

**PETRO
CHEM
ENVIRONMENTAL
SERVICES, INC.**

AB2588 SOURCE TEST REPORT

PACIFIC ENERGY SYSTEMS
6055 E. Washington Blvd.
Commerce, CA 90040

ATTENTION: Mr. Terence Hee

UNIT TESTED:

Oxnard Landfill
Superior Engine #2

DATE TESTED:

October 16, 1990

DATE REPORTED:

November 13, 1990

EMISSIONS DETERMINATION OF:

CARB Method 430: Formaldehyde, Acrolein, Acetaldehyde
CARB Method 422: Benzene & Full Scan
BAAQMD Method St-16: Phenols

Report: 62-308

Tested by: SAD
Scott Davis

Reviewed by: JEM
James E. Marchesini

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COMPANY: PACIFIC ENERGY
 UNIT: OXNARD LANDFILL ICE #2
 DATE: 10-16-90
 REPORT #:62-308

Method 430
 Formaldehyde Results

Test Run	#1	#2	#3	average
Time	1405	1515	1620	
Formaldehyde ug/l	50	50	50	
Sample vol. l	0.042	0.037	0.035	
Formaldehyde, ug	2.10	1.85	1.75	
Vm std DSCF	2.01	2.16	2.15	
Vm std DSCM	0.057	0.061	0.061	
Volume Flow, DSCFM 1/	5404	5461	5393	
Concentrations :				
ug/dscf	1	1	1	1
ug/dscm	37	30	29	32
ppm	0.03	0.02	0.02	0.02
Emissions :				
lb/hr	0.0007	0.0006	0.0005	0.0006

1/ See Method st-16 data

2/ All emissions reported are "less than" or
 the lower limit of detection

COMPANY: PACIFIC ENERGY
 UNIT: OXNARD LANDFILL ICE #2
 DATE: 10-16-90
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Method 430
 Acetaldehyde Results

Test Run	#1	#2	#3	average
Time	1405	1515	1620	
Formaldehyde ug/l	50	50	50	
Sample vol, l	0.042	0.037	0.035	
Formaldehyde, ug	2.10	1.85	1.75	
Vm std DSCF	2.01	2.16	2.15	
Vm std DSCM	0.057	0.061	0.061	
Volume Flow, DSCFM 1/	5404	5461	5393	
Concentrations :				
ug/dscf	1	1	1	1
ug/dscm	37	30	29	32
ppm	0.03	0.02	0.02	0.02
Emissions :				
lb/hr	0.0007	0.0006	0.0005	0.0006

1/ See Method st-16 data

2/ All emissions reported are "less than" or
 the lower limit of detection

COMPANY: PACIFIC ENERGY
 UNIT: OXNARD LANDFILL ICE #2
 DATE: 10-16-90
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Method 430
 Acrolein Results

Test Run	#1	#2	#3	average
Time	1405	1515	1620	
Formaldehyde ug/l	50	50	50	
Sample vol, l	0.042	0.037	0.035	
Formaldehyde, ug	2.10	1.85	1.75	
Vm std DSCF	2.01	2.16	2.15	
Vm std DSCM	0.057	0.061	0.061	
Volume Flow, DSCFM 1/	5404	5461	5393	
Concentrations :				
ug/dscf	1	1	1	1
ug/dscm	37	30	29	32
ppm	0.03	0.02	0.02	0.02
Emissions :				
lb/hr	0.0007	0.0006	0.0005	0.0006

1/ See Method st-16 data

2/ All emissions reported are "less than" or
 the lower limit of detection

COMPANY : PACIFIC ENERGY
UNIT : OXNARD LANDFILL ICE #2
Date : 10-16-90
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CARB 422 Summary, ppb
Light Molecular Weight Hydrocarbons, GCMS

Compound	Run #1 ppb	Run #2 ppb	Run #3 ppb	average ppb
-----	-----	-----	-----	-----
Acetone	1.0 *	1.2	2.4	1.5
Acrylonitrile	0.0	0.0	0.0	0.0 1
Benzene	40.0	46.0	49.0	45.0
2-Butanone, MEK	0.1 *	0.1 *	0.1 *	0.1
Bromodichloromethane	0.1 *	0.1 *	0.1 *	0.1
Carbon Disulfide	0.2 *	0.2 *	0.2 *	0.2
Carbontetrachloride	0.1 *	0.1 *	0.1 *	0.1
Chlorobenzene	0.7	0.5	0.6	0.6
Chloroethane	0.1 *	0.1 *	0.1 *	0.1
Chloroform	0.1 *	0.1 *	0.1 *	0.1
Chloromethane	5.8	6.7	7.1	6.5
Chloropicrin	0.0	0.0	0.0	0.0 1
Dibromochloromethane	0.1 *	0.1 *	0.1 *	0.1
1,2-Dibromoethane	0.0	0.0	0.0	0.0 1
1,4-Dichlorobenzene	0.0	0.0	0.0	0.0 1
1,1-Dichloroethane	0.1 *	0.1 *	0.1 *	0.1
1,2-Dichloroethane	0.1 *	0.1 *	0.1 *	0.1
1,1-Dichloroethene	0.1 *	0.1 *	0.1 *	0.1
Dichloromethane	3.4	5.3	110.0	39.6
1,2-Dichloropropane	0.1 *	0.1 *	0.1 *	0.1
1,4-Dioxane	0.0	0.0	0.0	0.0 1
Ethylbenzene	4.2	5.3	6.8	5
2-Hexanone	0.1 *	0.1 *	0.1 *	0.1
Hydrogen Sulfide	0.0	0.0	0.0	0.0 1
4-Methyl-2-Pentanone, MIBK	0.1 *	0.1 *	0.1 *	0.1
Styrene	0.2 *	0.2 *	0.2 *	0.2
Tetrachloroethene, PCE	12.0	1.5	1.8	5
Toluene	27.0	32.0	32.0	30
1,1,1-Trichloroethane, TCA	0.8	2.9	2.9	2
1,1,2-Trichloroethane	0.1 *	0.1 *	0.1 *	0.1
Trichloroethene, TCE	0.9	0.9	0.9	0.9
Trichlorotrifluoroethane, f	0.2 *	0.4	0.4	0.3
Trichlorofluoromethane	0.5	1.0	1.1	1
Vinyl Chloride	3.6	3.6	3.9	3.7
Xylenes	9.3	9.3	10.0	9.5

*= less than the detection limit

1/ these compounds were not analyzed

COMPANY: PACIFIC ENERGY
UNIT : OXNARD LANDFILL ICE #2
Date : 10-16-90
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CARB 422 Summary, lb/hr
Light Molecular Weight Hydrocarbons, GCMS

Compound	Run #1 lb/hr	Run #2 lb/hr	Run #3 lb/hr	average lb/hr	
-----	-----	-----	-----	-----	
Acetone	4.96E-05	*5.95E-05	1.19E-04	7.6E-05	
Acrylonitrile	0.00E+00	0.00E+00	0.00E+00	0.0E+00	1
Benzene	1.98E-03	3.07E-03	3.27E-03	2.8E-03	
2-Butanone, MEK	4.96E-06	*6.15E-06	*6.15E-06	* 5.8E-06	
Bromodichloromethane	4.96E-06	*1.39E-05	*1.39E-05	* 1.1E-05	
Carbon Disulfide	9.91E-06	*1.30E-05	*1.30E-05	* 1.2E-05	
Carbontetrachloride	4.96E-06	*1.32E-05	*1.32E-05	* 1.0E-05	
Chlorobenzene	3.47E-05	4.81E-05	5.77E-05	4.7E-05	
Chloroethane	4.96E-06	*5.51E-06	*5.51E-06	* 5.3E-06	
Chloroform	4.96E-06	*1.02E-05	*1.02E-05	* 8.5E-06	
Chloromethane	2.87E-04	2.89E-04	3.06E-04	2.9E-04	
Chloropicrin	0.00E+00	0.00E+00	0.00E+00	0.0E+00	1
Dibromochloromethane	4.96E-06	*1.78E-05	*1.78E-05	* 1.4E-05	
1,2-Dibromoethane	0.00E+00	0.00E+00	0.00E+00	0.0E+00	1
1,4-Dichlorobenzene	0.00E+00	0.00E+00	0.00E+00	0.0E+00	1
1,1-Dichloroethane	4.96E-06	*8.46E-06	*8.46E-06	* 7.3E-06	
1,2-Dichloroethane	4.96E-06	*8.46E-06	*8.46E-06	* 7.3E-06	
1,1-Dichloroethene	4.96E-06	*8.29E-06	*8.29E-06	* 7.2E-06	
Dichloromethane	1.68E-04	3.85E-04	7.99E-03	2.8E-03	
1,2-Dichloropropane	4.96E-06	*9.65E-06	*9.65E-06	* 8.1E-06	
1,4-Dioxane	0.00E+00	0.00E+00	0.00E+00	0.0E+00	1
Ethylbenzene	2.08E-04	4.80E-04	6.16E-04	4.3E-04	
2-Hexanone	4.96E-06	*8.54E-06	*8.54E-06	* 7.3E-06	
Hydrogen Sulfide	0.00E+00	0.00E+00	0.00E+00	0.0E+00	1
4-Methyl-2-Pentanone, MIBK	4.96E-06	*8.54E-06	*8.54E-06	* 7.3E-06	
Styrene	9.91E-06	*1.55E-05	*1.55E-05	* 1.4E-05	
Tetrachloroethene, PCE	5.95E-04	2.13E-04	2.55E-04	3.5E-04	
Toluene	1.34E-03	2.52E-03	2.52E-03	2.1E-03	
1,1,1-Trichloroethane, TCA	3.96E-05	3.31E-04	3.31E-04	2.3E-04	
1,1,2-Trichloroethane	4.96E-06	*1.14E-05	*1.14E-05	* 9.3E-06	
Trichloroethene, TCE	4.46E-05	1.01E-04	1.01E-04	8.2E-05	
Trichlorotrifluoroethane, f	9.91E-06	*6.41E-05	6.41E-05	4.6E-05	
Trichlorofluoromethane	2.48E-05	1.17E-04	1.29E-04	9.0E-05	
Vinyl Chloride	1.78E-04	1.92E-04	2.08E-04	1.9E-04	
Xylenes	4.61E-04	8.42E-04	9.06E-04	7.4E-04	

*= less than the detection limit

1/ these compounds were not analyzed

COMPANY: PACIFIC ENERGY
UNIT : OXNARD LANDFILL ICE #2
DATE : 10-16-90
REPORT#: 62-308

CARB 422 Summary, ppb
Light Molecular Weight Hydrocarbons, GCMS

Compound	Run #1 ppb	Run #2 ppb	Run #3 ppb	average ppb
-----	-----	-----	-----	-----
-----	0.2 *	0.2 *	0.2 *	0.2
Dichlorobenzene	0.2 *	0.2 *	0.2 *	0.2
1,2-Dibromoethane	0.2 *	0.2 *	0.3	0.2
1,4-Dioxane				

*- less than the detection limit

COMPANY: PACIFIC ENERGY
UNIT : OXNARD LANDFILL ICE #2
DATE : 10-16-90
REPORT#: 62-308

CARB 422 Summary, lb/hr
Light Molecular Weight Hydrocarbons, GCMS

Compound	Run #1 lb/hr	Run #2 lb/hr	Run #3 lb/hr	average lb/hr
-----	-----	-----	-----	-----
Dichlorobenzene	2.49E-05	*2.49E-05	*2.49E-05	* 2.5E-05
1,2-Dibromoethane	2.97E-05	*2.97E-05	*2.97E-05	* 3.0E-05
1,4-Dioxane	1.50E-05	*1.50E-05	*2.26E-05	1.8E-05

* less than the detection limit

COMPANY: PACIFIC ENERGY
UNIT: OXNARD LANDFILL ICE #2
REPORT #: 62-308
DATE: 10-16-90

Summary of Results for Phenolic Compounds

Pollutant	Test	Vm std	DSCFM	Total ug		gr/DSCF	lb/hr
-----	-----	-----	-----	-----		-----	-----
Phenol	1	34.53	5404	70.6	*	3.15E-05	1.46E-03
	2	34.75	5461	71.6	*	3.17E-05	1.49E-03
	3	34.34	5393	74.6	*	3.35E-05	1.55E-03
	average				*	3.22E-05	1.50E-03
3/4-Methyl phenol	1	34.53	5404	70.6	*	3.15E-05	1.46E-03
	2	34.75	5461	71.6	*	3.17E-05	1.49E-03
	3	34.34	5393	74.6	*	3.35E-05	1.55E-03
	average				*	3.22E-05	1.50E-03
2-Methyl- phenol	1	34.53	5404	70.6	*	3.15E-05	1.46E-03
	2	34.75	5461	71.6	*	3.17E-05	1.49E-03
	3	34.34	5393	74.6	*	3.35E-05	1.55E-03
	average				*	3.22E-05	1.50E-03

* Values reported are lower detection limit

INTRODUCTION

INTRODUCTION

At the request of Pacific Energy Systems, Petro Chem Environmental Services (PCES) performed a series of source tests on one Superior internal combustion engine. The unit is located at the Oxnard Landfill and uses landfill gas as fuel. The purpose of the testing was to document emissions of various pollutants to satisfy the requirements for the State of California AB2588, Air Toxics "Hot Spots" Information and Assessment Act of 1987. The following tests were performed:

<u>Pollutant</u>	<u>Date</u>	<u>Method</u>	<u>No. Runs</u>
Benzene/Full Scan	10/16/90	CARB 422	3 + Blank
Formaldehyde, Acrolin Acetaldehyde	10/16/90	CARB 430	3 + Blank
Phenol	10/16/90	BAAQMD ST-16	3 + Blank

The samples were analyzed by the following laboratories:

<u>Test Method</u>	<u>Analytical Laboratory</u>
CARB 422	Coast to Coast Analytical of San Luis Obispo
CARB 430	Coast to Coast Analytical of San Luis Obispo
BAAQMD ST-16	Enesco Labs of Garden Grove

All sampling was conducted by Mr. Eric Charles and Mr. James Taplin of Petro Chem Environmental Services. Mr. Scott Davis supervised all testing and performed all testing equipment turnaround and method recovery procedures. Mr. Dennis Marsh of Pacific Energy Systems supervised all testing.

DISCUSSION

DISCUSSION

The testing of Pacific Energy System's Superior engine located at the Oxnard Landfill was conducted on October 16, 1990. All testing proceeded smoothly without any upsets due to testing equipment or engine operational problems. All testing was conducted upstream of the exhaust outlet. Two sample ports were placed on the same cross sectional plane 90 degrees apart, approximately five diameters downstream and two diameters upstream from disturbance in flow.

On July 31, 1990, a cyclonic flow check was conducted and showed an average angle of deviation of three degrees from sixteen traverse points (report #62-232).

SAMPLING METHODS



CARB METHOD 430: FORMALDEHYDE

The sampling apparatus consisted of a heated stainless steel probe followed by three midget impingers containing 15ml of acidified DNPH in the first two and silica gel in the third. The impinger train was connected to a vacuum pump/rotometer/dry gas meter assembly. Prior to the test the impingers were cleaned with chromic acid, distilled water, methylene chloride, methanol, and oven dried. The impinger bottoms were sent to the analytical laboratory for charging. The impinger bottoms were charged, capped and returned to PCES for sampling within a 48 hour period of making the DNPH solution.

CARB METHOD 430 SAMPLING:

The charged impinger bottoms were stored in a friction top can with 1-2 inches of a activated charcoal and shipped to the sampling location. The impingers were uncapped, the impinger tops added and then the sampling train was assembled. The train was transported to the stack, and leak tested by closing the teflon stopcock at the first impinger while applying vacuum to the system. The stopcock was then opened and sampling proceeded at a sample rate of 1.0 lpm. (.035 ft/min). Upon completion of the test the train was leak tested again, and a 5ml distilled water probe wash was performed and allowed to drain into the first impinger. The train was then disconnected from the probe and lowered down to the mobile laboratory for sample recovery.

In the mobile laboratory the impinger tops were removed, impingers capped and sealed with teflon tape labeled, and placed back into the friction top can with activated charcoal. The samples were then shipped back to the analytical laboratory for extraction and analysis of formaldehyde by CARB Method 430, HPLC.

A field blank was similarly treated but, instead of sampling stack gas zero grade nitrogen was flushed through the impingers. A 5ml distilled water aliquot was added to the first impinger to represent a probe wash. A sample spike was performed by the analytical laboratory and that impinger was transported to the sample location where it remained for the duration of a test run. The sample spike was then sent back to the analytical laboratory along with the other samples for analysis.



PETRO
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METHOD 422 BENZENE

The sampling apparatus consisted of a heat traced stainless steel probe, teflon sample line, midget impinger moisture knockout, twenty liter tedlar bag housed in a rigid air tight container. The container was connected to a vacuum pump/rotometer/dry gas meter assembly.

The sampling apparatus was transported to the sample site and set up and leak tested by observing a zero reading on the rotometer. The sample probe/teflon line was purged with stack gas and the teflon stopcock of the midget impinger was opened to initiate sampling. Sampling was conducted over a one hour period, a final leak test was performed and the bag was recovered from the sample container. The contents of the impinger and distilled water rinsings were recovered into a villi vial and the vial was completely filled.

The samples were stored out of sunlight, packaged and sent to the analytical laboratory for analysis. The bag samples were analyzed by EPA Method T014, GCMS modified for bag sample.

The condensate samples were analyzed by EPA Method 524.2/8240, purge and trap GCMS.

A bag blank (zero grade nitrogen) and distilled water were included with each sample set.

A laboratory spike was included with each sample set.

BAAQMD METHOD ST-16: PHENOLIC COMPOUNDS

METHOD ST-16 SAMPLING:

The sampling apparatus is the same as that which is described for EPA Method #5 and consisted of a quartz nozzle, heat traced quartz probe, borosilicate filter holder with a teflon-coated screen filter support, a teflon filter to impinger line and four modified Greenburg Smith impingers containing 100 ml 0.1N NaOH, 100 ml NaOH, dry and silica gel.

Prior to the testing all sampling equipment was cleaned with successive rinses of soapy water, tap water, 6N HNO₃ soak, distilled H₂O, and 0.1N NaOH. All sample containers were pre-cleaned by rinsing with 6N HNO₃ rinse, distilled H₂O and 0.1N NaOH.

The sample train was charged, a Whatman QMA Quartz fiber filter was placed into the filter holder and the probe/nozzle/filter was put together and all sampling equipment was sealed and transported to the stack for assembly.

The sampling equipment was assembled and leak tested at 10 inches Hg vacuum. The probe and filter components were heated to 250 + or - 25 degrees F. The probe was inserted into the stack and isokinetic sampling was initiated as per EPA Method #5.

Upon completion of a test the probe was withdrawn from the stack and leak tested at a vacuum equal to or greater than the maximum vacuum observed during the test. The equipment was then disassembled the filter to impinger line was rinsed with a known amount of 0.1N NaOH into the first impinger, and the components were then sealed with aluminum foil and transported to the mobile laboratory for sample recovery.

A field blank was similarly treated: charged, transported to the stack, leak tested, disassembled, and transported to the mobile laboratory for sample recovery. No additional gases were pulled through the field blank train.

METHOD ST-16 SAMPLE RECOVERY:

The filter and nozzle were separated from the probe. The probe was tilted and brushed three successive times while rinsing with 0.1N NaOH and rotating. Sterile surgical gloves were used during this process. All rinses were caught in an amber glass sample bottle. The nozzle, and filter top half were then similarly cleaned and the rinsings were combined with the probe wash. The filter was removed from the filter holder with teflon coated forceps, folded and placed into a petri dish.

The first, second and third impingers were disassembled, weighed, and their contents transferred to an amber sample bottle. The impingers cross overs and filter bottom half were rinsed three times with 0.1N NaOH, and the rinses were combined with the impingate sample.

Alliquots of the reagents grade chemicals and filters were recovered for analysis as reagent blanks. All samples were sealed, fluid levels marked, labeled and logged on a chain of custody form. Upon completion of the test they were transported to the laboratory for analysis.

METHOD ST-16 SAMPLE ANALYSIS:

The filter was digested and combined with the probe wash and impingate contents. The sample was then analyzed for phenolic compounds by gas chromatography.

The reagent blanks were similarly analyzed and an in-house spike was performed with a similar sample matrix, percent recoveries are reported.

METHOD 430 DATA

COMPANY: PACIFIC ENERGY
 UNIT: OXNARD LANDFILL ICE #2
 DATE: 10-16-90
 REPORT #:62-308

METHOD 430
 FIELD DATA @ 70'

	RUN #:	1	2	3
	TIME:	1405	1515	1620

Vm (dry gas sampled).....		2.1	2.25	2.25
Y (meter calib. factor).....		0.984912	0.984912	0.984912
P bar (Barometric pressure).....		30.5	30.5	30.5
P static (stack pressure, " H2O).....		2.4	2.4	2.4
Delta H (differential meter press, " H2O)....		0	0	0
Tm (meter temperature, R').....		555	555	557

Vm(std),dscf		2.01	2.16	2.15
Vm(std),dscm		0.056916	0.061164	0.060881
Sample time		60	60	60

COMPANY: PACIFIC ENERGY
UNIT: OXNARD LANDFILL ICE #2
DATE: 10-16-90
REPORT #:62-308

Method 430
Formaldehyde Results

Test Run	#1	#2	#3	average
Time	1405	1515	1620	
Formaldehyde ug/l	50	50	50	
Sample vol, l	0.042	0.037	0.035	
Formaldehyde, ug	2.10	1.85	1.75	
Vm std DSCF	2.01	2.16	2.15	
Vm std DSCM	0.057	0.061	0.061	
Volume Flow, DSCFM 1/	5404	5461	5393	

Concentrations :

ug/dscf	1	1	1	1
ug/dscm	37	30	29	32
ppm	0.03	0.02	0.02	0.02

Emissions :

lb/hr	0.0007	0.0006	0.0005	0.0006
-------	--------	--------	--------	--------

1/ See Method st-16 data

COMPANY: PACIFIC ENERGY
 UNIT: OXNARD LANDFILL ICE #2
 DATE: 10-16-90
 REPORT #:62-308

Method 430
 Acetaldehyde Results

Test Run	#1	#2	#3	average
Time	1405	1515	1620	
Formaldehyde ug/l	50	50	50	
Sample vol, l	0.042	0.037	0.035	
Formaldehyde, ug	2.10	1.85	1.75	
Vm std DSCF	2.01	2.16	2.15	
Vm std DSCM	0.057	0.061	0.061	
Volume Flow, DSCFM 1/	5404	5461	5393	
Concentrations :				
ug/dscf	1	1	1	1
ug/dscm	37	30	29	32
ppm	0.03	0.02	0.02	0.02
Emissions :				
lb/hr	0.0007	0.0006	0.0005	0.0006

1/ See Method st-16 data

COMPANY: PACIFIC ENERGY
 UNIT: OXNARD LANDFILL ICE #2
 DATE: 10-16-90
 REPORT #:62-308

Method 430
 Acrolein Results

Test Run	#1	#2	#3	average
Time	1405	1515	1620	
Formaldehyde ug/l	50	50	50	
Sample vol, l	0.042	0.037	0.035	
Formaldehyde, ug	2.10	1.85	1.75	
Vm std DSCF	2.01	2.16	2.15	
Vm std DSCM	0.057	0.061	0.061	
Volume Flow, DSCFM 1/	5404	5461	5393	
Concentrations :				
ug/dscf	1	1	1	1
ug/dscm	37	30	29	32
ppm	0.03	0.02	0.02	0.02
Emissions :				
lb/hr	0.0007	0.0006	0.0005	0.0006

1/ See Method st-16 data

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FIELD DATA

Client: Pacific Energy Report #:

Location: OXNARD ENGINE #1

Operator: ELC / SAG

Date: 10/16/50

Run No: 1

Pump No.: _____

Meter Box No.: Pump/Water Factor: 1

meter VH @: Temp/Water 10/1/2001

Pitot Tube No.: _____

Post Test Leak Chk.Leak Rate: 0.00 cfm

Vacuum: 6 (in Hg)

Ambient Temp: 80

Barometric Pressure: 30.5Static Pressure, (in iHg): 30

Assumed Moisture %:

Nozzle Ident. No.:

Aver. Calib. Nozzle Diam.(in):

Probe Liner Material:

Filter Number: _____

Duct Diam. (in):

Pin Test LKCHK

Rate 0.000

2006
H 2

Traverse Point number	Time: (e) min	Vacuum in Hg	Stack Temper. (Ts) °F	Velocity Head (ΔPs) (in)H ₂ O	Pressure Differential across Orifice Meter ΔH R _{AIF} (in H ₂ O)	Gas Sample Volume (ft ³)	Gas Sample Temp. at dry Gas Meter		Filter Holder Temperature: (°F)	Temperature of Gas Leaving Condenser or L Impinger (°F)
							inlet (°F)	outlet (°F)		
	1405	4			.035	045.772				
	15	4			.035	046.121	96	96		
	25	4			.035	046.472				
	35	4			.035	046.821	95	95		
	45	4			.035	047.171				
	55	4			.035	047.522	94	94		
	15:05	4			.035	047.872				
						<u>2.10</u>				
								95		
Total							avg.	avg.		

FIELD DATA

Post Test Leak Chk.

Operator: SAV
SAVING IN THE U.S.

Leak Rate: 0,000 cfm
Vacuum: 6 (in Hg)

Pretest LK CLK

0.000000

245

Duct Diam. (in):

Barometric Pressure: 30.5

Static Pressure, (in Hg): 29.3

Assumed Moisture %: 20

Nozzle Ident. No.:

Aver. Calib. Nozzle Diam.(in):

Probe Liner Material: SS

Filter Number: _____
Duct Diam. (in): _____

-28-

W 20

FIELD DATA

Pr.

~~Post~~ Test Leak Chk.

Ambient Temp: 75.0

Barometric Pressure: $\frac{73}{30.5}$

Static Pressure, (in Hg): $\frac{30.3}{2.4}$

Assumed Moisture %: 20

Nozzle Ident. No.:

Aver. Calib. Nozzle Diam.(in):

Probe Liner Material:

Filter Number:

Duct Diam. (in):

Leak Rate: 0.02 cfm
Vacuum: 6 (in Hg)

Vacuum: 6 (in Hg)

1

NO:

100.

2.

No. 1

- 29 -

Coast-to-Coast
Analytical
Services

Coast-to-Coast
Analytical Services
141 Suburban Road
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: As Listed
Collected: 10/17/90
Received: 10/19/90
Tested: 10/31/90
Collected by: S. Davis

Attn: Faythe Blythe
Petro Chem Environmental
3207 Antonino Ave.
Bakersfield, CA 93308

Sample Description:

Job #62-308, PES, Oxnard Landfill,
Impingates As Listed

REPORT

LAB NUMBER	SAMPLE DESCRIPTION	LEVEL FOUND		
		ACETALDEHYDE ug/L	ACROLEIN ug/L	FORMALDEHYDE ug/L
METHOD-----				
DETECTION LIMIT(PQL)**-----		CARB 430 50.	CARB 430 50.	CARB 430 50.
ANALYST-----		ML	ML	ML
G-4022-1	Samples #1 & 2, Run-1, Volume = 42 ml	<50.	<50.	<50.
G-4022-2	Samples #3 & 4, Run-2, Volume = 37 ml	<50.	<50.	<50.
G-4022-3	Samples #5 & 6, Run-3, Volume = 35 ml	<50.	<50.	<50.
G-4022-4	Samples #7 & 8, Blank Run, Volume = 31.5 ml	<50.	<50.	70.
G-4022-5	DNPH Reagent SPIKED AT FOUND W/SPIKE PERCENT RECOVERY	<50. 2200. 2000. 91.	<50. 1600. 1400. 88.	<50. 780. 460. 59.
G-4022-6	DNPH Blank Volume = 29 ml	<50.	<50.	70.

**Practical Quantitation Limit

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES

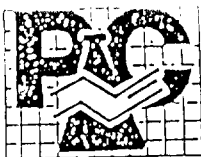
Shelli St. Clair

Shelli St. Clair, Group Leader

Stephen Havlicek

Mary Havlicek, Ph.D., President

11/01/90
G4022F.WR1/FORM1
MH/ml/ml/ss



PETROCHEM
ENVIRONMENTAL
SERVICES, INC.

CHAIN OF CUSTODY RECORD

3207 Antonino Avenue
Bakersfield, California 933
(805) 327-7300
FAX (805) 327-3459

METHOD: 430

CLIENT: PES

JOB NO. 62-308

LOCATION: Onwell Landfill

REPORT ATTN. TO: Scott Davis

P.O. # 1016 SG 4022

SAMPLE NO.	SAMPLE DESCRIPTION	DATE	SAMPLE TYPE			ANALYSIS REQUIRED	Formt
			liq.	filter	gas		
1	DNPH Imp #1 RUN #1	10/17	✓			-1	combine & ANALYZE each
2	DNPH Imp #2 RUN #1	10/17	✓				RUN separately
3	DNPH Imp #1 RUN #2	10/17	✓			-2	for total formaldehyde
4	DNPH Imp #2 RUN #2	10/17	✓				total formaldehyde
5	DNPH Imp #1 RUN #3	10/17	✓			-3	" "
6	DNPH Imp #2 RUN #3	10/17	✓				
7	DNPH Imp #1 Blank RUN	10/17	✓			-4	" "
8	DNPH Imp #2 Blank RUN	10/17	✓				
	Spike	10/17	✓			-5	Analyze total Formaldehyde
	Dnph BLANK	10/17	✓			-6	ANALYZE for Mg/L Formaldehyde
**	2 imp not used						DO NOT ANALYZE

COMMENTS:

RELINQUISHED BY: Scott Davis DATE 10-17-90

RELINQUISHED BY: [Signature] DATE 10/18/90

RELINQUISHED BY: [Signature] DATE 10/18/90

RECEIVED BY: [Signature] DATE 10/17/90

RECEIVED BY: [Signature] DATE 10/19/90

RECEIVED BY: Sealed intact DATE 1200

METHOD 422 DATA

COMPANY: PACIFIC ENERGY
UNIT: OXNARD LANDFILL ICE #2
DATE: 10-16-90
REPORT #:62-308

METHOD 422
FIELD DATA @ 70'

	RUN #:	1	2	3
	TIME:	915	1030	1150

Vm (dry gas sampled).....	0.9	0.9	0.9	
Y (meter calib. factor).....	0.984912	0.984912	0.984912	
P bar (Barometric pressure).....	30.5	30.5	30.5	
P static (stack pressure, " H2O).....	2.4	2.4	2.4	
Delta H (differential meter press, " H2O)....	0	0	0	
Tm (meter temperature, R').....	546	551	553	

Vm(std),dscf	0.88	0.87	0.87	
Vm(std),dscm	0.024918	0.024635	0.024635	
Sample time	60	60	60	

COMPANY: PACIFIC ENERGY
UNIT : OXNARD LANDFILL ICE #2
Date : 10-16-90
Report : 62-308

CARB 422 RUN #1
Light Molecular Weight Hydrocarbons, GCMS

Compound		ppb	TOTAL lb/hr *
-----		-----	-----
Acetone		1.0 *	4.96E-05 *
Acrylonitrile	1	0.0	0.00E+00
Benzene		40.0	1.98E-03
2-Butanone, MEK		0.1 *	4.96E-06 *
Bromodichloromethane		0.1 *	4.96E-06 *
Carbon Disulfide		0.2 *	9.91E-06 *
Carbontetrachloride		0.1 *	4.96E-06 *
Chlorobenzene		0.7	3.47E-05
Chloroethane		0.1 *	4.96E-06 *
Chloroform		0.1 *	4.96E-06 *
Chloromethane		5.8	2.87E-04
Chloropicrin	1	0.0	0.00E+00
Dibromochloromethane		0.1 *	4.96E-06 *
1,2-Dibromoethane		0.0	0.00E+00
1,4-Dichlorobenzen	1	0.0	0.00E+00
1,1-Dichloroethane		0.1 *	4.96E-06 *
1,2-Dichloroethane		0.1 *	4.96E-06 *
1,1-Dichloroethene		0.1 *	4.96E-06 *
Dichloromethane		3.4	1.68E-04
1,2-Dichloropropane		0.1 *	4.96E-06 *
1,4-Dioxane		0.0	0.00E+00
Ethylbenzene		4.2	2.08E-04
2-Hexanone		0.1 *	4.96E-06 *
Hydrogen Sulfide	1	0.0	0.00E+00
4-Methyl-2-Pentanone, MIBK		0.1 *	4.96E-06 *
Styrene		0.2 *	9.91E-06 *
Tetrachloroethene, PCE		12.0	5.95E-04
Toluene		27.0	1.34E-03
1,1,1-Trichloroethane, TCA		0.8	3.96E-05
1,1,2-Trichloroethane		0.1 *	4.96E-06 *
Trichloroethene, TCE		0.9	4.46E-05
Trichlorotrifluoroethane, f		0.2 *	9.91E-06 *
Trichlorofluoromethane		0.5	2.48E-05
Vinyl Chloride		3.6	1.78E-04
Xylenes		9.3	4.61E-04

*= less than the detection limit

1/ these compounds were not analyzed

DSCFM = 5404 see Method ST-16 DATA

COMPANY: PACIFIC ENERGY
UNIT : OXNARD LANDFILL ICE #2
Date : 10-16-90
Report : 62-308

CARB 422 RUN #2
Light Molecular Weight Hydrocarbons, GCMS

Compound		ppb	TOTAL lb/hr *
-----		-----	-----
Acetone		1.2	5.95E-05
Acrylonitrile	1	0.0	0.00E+00
Benzene		46.0	3.07E-03
2-Butanone, MEK		0.1 *	6.15E-06 *
Bromodichloromethane		0.1 *	1.39E-05 *
Carbon Disulfide		0.2 *	1.30E-05 *
Carbontetrachloride		0.1 *	1.32E-05 *
Chlorobenzene		0.5	4.81E-05
Chloroethane		0.1 *	5.51E-06 *
Chloroform		0.1 *	1.02E-05 *
Chloromethane		6.7	2.89E-04
Chloropicrin	1	0.0	0.00E+00
Dibromochloromethane		0.1 *	1.78E-05 *
1,2-Dibromoethane		0.0	0.00E+00
1,4-Dichlorobenzene	1	0.0	0.00E+00
1,1-Dichloroethane		0.1 *	8.46E-06 *
1,2-Dichloroethane		0.1 *	8.46E-06 *
1,1-Dichloroethene		0.1 *	8.29E-06 *
Dichloromethane		5.3	3.85E-04
1,2-Dichloropropane		0.1 *	9.65E-06 *
1,4-Dioxane		0.0	0.00E+00
Ethylbenzene		5.3	4.80E-04
2-Hexanone		0.1 *	8.54E-06 *
Hydrogen Sulfide	1	0.0	0.00E+00
4-Methyl-2-Pentanone, MIBK		0.1 *	8.54E-06 *
Styrene		0.2 *	1.55E-05 *
Tetrachloroethene, PCE		1.5	2.13E-04
Toluene		32.0	2.52E-03
1,1,1-Trichloroethane, TCA		2.9	3.31E-04
1,1,2-Trichloroethane		0.1 *	1.14E-05 *
Trichloroethene, TCE		0.9	1.01E-04
Trichlorotrifluoroethane, f		0.4	6.41E-05
Trichlorofluoromethane		1.0	1.17E-04
Vinyl Chloride		3.6	1.92E-04
Xylenes		9.3	8.42E-04

*= less than the detection limit

1/ these compounds were not analyzed

DSCFM = 5461 see Method ST-16 DATA

COMPANY: PACIFIC ENERGY
 UNIT : OXNARD LANDFILL ICE #2
 Date : 10-16-90
 Report : 62-308

CARB 422 RUN #3
 Light Molecular Weight Hydrocarbons, GCMS

Compound		ppb	TOTAL lb/hr *
-----		-----	-----
Acetone		2.4	1.19E-04
Acrylonitrile	1	0.0	0.00E+00
Benzene		49.0	3.27E-03
2-Butanone, MEK		0.1 *	6.15E-06 *
Bromodichloromethane		0.1 *	1.39E-05 *
Carbon Disulfide		0.2 *	1.30E-05 *
Carbontetrachloride		0.1 *	1.32E-05 *
Chlorobenzene		0.6	5.77E-05
Chloroethane		0.1 *	5.51E-06 *
Chloroform		0.1 *	1.02E-05 *
Chloromethane		7.1	3.06E-04
Chloropicrin	1	0.0	0.00E+00
Dibromochloromethane		0.1 *	1.78E-05 *
1,2-Dibromoethane		0.0	0.00E+00
1,4-Dichlorobenzen	1	0.0	0.00E+00
1,1-Dichloroethane		0.1 *	8.46E-06 *
1,2-Dichloroethane		0.1 *	8.46E-06 *
1,1-Dichloroethene		0.1 *	8.29E-06 *
Dichloromethane		110.0	7.99E-03
1,2-Dichloropropane		0.1 *	9.65E-06 *
1,4-Dioxane		0.0	0.00E+00
Ethylbenzene		6.8	6.16E-04
2-Hexanone		0.1 *	8.54E-06 *
Hydrogen Sulfide	1	0.0	0.00E+00
4-Methyl-2-Pentanone, MIBK		0.1 *	8.54E-06 *
Styrene		0.2 *	1.55E-05 *
Tetrachloroethene, PCE		1.8	2.55E-04
Toluene		32.0	2.52E-03
1,1,1-Trichloroethane, TCA		2.9	3.31E-04
1,1,2-Trichloroethane		0.1 *	1.14E-05 *
Trichloroethene, TCE		0.9	1.01E-04
Trichlorotrifluoroethane, f		0.4	6.41E-05
Trichlorofluoromethane		1.1	1.29E-04
Vinyl Chloride		3.9	2.08E-04
Xylenes		10.0	9.06E-04

*= less than the detection limit

1/ these compounds were not analyzed

DSCFM = 5393 see Method ST-16 DATA

COMPANY: PACIFIC ENERGY
UNIT : OXNARD LANDFILL ICE #2
DATE : 10-16-90
REPORT#: 62-308

CARB 422 RUN #1
Light Molecular Weight Hydrocarbons, GCMS

Compound	ppb	TOTAL lb/hr *
-----	-----	-----
Dichlorobenzene	0.2	2.49E-05 *
1,2-Dibromoethane	0.2	2.97E-05 *
1,4-Dioxane	0.2	1.50E-05 *

*= less than the detection limit

DSCFM - 5404 see Method ST-16 data

COMPANY: PACIFIC ENERGY
UNIT : OXNARD LANDFILL ICE #2
DATE : 10-16-90
REPORT#: 62-308

CARB 422 RUN #2
Light Molecular Weight Hydrocarbons, GCMS

Compound -----	ppb -----	TOTAL lb/hr * -----
Dichlorobenzene	0.2	2.49E-05 *
1,2-Dibromoethane	0.2	2.97E-05 *
1,4-Dioxane	0.2	1.50E-05 *

*= less than the detection limit

DSCFM 5461 see Method ST-16 data

COMPANY: PACIFIC ENERGY
UNIT : OXNARD LANDFILL ICE #2
DATE : 10-16-90
REPORT#: 62-308

CARB 422 RUN #3
Light Molecular Weight Hydrocarbons, GCMS

Compound	ppb	TOTAL lb/hr *
-----	-----	-----
Dichlorobenzene	0.2	2.49E-05 *
1,2-Dibromoethane	0.2	2.97E-05 *
1,4-Dioxane	0.3	2.26E-05

*: less than the detection limit

DSCFM 5393 see Method ST-16 data

Benzene Run #1 on 11/1/62 FIELD DATA

Client: Leak Investigation Report #:
 Location:
 Operator: JAT
 Date: 10-16-60
 Run No.: 1-1 BARK
 Pump No.:
 Meter Box No.: Pump #1 Factor:
 Meter ΔH @:
 Pitot Tube No.:

Post Test Leak Chk.

Leak Rate: 4.50 cfm
 Vacuum: 2 (in Hg)

Ambient Temp:
 Barometric Pressure: 30.50
 Static Pressure, (in Hg): 2.4
 Assumed Moisture %: 20
 Nozzle Ident. No.:
 Aver. Calib. Nozzle Diam.(in): 75.000
 Probe Liner Material: PTFE
 Filter Number:
 Duct Diam. (in): 17.5

Traverse Point number	Time: (e) min	Vacuum in Hg	Stack Temper. (Ts) °F	Velocity Head (ΔPs) (in)H ₂ O	Pressure Differential across Orifice Meter ΔH (in H ₂ O)	Gas Sample Volume (ft ³)	Gas Sample Temp. at dry Gas Meter		Filter Holder Temperature: (°F)	Temperature of Gas Leaving Condenser or Last Impinger (°F)
							inlet (°F)	outlet (°F)		
	9:15	2			.015	41.8	86	82		
	9:25	2			.015	41.95				
	9:35	2			.015	42.10				
	9:45	2			.015	42.25				
	9:55	2			.015	42.40				
	10:05	2			.015	42.55				
	10:15	2			.015	42.70				
						0.515				
									86	
	12:55	2			.015	44.77				
	1:05	2			.015	44.92	88	88		
	1:15	2			.015	45.07				
	1:25	2			.015	45.22	88	88		
	1:35	2			.015	45.37				
	1:45	2			.015	45.52				
	12:55	2			.015	45.67	avg. 88	avg. 88		
Total						0.90	avg. 88	avg. 88		

Ann # 2 t #3 FIELD DATA

Client: Quanta Energy Report #: _____

Location: Quanta Energy

Operator: JAT

Date: 10-16-90

Run No: 233

Pump No.: _____

Meter Box No.: PUMP#4 Factor: _____

Meter ΔH @: _____

Pitot Tube No.: _____

Post Test Leak Chk. _____

Leak Rate: 0.00 cfm

Vacuum: 2 (in Hg)

Ambient Temp: _____

Barometric Pressure: 30.5

Static Pressure, (in Hg): 2.9

Assumed Moisture %: _____

Nozzle Ident. No.: _____

Aver. Calib. Nozzle Diam.(in): _____

Probe Liner Material: TEFLON

Filter Number: _____

Duct Diam. (in): 17.5

Traverse Point number	Time: (e) min	Vacuum in Hg	Stack Temper. (Ts) °F	Velocity Head (ΔPs) (in)H ₂ O	Pressure Differential across Orifice Meter ΔH (in H ₂ O)	Gas Sample Volume (ft ³)	Gas Sample Temp. at dry Gas Meter		Filter Holder Temperature: (°F)	Temperature of Gas Leaving Condenser or Last Impinger (°F)
							inlet (°F)	outlet (°F)		
	10:30	2			.015	42.95	91	91		
	:40	2			.015	43.10				
	:50	2			.015	43.25	91	91		
	11:00	2			.015	43.40				
	:10	2			.015	43.55				
	:20	2			.015	43.70	91	91		
	:30	2			.015	43.85		(91)		
						(0.90)				
	11:50				.015	43.86				
	12:00				.015	44.01	93	93		
	:10				.015	44.16				
	:20				.015	44.31				
	:30				.015	44.46	93	93		
	:40				.015	44.61				
	:50				.015	44.76	93	93		
						avg.	avg.	avg.		

**Coast-to-Coast
Analytical
Services**

Coast-to-Coast
Analytical Services, Inc.
141 Suburban Road
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: G-3996-1
Collected: 10/16/90
Received: 10/18/90
Tested: 10/18/90
Collected by: E. Charles

ATTN: Scott Davis
Petro Chem Environmental
3207 Antonino Avenue
Bakersfield, CA 93308

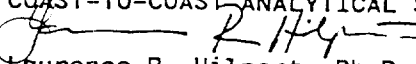
GC/MS AMBIENT AIR ANALYSIS EPA TO-14
Sample Description:
Proj.#62-308, Pacific Energy Systems, Oxnard,
1 Run-1, Bag #1, Engine #1, Air

HAZARDOUS SUBSTANCE LIST

Compound Analyzed	Detection Limit		Concentration	
	(CAS RN)	ppbv	ug/cu M	ppbv
Acetone	(67641)	1.0	not found	not found
Benzene	(71432)	0.1	140.	40.
Bromodichloromethane	(75274)	0.1	not found	not found
Bromomethane	(74839)	0.2	not found	not found
Bromoform	(75252)	0.1	not found	not found
2-Butanone (MEK)	(78933)	0.1	not found	not found
Carbon Disulfide	(75150)	0.2	not found	not found
Carbon Tetrachloride	(56235)	0.1	not found	not found
Chlorobenzene	(108907)	0.1	3.3	0.7
Chloroethane	(75003)	0.1	not found	not found
2-Chloroethylvinyl Ether	(110758)	1.0	not found	not found
Chloroform	(67663)	0.1	not found	not found
Chloromethane	(107302)	0.1	13.	5.8
Dibromochloromethane	(124481)	0.1	not found	not found
1,1-Dichloroethane	(75343)	0.1	not found	not found
1,2-Dichloroethane	(107062)	0.1	not found	not found
1,1-Dichloroethene	(75354)	0.1	not found	not found
c-1,2-Dichloroethene	(156605)	0.1	3.2	0.7
t-1,2-Dichloroethene	(156605)	0.1	not found	not found
Dichlorobenzenes	(25321226)	0.2	not found	not found
Dichloromethane	(75092)	1.0	13.	3.4
1,2-Dichloropropane	(78875)	0.1	not found	not found
cis-1,3-Dichloropropene	(10061015)	0.1	not found	not found
trans-1,3-Dichloropropene	(10061026)	0.1	not found	not found
Ethylbenzene	(100414)	0.2	20.	4.2
2-Hexanone	(591786)	0.1	not found	not found
4-Methyl-2-Pentanone (MIBK)	(624839)	0.1	not found	not found
Styrene	(100425)	0.2	not found	not found
1,1,2,2-Tetrachloroethane	(79345)	0.2	not found	not found
Tetrachloroethene (PCE)	(127184)	0.2	89.	12.
Toluene	(108883)	0.2	110.	27.
1,1,1-Trichloroethane (TCA)	(71556)	0.1	4.7	0.8
1,1,2-Trichloroethane	(79005)	0.1	not found	not found
Trichloroethene (TCE)	(79016)	0.1	5.2	0.9
Trichlorofluoromethane (F11)	(75694)	0.2	3.1	0.5
Trichlorotrifluoroethane	(76131)	0.2	not found	not found
Vinyl Acetate	(108054)	1.0	not found	not found
Vinyl Chloride	(75014)	0.1	10.	3.6
Xylenes	(1330207)	0.2	44.	9.3

Percent Recovery of Sample-Specific Quality Assurance Spike is: 106.

MSD#1
10/26/90
G3996-1.wr1/HSL23
LRH/ec/gd/co

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES

Laurence R. Hilpert, Ph.D.
Vice President

**Coast-to-Coast
Analytical
Services**

Coast-to-Coast
Analytical Services, Inc.
141 Suburban Road
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: G-3996-2
Collected: 10/16/90
Received: 10/18/90
Tested: 10/18/90
Collected by: E. Charles

ATTN: Scott Davis
Petro Chem Environmental
3207 Antonino Avenue
Bakersfield, CA 93308

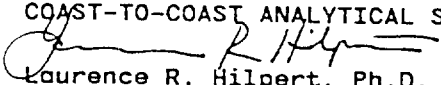
GC/MS AMBIENT AIR ANALYSIS EPA TO-14
Sample Description:
Proj.#62-308, Pacific Energy Systems, Oxnard,
2 Run-2, Bag #2, Engine #1, Air

HAZARDOUS SUBSTANCE LIST

Compound Analyzed	Detection Limit		Concentration	
	(CAS RN)	ppbv	ug/cu M	ppbv
Acetone	(67641)	1.0	3.1	1.2
Benzene	(71432)	0.1	160.	46.
Bromodichloromethane	(75274)	0.1	not found	not found
Bromomethane	(74839)	0.2	not found	not found
Bromoform	(75252)	0.1	not found	not found
2-Butanone (MEK)	(78933)	0.1	not found	not found
Carbon Disulfide	(75150)	0.2	not found	not found
Carbon Tetrachloride	(56235)	0.1	not found	not found
Chlorobenzene	(108907)	0.1	2.3	0.5
Chloroethane	(75003)	0.1	not found	not found
2-Chloroethylvinyl Ether	(110758)	1.0	not found	not found
Chloroform	(67663)	0.1	not found	not found
Chloromethane	(107302)	0.1	15.	6.7
Dibromochloromethane	(124481)	0.1	not found	not found
1,1-Dichloroethane	(75343)	0.1	not found	not found
1,2-Dichloroethane	(107062)	0.1	not found	not found
1,1-Dichloroethene	(75354)	0.1	not found	not found
c-1,2-Dichloroethene	(156605)	0.1	3.6	0.8
t-1,2-Dichloroethene	(156605)	0.1	not found	not found
Dichlorobenzenes	(25321226)	0.2	not found	not found
Dichloromethane	(75092)	1.0	20.	5.3
1,2-Dichloropropane	(78875)	0.1	not found	not found
cis-1,3-Dichloropropene	(10061015)	0.1	not found	not found
trans-1,3-Dichloropropene	(10061026)	0.1	not found	not found
Ethylbenzene	(100414)	0.2	25.	5.3
2-Hexanone	(591786)	0.1	not found	not found
4-Methyl-2-Pentanone (MIBK)	(624839)	0.1	not found	not found
Styrene	(100425)	0.2	not found	not found
1,1,2,2-Tetrachloroethane	(79345)	0.2	not found	not found
Tetrachloroethene (PCE)	(127184)	0.2	11.	1.5
Toluene	(108883)	0.2	130.	32.
1,1,1-Trichloroethane (TCA)	(71556)	0.1	17.	2.9
1,1,2-Trichloroethane	(79005)	0.1	not found	not found
Trichloroethene (TCE)	(79016)	0.1	5.2	0.9
Trichlorofluoromethane (F11)	(75694)	0.2	6.0	1.0
Trichlorotrifluoroethane	(76131)	0.2	2.9	0.4
Vinyl Acetate	(108054)	1.0	not found	not found
Vinyl Chloride	(75014)	0.1	10.	3.6
Xylenes	(1330207)	0.2	44.	9.3

Percent Recovery of Sample-Specific Quality Assurance Spike is: 105.

MSD#1
10/26/90
G3996-2.wr1/HSL23
LRH/ec/gd/co

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES

Laurence R. Hilpert, Ph.D.
Vice President

Coast-to-
Coast
Analytical
Services

Coast-to-Coast
Analytical Services, Inc.
141 Suburban Road
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: G-3996-3
Collected: 10/16/90
Received: 10/18/90
Tested: 10/18/90
Collected by: E. Charles

ATTN: Scott Davis
Petro Chem Environmental
3207 Antonino Avenue
Bakersfield, CA 93308

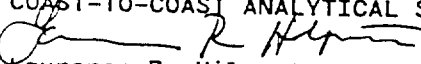
GC/MS AMBIENT AIR ANALYSIS EPA TO-14
Sample Description:
Proj.#62-308, Pacific Energy Systems, Oxnard,
3 Run-3, Bag #3, Engine #1, Air

HAZARDOUS SUBSTANCE LIST

Compound Analyzed	Detection Limit		Concentration	
	(CAS RN)	ppbv	ug/cu M	ppbv
Acetone	(67641)	1.0	6.3	2.4
Benzene	(71432)	0.1	170.	49.
Bromodichloromethane	(75274)	0.1	not found	not found
Bromomethane	(74839)	0.2	not found	not found
Bromoform	(75252)	0.1	not found	not found
2-Butanone (MEK)	(78933)	0.1	not found	not found
Carbon Disulfide	(75150)	0.2	not found	not found
Carbon Tetrachloride	(56235)	0.1	not found	not found
Chlorobenzene	(108907)	0.1	2.9	0.6
Chloroethane	(75003)	0.1	not found	not found
2-Chloroethylvinyl Ether	(110758)	1.0	not found	not found
Chloroform	(67663)	0.1	not found	not found
Chloromethane	(107302)	0.1	16.	7.1
Dibromochloromethane	(124481)	0.1	not found	not found
1,1-Dichloroethane	(75343)	0.1	not found	not found
1,2-Dichloroethane	(107062)	0.1	not found	not found
1,1-Dichloroethene	(75354)	0.1	not found	not found
c-1,2-Dichloroethene	(156605)	0.1	3.2	0.7
t-1,2-Dichloroethene	(156605)	0.1	not found	not found
Dichlorobenzenes	(25321226)	0.2	1.6	0.3
Dichloromethane	(75092)	1.0	410.	110.
1,2-Dichloropropane	(78875)	0.1	not found	not found
cis-1,3-Dichloropropene	(10061015)	0.1	not found	not found
trans-1,3-Dichloropropene	(10061026)	0.1	not found	not found
Ethylbenzene	(100414)	0.2	32.	6.8
2-Hexanone	(591786)	0.1	not found	not found
4-Methyl-2-Pentanone (MIBK)	(624839)	0.1	not found	not found
Styrene	(100425)	0.2	not found	not found
1,1,2,2-Tetrachloroethane	(79345)	0.2	not found	not found
Tetrachloroethene (PCE)	(127184)	0.2	13.	1.8
Toluene	(108883)	0.2	130.	32.
1,1,1-Trichloroethane (TCA)	(71556)	0.1	17.	2.9
1,1,2-Trichloroethane	(79005)	0.1	not found	not found
Trichloroethene (TCE)	(79016)	0.1	5.4	0.9
Trichlorofluoromethane (F11)	(75694)	0.2	6.6	1.1
Trichlorotrifluoroethane	(76131)	0.2	3.5	0.4
Vinyl Acetate	(108054)	1.0	not found	not found
Vinyl Chloride	(75014)	0.1	11.	3.9
Xylenes	(1330207)	0.2	48.	10.

Percent Recovery of Sample-Specific Quality Assurance Spike is: 108.

MSD#1
10/29/90
G3996-3.wr1/HSL23
LRH/ec/gd/co

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES

Laurence R. Hilpert, Ph.D.
Vice President

Coast-to-Coast
Analytical
Services

Coast-to-Coast
Analytical Services, Inc.
141 Suburban Road
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: G-3996-3dup
Collected: 10/16/90
Received: 10/18/90
Tested: 10/18/90
Collected by: E. Charles

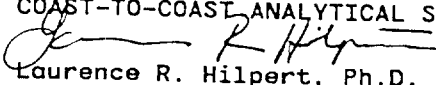
ATTN: Scott Davis
Petro Chem Environmental
3207 Antonino Avenue
Bakersfield, CA 93308

GC/MS AMBIENT AIR ANALYSIS EPA TO-14
Sample Description:
Proj.#62-308, Pacific Energy Systems, Oxnard,
3 Run-3, Bag #3, Engine #1, Air, DUPLICATE

HAZARDOUS SUBSTANCE LIST Compound Analyzed	Detection Limit		Concentration	
	(CAS RN)	ppbv	ug/cu M	ppbv
Acetone	(67641)	1.0	6.5	2.5
Benzene	(71432)	0.1	150.	43.
Bromodichloromethane	(75274)	0.1	not found	not found
Bromomethane	(74839)	0.2	not found	not found
Bromoform	(75252)	0.1	not found	not found
2-Butanone (MEK)	(78933)	0.1	not found	not found
Carbon Disulfide	(75150)	0.2	not found	not found
Carbon Tetrachloride	(56235)	0.1	not found	not found
Chlorobenzene	(108907)	0.1	2.7	0.5
Chloroethane	(75003)	0.1	not found	not found
2-Chloroethylvinyl Ether	(110758)	1.0	not found	not found
Chloroform	(67663)	0.1	not found	not found
Chloromethane	(107302)	0.1	16.	7.1
Dibromochloromethane	(124481)	0.1	not found	not found
1,1-Dichloroethane	(75343)	0.1	not found	not found
1,2-Dichloroethane	(107062)	0.1	not found	not found
1,1-Dichloroethene	(75354)	0.1	not found	not found
c-1,2-Dichloroethene	(156605)	0.1	3.5	0.8
t-1,2-Dichloroethene	(156605)	0.1	not found	not found
Dichlorobenzenes	(25321226)	0.2	1.3	0.2
Dichloromethane	(75092)	1.0	390.	100.
1,2-Dichloropropane	(78875)	0.1	not found	not found
cis-1,3-Dichloropropene	(10061015)	0.1	not found	not found
trans-1,3-Dichloropropene	(10061026)	0.1	not found	not found
Ethylbenzene	(100414)	0.2	29.	6.1
2-Hexanone	(591786)	0.1	not found	not found
4-Methyl-2-Pentanone (MIBK)	(624839)	0.1	not found	not found
Styrene	(100425)	0.2	not found	not found
1,1,2,2-Tetrachloroethane	(79345)	0.2	not found	not found
Tetrachloroethene (PCE)	(127184)	0.2	13.	1.8
Toluene	(108883)	0.2	120.	29.
1,1,1-Trichloroethane (TCA)	(71556)	0.1	15.	2.5
1,1,2-Trichloroethane	(79005)	0.1	not found	not found
Trichloroethene (TCE)	(79016)	0.1	4.1	0.7
Trichlorofluoromethane (F11)	(75694)	0.2	6.3	1.0
Trichlorotrifluoroethane	(76131)	0.2	3.1	0.4
Vinyl Acetate	(108054)	1.0	not found	not found
Vinyl Chloride	(75014)	0.1	11.	3.9
Xylenes	(1330207)	0.2	44.	9.3

Percent Recovery of Sample-Specific Quality Assurance Spike is: 111.

MSD#1
10/29/90
G3996-3d.wr1/HSL23
LRH/ec/gd/co

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES

Laurence R. Hilpert, Ph.D.
Vice President

**Coast-to-Coast
Analytical
Services**

Coast-to-Coast
Analytical Services, Inc.
141 Suburban Road
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: G-3996-4
Collected: 10/16/90
Received: 10/18/90
Tested: 10/18/90
Collected by: E. Charles

ATTN: Scott Davis
Petro Chem Environmental
3207 Antonino Avenue
Bakersfield, CA 93308

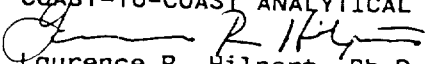
GC/MS AMBIENT AIR ANALYSIS EPA TO-14
Sample Description:
Proj.#62-308, Pacific Energy Systems,
Oxnard, Blank Bag #4, Air

HAZARDOUS SUBSTANCE LIST

Compound Analyzed	Detection Limit		Concentration	
	(CAS RN)	ppbv	ug/cu M	ppbv
Acetone	(67641)	1.0	not found	not found
Benzene	(71432)	0.1	19.	5.5
Bromodichloromethane	(75274)	0.1	not found	not found
Bromomethane	(74839)	0.2	not found	not found
Bromoform	(75252)	0.1	not found	not found
2-Butanone (MEK)	(78933)	0.1	not found	not found
Carbon Disulfide	(75150)	0.2	not found	not found
Carbon Tetrachloride	(56235)	0.1	not found	not found
Chlorobenzene	(108907)	0.1	not found	not found
Chloroethane	(75003)	0.1	not found	not found
2-Chloroethylvinyl Ether	(110758)	1.0	not found	not found
Chloroform	(67663)	0.1	not found	not found
Chloromethane	(107302)	0.1	6.5	2.9
Dibromochloromethane	(124481)	0.1	not found	not found
1,1-Dichloroethane	(75343)	0.1	not found	not found
1,2-Dichloroethane	(107062)	0.1	not found	not found
1,1-Dichloroethene	(75354)	0.1	not found	not found
c-1,2-Dichloroethene	(156605)	0.1	not found	not found
t-1,2-Dichloroethene	(156605)	0.1	not found	not found
Dichlorobenzenes	(25321226)	0.2	not found	not found
Dichloromethane	(75092)	1.0	370.	98.
1,2-Dichloropropane	(78875)	0.1	not found	not found
cis-1,3-Dichloropropene	(10061015)	0.1	not found	not found
trans-1,3-Dichloropropene	(10061026)	0.1	not found	not found
Ethylbenzene	(100414)	0.2	12.	2.5
2-Hexanone	(591786)	0.1	not found	not found
4-Methyl-2-Pentanone (MIBK)	(624839)	0.1	not found	not found
Styrene	(100425)	0.2	not found	not found
1,1,2,2-Tetrachloroethane	(79345)	0.2	not found	not found
Tetrachloroethene (PCE)	(127184)	0.2	6.5	0.9
Toluene	(108883)	0.2	35.	8.5
1,1,1-Trichloroethane (TCA)	(71556)	0.1	7.4	1.2
1,1,2-Trichloroethane	(79005)	0.1	not found	not found
Trichloroethene (TCE)	(79016)	0.1	2.5	0.4
Trichlorofluoromethane (F11)	(75694)	0.2	2.5	0.4
Trichlorotrifluoroethane	(76131)	0.2	not found	not found
Vinyl Acetate	(108054)	1.0	not found	not found
Vinyl Chloride	(75014)	0.1	not found	not found
Xylenes	(1330207)	0.2	22.	4.7

Percent Recovery of Sample-Specific Quality Assurance Spike is: 101.

MSD#1
10/29/90
G3996-4.wr1/HSL23
LRH/ec/gd/co

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES

Laurence R. Hilpert, Ph.D.
Vice President

Coast-to-Coast
Analytical
Services

Coast-to-Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: As Listed
Collected: 10/18/88
Received: 10/18/88
Tested: 10/18/88
Collected by: E. Charles

SUPPLEMENTARY REPORT FOR AIR ANALYSIS BY EPA TO-14 (GC/MS)

ATTN: Scott Davis
Petro Chem Environmental
3287 Antonino Avenue
Bakersfield, CA 93308

Sample Description:

Proj. #62-368, Pacific Energy Systems, Oxnard
Tedlar Bags, Air Samples As Listed

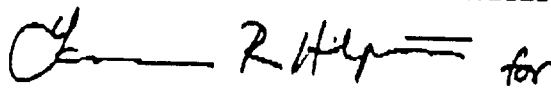
EPA METHOD-----
DETECTION LIMIT(PQL)*-----
DATE/ANALYST-----

TO-14
1,
10-18-88/EJAC

LAB NUMBER	SAMPLE DESCRIPTION	LEVEL FOUND (ug/cu m)	
		1,2-DIBROMOETHANE	1,4-DIOXANE
G-3996-1	1 Run-1 Bag #1 Engine #1	not found	not found
G-3996-2	2 Run-2 Bag #2 Engine #1	not found	not found
G-3996-3	3 Run-3 Bag #2 Engine #1	not found	not found
G-3996-4	Blank Bag #4	not found	not found

*Practical Quantitation Limit

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES


Mary Havlicek, Ph.D., President

MSD#1
11/12/88
G39861m.wr1/SUPSS
LRH/ec/co



PETRO
CHEM
ENVIRONMENTAL
SERVICES, INC.

Coast to Coast

CHAIN OF CUSTODY RECORD

3207 Antonino Avenue
Bakersfield, California 93388
(805) 327-7300
FAX (805) 327-3459

METHOD: 422 / 410 A Benzenes 327-7300

CLIENT: Pacific Energy Systems

JOB NO. 62-308

LOCATION: Oxford

REPORT ATTN. TO: Scott Davis

P.O. # 1012

SAMPLE NO.	SAMPLE DESCRIPTION	DATE	SAMPLE TYPE	ANALYSIS REQUIRED
			liq. filter gas	
1	IC Engine #1 Run - 1 Bag #1	10/16		✓ Benzenes by PID -1 SG 3996
2	" " " " " " " " Run - 2 Bag #2	10/16		✓ " " - 2
3	" " " " " " " " Run - 3 Bag #3	10/16		✓ " " - 3
4	" " " " " " " " Blank Bag #4	10/16		✓ " " - 4
11	IC Engine #1 Condensate run #1	10/16	✓	} Cancelled " " - 5 10-18-90 as per Scott Davis Samples sent back to Petro Chem
12	" " " " " " " " run #2	10/16	✓	
13	" " " " " " " " run #3	10/16	✓	
14	" " " " " " " " Blank	10/16	✓	
	impingew?			

COMMENTS:

Eric Chacks
RELINQUISHED BY: Eric Chacks DATE 10-17-90
RECEIVED BY: Fay Blyth DATE 10/17/90
RELINQUISHED BY: Fay Blyth DATE 10/17/90
RECEIVED BY: John L. DATE 10/18/90
RELINQUISHED BY: DATE
RECEIVED BY: Seal intact DATE

BAAQMD METHOD ST-16

DATA

COMPANY: PACIFIC ENERGY
UNIT: OXNARD LANDFILL ICE #2
DATE: 10-16-90
REPORT #:62-308

METHOD ST-16
FIELD DATA @ 70'

	RUN #:	1	2	3
	TIME:	1050	1225	1515

Vm (dry gas sampled).....		35.89	35.48	35.06
Y (meter calib. factor).....		0.998880	0.99888	0.99888
P bar (Barometric pressure).....		30.5	30.5	30.5
P static (stack pressure, " H2O).....		2.4	2.4	2.4
Delta H (differential meter press, " H2O)....		0.78	0.78	0.76
Tm (meter temperature, R').....		562	552	552
Vol H2O mls		124.9	123.3	124.5

Vm(std),dscf		34.53	34.75	34.34

Bws-H2O vapor		0.1463	0.1439	0.1465
MF-moisture factor		0.8537	0.8561	0.8535

% CO2		7.3	7.5	7.2
% O2		8.4	8.4	8.4
% N2		84.3	84.1	84.4

Md-MW stk gas,dry		29.5	29.54	29.49
Ms-MW stk gas,wet		27.82	27.88	27.81

Cp-pitot tube		0.84	0.84	0.84
Avg sq rt ^p		1.789	1.806	1.783
T stack, R'.....		1431	1433	1427
Stack area,ft2		1.67	1.67	1.67

Vs-fps		166.36	167.88	165.6
Qstd-dscfm		5404	5461	5393

Area noz,ft2		1.73E-04	1.73E-04	1.73E-04
Sample time		60	60	60

% Isokinetic		102.9	102.5	102.6

COMPANY: PACIFIC ENERGY
UNIT : OXNARD LANDFILL ICE #2
DATE : 10-16-90
REPORT#: 62-308

Summary of Results for Phenolic Compounds

Pollutant	Test	Vm std	DSCFM	Total ug		gr/DSCF	lb/hr
Phenol	1	34.53	5404	70.6	*	3.15E-05	1.46E-03
	2	34.75	5461	71.6	*	3.17E-05	1.49E-03
	3	34.34	5393	74.6	*	3.35E-05	1.55E-03
			average		*	3.22E-05	1.50E-03
3/4-Methyl phenol	1	34.53	5404	70.6	*	3.15E-05	1.46E-03
	2	34.75	5461	71.6	*	3.17E-05	1.49E-03
	3	34.34	5393	74.6	*	3.35E-05	1.55E-03
			average		*	3.22E-05	1.50E-03
2-Methyl- phenol	1	34.53	5404	70.6	*	3.15E-05	1.46E-03
	2	34.75	5461	71.6	*	3.17E-05	1.49E-03
	3	34.34	5393	74.6	*	3.35E-05	1.55E-03
			average		*	3.22E-05	1.50E-03

* Values reported are lower detection limit

COMPANY: Pacific Lightning Energy
 REPORT #: 62-308
 UNIT ID: #1
 DATE: 10/16/00

ON-SITE DATA

SITE: OXNAICK LANDFILL

RUN #: #1 #2 #3
 TIME: 1055-1155 1225-1330 1350-1455

Vm Dry sampled gas volume, dcf
 Y Meter calibration factor (met# 1002 →)
 P bar Barometric pressure, in Hg.....
 P static Stack static pressure, in H₂O.....
 Delta H Differential meter pressure, in H₂O.....
 Tm Meter temperature, deg F.....

35.89	35.48	35.00
9988002		
30.50	30.50	30.50
+2.9	+2.9	+2.4
.78	.78	.76
102	92	92

Contents	Run 1			Run 2			Run 3		
	final	tare	net	final	tare	net	final	tare	net
100 mL 1N NaOH	731.0	573.8	157.2	750.8	603.2	147.6	742.8	572.1	170.7
100 mL 1N NaOH	599.4	585.4	14.0	635.1	621.8	13.3	596.0	589.9	6.1
Dry	449.4	447.9	1.5	482.1	478.9	3.2	448.7	447.9	0.8
Silica	847.3	833.6	13.7	824.8	819.2	5.6	855.4	846.7	8.7
LW			-61.5			-51.4			-61.8
			124.9			123.3			124.5

Vlc, volume of H₂O, grams

CO₂ % Dry Volume.....
 O₂ % Dry Volume.....
 N₂ % Dry Volume.....
 Cp Pitot tube coefficient (Pit#)
 Delta P Avg Delta-P, in H₂O.....
 Ts Stack temperature, in deg F.....
 As Stack area, sq. ft.....
 Ds Stack Diameter, inches.....
 Dn Nozzle diameter, inches.....
 Dur Sampling time, min.....
 % Iso Mini Iso.....

#1	#2	#3
7.3	7.5	7.2
8.4	8.3	8.3
84.3	86.2	84.5
.84	.84	.84
3.2	3.26	3.18
971	973	967
1.67	1.67	1.67
17.5	17.5	17.5
17.8	17.8	17.8
60	60	60

 Filter #.....
 Filter tare weights, grams.....

QT 270	QT 271	QT 272
0.82566	0.82512	0.82560

INITIALS**

CONTROL BOX#: _____
 Hi ΔP _____ Lo ΔP _____ Ave ΔP _____ Duct Temp. _____
 Diameters before disturb _____ After _____
 # of Points, total _____
 Overall (Inches) _____ Coupling _____

Client: Pacific Energy
 Location: OR Naval
 Operator: ELC
 Date: 10-16-90
 Run No: #1
 Pump No.: 651
 Meter Box No.: 1002 Factor:
 Meter ΔH @: .900
 Pitot Tube No.: CP 84

PC Post Test Leak Chk.

Leak Rate: 0.00 cfm
 Vacuum: 10 (in Hg)

Ambient Temp: 30.50
 Barometric Pressure: 30.50
 Static Pressure, (in Hg): ±2.4
 Assumed Moisture %: 13 moist 27.5
 Nozzle Ident. No.:
 Aver. Calib. Nozzle Diam.(in): .178
 Probe Liner Material: Quartz
 Filter Number:
 Duct Diam. (in):

120 ft 12x6 CR 0.00
400 10

Traverse Point number	Time: (e) min	Vacuum in Hg	Stack Temper. (Ts) °F	Velocity Head (ΔPs) (in)H ₂ O	Pressure Differential across Orifice Meter ΔH (in H ₂ O)	Gas Sample Volume (ft ³)	Gas Sample Temp. at dry Gas Meter inlet (°F)	Gas Sample outlet (°F)	Filter Holder Temperature: (°F)	Temperature of Gas Leaving Condenser or Last Impinger (°F)
1	10:50	4	971	27	.55	0.96, 80	104	104	250	254 68
2	55	4	973	25	.57	99, 54	104	48		
3	11:00	4	973	30	.58	102, 38	104	45		
4	05	4	972	34	.61	105, 27	105	97		
5	10	4	977	36	.63	108, 33	105	97		
6	15	4	970	38	.65	111, 49	107	102	245	255 68
pk						114, 73				
1	11:25	4	970	27	.55	114, 73	105	100	245	253 68
2	30	4	968	27	.55	117, 47	104	100		
3	35	4	968	30	.58	120, 20	107	104		
4	40	4	970	35	.62	123, 13	105	101		
5	45	4	972	37	.64	126, 24	104	100		
6	50	4	965	38	.65	129, 44	101	94		
avg	55		(971)	(32)	0.780	132.69	avg	avg		avg = 53.67
Total						135.89				
Average						135.89				

FIELD DATA

Client: Pacific Energy Report #: _____
 Location: Onshore
 Operator: JMT
 Date: 12-16-96
 Run No.: 2
 Pump No.: 1002
 Meter Box No.: 1002 Factor: _____
 Meter ΔH @: 900
 Pitot Tube No.: CP 841

Post Test Leak Chk.

Leak Rate: 0.01 cfm
 Vacuum: 10 (in Hg)

Ambient Temp: 70°
 Barometric Pressure: 30.50
 Static Pressure, (in Hg): +2.4
 Assumed Moisture %: 13
 Nozzle Ident. No.: _____
 Aver. Calib. Nozzle Diam. (in): 1.78
 Probe Liner Material: Quartz
 Filter Number: _____
 Duct Diam. (in): 18"

Traverse Point number	Time: (e) min	Vacuum in Hg	Stack Temper. (Ts) °F	Velocity Head (ΔPs) (in) H ₂ O	Pressure Differential across Orifice Meter ΔH (in H ₂ O)	Gas Sample Volume (ft ³)	Gas Sample Temp. at dry Gas Meter		Filter Holder Temperature: (°F)	Temperature of Gas Leaving Condenser or Last Impinger (°F)
							inlet (°F)	outlet (°F)		
6	12:25		970	3.9	.65	0.92	100	99	250	252
5	:30		976	3.7	.63	0.86	89	94		
4	:35		973	3.5	.61	0.82	91	90		
3	:40		974	3.0	.55	0.72	90	92		
2	:45		972	2.8	.54	0.68	91	89		
1	:50		970	2.7	.54	0.66	90	90	249	252
PIC	:55					151.51				
6	1:00		971	3.8	.65	0.90	100	99	249	251
5	:05		975	3.7	.63	0.86	90	93		
4	:10		973	3.6	.62	0.84	91	90		
3	:15		974	3.0	.57	0.72	90	92		
2	:20		971	2.9	.56	0.70	91	89		
1	:25		971	2.7	.54	0.66	90	92	248	252
E.O.T	:30					169.28				
Total			(973)	(3.26)		0.78 (35.18 cf)	avg 90	avg 92		(92) VEL 53.43

April 27-10 FIELD DATA

Client: Pacific Energy Report #: _____
 Location: Oxnard
 Operator: JAT
 Date: 10-16-90
 Run No.: 3
 Pump No.: 1002
 Meter Box No.: 1002 Factor: _____
 Meter ΔH @: 900
 Pitot Tube No.: CP-84

Post Test Leak Chk.
 Leak Rate: 0.00 cfm
 Vacuum: 10 (in Hg)

Ambient Temp: 70.0
 Barometric Pressure: 30.50
 Static Pressure, (in Hg): 2.14
 Assumed Moisture %: 2.0 m w 5.15
 Nozzle Ident. No.: _____
 Aver. Calib. Nozzle Diam. (in): 1.38
 Probe Liner Material: Quartz
 Filter Number: _____
 Duct Diam. (in): _____

Survey Point number	Time: (e) min	Vacuum in Hg	Stack Temper. (Ts) °F	Velocity Head (ΔPs) (in) H ₂ O	Pressure Differential across Orifice Meter ΔH (in H ₂ O)	Gas Sample Volume (ft ³)	Gas Sample Temp. at dry Gas Meter inlet (°F)	Gas Sample outlet (°F)	Filter Holder Temperature: (°F)	Temperature of Gas Leaving Condenser or Impinger (°F)
1	1:50		984	28	.53	0.63 169.80	93	93	249	250 68
2	1:55		986	26	.52	0.63 172.43	92	89		
3	2:00		985	34	.56	0.71 175.05	93	89		
4	2:05		982	35	.61	0.82 177.87	93	89		
5	2:10		936	34	.63	0.86 180.92	93	91		
6	2:15		928	37	.64	0.89 184.06	92	91	250 251	
91	2:20					187.25				
1	2:25		984	27	.54	0.65 187.25	93	92	250 252	
2	2:30		985	28	.54	0.67 189.93	93	89		
3	2:35		986	31	.57	0.74 192.65	93	90		
4	2:40		981	34	.60	0.80 195.51	94	90		
5	2:45		936	36	.63	0.86 198.52	92	92		
6	2:50		927	37	.64	0.89 201.66	93	92	251 251	
End	2:55					204.86				
			967	318	0.76	35.06 CF			92	VEL 52.64

CALLAB-055415

Enseco, Inc. - Cal Lab Analytical
544 Industrial Bvd.

West Sacramento, California 95691
916) 372-1393

Date Received : 22 OCT 90 11:55

Mr. Scott Davis
Petro Chem Environmental Services Inc. -
3207 Antonino Ave.
Bakersfield, California 93388

Project ID,
EPA Case, RMA Lot : Petro Chem (62-30) Pacific
Energy/Oxnard 10/22/90

P.O. Number :

Delivered By :

Storage Location : R18

Logged in by : TCLEARY

(805) 327-7300

Nine samples received under COC in good condition. Delivered by UPS.

Sample ID	Enseco ID	Client's label info	Date/Time Samp.	Containers
055415-0001-SA	170199	#10 P/N-1	16 OCT 90	1-250AGJ
055415-0002-SA	170200	#11 IMP-1	16 OCT 90	1-500AGJ
055415-0003-SA	170201	#12 FILTER-1	16 OCT 90	1-PETRI
055415-0004-SA	170202	#13 P/N-2	16 OCT 90	1-250AGJ
055415-0005-SA	170204	#14 IMP-2	16 OCT 90	1-500AGJ
055415-0006-SA	170206	#15 FILTER-2	16 OCT 90	1-PETRI
055415-0007-SA	170207	#16 IMP-3	16 OCT 90	1-500AGJ
055415-0008-SA	170208	#17 P/N-3	16 OCT 90	1-250AGJ
055415-0009-SA	170209	#18 FILTER-3	16 OCT 90	1-PETRI

Samples not destroyed in testing are retained a maximum
of thirty (30) days unless otherwise requested.

Client Manager: Tim Cleary

Phenols by Method T0-8

Method T08

Client Name: Petro Chem Environmental Services Inc.

Client ID: #10 P/N-1

Lab ID: 055415-0001-SA

Matrix: GAS

Authorized: 26 OCT 90

Sampled: 16 OCT 90

Prepared: NA

Received: 22 OCT 90

Analyzed: 01 NOV 90

Parameter	Result	Units	Reporting Limit
Phenol	ND	ug/sample	16
2-Methylphenol	ND	ug/sample	16
3/4-Methylphenol	ND	ug/sample	16

ND = Not detected

NA = Not applicable

Reported By: Claire Hanamoto

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

Rev 230787

Phenols by Method TO-8

Method T08

Client Name: Petro Chem Environmental Services Inc.

Client ID: #11 IMP-1

Lab ID: 055415-0002-SA

Matrix: GAS

Authorized: 26 OCT 90

Sampled: 16 OCT 90

Prepared: NA

Received: 22 OCT 90

Analyzed: 01 NOV 90

Parameter	Result	Units	Reporting Limit
Phenol	ND	ug/sample	52
2-Methylphenol	ND	ug/sample	52
3/4-Methylphenol	ND	ug/sample	52

ND = Not detected
NA = Not applicable

Reported By: Claire Hanamoto

Approved By: Lisa Stafford

The cover letter is an integral part of this report.
Rev 230787

Phenols by Method T0-8

Method T08

Client Name: Petro Chem Environmental Services Inc.
 Client ID: #12 FILTER-1
 Lab ID: 055415-0003-SA
 Matrix: GAS
 Authorized: 26 OCT 90

Sampled: 16 OCT 90
 Prepared: NA

Received: 22 OCT 90
 Analyzed: 01 NOV 90

Parameter	Result	Units	Reporting Limit
Phenol	ND	ug/sample	2.6
2-Methylphenol	ND	ug/sample	2.6
3/4-Methylphenol	ND	ug/sample	2.6

ND = Not detected
 NA = Not applicable

Reported By: Claire Hanamoto

Approved By: Lisa Stafford

The cover letter is an integral part of this report.
 Rev 230787

Phenols by Method T0-8
Method T08

Client Name: Petro Chem Environmental Services Inc.
Client ID: #13 P/N-2
Lab ID: 055415-0004-SA
Matrix: GAS
Authorized: 26 OCT 90

Sampled: 16 OCT 90
Prepared: NA

Received: 22 OCT 90
Analyzed: 01 NOV 90

Parameter	Result	Units	Reporting Limit
Phenol	ND	ug/sample	17
2-Methylphenol	ND	ug/sample	17
3/4-Methylphenol	ND	ug/sample	17

ND = Not detected
NA = Not applicable

Reported By: Claire Hanamoto

Approved By: Lisa Stafford

The cover letter is an integral part of this report.
Rev 230787

Phenols by Method T0-8

Method T08

Client Name: Petro Chem Environmental Services Inc.

Client ID: #14 IMP-2

Lab ID: 055415-0005-SA

Matrix: GAS

Authorized: 26 OCT 90

Sampled: 16 OCT 90
Prepared: NAReceived: 22 OCT 90
Analyzed: 01 NOV 90

Parameter	Result	Units	Reporting Limit
Phenol	ND	ug/sample	52
2-Methylphenol	ND	ug/sample	52
3/4-Methylphenol	ND	ug/sample	52

ND = Not detected
NA = Not applicable

Reported By: Claire Hanamoto

Approved By: Lisa Stafford

The cover letter is an integral part of this report.
Rev 230787

Phenols by Method T0-8

Method T08

Client Name: Petro Chem Environmental Services Inc.
 Client ID: #15 FILTER-2
 Lab ID: 055415-0006-SA
 Matrix: GAS
 Authorized: 26 OCT 90

Sampled: 16 OCT 90
 Prepared: NA

Received: 22 OCT 90
 Analyzed: 01 NOV 90

Parameter	Result	Units	Reporting Limit
Phenol	ND	ug/sample	2.6
2-Methylphenol	ND	ug/sample	2.6
3/4-Methylphenol	ND	ug/sample	2.6

ND = Not detected
 NA = Not applicable

Reported By: Claire Hanamoto

Approved By: Lisa Stafford

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 Rev 230787

Phenols by Method T0-8

Method T08

Client Name: Petro Chem Environmental Services Inc.
 Client ID: #17 P/N-3
 Lab ID: 055415-0008-SA
 Matrix: GAS
 Authorized: 26 OCT 90

Sampled: 16 OCT 90
 Prepared: NA

Received: 22 OCT 90
 Analyzed: 01 NOV 90

Parameter	Result	Units	Reporting Limit
Phenol	ND	ug/sample	19
2-Methylphenol	ND	ug/sample	19
3/4-Methylphenol	ND	ug/sample	19

ND = Not detected
 NA = Not applicable

Reported By: Claire Hanamoto

Approved By: Lisa Stafford

The cover letter is an integral part of this report.
 Rev 230787

Phenols by Method T0-8

Method T08

Client Name: Petro Chem Environmental Services Inc.
 Client ID: #16 IMP-3
 Lab ID: 055415-0007-SA
 Matrix: GAS
 Authorized: 26 OCT 90

Sampled: 16 OCT 90
 Prepared: NA

Received: 22 OCT 90
 Analyzed: 01 NOV 90

Parameter	Result	Units	Reporting Limit
Phenol	63	ug/sample	53
2-Methylphenol	ND	ug/sample	53
3/4-Methylphenol	ND	ug/sample	53

ND = Not detected
 NA = Not applicable

Reported By: Claire Hanamoto

Approved By: Lisa Stafford

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Phenols by Method T0-8

Method T08

Client Name: Petro Chem Environmental Services Inc.
 Client ID: #18 FILTER-3
 Lab ID: 055415-0009-SA
 Matrix: GAS
 Authorized: 26 OCT 90

Sampled: 16 OCT 90
 Prepared: NA

Received: 22 OCT 90
 Analyzed: 01 NOV 90

Parameter	Result	Units	Reporting Limit
Phenol	ND	ug/sample	2.6
2-Methylphenol	ND	ug/sample	2.6
3/4-Methylphenol	ND	ug/sample	2.6

ND = Not detected
 NA = Not applicable

Reported By: Claire Hanamoto

Approved By: Lisa Stafford

The cover letter is an integral part of this report.
 Rev 230787



PETRO
CHEM
ENVIRONMENTAL
SERVICES, INC.

CHAIN OF CUSTODY RECORD

3207 Antonino Avenue
Bakersfield, California 93388
(805) 327-7300
FAX (805) 327-3459

METHOD: ST-16

CLIENT: Pacific Energy Systems

JOB NO. 62-308

LOCATION: Oxnard

REPORT ATTN. TO: Scott Davis

SAMPLE NO.	SAMPLE DESCRIPTION	DATE	SAMPLE TYPE			ANALYSIS REQUIRED
			liq.	filter	gas	
10	Pacific Energy Oxnard meth. ST-16 phenols P/N 1	10/16	✓			Phenols + Cresols method ST-16 by HPLC
11	Pacific Energy Oxnard meth. ST-16 phenols IMP. 1	10/16	✓			Composite + analyze for Phenols + Cresols method ST-16 by HPLC
12	Pacific Energy Oxnard meth. ST-16 phenols Filter #1	10/16		✓		
13	Pacific Energy Oxnard meth. ST-16 phenols P/N 2	10/16	✓			" "
14	Pacific Energy Oxnard meth. ST-16 phenols IMP. 2	10/16	✓			" "
15	Pacific Energy Oxnard meth. ST-16 phenols Filter 2	10/16		✓		
16	Pacific Energy Oxnard meth. ST-16 phenols IMP. 3	10/16	✓			" "
17	Pacific Energy Oxnard meth. ST-16 phenols P/N 3	10/16	✓			" "
18	Pacific Energy Oxnard meth. ST-16 phenols Filter #3	10/16		✓		

COMMENTS:

RELINQUISHED BY:

DATE

RECEIVED BY:

DATE

RELINQUISHED BY:

DATE

RECEIVED BY:

DATE

RELINQUISHED BY:

DATE

RECEIVED BY:

DATE

EQUIPMENT CALIBRATIONS

PETRO-CHEM ENVIRONMENTAL
 DRY GAS METER CALIBRATION

DATE:10-12-90
 OPERATOR:BDM
 METER ID PUMPMETER

AMBIENT TEMP. 72
 BAROMETRIC Pbar 29.52
 TEST METER ID#: S5M104564
 TEST METER Mcf: 1.031

APPROXIMATE CFM		.02	.04	.1
STD TEST METER	INT.	0.00	0.00	0.00
VOLUME CF	FINAL	5.01	5.25	5.01
	TOTAL	5.01	5.25	5.01
FIELD GAS METER	INT.	1.10	34.25	7.40
VOLUME CF	FINAL	6.34	39.78	12.67
	TOTAL	5.24	5.53	5.27
STD TEST METER				
TEMP F'		87	66	71
FIELD GAS METER				
TEMP F'				
IN		86	66	67.5
OUT		86	66.5	70.5
AVERAGE		86	66.25	69
STD TEST METER				
PRES.(in H2O)		-1.30	-0.60	-0.30
FIELD GAS METER				
PRES.(in H2O)		0	0	0
FIELD GAS METER				
Mcf		.9839441	.9792627	.9764431
FIELD AVERAGE Mcf:		.9849125		

PETRO-CHEM ENVIRONMENTAL
 DRY GAS METER CALIBRATION

DATE:10-9-90
 OPERATOR:BDM
 METER ID 1002

AMBIENT TEMP. 71
 BAROMETRIC Pbar 30.22
 TEST METER ID#: S5M104564
 TEST METER Mcf: 1.031

APPROXIMATE CFM		1	.75	.5	.3
STD TEST METER VOLUME CF	INT.	0.00	0.00	0.00	0.00
	FINAL	10.541	7.386	10.01	10.01
	TOTAL	10.541	7.39	10.01	10.01
FIELD GAS METER VOLUME CF	INT.	86.00	69.30	45.20	31.20
	FINAL	96.20	76.80	55.70	41.92
	TOTAL	10.20	7.50	10.50	10.72
STD TEST METER TEMP F'		73	71	68	66
FIELD GAS METER TEMP F'					
IN		92	87	79	68
OUT		78	74	69	62
AVERAGE		85	80.5	74	65
STD TEST METER PRES.(in H2O)		-1.30	-0.60	-0.30	-0.15
FIELD GAS METER PRES.(in H2O)		2.72	1.35	.5	.18
FIELD GAS METER Mcf		1.082293	1.030110	.9928460	.9604646
FIELD AVERAGE Mcf:		1.016429			

