbox"/>
Soil Classify/Disposal <input type="checkbox"/>	4442	15 days <input type="checkbox"/> (Normal)
Water Classify/Disposal <input type="checkbox"/>	4443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input checked="" type="checkbox"/>	4452	NOTE: Notify Lab as soon as possible of 24/48 hr. TAT.
Water Rem. or Sys. O & M <input type="checkbox"/>	4453	
Other <input type="checkbox"/>		

UST AGENCY:	
MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
UST Soil Vapor	9308E71

Relinquished By (signature): <u>Joe V...</u>	Printed Name: <u>Joe V...</u>	Date: <u>8-31-93</u>	Time: <u>4:50</u>	Received (signature): <u>David Alderman</u>	Printed Name: <u>David Alderman</u>	Date: <u>8/31/93</u>	Time: <u>14:50</u>
Relinquished By (signature): <u>David Alderman</u>	Printed Name: <u>David Alderman</u>	Date: <u>8/31/93</u>	Time: <u>3:40</u>	Received (signature): <u>...</u>	Printed Name: <u>...</u>	Date: <u>8-31-93</u>	Time: <u>1:40</u>
Relinquished By (signature): <u>...</u>	Printed Name: <u>...</u>	Date: <u>...</u>	Time: <u>...</u>	Received (signature): <u>...</u>	Printed Name: <u>P. HUFANO</u>	Date: <u>8-31-93</u>	Time: <u>1:40</u>

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

9308E71

8-31-93

CLIENT NAME:
REC. BY: (PRINT):

PEG
PH

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

CIRCLE THE APPROPRIATE RESPONSE		LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION (ETC)
1. Custody Seal(s):	Present / <u>Absent</u> Intact / Broken*	01	A	INFL	TEDLAR	A	8-21	
2. Custody Seal Nos.:		2		VEW 1				
		3		2				
		4		3				
3. Chain-of-Custody Records:	<u>Present</u> / Absent*	5		4				
		6		5				
		7		EFFL				
4. Traffic Reports or Packing List:	Present / <u>Absent</u>							
5. Airbill:	Airbill / Sticker Present / <u>Absent</u>							
6. Airbill No.:								
7. Sample Tags:	<u>Present</u> / Absent*							
Sample Tag Nos.:	<u>Listed</u> / Not Listed on Chain-of-Custody							
8. Sample Condition:	<u>Intact</u> / Broken* / Leaking*							
9. Does information on custody reports, traffic reports and sample tags agree?	<u>Yes</u> / No*							
10. Proper Preservatives Used:	<u>Yes</u> / No*							
11. Date Rec. at Lab:	8-31-93							
Time Rec. at Lab:	1540							

and, contact Project Manager and attach record of resolution



SHELL OIL COMPANY 305 7901
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No: _____

Date: 8-31-93

Page 1 of 1

Site Address: 285 Hegenberger Rd Oakland

Analysis Required

LAB: Sequoia

WIC#: 204-5508-5504

Shell Engineer: DAN Kirk
 Phone No.: 675 468 (510)
 Fax #: 675 6172

Consultant Name & Address:
 PACIFIC ENVIRONMENTAL GROUP, INC.
 2025 GATEWAY PLACE, Ste. 440 SAN JOSE, CALIFORNIA 95110

Consultant Contact: JUSTIN HAWKINS
 Phone No.: 408 441-7500
 Fax #: 441-7539

Comments:

Sampled by: Joe Vignone

Printed Name: JOE VIGNONE

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 GAG	Asbestos	Container Size	Preparation Used	Composite Y/N
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CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
G.W. Monitoring <input type="checkbox"/>	4461	24 hours <input checked="" type="checkbox"/>
Site Investigation <input type="checkbox"/>	4441	48 hours <input type="checkbox"/>
Soil Classify/Disposal <input type="checkbox"/>	4442	15 days <input type="checkbox"/> (Normal)
Water Classify/Disposal <input type="checkbox"/>	4443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input checked="" type="checkbox"/>	4452	
Water Rem. or Sys. O & M <input type="checkbox"/>	4453	
Other <input type="checkbox"/>		

UST AGENCY: _____

Sample ID	Date	Sludge	Soil	Water	Air	No. of conds.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 GAG	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
IAFL	8/31/93				X	1						X		LIQID BAG	N	N	UST Soil vapor	
IAFL																		
IAFL																		
IAFL																		
IAFL																		
IAFL																		
FFFL																		

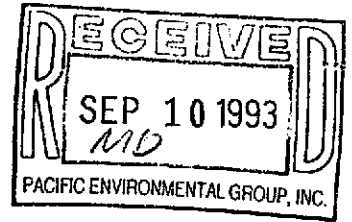
Relinquished By (signature): <u>Joe Vignone</u>	Printed Name: <u>Joe Vignone</u>	Date: <u>8-31-93</u> Time: <u>1450</u>	Received (signature): <u>David Alderman</u>	Printed Name: <u>David Alderman</u>	Date: <u>8/31/93</u> Time: <u>1450</u>
Relinquished By (signature):	Printed Name:	Date:	Received (signature):	Printed Name:	Date:
Relinquished By (signature):	Printed Name:	Date:	Received (signature):	Printed Name:	Date:

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS



SEQUOIA ANALYTICAL

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



Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Justin Hawkins

Project: 305-79.01/Shell, Oakland

Enclosed are the results from 2 air samples received at Sequoia Analytical on September 2, 1993. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
3105401	Air, Infl	9/1/93	EPA 5030/8015/8020
3105402	Air, Eff	9/1/93	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


Eileen A. Manning
Project Manager



SEQUOIA ANALYTICAL

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

Pacific Environmental Group	Client Project ID: 305-79.01/Shell, Oakland	Sampled: Sep 1, 1993
2025 Gateway Place, Suite 440	Sample Matrix: Air	Received: Sep 2, 1993
San Jose, CA 95110	Analysis Method: EPA 5030/8015/8020	Reported: Sep 9, 1993
Attention: Justin Hawkins	First Sample #: 3105401	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit $\mu\text{g/L}$ (ppb)	Sample I.D. 3105401 Infl	Sample I.D. 3105402 Eff
Purgeable Hydrocarbons	5.0	13,000	79
Benzene	0.050	170	0.25
Toluene	0.050	95	0.38
Ethyl Benzene	0.050	120	2.8
Total Xylenes	0.050	230	5.0
Chromatogram Pattern:		Gas + Non-gas < C8	Gas

Quality Control Data

Report Limit Multiplication Factor:	100	1.0
Date Analyzed:	9/2/93	9/2/93
Instrument Identification:	GCHP-3	GCHP-3
Surrogate Recovery, %: (QC Limits = 70-130%)	111	97

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

SEQUOIA ANALYTICAL


Eileen A. Manning
Project Manager

3105401.PPP <1>



SEQUOIA ANALYTICAL

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

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Justin Hawkins

Client Project ID: 305-79.01/Shell, Oakland

QC Sample Group: 3I05401-02

Reported: Sep 9, 1993

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
Conc. Spiked:	10	10	10	30
Units:	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	GBLK090293	GBLK090293	GBLK090293	GBLK090293
Date Prepared:	-	-	-	-
Date Analyzed:	9/2/93	9/2/93	9/2/93	9/2/93
Instrument I.D.#:	GCHP-3	GCHP-3	GCHP-3	GCHP-3
LCS % Recovery:	99	100	100	100
Control Limits:	80-120	80-120	80-120	80-120

MS/MSD	Batch #:	3HD3602	3HD3602	3HD3602	3HD3602
Date Prepared:	-	-	-	-	-
Date Analyzed:	9/2/93	9/2/93	9/2/93	9/2/93	9/2/93
Instrument I.D.#:	GCHP-3	GCHP-3	GCHP-3	GCHP-3	GCHP-3
Matrix Spike % Recovery:	100	100	100	103	
Matrix Spike Duplicate % Recovery:	110	110	110	107	
Relative % Difference:	9.5	9.5	9.5	3.8	

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

CLIENT NAME:
REC. BY (PRINT):

PEG
LS

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

9309054
9-2-93

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE	DASH	CLIENT	CONTAINER	SAMPLE	DATE	REMARKS:
	#	#	IDENTIFICATION	DESCRIPTION	MATRIX	SAMP.	CONDITION (ETC)
1. Custody Seal(s): Present / <input checked="" type="radio"/> Absent Intact / Broken*	01	A	INFL	1 bag	air	9/1	
	02	A	EFFL	↓	↓		
2. Custody Seal Nos.:							
3. Chain-of-Custody Records: <input checked="" type="radio"/> Present / Absent*							
4. Traffic Reports or Packing List: Present / <input checked="" type="radio"/> Absent							
5. Airbill: Airbill / Sticker Present / <input checked="" type="radio"/> Absent							
6. Airbill No.:							
7. Sample Tags: <input checked="" type="radio"/> Present / Absent*							
Sample Tag Nos.: <input checked="" type="radio"/> Listed / Not Listed on Chain-of-Custody							
8. Sample Condition: <input checked="" type="radio"/> Intact / Broken* / Leaking*							
9. Does information on custody reports, traffic reports and sample tags agree? <input checked="" type="radio"/> Yes / No*							
10. Proper Preservatives Used: <input checked="" type="radio"/> Yes / No*							
11. Date Rec. at Lab: <u>9-2-93</u>							
12. Time Rec. at Lab: <u>1130</u>							

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



SHELL OIL COMPANY 305 79.01
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No: _____

Date: 9-1
 Page 1 of 1

Site Address: 285 Hegenberger OAKLAND

Analysis Required

LAB: Sequoia

WIC#: 204 7620 1502

Shell Engineer: DAN Kirk
 Phone No.: 675-6168
 Fax #: 675-6172

Consultant Name & Address:
 PACIFIC ENVIRONMENTAL GROUP, INC.
 2025 GATEWAY PLACE, Ste. 440 SAN JOSE, CALIFORNIA 95110

Consultant Contact: JUSTIN HAWKINS
 Phone No.: 408 441-7500
 Fax #: 441-7539

Comments:

Sampled by: Joe Vovoda

Printed Name: Joe Vovoda

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
G.W. Monitoring <input type="checkbox"/>	4461	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	4441	48 hours <input type="checkbox"/>
Soil Classify/Disposal <input type="checkbox"/>	4442	15 days <input checked="" type="checkbox"/> (Normal)
Water Classify/Disposal <input type="checkbox"/>	4443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input checked="" type="checkbox"/>	4452	NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.
Water Rem. or Sys. O & M <input type="checkbox"/>	4453	
Other <input type="checkbox"/>		

UST AGENCY: _____

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 GAS	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
INFL	9/1/93				X	1											UST/soil vapor	9309054
EFFL	↓				↓	1											gas	

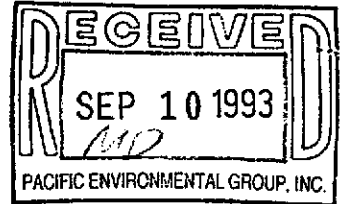
Relinquished By (signature): Joe Vovoda	Printed Name: Joe Vovoda	Date: 9-1-93 Time: 1500	Received (signature): M Doden	Printed Name: M Doden	Date: 9/2/93 Time: 0730
Relinquished By (signature): M Doden	Printed Name: M Doden	Date: 9/2/93 Time: 6015	Received (signature): David Alderman	Printed Name: David Alderman	Date: 9/2/93 Time: 1055
Relinquished By (signature): David Alderman	Printed Name: David Alderman	Date: 9/2/93 Time: 1130	Received (signature): L Stenstrom	Printed Name: L Stenstrom	Date: 9/2/93 Time: 1130

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS



SEQUOIA ANALYTICAL

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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Mark Boyd

Project: 305-79.01/Shell, Oakland


Enclosed are the results from 2 air samples received at Sequoia Analytical on September 3, 1993. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
3I14901	Air, Infl	9/2/93	EPA 5030/8015/8020
3I14902	Air, Effl	9/2/93	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


Eileen A. Manning
Project Manager



SEQUOIA ANALYTICAL

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

Pacific Environmental Group	Client Project ID: 305-79.01/Shell, Oakland	Sampled: Sep 2, 1993
2025 Gateway Place, Suite 440	Sample Matrix: Air	Received: Sep 3, 1993
San Jose, CA 95110	Analysis Method: EPA 5030/8015/8020	Reported: Sep 9, 1993
Attention: Mark Boyd	First Sample #: 3I14901	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 3I14901 Infl	Sample I.D. 3I14902 Effl
Purgeable Hydrocarbons	5.0	8,800	64
Benzene	0.050	190	1.7
Toluene	0.050	130	1.0
Ethyl Benzene	0.050	130	4.4
Total Xylenes	0.050	330	5.0
Chromatogram Pattern:		Gas	Gas

Quality Control Data

Report Limit Multiplication Factor:	100	1.0
Date Analyzed:	9/4/93	9/4/93
Instrument Identification:	GCHP-3	GCHP-3
Surrogate Recovery, %: (QC Limits = 70-130%)	123	110

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

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Eileen A. Manning
Project Manager

3I14901.PPP <1>



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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Mark Boyd

Client Project ID: 305-79.01/Shell, Oakland

QC Sample Group: 3114901-02

Reported: Sep 9, 1993

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
Conc. Spiked:	10	10	10	30
Units:	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	GBLK090493	GBLK090493	GBLK090493	GBLK090493
Date Prepared:	N.A.	N.A.	N.A.	N.A.
Date Analyzed:	9/4/93	9/4/93	9/4/93	9/4/93
Instrument I.D.#:	GCHP-3	GCHP-3	GCHP-3	GCHP-3
LCS % Recovery:	100	100	100	103
Control Limits:	80-120	80-120	80-120	80-120

MS/MSD	Batch #:	3HE7803	3HE7803	3HE7803	3HE7803
Date Prepared:	N.A.	N.A.	N.A.	N.A.	N.A.
Date Analyzed:	9/4/93	9/4/93	9/4/93	9/4/93	9/4/93
Instrument I.D.#:	GCHP-3	GCHP-3	GCHP-3	GCHP-3	GCHP-3
Matrix Spike % Recovery:	110	110	110	107	
Matrix Spike Duplicate % Recovery:	110	100	110	107	
Relative % Difference:	0.0	9.5	0.0	0.0	

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EAM
Eileen A. Manning
Project Manager

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.



SHELL OIL COMPANY 305-7901
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No: _____

Date: 9/3/93

Page 1 of 1

Site Address: 285 HEGENBERGER, OAKLAND

Analysis Required

LAB: SEQUOIA

WIC#: 704-5508-5304

Shell Engineer:

DANKIRK

Phone No:

(510) 75-6168
 Fax # (510) 75-6172

Consultant Name & Address:
 PACIFIC ENVIRONMENTAL GROUP, INC.
 2025 GATEWAY PLACE, Ste. 440 SAN JOSE, CALIFORNIA 95110

Consultant Contact:

MARK BOYD

Phone No.: 408
 441-7500
 Fax #: 441-7539

Comments:

Sampled by:

[Signature]

Printed Name:

JAMES MERRICK

Sample ID	Date	Sludge	Soil	Water	Air	No. of conls.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 GAS	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
<u>INFL.</u>	<u>9/2/93</u>				<u>X</u>	<u>1</u>						<u>X</u>					<u>UST SOIL</u>	<u>9309144-01</u>
<u>EFFL.</u>	<u>9/2/93</u>				<u>X</u>	<u>1</u>						<u>X</u>					<u>VARDK GAS</u>	<u>02</u>

Relinquished By (signature):

[Signature]

Printed Name:

JAMES MERRICK

Date: 9/3/93

Time: 11:30

Received (signature):

[Signature]

Printed Name:

M. DODER

Date: 9/3/93

Time: 6:30

Relinquished By (signature):

[Signature]

Printed Name:

M. DODER

Date: 9/3/93

Time: 1:45

Received (signature):

[Signature]

Printed Name:

D. NEWCOMB

Date: 9/3/93

Time: 1:40

Relinquished By (signature):

[Signature]

Printed Name:

D. NEWCOMB

Date: 9/3/93

Time: 1:45

Received (signature):

[Signature]

Printed Name:

D. NEWCOMB

Date:

Time:

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

9309149

CLIENT NAME:
REC. BY (PRINT):

PEG
PH

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

9-3-93

CIRCLE THE APPROPRIATE RESPONSE		LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION (ETC)
1. Custody Seal(s):	Present / <u>Absent</u> Intact / Broken*	01	A	INFL	TEOLAR	A	9-2	
		02	↓	EFFL	↓	↓	↓	
2. Custody Seal Nos.:								
3. Chain-of-Custody Records:	<u>Present</u> / Absent*							
4. Traffic Reports or Packing List:	Present / <u>Absent</u>							
5. Airbill:	Airbill / <u>Sticker</u> Present / <u>Absent</u>							
6. Airbill No.:								
7. Sample Tags:	<u>Present</u> / Absent*							
Sample Tag Nos.:	<u>Listed</u> / Not Listed on Chain-of-Custody							
8. Sample Condition:	<u>Intact</u> / Broken* / Leaking*							
9. Does information on custody reports, traffic reports and sample tags agree?	<u>Yes</u> / No*							
10. Proper Preservatives Used:	Yes / No*							
11. Date Rec. at Lab:	9-3-93							
12. Time Rec. at Lab:	1420							

If needed, contact Project Manager and attach record of resolution