GW - 23

MONITORING REPORTS

DATE:

1988-1986



ODESSA, TEXAS 79762 4001 PENBROOK

August 11, 1988

Notification of Discharge Lee Gasoline Plant

CERTIFIED MAIL
RETURN RECEIPT NO. P-512 089 614

Mr. Dave Boyer Environmental Bureau Chief New Mexico Oil Conservation Division P. O. Box 2088 Santa Fe, New Mexico 87501

Dear Mr. Boyer:

In compliance with Section 1-203 of the Water Quality Control Commission regulations, this is to notify you of a discharge of hydrocarbon material to the uppermost aquifer at our Lee Gasoline Plant.

As you are aware, we recently completed installation of new groundwater monitoring well systems at our four southeastern New Mexico plants (Artesia, Eunice, Lee and Lusk). The new systems were installed as a result of a Compliance Order issued by the New Mexico Environmental Improvement Division. The first set of samples from the new wells were taken during the month of May. Analysis results were recently received by this office (copies attached).

You will note from the analyses that water in the No. 4 well at Lee Plant shows some evidence of hydrocarbon contamination. Hydrocarbon contamination was also detected in the original upgradient well located approximately 250 feet north of the No. 4 well. We have requested our consultants on this project (Geoscience Consultants, Ltd. of Albuquerque) provide you with a copy of their document entitled "Report on the Installation of a Ground-Water Monitoring System at Phillips 66 Natural Gas Company Lee Plant" for additional detailed information.

Phillips has contracted GCL to perform a contamination assessment of the Lee Plant site. GCL plans to conduct a soil gas vapor survey as the first step in this project. We would like to schedule a meeting with you and your staff to further discuss our strategies for remediation of this problem. Please contact Mike Ford of this office to schedule a meeting date.

Questions regarding this information should be directed to Mike Ford of this office at (915) 367-1316.

Very truly yours,

Manager, Permian Basin Region

LLF:MDF

Attachments



ODESSA, TEXAS 79762 4001 PENBROOK

December 8, 1988

Quarterly Groundwater Monitoring Analyses Artesia, Eunice, Lee and Lusk Plants

Mr. Dave Boyer Environmental Bureau Chief New Mexico Oil Conservation Division P. O. Box 2088 Santa Fe, New Mexico 87501

Dear Mr. Boyer:

Per your request, attached please find copies of the second quarter groundwater monitoring analyses for the above referenced plants. I have also included additional information on the Lee Plant water supply wells for your reference.

If you should have any questions regarding this information, please contact me at (915) 367-1316.

Very truly yours,

Michael D. Ford

Environmental Analyst

MDF

Attachments

Garage . . .



ODESSA, TEXAS 79762 4001 PENBROOK

January 19, 1989

Quarterly Groundwater Monitoring Analyses Artesia, Eunice, Lee and Lusk Plants

Mr. Dave Boyer Environmental Bureau Chief New Mexico Oil Conservation Division P. O. Box 2088 Santa Fe, New Mexico 87501

Dear Mr. Boyer:

Per your request, attached please find copies of the third quarter groundwater monitoring analyses for the above referenced plants.

If you should have any questions regarding this information, please contact me at (915) 367-1316.

Very truly yours,

Michael D. Ford

Environmental Analyst

Michael D. Food

MDF

Attachments

Page 1 Received: 05/12/88

RAS Perimeter REPORT 06/13/88 16:14:44

Work Order # P8-05-035

SAMPLE IDENTIFICATION 21 8805121239	WORK ID PHILLIPS TAKEN W.S. Dubuk TRANS Fed Ex (see file for #'s) TYPE Aqueous P.D. # 88-0190-700 INVOICE under separate cover	CLIENT GEOSCIENCE SAMPLES 14 COMPANY Geoscience Consultants, Ltd. FACILITY 500 Copper NW Albequerque, NM 87102	Mike Geosc Albeg
TEST CODES and NAMES used on this report Pesticides/PCBs. Extraction for GC May 88 - 1514		ATTEN PHONE 919-981-0212 CONTACT M DAY * = Matrix interference	PREPARED Radian Analytical Services BY Bldg. 900 Perimeter Park Mortisville NC 27560 CERTIFIED BY

900

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leceived: 05/12/88

RAS Perimeter

REPORT

Work Order # P8-05-033

JAMPLE ID 8805121239

FRACTION 01A

Results by Sample

Date & Time Collected 05/12/88 TEST CODE 8080 系 Pesticides/PCBs. Category

DRGANICS ANALYSIS DATA SHEET PESTICIDES by METHOD 8080

INSTRMT ANALYST

BLACKLEY

GC1

319-85-7

58-89-9

319-84-6

CAS

EXTRCTD INJECTD gamma—BHC 05/16/88 heptachlor (lindane) alpha-BHC beta-BHC COMPOUND RESULT FILE # DET LIMIT 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 VERIFIED CNITS 7/101 Ŧ

53469-21-9 12672-29-6 33213-65-9 11096-82-5 11097-69-11141-16-5 11104-28-2 12674-11-2 8001-35-2 309-00-02 1031-07-B 1024-57-3 7421-93-4 319-86-8 959-98-8 50-29-3 57-74-9 72-54-8 60-57-1 76-44-8 72-20-B 72-55-9 endosulfan sulphate heptachlor epoxide endrin aldehyde endosulfan II endosulfan I delta-BHC toxaphene chlordane PCB-1260 PCB-1254 PCB-1248 PCB-1242 PCB-1232 PCB-1221 PCB-1016 4, 4'-DDT 4, 4'-DDD dieldrin 4, 4 '-DDE endrin aldmin

> 0.050 0.050

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0.20 0.20

0.10

0.20

Received: 05/12/88



RAS Perimeter

Results by Sample REPORT

Work Order # P8-05-035 Continued From Above

SAMPLE ID 8805121239

FRACTION <u>OIA</u> TEST CODE <u>8080</u> Date & Time Collected <u>05/12/88</u>

NAME Pesticides/PCBs. Category

SURROGATE RECOVERY

COMPOUND

RECOVERY

dibutyl chlorendate

tetrachlorometaxylene ×

NOTES AND DEFINITIONS FOR THIS REPORT: DET LIMIT = detection limit

ND = not detected at specified detection limit

for analysis.

estimated value less than 3 x minimum detection limit

RAS Perimeter

Results by Sample REPORT

Work Order # P8-05-033

SAMPLE ID 8805121041

FRACTION <u>O2A</u> TEST CODE <u>8080</u>
Date & Time Collected <u>05/12/88</u>

NAME Pesticides/PCBs.

Category

DRGANICS ANALYSIS DATA SHEET PESTICIDES by METHOD 8080

INSTRMT GC1

EXTRCTD 05/16/88
INJECTD 06/05/88

FILE # **VERIFIED** ¥

STIND

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319-84-6 58-89-9 319-85-7 76-44-8 319-86-8 319-86-8 319-86-8 319-86-8 319-86-8 319-86-8 319-86-8 3213-85-9 50-29-3 7421-93-4 1031-07-8 57-74-9 8001-35-2 11104-28-2 11104-28-2 111141-16-5 53469-21-9 12672-29-6 11097-69-1	CAS #
alpha—BHC gamma—BHC (lindane) beta—BHC heptachlor delta—BHC heptachlor delta—BHC aldrin delta—BHC aldrin aldrin 4, 4, -DDE dieldrin endrin aldehyde endosulfan sulphate chlordane toxaphene pCB-1232 PCB-1248 PCB-1254 PCB-1254	COMPOUND
	RESULT
0.0000000000000000000000000000000000000	DET LIMIT

Page 9
Received: 05/12/88

SAMPLE ID 8805121041

RAS Perimeter

REPORT

Work Order # P8-05-035 Continued From Above

Results by Sample

FRACTION <u>O2A</u> TEST CODE <u>8080</u>
Date & Time Collected <u>05/12/88</u>

NAME Pesticides/PCBs.

SURROGATE RECOVERY

COMPOUND

RECOVERY

dibutyl chlorendate

tetrachlorometaxylene ×

NR = not required for analysis.

ND = not detected at specified detection limit DET LIMIT = detection limit NOTES

AND DEFINITIONS FOR THIS REPORT:

S = compound peak saturated.

J = estimated value less than 3 x minimum detection limit.

RAS Perimeter

REPORT

Work Order # P8-05-055

JAMPLE ID 8805111655

ERACTION 03A TEST CODE 8080 Date & Time Collected 05/11/88 Results by Sample

NAME Pesticides/PCBs. Category

DRGANICS ANALYSIS DATA SHEET

1/6n	SLINO		INJECTD 06/05/88	INSTRMT GC1
		FILE #	EXTRCTD 05/16/88	ANALYST BLACKLEY
¥	VERIFIED H			
		ESTICIDES by METHOD 8080	PEST	

58-89-9 319-85-7 76-44-8 319-86-8 319-86-8 309-00-02 1024-57-3 959-98-8 72-55-9 60-57-1 72-20-8 7213-65-9 50-29-3 7421-93-4 1031-07-8 57-74-9 8001-35-2 11104-28-2 111141-16-5 53469-21-9 112672-29-6 111096-82-5	CAS #
gamma-BHC (lindane) beta-BHC heptachlor delta-BHC delta-BHC aldrin heptachlor epoxide endosulfan I 4,4,-DDE dieldrin endrin aldehyde endosulfan Sulphate chlordane toxaphene PCB-1232 PCB-1248 PCB-1248 PCB-1248	alpha-BHC
	RESULT
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	_



RAS Perimeter Results by Sample REPORT

Work Order # P8-05-055 Continued From Above

SAMPLE ID 8805111655

FRACTION <u>O3A</u> TEST CODE <u>8080</u>
Date & Time Collected <u>05/11/88</u>

NAME Pesticides/PCBs. Category

SURROGATE RECOVERY

COMPOUND

RECOVERY

dibutyl chlorendate

tetrachlorometaxylene ×

NOTES AND DEFINITIONS FOR THIS REPORT

DET LIMIT = detection limit

ND = not detected at specified detection limit

for analysis.

less than 3 x minimum detection limit.

RAS Perimeter

REPORT

Work Order # P8-05-055

SAMPLE ID 8805111811

Results by Sample
FRACTION 04A TEST CODE 8080
Date & Time Collected 05/11/88

NAME Pesticides/PCBs.

ORGANICS ANALYSIS DATA SHEET PESTICIDES by METHOD 8080

																		-										
11096-82-5	11097-69-1	12672-29-6	53469-21-9	11141-16-5	11104-28-2	12674-11-2	8001-35-2	57-74-9	1031-07-8	7421-93-4	50-29-3	33213-65-9	72-54-8	72-20-8	60-57-1	72-55-9	959-98-8	1024-57-3	309-00-02	319-86-8	76-44-8	319-85-7	58-89-9	319-84-6	C #		•	ANAI YST BI ACKLEY
PCB-1260	PCB-1254	8	PCB-1242	PCB-1232	PCB-1221	PCB-1016	toxaphene	chlordane	endosulfan sulphate	endrin aldehyde	4, 4 '-DDT	endosulfan II	4, 4, ~ DDD	endrin	dieldrin	4, 4 '-DDE	endosulfan I	heptachlor epoxide	aldrin	delta-BHC	heptachlor	beta-BHC	gamma-BHC (lindane)	alpha-BHC	COMPOUND		INJECTD 06/05/88	
NR	N _Z	N N	•	NR	•	N.Z		•	•		•	ND	•	•	•-		•	ND	•	•				2.3	RESULT DE)	7	n • • • • • • • • • • • • • • • • • • •
0. 20	0. 20	0. 10	0. 10	0. 20	0. 20	0.10	0.50	0.050	0.050	0.020	0.020	0. 030	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010 ک	0.010	MT LIMIT		UNITS ug/L	VERIFIED HK

leceived: 05/12/88

RAS Perimeter

Results by Sample REPURT

Work Order # P8-05-035 Continued From Above

AMPLE ID 8805111811

FRACTION <u>04A</u> TEST CDDE <u>8080</u> Date & Time Collected <u>05/11/88</u>

NAME Pesticides/PCBs. Category

SURROGATE RECOVERY

COMPOUND

RECOVERY

dibutyl chlorendate

tetrachlorometaxylene

×

IOTES AND DEFINITIONS FOR THIS REPORT: DET LIMIT = detection limit

not detected at specified detection limit

for analysis.

minimum detection limit

Received: 05/12/88

RAS Perimeter REPORT 06/14/88 14:02:48

Work Order # P8-05-536

ATTEN	REPORT TO
W. S. Dubuk	Mike Selke Geoscience Consultants, Ltd. Albequerque, NM 87102
P	PREPA

RED Radian Analutica BY Bldg 900 Perime Morrisville, NC

CONTACT M DAY

SAMPLES 15 Consultants, Ltd

87102

Previously Reported on 06/13/88

Geosciences
W S Dubuk
Fed Ex (see file for # 's)

Aqueous BB-0190-700 under separate cover

TEST CODES and NAMES used on this report

May 88 - 151 Quarley

a Ge

RAS Perimeter

REPORT

Work Order # P8-05-556

SAMPLE ID 8805121240

Results by Sample

FRACTION OIA TEST CODE 509B Date & Time Collected 05/12/88

孟 GC of Herbicides Category

ORGANICS ANALYSIS DATA SHEET HERBICIDES

VERIFIED

FILE #

UNITS

BLACKLEY

EXTRCTD 05/18/88 INJECTD 05/26/88

93-76-5 93-72-1 94-75-7 CAS # 2, 4, 5-TP (Silvex) COMPOUND 2,4,5-1 2,4-D RESULT DET. LIMIT 0.50 0.10 0.10

NOTES

ITIONS FOR THIS REPORT.

= detection limit.

detected at specified detection limit.

required for analysis.

minimum detection limit

Page /

Work Order # P8-05-036

SAMPLE ID 8805121042 Received: 05/12/88

RAS Perimeter Results by Sample REP ST

FRACTION <u>OZA</u> TEST CODE <u>5098</u> Date & Time Collected <u>05/12/88</u> 孟 GC of Herbicides Category

ORGANICS ANALYSIS DATA SHEET HERBICIDES

EXTRCTD

05/18/88 05/26/88

FILE

VERIFIED

SLINO

93-72-1 93-76-5 94-75-7 CAS # 2, 4, 5-TP COMPOUND (Silvex) 2, 4, 5-T 2,4-D RESULT DET LIMIT 0.50

NOTES NITIONS FOR THIS REPORT

T = detection limit

detected at specified a

required for analysis

ound peak saturated detection minimum detection limit. limit

~1) OU VC3 ND

Received: 05/12/88

RAS Perimeter Results by Sample

REPORT

Work Order # P8-05-936

SAMPLE ID 8805111656

FRACTION <u>O3A</u> TEST CODE <u>509B</u> Date & Time Collected <u>05/11/88</u>

NAME GC of Herbicides Category

ORGANICS ANALYSIS DATA SHEET HERBICIDES

EXTRCTD

FILE # VERIFIED

SLINA

93-76-5 2,4,5-T

93-72-1 94-75-7

(Silvex)

0.10 0.50 CAS

COMPOUND

RESULT

DET. LIMIT

2,4-D

NOTES

TOR THIS REPORT.

tion limit.

at specified detection limit.

for analysis.

saturated.

minimum detection limit

RAS Perimeter

REPORT

Work Order # P8-05-06

SAMPLE ID 8805111812

Results by Sample

FRACTION 04A TEST CODE 509B Date % Time Collected 05/11/88

NAME &C of Herbicides Category

DRGANICS ANALYSIS DATA SHEET HERBICIDES

EXTRCTD INJECTO

FILE VERIFIED

UNITS

93-76-5 93-72-1 94-75-7 CAS (Silvex) COMPOUND 2, 4, 5-T 2,4-D RESULT S DET. LIMIT 0.10 7 0.10 0.50

NOTES detection limi n limit specified : REFORT detection

x minimum detection limit.

RAS

Page

REPORT 06/29/88 09:15:49

Work Order # 88-----057

Received: 05/13/88

REPORT ATTEN d Geoscience Consultants, Ltd. Mike Selke 500 Capper NW Albuquerque, Suite 200 NM 87102

FACILITY

WORK ID

Phillips

TAKEN TRANS TYPE

USM

Fed Ex

INVOICE

under separate cover

P. O. #

88-0190-700

COMPANY

Geoscience Consultants,

CLIENT

GEOSCIENCE

SAMPLES

ATTEN	¥	REPARED
PO Box 201088 Austin, TX 78720-1088 TEN 512-454-4797		Radian Analytical Services

CERTIFIED BY

CONTACT GIBSON

<u>Unknawn compounds present</u> 11 -01 and -02

Footnotes and Comments

Potential error for such low values ranges between 50 and 100% Indicates a value ess than 5 times the detection limit

specific matrix was not within acceptable limits indicating an interferent present. Indicates that spike recovery for this analysis on the

SAMPLE IDENTIFICATION

1	0	04	င္မ	ည	01
	agent	<u>}-</u> -	et e	tes	Artesia
	b 1 d	ž	#	# N	#
	lank		dup		
		1	(na		
			sed)		
		j	1		1

BAE BETA AS G ALPHA Silver, Gross alpha radiation Gross beta radiation arium, rsenic, graphite AA admium, ICPES hloride, ICPES ICPES CODES and

XYLENE	TURB	TOX	TOC	S04 IC	SE G	PHEN	FI	5 Rd	NAMES used
Xulenes, EPA 602	Turbidity	Total organic halides	Total organic carbon	-	Selenium, graphite AA	Total phenolics	DΗ	Lead, graphite AA	on this report

May 88 - 15) Querte

PAGO)G6010 093020

PA method 602

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method

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Page 2 Received: 05/13/88

RAS

Austin REPORT REPORT

Work Order # 88-vu-057

Artesia #2	SAMPLE Id Artesia #1	SAMPLE Id Sample Id OI Artesia #1 O2 Artesia #2	Sample Id Sample Id OI Artesia #1 O2 Artesia #2
05/23/88	Test: <u>DG6010</u> date complete 05/23/88	Test: <u>CD E</u> <0.003 <0.003	Test: AG E ug/ml (0.003 (0.003
0.074	Test: FE E	Test: <u>CL IC</u> 160 790	Test: ALPHA pci/ 21 1(5.3) 21 1(3.8) 8 1 (3.8) pci/L
	Test: <u>F IC</u> mg/L	Test: COLI I >24,000 >24,000	Test: AS G 0.014 0.049
1350 1360 3450 3450	Test: MHD umhos/cm 1390	Test: CR E 	Test: BA E
in 4	Test: MN E	Test: <u>DG3020</u> date complete 05/16/88 05/16/88	Test: BETA PCi/ 25.7(7.3) PCi/L 20.6(7.1) PCi/L

Page 3 Received: 05/13/88

RAS Austin REPORT REPORT

Work Order # 88-ww-057 Continued From Above

SAMPLE I	Test: DG6010 date complete	Test: FE E	Test: F IC	Test: MHD	Test: MN E
				3370	
		,		3440	
Sample Id SAMPLE	Test: NA E	mg/L as N	Test: PB G	Test: PH units	Test: PHEN
	110	⟨0.1	<0.002	7.16	<0.00 <u>5</u>
Artesia #1				7.41	
				7. 16	
				7. 14	
	350	⟨0.1	0.006*	7. 32	⟨0, 005
T TOUS LA WA			12.1	7. 23	
				7. 20	
				7.21	

Page 4 (**) Received: 05/13/88

RAS

- Austin REPORT REPORT

Work Order # 88-vJ-057

SAMPLE	Test: SE G	Test: <u>504 1C</u>	Test: TOC	Test: TOX
I	<0.003	92	87	0.04*
Artes14 #1			92	0.04*
	Ž		61	0.04*
			65	0.05*
20	<0.003	24	83	0.11
AT COSTA		X	88.	0.06*
			84	0.14
·			948	0.09*
Anderson and Antonion, and and Antonion and Antonion and Antonion and Antonion and Antonion and Antonion and A	to international to the first first and the second	serances de complemental designation designation de serances de serances de serances de serances de serances d	A THE REAL PROPERTY OF THE BOOK AND	on the second of

Received: 05/13/88

RAS Austin

REPORT

Work Order # 88-vy-057

SAMPLE ID Artesia #1

Results by Sample

FRACTION OLV TEST CODE EPA602
Date & Time Collected 05/12/88 NAME EPA method 602 Category

			J.V	ERIFIEDCL	
ISTRMTCL	INJECTE	INJECTED 05/13/88 FILE # _		UNITS ug/L	
	CAS#	COMPOUND	RESULT	DET LIMIT	
	71-43-2	Benzene	17	0.2	
	108-88-3	Toluene	1. 8	0.2	
	100-41-4	Ethylbenzene	ND	0.3	
	108-90-7	Chlorobenzene-A	ND	0.3	
	106-46-7	1,4-Dichlorobenzene	ND	0.3	
	541-73-1	1,3-Dichlorobenzene	ND	0.4	
	95-50-1	1,2-Dichlorobenzene	ND	0.4	

SURRUGATES

8-80-86 a, a, a-Trifluorotoluene 100% recovery

NOTES AND DEFINITIONS FOR THIS REPORT. N\A = not available Second column confirmation NOT performed NA = not analyzed ND = not detected at detection limit DET LIMIT = DETECTION LIMIT less than 5 times the detection limit is otherwise noted

בח

Received: 05/13/88

Austin

RAS

Results by Sample REPORT

Work Order # 88-vo-057 Continued From Above

NAME EPA method 602

Category

SAMPLE ID Artesia #1

FRACTION O1J TEST CODE EPA602 Date & Time Collected 05/12/88

A-Chlorobenzene and m-xylene co-elute otherwise noted. Quantitated as chlorobenzene unless

SAMPLE ID Artesia #1 SAMPLE ID Artesia #1 ANALYST INSTRMT NOTES AND DEFINITIONS FOR THIS REPORT NVA = not available * = less than 5 times the detection limit NA = not analyzed ND = not detected at detection limit DET LIMIT = DEFECTION LIMIT <u>КСР</u> ANALYTE Mercury ANALYZED 05/13/88 RESULT FRACTION OIA TEST CODE TURB Pate & Time Collected 05/12/88 S DET LIMIT 0.00012 TEST CODE TURB **VERIFIED** UNITS NAME Turbidity NAME Mercury, cold vapor DMC Category Category

ANALYST INSTRMT

2100A

ANALYZED 05/14/88

VERIFIED

SLINA

Turbidity

4.2

10

ANALYTE

RESULT DET LIMIT

Page 7

CORPOR

RAS

Austin

REPURT

Work Order # 88-vu-057

Results by Sample

Received: 05/13/88

CORPORATION

Page 8 Received: 05/13/88

> RAS Austin

Results by Sample REPORT

Work Order # 88-vu-057 Continued From Above

SAMPLE ID Artesia #1

FRACTION OIA TEST CODE TURB Date & Time Collected 05/12/88

NAME Turbidity Category

NOTES AND DEFINITIONS FOR THIS REPORT. DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* less than 5 times the detection limit

NNA = not available

SAMPLE ID Artesia #1

FRACTION OIJ Date & Time Collected 05/12/88 TEST CODE XYLENE NAME Xulenes, EPA 602

Category

VER IF IED 13

ANALYST INSTRMT

INJECTD 05/13/88

FULE #

SLINN

DET LIMIT

RESULT 0.1 0.02

106-42-3 108-38-3

m-Xylene-A

p-Xylene

o-Xylene

CAS #

COMPOUND

95-47-6

98-08-8

a, a, a-Trifluorotoluene SURROGATES 100% recovery

NOTES AND DEFINITIONS FOR THIS REPORT

DET LIMIT = DETECTION LIMIT not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N\A = not available

Second column confirmation NOT performed u I s otherwise noted

Received: 05/13/88

SAMPLE ID Artesia #1

RAS

Austin

Results by Sample REPORT

FRACTION OLD TEST CODE XYLENE Date & Time Collected 05/12/88

Work Order # 88-vj-057 Continued From Above

NAME Xylenes, EPA 602

Category

Q = daily EPA standard recovery outside 95% confidence interval.

Chlorobenzene and m-xylene co-elute. Quantitated as chlorobenzene unless otherwise noted.

Page 10

SAMPLE ID Artesia #2 Received: 05/13/88

Austin

RAS

Results by Sample REPURT

Work Order # 88-va-057

FRACTION 02J TEST CODE EPA602
Date & Time Collected 05/12/88 NAME EPA method 602

Category

VERIFIED _

	NO NO 46 NO 15	Benzene Toluene Ethylbenzene Chlorobenzene-A 1,4-Dichlorobenzene 1,3-Dichlorobenzene	71-43-2 108-88-3 100-41-4 108-90-7 106-46-7 541-73-1 95-50-1
DET LIMIT	RESULT I	COMPOUND	CAS#
UNITSUQ/!	en e	INJECTED 05/13/88	NALYST CL INSTRMT D INJ

SURRUGATES

8-80-88 a, a, a-Trifluorotoluene 98% recovery

NOTES AND DEFINITIONS FOR THIS REPORT. NA = not analyzed Second column confirmation NOT performed N\A = not available * = less than 5 times the detection limit ND = not detected at detection limit DET LIMIT = DETECTION LIMIT otherwise noted.

CORPORATION

Page 11

Received: 05/13/88 SAMPLE ID Artesia #2

RAS - Aust

Austin

To be Comp

REPORT

Work Order # 88-v--057 Continued From Above

FRACTION 02J TEST CODE EPA602 NAME EPA method 602
Date & Time Collected 05/12/88 Category Results by Sample

A-Chlorobenzene and m-xylene co-elute Quantitated as chlorobenzene unless otherwise noted.

SAMPLE ID Artesia #2 SAMPLE ID Artesia #2 ANAL YST INSTRMT NOTES AND DEFINITIONS FOR THIS REPORT ANALYST INSTRMI N\A = not available NA = not analyzed ND = not detected at detection limit * = less than 5 times the detection limit DET LIMIT = DETECTION LIMIT 403 KCP ANALYTE Mercury ANALYZED 05/13/88 RESULT FRACTION 02A Date & Time Collected 05/12/88 PRACTION 021 TEST CODE HG C 8 Results by Sample DET LIMIT 0.00012 TEST CODE TURB VERIFIED VERIFIED DMC CTINU NAME Mercury, cold vapor NAME Turbidity F ug/ml Category Category

2100A

ANALYZED 05/14/88

SLINA

NTC

Turbidity

3.8

ANALYTE

RESULT DET LIMIT

Page 12

RAS

Austin

REPURT

Work Order # 88-4-057

Received: 05/13/88

Received: 05/13/88

RAS Austin

REPORT

Results by Sample

Work Order # 88-00-057 Continued From Above

SAMPLE ID Artesia #2

FRACTION <u>OZA</u> TEST CODE TURB Date & Time Collected <u>O5/12/88</u>

NAME Turbidity (ategory

NOTES AND DEFINITIONS FOR THIS REPORT NA = not analyzed ND = not detected at detection limit DET LIMIT = DETECTION LIMIT

MPLE ID Artesia #2

NIA = not available * = less than 5 times

the detection limit

TEST CODE XYLENE NAME Xulenes, EPA 602

FRACTION <u>O2J</u> TEST CODE XYLE

Category

FILE #

VERIFIED

S

INJECTD 05/13/88

AMALYST INSTRMI

UNITS

106-42-3 108-38-3 CAS #

95-47-6

COMPOUND p-Xylene

m-Xylene-A

o-Xylene

RESULT NDe DET LIMIT

NE P

8--80-85

a, a, a—Trifluorotoluene SURROGATES 98% recovery

NOTES AND DEFINITIONS FOR THIS REPORT DET LIMIT = DETECTION LIMIT

not detected at detection limit

analyzed

less than 5 times the detection limit

M\A = not available

Second column confirmation NOT performed 5 otherwise noted

Received: 05/13/88

RAS

Austin

Work Order # 88-vj-057 Continued From Above

SAMPLE IU Artesia #2 Upte & Time Collected 05/12/88 NAME Xulenes, EPA 602 Results by Sample

Chlorobenzene and m-xylene co-elute. - daily EPA standard recovery outside 95% confidence interval. Quantitated as chlorobenzene unless

otherwise noted

CORPORATION

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Received: 05/13/88

RAS Austin

Results by Sample REPORT

Work Order # 88-vy-057

SAMPLE ID Artesia #1 dup (no sed)

FRACTION 03A TEST CODE EPA6 Date & Time Collected 05/12/88 TEST CODE EPA602

NAME EPA method 602 Category

	0.4	ND ND	1,2-Dichlorobenzene	95-50-1
	0.4	NB	1,3-Dichlorobenzene	541-73-1
	0.3	N	1,4-Dichlorobenzene	106-46-7
	0.3	ND	Chlorobenzene-A	108-90-7
	0.3	ND	Ethylbenzene	100-41-4
	0.2	ND	Toluene	108-88-3
	0.2	ND	Benzene	71-43-2
	DET LIMIT	RESULT I	COMPOUND	CAS#
ug/L	CTINU		INJECTED 05/13/88 FILE # _	NALYSTCL IN
CL	VERIFIEDCL	S		

NOTES AND DEFINITIONS FOR THIS REPORT

8-80-8

a, a, a-Trifluorotoluene

100% recovery

SURROGATES

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

NNA = not available

Second column confirmation NOT performed

is otherwise noted.

CORPORATION

Page 16 Received: 05/13/88

SAMPLE ID Artesia #1 dup (no sed)

Austin

RAS

REPORT

Results by Sample

FRACTION 03A TEST CODE EPA602
Date & Time Collected 05/12/88

NAME EPA method 602 Category

Work Order # 88-v--057 Continued From Above

A-Chlorobenzene and m-xylene co-elute otherwise noted. Quantitated as chlorobenzene unless

Page 1

Received: 05/13/88

226 Austin

Results by Sample REPORT

Work Order # 88--vy-057

SAMPLE ID Artesia #1 dup (no sed)

PRACTION OBA TEST CODE XYLE TEST CODE XYLENE

NAME Xulenes, EPA 602

Category

VERIFIED

ANALYST INSTRMI

INJECTD 05/13/88

F11_E #

UNITS

106-42-3 108-38-3 95-47-6 CAS # m-Xylene-A COMPOUND o-Xylene p-Xylene RESULT DET LIMIT 0.1 0 2 2

90-08-B

a, a, a-Trifluorotoluene SURROGATES 100% recovery

NOTES AND DEFINITIONS FOR THIS REPORT DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not * = less than 5 times the detection limit analyzed

Second column confirmation NOT performed N\A = not available

Q = daily EPA standard recovery outside unless otherwise noted.

Chlorobenzene and m-xylene co-elute 95% confidence interval.

Quantitated as chlorobenzene unless otherwise noted

Page 18 05/13/88

SAMPLE ID trip blank

Austin

RAS

Work Order # 88-0-057

Results by Sample

FRACTION 04A TEST CODE EPA602 NAME EPA method 602
Date & Time Collected not specified Category Category

VERIFIED

-					
	0.4	ND	1,2-Dichlorobenzene	95-50-1	
	0.4	ND	1,3-Dichlorobenzene	541-73-1	
	0.3	ND	1,4-Dichlorobenzene	106-46-7	
	0.3	ND	Chlorobenzene-A	108-90-7	
	0.3	dN	Ethylbenzene	100-41-4	
	0. 2	ND	Toluene	108-88-3	
	0. ₂ 2	ND	Benzene	71-43-2	
	RESULT DET LIMIT	RESULT	COMPOUND	CAS#	
_1/ pu	BLIND		INJECTED 05/13/88	INJE	INSTRMT D
			717		•

SURRUGATES

a, a, a-Trifluorotoluene 105% recovery

NOTES AND DEFINITIONS FOR THIS REPORT. DET LIMIT = DETECTION LIMIT

not detected at detection limit

analyzed

N\A = not available less than 5 times the detection limit

Second column confirmation NOT performed s otherwise noted

Page 19

SAMPLE ID trip blank Received: 05/13/88

RAS

Austin

Results by Sample REPORT

Work Order # 88-v-057 Continued From Above

lected not specified NAME EPA method 602

A-Chlorobenzene and m-xylene co-elute. Quantitated as chlorobenzene unless otherwise noted

FRACTION 04A TEST CODE EPA602 No Date & Time Collected not specified

RAS - Austin

REPORT

Work Order # 88-vu-057

SAMPLE ID trip blank

Results by Sample

FRACTION 04A TEST CODE XYLENE NA NAME Xylenes, EPA 602 Category

D INJECTO 05/13/88	
FILE #	VERI
UNITS1/L	VERIFIED CL

ANALYST

98-08-8	CAS # 106-42-3 108-38-3 95-47-6
a, a, a-Tr	p-Xylene m-Xylene-A a-Xylene
SURROGATES a, a, a-Trifluorotoluene	RESULT ND ND
RROGATES	ND 0.2 ND 0.2 ND 0.2
105% rec	
reco	

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N\A = not available Second column confirmation NOT performed unless otherwise noted.

Q = daily EPA standard recovery outside 95% confidence interval.

Chlorobenzene and m-xylene co-elute. Quantitated as chlorobenzene unless otherwise noted.

RAS Austin Results by Sample

REPORT

Work Under # 88-vu-057

SAMPLE ID reagent blank

FRACTION 05A TEST CODE EPA602 NAME EPA method 602
Date & Time Collected not specified Category

-						
	0.4	ND	1,2-Dichlorobenzene	1,2-Dich	95-50-1	
	0.4	ND	1,3-Dichlorobenzene	1,3-Dich	541-73-1	
	0.3	R	1,4-Dichlorobenzene	1,4-Dich	106-46-7	
	0.3	ND	Chlorobenzene-A	Chlqı	108-90-7	
	0.3	ND	Ethylbenzene	m	100-41-4	
	0.2	ND	Toluene		108-88-3	
	0.2	ND	Benzene		71-43-2	
	DET LIMIT	RESULT	COMPOUND	<i>;</i>	CAS#	
1/ bn	UNITS		F1LE # _	INJECTED <u>05/13/88</u>	ILNI	ANALYST CL
CL	VERIFIEDCL	<u> </u>				

NOTES AND DEFINITIONS FOR THIS REPORT.

8-80-8⁸

a, a, a-Trifluorotoluene

N/A% recovery

SURROGATES

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

not analyzed

less than 5 times the detection limit

N\A = not available

Second column confirmation NOT performed s otherwise noted

Received: 05/13/88

SAMPLE ID reagent blank

Austin

RAS

REPORT

Results by Sample

FRACTION OSA TEST CODE EPA602 NAME EPA method 602
Date & Time Collected not specified Category

Work Order # 88-v--057 Continued From Above

Quantitated as chlorobenzene unless

A-Chlorobenzene and m-xylene co-elute otherwise noted,

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Received: 05/13/88

RAS Austin Results by Sample

Work Order # 88-vu-057

SAMPLE ID reagent blank

FRACTION <u>OSA</u> TEST CODE <u>XYLENE</u> No Date & Time Collected not <u>specified</u> TEST CODE XYLENE NAME Xylenes, EPA 602 Category

FILE # UNITSUq/	INJECTD 05/13/88	CL	ANALYST
VERIFIED CL			

108-38-3 106-42-3 CAS # 93-47-6 m-Xylene-A COMPOUND o-Xylene p-Xylene RESULT DET LIMIT 0,2

SURRUGATES

a, a, a-Trifluorotoluene N/A% recovery

NOTES AND DEFINITIONS FOR THIS REPORT DET LIMIT = DETECTION LIMIT

8-80-8¢

NA " not ND = not detected at detection limit analyzed

NNA = not available # = less than 5 times the detection limit

Second column confirmation NOT performed unless otherwise noted.

0 = daily EPA standard recovery outside 95% confidence interval.

Chlorobenzene and m-xylene co-elute Quantitated as chlorobenzene unless otherwise noted.

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RAS

Austin

REPORT

Test Methodology

TEST CODE ALPHA NAME Gross alpha radiation

The value in parentheses is a + or - one sigma value. Results are thus expressed as: value (+ or - 1 sigma). One sigma = one standard deviation, 68% confidence level.

TEST CODE BETA NAME Gross beta radiation

confidence level. The value in parentheses is a + or - one sigma value. ressed as: value (+ or -1 sigma). One sigma = one standard deviation, Results are thus %89

Work Order # 88----057

RAS

Austin

NonReported Work

Page 25 Received: 05/13/88

FRACTION AND TEST CODES FOR WORK NOT REPORTED ELSEWHERE

SPARE SPARE SPR602 SPR602 N20 N10 SPR602

01N 02N 03B 04B

Work Order # 88-v.-057

Received: 05/13/88

REPORT Geoscience Cons

500 Copper NW

Austin

Work Order # 88-----058

ultants, Ltd.	j
PREPARED !	06/29/88
Radian Analyti 8501 Mo-pac Bl	38 09:00:47

ATTEN 512-454-4797 Austin, PO Box 201088 IX 78720-1088 cal Services

CERTIFIED BY CONTACT GIBSON

in EPA602 analyses. <u>Unknown copounds present in Artesia #3 and Artesia #3 dup</u> ** Possible interference.

FACILITY COMPANY

CLIENT

GEDSCIENCE

SAMPLES

Ltd

Geoscience Consultants,

ATTEN

Mike Selke

Albuguerque, Suite 200

NM 87102

WORK ID

Phillips

TAKEN

USD

TRANS

Fed Ex

TYPE

INVOICE

under separate cover

88-0190-700

Footnotes and Comments

Potential error for such Indicates a value less low values ranges than 5 times the detection limit. between 50 and 100%

an interferent present. specific matrix was not within acceptable limits indicating Indicates that spike recovery for this analysis on the

SAMPLE IDENTIFICATION

Artesia #3 Artesia #4 Artesia #3 dup trip blank

BAE

arium,

ICPES

AS G ALPHA

Arsenic, graphite AA Gross alpha radiation

Silver,

eagent blank May 86 - 15/ Quarter

CR E BETA DG3020 PA602 DG6010 rercury, cold vapor Pross beta radiation od i um, pecific conductance PA method 602 otal coliform anganese, luoride, ron, igestion, method 6010 igestion, hromium, hloride, admium, ICPES ICPES IC IC ICPES method ICPES 3020

ICPES TEST CODES and NAMES used an this renort

XYLENE Xylenes, E		TOX Total organic	TUC Total organic	SO4 IC Sulfate, I		MN	3 Lead, gra	NO3 Nitrate, c	LO CRUC ON CHIRD - C
EPA 602	•	anic halides	anic carbon	IC	graphite AA	nolics	phite AA	colorimetric	- n c c - e

Page 2 Received: 05/13/88

RAS Austin

Results By Test

Work Order # 88-44-058

SAMPLE Id OI	Test: AG E	Test: ALPHA	Test: AS G 0.042	Test: BA E
Artesia #3 02 Artesia #4	₹0. 003	4.5 (1.7) pci/L	0.017	0. 036
SAMPLE	Test: CD E	Test: CL IC	Test: COLI	Test: CR E
	0 012*	450	<u>۵</u> .	⟨0, 003
	<0.003	270	ដ	<0.003
Artesia #4 03 Artesia #3 dup				<0. 003
SAMPLE I	Test: DG6010	Test: FE E	Test: F IC	Test: MHO
	05/23/88	0. 42	4 5	2450
Artesia #3				2440
				2440
				2460
02	05/23/88	<0.003	נים פם	2040
Artesia		- .,		

Page 3 Received: 05/13/88

RAS Austin REPORT

Work Order # 88-v-058 Continued From Above

		ale en Olem angle en alem											
	Artesia #4					Artesis #3 01 1	SAMPLE I	O3 Artesia #3 dup			,	Sample Id SAMPLE	
		130				220	Test: NA E	05/16/88				Test: DG6010	
	·	<0.1				(0.1	Test: NO3					Test: FE E	
		< 0.002			,	<0,002	Test: PB G				** . * *	Test: F IC	
7. 68	7. 68	7. 73	7. 10	7. 13	7. 10	7. 23	Test: PH		2030	2020	2020	Test: MHO	
		⟨0. 005				⟨0, 005	Test: PHEN					Test: MN E	

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RAS

- Austin REPORT

Work Order # 88-vo-058 Continued From Above

			T	Task Dil	Tart. DUCN
Sample Id SHIFLE	IEST NH C	mg/L as N	lest. The b	PH units	Mg/L
				7.68	
SAMPLE I	Test: SE G	Test: <u>504 IC</u>	Test: TOC	Test: TOX	
	<0.003	77	80	0. 11	
# G			72	0.08*	
نندر خدجه مد			77	0.08*	
n was now to			64	0.09*	
	<0.003	500	ca Ca	0.07*	
Arcesia #4			-	0.05*	
			74	0. 12	
			828	0.08*	
A CANADA CANADA AND AND AND AND AND AND AND AND AN	And the second	The second section of the second second second second second second second sections and second secon	THE PROPERTY OF THE PROPERTY O	And the second s	The section of the se

SAMPLE ID Artesia #3

Results by Sample

PRACTION OID TEST CODE EPA602 NAME EPA method 602
Date & Time Collected 05/11/88 Category

VER 1F 1FD CL

	541-73-1	106-46-7	108-90-7	100-41-4	108-89-3	71-43-2	<u></u> 64	ANALYST CL
95-50-1 1.2-Dichlorchenzene	3-1 1,3-Dichlorobenzene	5-7 1,4-Dichlorobenzene)-7 Chlorobenzene-A	1-4 Ethylbenzene	3-3 Toluene	3-2 Benzene	CAS# COMPOUND	INJECTED 05/17/88
į			S	2.2	0.7*	2.1	RESULT I	
	0.4	0.3	0.3	0.3	0.2	0.2	RESULT DET LIMIT	UNITS

SURROGATES

8-80-8² a, a, a-Trifluorotoluene 125**% recovery

NOTES AND DEFINITIONS FOR THIS REPORT. DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed less than 5 times the detection limit

Second column confirmation NOT performed N\A = not available

s otherwise noted

Page 6

SAMPLE ID Artesia #3 Received: 05/13/88

> RAS Austin

Results by Sample

Work Order # 88-v--058 Continued From Above

NAME EPA method 602 Category

A-Chlorobenzene and m-xylene co-elute. FRACTION OLD TEST CODE EPA602
Date & Time Collected 05/11/88

Quantitated as chlorobenzene unless otherwise noted

RAS

Austin

Work Order # 88-----058

ANALYST MUS

ANALYZED 05/14/88

UNITS NTI

VERIFIED

=

ANALYTE RESULT DET LIMIT

Turbidity

CORPORATION

Received: 05/13/88

RAS Austin

REPURT

Results by Sample

Work Order # 88-vu-058 Continued From Above

SAMPLE ID Artesia #3

FRACTION OIA TEST CODE TURB

NAME Turbidity Category

NOTES AND DEFINITIONS FOR THIS REPORT ND = not detected at detection limit NA = not NNA = not available * - less than 5 times the detection limit DET LIMIT = DETECTION LIMIT analyzed

MPLE ID Artesia #3

FRACTION OIJ Date & Time Collected 05/11/88 TEST CODE XYLENE

NAME Xulenes, EPA 602 Category

VERIFIED 5

ANAL YST INSTRMT CL

INJECTD 05/17/88

FILE #

SLIND

108-38-3 106-42-3 CAS # 95-47-6 m-Xylene-A COMPOUND p-Xylene o-Xylene

0.2

0.2

SURRUGATES

RESULT

DET LIMIT

a, a, a—Trifluorotoluene 125**% recovery

NOTES AND DEFINITIONS FOR THIS REPORT DET LIMIT = DETECTION LIMIT

98-08-8

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N\A = not available Second column confirmation NOT performed

otherwise noted

C T

Received: 05/13/88

SAMPLE ID Artesia #3

RAS Austin

REPORT

Results by Sample

Work Order # 88-vu-058 Continued From Above

NAME Xylenes, EPA 602

Category

Pate & Time Collected 05/11/88

Chlorobenzene and m-xylene co-elute. = daily EPA standard recovery outside 95% confidence interval. otherwise noted Quantitated as chlorobenzene unless

Page 10

Received: 05/13/88 SAMPLE ID Artesia #4

> RAS Austin

REPORT

Results by Sample

Work Order # 88-vu-058

FRACTION 02J TEST CODE EPA602
Date & Time Collected 05/11/88

NAME EPA method 602 Category

								INSTRMTD	
95-50-1	541-73-1	106-46-7	108-90-7	100-41-4	108-88-3	71-43-2	CAS#	INJEC	
1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlarobenzene	Chlorobenzene-A	Ethylbenzene	Toluene	Benzene	COMPOUND	INJECTED 05/13/88	
ND	ND	ND	ND	ND	ND	5.0	RESULT DET LIMIT		VE.
0.4	0.4	0.3	0.3	0.3	0.2	0.2	ET LIMIT	CNITS	VER1FIED CL
									CL

NOTES AND DEFINITIONS FOR THIS REPORT. DET LIMIT = DETECTION LIMIT

8-80-89

a, a, a-Trifluorotoluene

113% recovery

SURRUGATES

ND = not detected at detection limit

NA = not analyzed

* - less than 5 times the detection limit

N\A = not available

Second column confirmation NOT performed otherwise noted.

SAMPLE ID Artesia #4 Received: 05/13/88

Austin

RAS

REPORT

Results by Sample

FRACTION <u>OZJ</u> TEST CODE <u>EPA602</u>

Date & Time Collected <u>05/11/88</u>

NAME EPA method 602 Category Work Order # 88-v-058 Continued From Above

A-Chlorohenzene and m-xylene co-elute Quantitated as chlorobenzene unless

otherwise noted.

Austin

REPORT

Work Order # 88-vu-058

VERIFIED _ 5

SLINA

ANALYTE RESULT DET LIMIT

ANALYZED 05/14/88

ANALYST INSTRMT

2100A

SCE

Turbidity

CORPORATION

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Received: 05/13/88

RAS Austin

Results by Sample

REP CR

Work Under # 88-vu-058 Continued From Above

SAMPLE ID Artesia #4

FRACTION <u>OZA</u> TEST CODE TURB Date & Time Collected <u>O5/11/88</u>

NAME Turbidity Category

NOTES AND DEFINITIONS FOR THIS REPORT DET LIMIT = DETECTION LIMIT

NA = not ND = not detected at detection limit analyzed

* - less than 5 times the detection limit

N\A = not available

SAMPLE ID Artesia #4

PRACTION OZU TEST CODE XYLE Date & Time Collected 05/11/88 TEST CODE XYLENE NAME Xylenes, EPA 602

Category

VERIFIED CL

ANALYST

INJECTD 05/13/88

UNITS

RESULT DET LIMIT 002

8-80-B

108-38-3 106-42-3 CAS #

m-Xylene-A

o-Xylene

COMPOUND p-Xylene

95-47-6

SURRUGATES

a, a, a-Trifluorotoluene 113% recovery

NOTES AND DEFINITIONS FOR THIS REPORT

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

analyzed

less than 5 times the detection limit

NNA = not available

Second column confirmation NOT performed otherwise noted

SAMPLE ID Artesia #4 Received: 05/13/88

Austin

RAS

REPORT

Results by Sample

Work Order # 88-v--058 Continued From Above

NAME Xulenes, EPA 602

Category

FRACTION <u>O2J</u> TEST CODE XYLENE Date & Time Collected <u>O5/11/88</u>

Chlorobenzene and m-xylene co-elute. = daily EPA standard recovery outside otherwise noted Quantitated as chlorobenzene unless 95% confidence interval.

J. J.

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SAMPLE ID Artesia #3 dup

RAS Austin

REPORT

Work Order # 88-v-058

Results by Sample

FRACTION 03A TEST CODE EPA602 NAME EPA method 602
Date & Time Collected 05/11/88 Category

								INSTRMTD	
95-50-1	541-73-1	106-46-7	108-90-7	100-41-4	108-88-3	71-43-2	CAS#	INJECTE	
1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Chlorobenzene-A	Ethylbenzene	Toluene	Benzene	COMPOUND	INJECTED <u>05/17/88</u> FILE # _	
ND	ND	ND	ND	2.6	0.6*	2.5	RESULT		≤
0.4	0.4	0. 3	0.3	0.3	0.2	0.2	RESULT DET LIMIT	UNITS ug/L	VERIFIED CL

SURRUGATES

8-80-8⁴ a, a, a-Trifluorotoluene 124**% recovery

NOTES AND DEFINITIONS FOR THIS REPORT

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed
* = less than 5 times the detection limit

NNA = not available

Second column confirmation NOT performed s otherwise noted.

CORPORATION

Page 16

SAMPLE ID Artesia #3 dup Received: 05/13/88

Austin

RAS

Results by Sample REPURT

Work Order # 88-v--058 Continued From Above

NAME EPA method 602

FRACTION 03A TEST CODE EPA602
Date & Time Collected 05/11/88

A-Chlorobenzene and m-xylene co-elute. Quantitated as chlorobenzene unless otherwise noted.

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Austin Results by Sample

RAS

Work Order # 88-vu-058

SAMPLE ID Artesia #3 dup

ANALYST INSTRMT

INJECTD 05/17/88

Pate & Time Collected 05/11/88 NAME Xulenes, EPA 602

Category

VERIFIED CL

SLINA

108-38-3 104-42-3 CAS # 98-08-B 95-47-6 m-Xylene-A COMPOUND p-Xylene o-Xylene RESULT DET LIMIT SURRUGATES 0.1 02

a, a, a-Trifluorotoluene 124**% recovery

NOTES AND DEFINITIONS FOR THIS REPORT ND = not detected at detection limit DET LIMIT - DETECTION LIMIT

NA = not analyzed N\A = not available * = less than 5 times the detection limit

Q = daily EPA standard recovery outside unless otherwise noted 95% confidence interval.

Second calumn confirmation NOT performed

Chlorobenzene and m-xylene co-elute otherwise noted. Quantitated as chlorobenzene unless

Received: 05/13/88

SAMPLE ID trip blank

Austin

RAS

REPURT

Work Order # 88-vu-058

Results by Sample

FRACTION <u>O4A</u> TEST CODE <u>EPA602</u> NATION O4A TEST CODE <u>EPA602</u> NATIONAL STREET OF THE PAGE OF THE PAG TEST CODE EPA602 NAME EPA method 602 Category

								INSTRMTCL	
95-50-1	541-73-1	196-46-7	108-90-7	100-41-4	1.08-88-3	71-43-2	CAS#	INJECTE	
1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Chlorobenzene-A	Ethylbenzene	Taluene	Benzene	COMPOUND	FILE # _	
ND	ND	ND	ND	ND	ND	ND	RESULT		<u> </u>
0.4	0.4	0.3	0.3	0.3	0.2	0.2	RESULT DET LIMIT	UNITS ug/L	VERIFIEDCL

SURROGATES

98-08-B a, a, a-Trifluorotoluene 103% recovery

NOTES AND DEFINITIONS FOR THIS REPORT DET LIMIT = DETECTION LIMIT NA = not ND = not detected at detection limit analyzed

Second column confirmation NOT performed N\A = not available un u less than 5 times the detection limit otherwise noted.

0 0 7

Page 19 Received: 05/13/88

SAMPLE ID trip blank

Austin

RAS

Results by Sample REPORT

FRACTION <u>04A</u> TEST CODE <u>EPA602</u> NAME <u>EPA method 602</u>
Date & Time Collected <u>not specified</u> Category

Work Order # 88-v-058 Continued From Above

A-Chlorobenzene and m-xylene co-elute otherwise noted. Quantitated as chlorobenzene unless

Page 20

Received: 05/13/88

SAMPLE ID trip blank

RAS Austin

REPURT

Work Order # 88-vJ-058

FRACTION OAA Results by Sample

Date & Time Collected not specified

TEST CODE XYLENE

NAME Xulenes, EPA 602

Category

VERIFIED C

ANALYST INSTRMT

INJECTD 05/13/88

FILE #

UNITS

105-42-3 95-47-6 CAS # m-Xylene∹A COMPOUND o-Xylene p-Xylene RESULT DET LIMIT 0 0. 2

98-08-8

SURRUGATES

a, a, a-Trifluorotoluene 103% recovery

NOTES AND DEFINITIONS FOR THIS REPORT. DET LIMIT = DETECTION LIMIT

NA = not analyzed ND = not detected at detection limit

NNA = not available less than 5 times the detection limit

Second column confirmation NOT performed unless otherwise noted.

= daily EPA standard recovery outside 95% confidence interval.

Chlorobenzene and m-xylene co-elute Quantitated as chlorobenzene unless

otherwise noted

REPORT

Work Order # 88-vu-058

SAMPLE ID reagent blank

FRACTION 05A TEST CODE EPA602 NAME EPA method 602
Date & Time Collected not specified Category

ANALYSTCL	INJECT	FILE #		UNITS U9/L
	CAS#	COMPOUND		RESULT DET LIMIT
	71-43-2	Benzene	ND	0.2
	108-88-3	Toluene	ND	0.2
	100-41-4	Ethylbenzene	ND	0.3
	108-90-7	Chlorobenzene-A	ND	0.3
	106-46-7	1,4-Dichlorobenzene	ND	0. 3
	541-73-1	1,3-Dichlorobenzene	ND	0.4
	95-50-1	1,2-Dichlorobenzene	ND	0.4

SURROGATES

a, a, a-Trifluorotoļuene N\A% recovery

NOTES AND DEFINITIONS FOR THIS REPORT DET LIMIT = DETECTION LIMIT

not detected at detection limit

analyzed

N\A = not available less than 5 times the detection limit

Second column confirmation NOT performed

otherwise noted

CORPORATION

Page 22

SAMPLE ID reagent blank Received: 05/13/88

> RAS Austin

REPURT

Work Order # 88-v--058 Continued From Above

NAME EPA method 602

FRACTION OSA TEST CODE EPA602 No Date & Time Collected not specified Results by Sample

A-Chlorobenzene and m-xylene co-elute otherwise noted. Quantitated as chlorobenzene unless

Received: 05/13/88

RAS Austin Results by Sample

Work Order # 88-v-058

SAMPLE ID reagent blank

PRACTION 05A TEST CODE XYLENE NAME Xylenes, EPA 602

Date & Time Collected not specified Category

UNITSuq/L	FILE #	INJECTD 05/17/88	ANALYSTCL INSTRMTD
IED <u>CL</u>	VERIFIED		

106-42-3 108-38-3 CAS # 95-47-6 m-Xylene-A COMPOUND o-Xylene p-Xylene RESULT DET LIMIT 0.2 0.1 0.2

SURROGATES

B-80-84

a, a, a-Trifluorotoluene NIA% recovery

NOTES AND DEFINITIONS FOR THIS REPORT ND = not detected at detection limit NA = not analyzed DET LIMIT - DEFECTION LIMIT

* - less than 5 times the detection limit N\A = not available

Second column confirmation NOT performed unless otherwise noted.

Q = daily EPA standard recovery outside 95% confidence interval.

Chlorobenzene and mixylene comelute Quantitated as chlorobenzene unless

Page 2. Strained: 05/13/88

Austin

RAS

Test Methodology

TEST CODE ALPHA NAME Gross alpha radiation

confidence level. The value in parentheses is a + or - one sigma value. Results are thus expressed as: value (+ or - 1 sigma). One sigma = one standard deviation, 68%

IEST CODE BETA NAME Gross beta radiation

The value in parentheses is a + or - one sigma value. xpressed as: value (+ or bnfidence level. 1 sigma). One sigma = one standard deviation, 68% Results are thus

REPORT

Received: 05/13/88

RAS Austin

NonReported Work

9E0 NZ0 N10 FRACTION AND TEST CODES FOR WORK NOT REPORTED ELSEWHERE SPARE SPARE SPR602 02K 01K SPR602 SPR602

Work Order # 88-v--058



ODESSA, TEXAS 79762 4001 PENBROOK

December 8, 1988

Quarterly Groundwater Monitoring Analyses Artesia, Eunice, Lee and Lusk Plants

Mr. Dave Boyer Environmental Bureau Chief New Mexico Oil Conservation Division P. O. Box 2088 Santa Fe, New Mexico 87501

Dear Mr. Boyer:

Per your request, attached please find copies of the second quarter groundwater monitoring analyses for the above referenced plants. I have also included additional information on the Lee Plant water supply wells for your reference.

If you should have any questions regarding this information, please contact me at (915) 367-1316.

Very truly yours,

Michael D. Ford

Environmental Analyst

Michael D. Ford

MDF

Attachments

RAS

Page 1 Faceived: 09/09/88

Austin 09/15/88 10:14:59

Work Order # 88-09-045

rtesia MW-4 dunlicate reagent blank See 88 - 2	SAMPLE IDENTIFICATION	SVUICE <u>under separate cover</u>	OF 8		CHPANY Phillips Petroleum CHPANY Odessa, TX	Linda Bendele	REPORT Radian TO B1.1 Austin
· · · · · · · · · · · · · · · · · · ·	TEST CODES and NAMES used on this report XYLENE Xylenes, EPA 602	@ Indicates that spike recovery for this analysis on the specific matrix was not within acceptable limits indicating an interferent present.	* Indicates a value less than 5 times the detection limit. Potential error for such low values ranges between 50 and 100%.	Artesia MW-3. Footnotes and Comments	1	i	Analutical Services Pac Bl. Pac Bl. Pac Bl. Pac Bl. Pac Bl.

Received: 09/09/88

Austin

REPORT

Work Order # 88-09-045

NAME EPA method 602

Category

WIE ID Artesia MW-1

RAS FRACTION <u>O1A</u> TEST CODE <u>EPA602</u>

Date % Time Collected <u>09/08/88</u> aldues he saynsak

INJECTED 09/12/88 FILE # VERIFIED SLINO P

CAS# COMPOUND RESULT DET LIMIT

108-88-3 71-43-2 Benzene Toluene 0. 5# 15

0.20

0.20

106-46-7 108-90-7 100-41-4 Chlorobenzene-A Ethylbenzene 8 0.30 0.30

541-73-1 95-50-1 1,4-Dichlorobenzene 1, 2-Dichlorobenzene 1,3-Dichlorobenzene QN B S

0.40

0.40

0.30

SURROGATES

98-09-8 a, a, a-Trifluorotoluene 116% recovery

NOTES AND DEFINITIONS FOR THIS REPORT. DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

analyzeo

less than 5 times the detection limit

N\A = not available

Second column confirmation NOT performed

unless otherwise noted

Beceived: 09/09/88

SAMPLE ID Artesia MW-1

Austin

Results by Sample REPORT

Work Order # 88-09-045 Continued From Above

NAME EPA method 602

Category

A-Chlorobenzene and p-xylene co-elute. Quantitated as chlorobenzene unless otherwise noted. FRACTION <u>OIA</u> TEST CODE EPA602 Date % Time Collected <u>09/08/88</u>

Received: 09/09/88

Austin

REPORT

Work Order # 88-09-045

SAMPLE ID Artesia MW-1

Results by Sample

FRACTION <u>OIA</u> TEST CODE XYLEIDate & Time Collected <u>09/08/88</u> TEST CODE XYLENE

NAME Xulenes, EPA 602 Category

VERIFIED

INJECTD 09/12/88

FILE

SLING

m-Xylene-A COMPOUND p-Xylene o-Xylene RESULT DET LIMIT 0. <u>20</u> 0. <u>20</u> 0. 10

106-42-3 108-38-3 CAS #

95-47-6

SURROGATES

a, a, a-Trifluorotoluene 116% recovery

NOTES AND DEFINITIONS FOR THIS REPORT. DET LIMIT = DETECTION LIMIT

8-80-84

NA = not analyzed ND = not detected at detection limit

Second column confirmation NOT performed N\A = not available less than 5 times the detection limit

daily EPA standard recovery outside unless otherwise noted

95% confidence interval.

Chlorobenzene and p-xylene co-elute. Quantitated as chlorobenzene unless otherwise noted

Tage u

SAMPLE ID Artesia MW-2 Received: 09/09/88

REPORT

RAS

Work Order # 88-09-045

Austin Results by Sample

Pate % Time Collected 09/08/88 NAME EPA method 602 flobaten

541-73-1 106-46-7 108-88-3 108-90-7 100-41-4 95-50-1 71-43-2 CAU# INJECTED 09/12/88 1,3-Dichlorobenzene 1,2-Dichlorobenzene 1,4-Dichlorobenzene Chlorobenzene-A Ethylbenzene COMPOUND Benzene FILE Toluene RESULT DET LIMIT B. 3 S S B B VERIFIED 0.40 0.40 0.30 0.30 0.20 0. 20 0.30 STIND 2

SURROGATES

98-08-8 a, a, a-Trifluorotoluene 109% recovery

DOTES AND DEFINITIONS FOR THIS REPORT. DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed
* = less than 5 times the detection limit

N\A = not available

Second column confirmation NOT performed unless otherwise noted.

SAMPLE ID Artesia MW-2

Received: 09/09/88

BAS

Austin

FRACTION <u>02A</u> TEST CODE <u>EPA602</u>
Date % Time Collected <u>09/08/88</u>

REPORT

Results by Sample

Work Order # 88-09-045 Continued From Above

NAME EPA method 602

Category

A-Chlorobenzene and p-xylene co-elute otherwise noted. Quantitated as chlorobenzene unless

SAMPLE ID Artesia MW-2

Austin

REPOR

Work Order # 88-09-045

Results by Sample

TEST CODE XYLENE NAME Xylenes, EPA 602

Category.

FRACTION <u>O2A</u> TEST CODE XYLENE Date % Time Collected <u>O9/O8/88</u>

VERIFIED CL

STRMT BM

INJECTD 09/12/88

FILE #

UNITS UD

CAS # COMPOUND RESULT DET LIMIT
106-42-3 p-Xylene ND 0.20
108-38-3 m-Xylene ND 0.20
95-47-6 o-Xylene ND 0.10

8-80-86

SURROGATES

a, a, a-Trifluorotoluene 109% recovery

NOTES AND DEFINITIONS FOR THIS REPORT,

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N\A = not available
Second column confirmation NOT performed unless otherwise noted.

Q = daily EPA standard recovery outside 95% confidence interval.

Chlorobenzene and p-xylene co-elute. Quantitated as chlorobenzene unless

otherwise noted.

100 100 100

Received: 09/09/88 SAMPLE ID Artesia NW-3

REPORT

Work Order # 88-09-045

Austin

Results by Sample

FRACTION 03A TEST CODE EPA602
Date % Time Collected 09/08/88 NAME EPA method 602 Category

541-73-1 100-41-4 106-46-7 108-90-7 108-88-3 71-43-2 95-50-1 CAS# INJECTED 09/12/88 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Chlorobenzene-A Ethylbenzene COMPOUND FILE # Toluene Benzene RESULT DET LIMIT 0.8* 3 B H B **VERIFIED** 0.20 0.30 0.30 0.20 0.40 0.40 0.30 SLINO P

SURROGATES

98-08-8 a, a, a-Trifluorotoluene 94% recovery

NOTES AND DEFINITIONS FOR THIS REPORT. DET LIMIT = DETECTION LIMIT

not detected at detection limit

NA = not analyzed

N\A = not available * = less than 5 times the detection limit

Second column confirmation NOT performed unless otherwise noted.

P 400 P 88/90/94: 09/09/88

SAMPLE ID Artesia MW-3

RAS Austin

REPORT

Work Order # 88-09-045 Continued From Above

Results by Sample

FRACTION <u>03A</u> TEST CODE <u>EPA602</u>
Date & Time Collected <u>09/08/88</u> NAME EPA method 602

Category

A-Chlorobenzene and p-xylene co-elute otherwise noted. Quantitated as chlorobenzene unless

Received: 09/09/88

RAS Austin

REPORT

Work Order # 88-09-045

CAMPLE ID Antesia MW-3

Results by Sample

FRACTION <u>03A</u> TEST CODE XYLEI Date & Time Collected <u>09/08/88</u> TEST CODE XYLENE NAME Xulenes, EPA 602 Category

VERIFIED S

INJECTD 09/12/88

FILE

UNITS

106-42-3 95-47-6 m-Xylene-A COMPOUND p-Xylene o-Xylene 0.6*,0 RESULT DET LIMI 0. 20 0. 20

SURROGATES

a, a, a-Trifluorotoluene 94% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

98-08-8

DET LIMIT = DETECTION LIMIT

ND = not detected NA = not analyzed at detection limit

N\A = not available less than 5 times the detection limit

Q = daily EPA standard recovery outside Second column confirmation NOT performed unless otherwise noted

Chlorobenzene and p-xylene co-elute. 95% confidence interval.

Quantitated as chlorobenzene unless otherwise noted

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SAMPLE ID Artesia MW-4

RAS Austin

REPORT

Work Order # 88-09-045

Results by Sample

FRACTION <u>04A</u> TEST CODE <u>EPA602</u>

Date & Time Collected <u>09/08/88</u> NAME EPA method 602 Category

541-73-1 106-46-7 108-90-7 100-41-4 108-88-3 95-50-1 71-43-2 CAS# INJECTED 09/13/88 1, 2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Chlorobenzene-A Ethylbenzene COMPOUND Benzene FILE # Toluene RESULT DET LIMIT 3 VERIFIED 0.20 0.40 0.40 0.30 0.30 0.20 0.30 SLINO

SURROGATES

8-80-86 a, a, a-Trifluorotoluene 95% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N\A = not available

Second column confirmation NOT performed unless otherwise noted

Page 12 Received: 09/09/88

SAMPLE ID Artesia MW-4

REPORT

Work Order # 88-09-045 Continued From Above

FRACTION <u>04A</u> TEST CODE <u>EPA602</u> NAME <u>EPA method 602</u>
Date % Time Collected <u>09/08/88</u> Category Austin REPo Results by Sample

A-Chlorobenzene and p-xylene co-elute. otherwise noted. Quantitated as chlorobenzene unless

Received: 09/09/88

REPORT

Work Order # 88-09-045

NAME Xylenes, EPA 602

Category

SAMPLE ID Artesia MW-4

Austin Results by Sample

FRACTION 04A Date & Time Collected 09/08/88 TEST CODE XYLENE

VERIFIED

INJECTD 09/13/88 FILE

DNALYST TRMT

UNITS

106-42-3 108-38-3 95-47-6 CAS # m-Xylene-A COMPOUND p-Xylene o-Xylene RESULT 0.0*,0 DET LIMIT 0. 20

a, a, a-Trifluorotoluene SURROGATES 95% recovery

WOTES AND DEFINITIONS FOR THIS REPORT DET LIMIT = DETECTION LIMIT

98-08-8

ND = not detected at detection limit

N\A = not available * = less than 5 times the detection limit NA = not analyzed

Second column confirmation NOT performed unless otherwise noted.

Q = daily EPA standard recovery outside

Chlorobenzene and p-xylene co-elute. 95% confidence interval.

otherwise noted. Quantitated as chlorobenzene unless

Received: 09/09/88

SAMPLE ID Artesia MW-4 duplicate

Austin

REPORT

Work Order # 88-09-045

Results by Sample

FRACTION 05A TEST CODE EPA602 NAME EPA method 602
Date % Time Collected 09/08/88 Category

			· V E	ERIFIED	1
TRMT CL	INJECTEI	FILE #		ONITS	υq/L
_	CAS#	COMPOUND	RESULT	DET LIMIT	
	71-43-2	Benzene	2.0	0.20	
	108-88-3	Toluene	ND	0, 20	-
	100-41-4	Ethylbenzene	S NO	0.30	
	108-90-7	Chlorobenzene-A	ND ND	0.30	
	106-46-7	1,4-Dichlorobenzene	UN	0.30	
	541-73-1	1,3-Dichlorobenzene	ND	0.40	
	95-50-1	1,2-Dichlorobenzene	GIN	0.40	
CONTROL TO	ببيان باستان ومقوات بالثالانان بومون مدنسها مقوالا الانانان الإنانان الإنانان الإنانان الإنانان الإنانان الإنانان				

SURROGATES

98-08-8 a, a, a-Trifluorotoluene 98% recovery

NOTES AND DEFINITIONS FOR THIS REPORT

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NNA = not available

Second column confirmation NOT performed unless otherwise noted.

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SAMPLE ID Artesia NW-4 duplicate

Austin

Results by Sample

REPORT

Work Order # 88-09-045 Continued From Above

FRACTION <u>05A</u> TEST CODE EPA602 Date % Time Collected <u>09/08/88</u> NAME EPA method 602

Category

A-Chlorobenzene and p-xylene co-elute. otherwise noted. Quantitated as chlorobenzene unless

Received: 09/09/88

RAS Austin

REPORT

Work Order # 88-09-045

SAMPLE ID Artesia MW-4 duplicate eldues ho salnsau

PRACTION 05A TEST CODE XYLENE NAME Xulenes, EPA 602
Date & Time Collected 09/08/88 Category Category

VERIFIED

INJECTD 09/13/88

FILE

SLINO

106-42-3 108-38-3 95-47-6 CAS # m-Xylene-A COMPOUND p-Xylene o-Xylene RESULT 0.4*,0 DET LIMIT 0. 20 0. 20 0. 10

SURROGATES

a, a, a-Trifluorotoluene 98% recovery

MOTES AND DEFINITIONS FOR THIS REPORT DET LIMIT = DETECTION LIMIT

8-08-B

ND = not detected at detection limit

NA = not analyzed

Second column confirmation NOT performed * = less than 5 times the detection limit N\A = not available unless otherwise noted.

= daily EPA standard recovery outside 95% confidence interval.

Chlorobenzene and p-xylene co-elute. Quantitated as chlorobenzene unless

otherwise noted

Page 17 Received: 09/09/88

SAMPLE ID trip blank

REPORT

RAS

Austin

Work Order # 88-09-045

Results by Sample

FRACTION 06A TEST CODE EPA602 NAME EPA method 602
Date & Time Collected not specified Category

541-73-1 106-46-7 108-90-7 108-88-3 100-41-4 95-50-1 71-43-2 CAS# INJECTED 09/13/88 1, 2-Dichlorobenzene 1,3-Dichlorobenzene 1, 4-Dichlorobenzene Chlorobenzene-A Ethylbenzene COMPOUND Benzene FILE Toluene RESULT DET LIMIT R 3 VERIFIED 0.20 0. 20 0.40 0.40 0.30 0.30 0.30 UNITS CL

SURROGATES

8-80-86 a, a, a-Trifluorotoluene 95% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

ND = not detected at detection limit DET LIMIT - DETECTION LIMIT

NA - not analyzed

* = less than 5 times the detection limit

N\A = not available

Second column confirmation NOT performed unless otherwise noted.

Received: 09/09/88

SAMPLE ID trip blank

REPORT

Work Order # 88-09-045 Continued From Above

FRACTION <u>O6A</u> TEST CODE <u>EPA602</u> NAME <u>EPA method 602</u>

Date & Time Collected <u>not specified</u> Category Austin REPL Results by Sample

A-Chlorobenzene and p-xylene co-elute. Quantitated as chlorobenzene unless otherwise noted

Received: 09/09/88

SAMPLE ID trip blank

REPORT

Austin

Work Order # 88-09-045

Results by Sample

FRACTION <u>O6A</u> TEST CODE XYLENE NA TEST CODE XYLENE NAME Xylenes, EPA 602

Category

VERIFIED

INJECTD 09/13/88

FILE

SLINA

106-42-3 108-38-3 95-47-6 CAS # m-Xylene-A COMPOUND o-Xylene p-Xylene RESULT ND, Q DET LIMIT 0. 20 0. 20 0. 10

SURROGATES

a, a, a-Trifluorotoluene 95% recovery

NOTES AND DEFINITIONS FOR THIS REPORT DET LIMIT = DETECTION LIMIT

8-80-86

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit N\A = not available

Second column confirmation NOT performed = daily EPA standard recovery outside unless otherwise noted

95% confidence interval.

Chlorobenzene and p-xylene co-elute. Quantitated as chlorobenzene unless otherwise noted

100 P

Received: 09/09/88

Austin

REPORT

Work Order # 88-09-045

SAMPLE ID reagent blank

FRACTION <u>07A</u> TEST CODE <u>EPA602</u> NAME <u>EPA method 602</u>
Date & Time Collected <u>not specified</u> Category Results by Sample

VERIFIED

(ategory

541-73-1 1,3-Dichlorobenzene <u>ND</u> 0.40		106-46-7 1,4-Dichlorobenzene <u>ND</u> 0.30	108-90-7 Chlorobenzene-A <u>ND</u> 0.30	100-41-4 Ethylbenzene <u>ND</u> 0.30	108-88-3 Toluene <u>ND 0.20</u>	71-43-2 Benzene ND 0.20	CAS# COMPOUND RESULT DET LIMI	TRMT D INJECTED 09/13/88 FILE # UNI	
))	0.40	0, 30	0.30	0.30	0.20	0.20	DET LIMIT	UNITS	

SURROGATES

8-80-86 a, a, a-Trifluorotoluene NIA% recovery

MOTES AND DEFINITIONS FOR THIS REPORT.

ND = not detected at detection limit DET LIMIT = DETECTION LIMIT

NA = not analyzed

* = less than 5 times the detection limit

N\A = not available

Second column confirmation NOT performed

unless otherwise noted.

Page 21 Received: 09/09/88

SAMPLE ID reagent blank

Austin

REPORT

Work Order # 88-09-045 Continued From Above

Results by Sample

FRACTION 07A TEST CODE EPA602 NAME EPA method 602
Date & Time Collected not specified Category Category

A-Chlorobenzene and p-xylene co-elute. Quantitated as chlorobenzene unless otherwise noted.

100 m

Received: 09/09/88

Austin

REPORT

Work Order # 88-09-045

Category

SAMPLE ID reagent blank

PRACTION <u>07A</u> TEST CODE XYLENE NAME Xylenes, EPA 602

Date & Time Collected not specified Category Results by Sample

FILE # **VERIFIED**

INJECTD 09/13/88

SLINO

106-42-3 108-38-3 95-47-6 CAS # m-Xylene-A COMPOUND o-Xylene p-Xylene RESULT ND, Q DET LIMIT 0. 20 0. 20 0. 10

NOTES AND DEFINITIONS FOR THIS REPORT

98-08-8

a, a, a-Trifluorotoluene

N\A% recovery

SURROGATES

ND = not detected at detection limit DET LIMIT = DETECTION LIMIT

NA = not analyzed

Second column confirmation NOT performed * # less than 5 times the detection limit N\A = not available unless otherwise noted

m daily EPA standard recovery outside 95% confidence interval.

Chlorobenzene and p-xylene co-elute Quantitated as chlorobenzene unless

otherwise noted

Received: 09/09/88

FERGIION AND TEST CODES FOR WORK NOT REPORTED ELSEWHERE

00000 9 4 6 6 7 8 8 8 8 8

SPR602 SPR602 SPR602 SPR602 SPR602

RAS

Austin
NonReported Work

Work Order # 88-09-045

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PAGE 1	- Alistin	Work Order # 88-09-044
ived: 09/09/88	10/11/88 13:00	
REPORT Radian	PREPARED Radian Analytical Services	ces
Austin	201088	B
ATTEN Linda Bendele		CERTIFIED BY
CLIENT PHILLIPS P SAMPLES	S 5'	CUNTACT BENDELE
Phillips Petroleum	١,	
	Footnote's and Comments	
WORK ID Artesia	on a value long	+70 10+07+403
	otential error for such low	LA .
P.O. #	@ Indicates that spike recovery	for this analusis on the
INVOICE under separate cover	matrix was not within a erent present.	e limits i
SAMPLE IDENTIFICATION	CODES and NAMES	used on this report
Ol Artesia MW-1	AS G Arsenic, Graphite AA TOX	Total organic carbon Total organic halides
Artesia MW-3	E Barium, ICPES	Turbiditu
05 Artesia MW-2 duplicate	IC Chloride,	
	CR E Chromium, ICPES DG3020 Digestion, method 3020	
Soll BB J. DOIT	Digestion, method Iron, ICPES	
The war of many	IC Fluoride, IC	
	MHO Specific conductance	
	E Manganese, ICPES	
_	NA E Sodium, ICHES	
	G Lead, gra	
	PH pH phonolics	
		-
	IC Sulfate, IC	

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RAS - Austin REPORT
Results By Test

Work Order # 88-09-044

SAMPLE :	Test: AG E	Test: AS G	Test:BA E	Test: CD E	Test: CL IC
	⟨0.03	0.015	0.05	⟨0, 005	160
	<0.03	0. 080	0.60	⟨0. 005	850
	<0.03	0. 082	0.06	<0.005	84
Artesia MW-4	(0. 03	0. 034	0. 03*	⟨₫. 005	300
SAMPLE	Test: CR E	Test: DG3020	Test: <u>DG6010</u>	Test: FE E	Test: F IC
	(0.03	09/23/88	09/27/88	<0.04	2.8
	(0.03	09/23/88	09/27/88	1. 9	4. 1
	<0.03	09/23/88	09/27/88	Ω ί:Э	<u>ယ</u>
_	⟨0, 03	09/23/88	09/27/88	0.12*	3.0
Artesia MW-2 du l	⟨0.03		09/27/88	-	

Artesia MW-1

Sample

SAMPLE

Test: MHD

Test: MN E

est: NA E

Test: NO3

Test: PB G

mg/L as N

1403

0.10

100

0.2*

<0.002

RADIA

Page 3 Received: 09/09/88 Sample Artesia MW-3 Artesia MW-4 Artesia MW-2 SAMPLE ដ 04 S S Test: 語 umhos/cm 2020 3640 3650 3670 3730 2360 2340 2400 1395 1376 1893 1866 1403 1873 RAS Austin est: MN E tin Results By Test 0.12 <u>ئ</u> 6 est: NA E 340 140 120 uq/m] Test: NO3 Work Order # 88-09-044 Continued From Above ng/L as N 0.35 ი ჯ <u>၀</u> မွှ est:PB G <0.002 <0.002

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RAS

Austin REPORT REPORT

Work Order # 88-09-044 Continued From Above

Artesia MW-3	23			Artesia MW-2	02			Artesia MW-1		Sample Id		SAMPLE
6. 98	4 9 A	6. 96	7. 00	6. 95	7.14	7. 00	7. 03	7. 19	7.44	Test: PH units	2380	Test: MHO
70.000	<0.005				0 015*					Test: PHEN		Test: MN E
ימ. טטר	¢00 002	,			⟨0, 002				<0.002	Test: SE G		Test: NA E
	560				3 5				100	Test: <u>SO4 IC</u>		Test: NO3
₩ 5	<u>,</u> ,	28	29	29	26	12		12	00	Test: TOC		Test: PB G

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RAS

Austin REPORT
Results By Test

Work Order # 88-09-044 Continued From Above

Artesia MW-2		Artesia MW-1	SAMPLE :			2	04			SAMPLE I
0. 03 * 0. 08	0.03*	0.03*	Test: IOX	7. 11	7. 33	7. 10	7. 28	7.07	7. 31	Test: PH units
	-			·	-		<0.005			Test: PHEN
							<0. 002			Test: SE G
							580			Test: <u>SO4 IC</u>
				9	9	10	œ	13	14	Test: TOC

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RAS Austin REPORT REPORT

Work Order # 88-09-044 Continued From Above

SAMPLE	Test: TOX	
	0.06	
·	0.06	,
•	0.08	
03	0.15	
Artesia MW-3	0.06	
	0.08	
	0.09	
04	0.10	
Arcesta rw-4	0.08	
	0.11	
	0.11	

-		ANALYST TAM INSTRMT 2100A	_	SAMPLE ID Artesia MW-1	NOTES AND DEFINITIONS FO DET LIMIT = DETECTI ND = not detected a NA = not analyzed * = less than 5 tim N\A = not available		400	ANALYST KCP	SAMPLE ID <u>Artesia MW-1</u>	Page 7 Received: 09/09/88
Turbidity171.0	ANALYTE RESULT DET LIMIT	ANALYZED 09/09/88		Date & Time Col	IONS FOR THIS REPORT! DETECTION LIMIT ected at detection limit lyzed n 5 times the detection limit! ailable	MercuryND 0.00018	ANALYTE RESULT DET LIMIT		Date & Time Col	RAS - Austin Results by San
		UNITS NTU	VERIFIED LM	TEST CODE TURB NAME Turbidity Lected 09/08/88 Category			UNITS	R 포 포	TEST CODE HG C NAME Mercury, cold vapor lected 09/08/88 Category	REPORT Work Order # 88-09-044

RADIAN

SAMPLE ID Artesia MW-2 Page 8 Received: 09/09/88 SAMPLE ID Artesia MW-1 NOTES AND DEFINITIONS FOR THIS REPORT. NOTES AND DEFINITIONS FOR THIS REPORT. INSTRMT ANALYST NA = not analyzed ND = not detected at detection limit DET LIMIT = DETECTION LIMIT N\A = not available NA = not analyzed ND = not detected at detection limit * = less than 5 times the detection limit DET LIMIT = DETECTION LIMIT Se Se ANALYTE Mercury ANALYZED 09/16/88 RAS RESULT FRACTION <u>021</u> TEST CODE HG C Date & Time Collected <u>09/08/88</u> FRACTION <u>OIA</u> TEST CODE TURB Date & Time Collected <u>09/08/88</u> Austin R Results by Sample DET LIMIT 0.00018 REPORT VERIFIED SLINO NAME Mercury, cold vapor NAME Turbidity uq/ml Work Order # 88-09-044 Continued From Above Category Category

* = less than 5 times the detection limit

RAS

Austin

REPORT

Work Order # 88-09-044

SAMPLE ID Artesia MW-3 Page 9 Received: 09/09/88 ANALYST SAMPLE ID Artesia MW-2 AMALYST NOTES AND DEFINITIONS FOR THIS REPORT N\A = not available * = less than 5 times the detection limit NA = not analyzed ND = not detected at detection limit DET LIMIT = DETECTION LIMIT 7AM 2100A 403 Turbidity ANALYTE ANALYTE Mercury ANALYZED 09/16/88 ANALYZED 09/09/88 RESULT DET LIMIT RESULT œ FRACTION <u>031</u> TEST CODE HG C Date & Time Collected <u>09/08/88</u> FRACTION <u>02A</u> TEST CODE TURB Date & Time Collected <u>09/08/88</u> S Results by Sample 1.0 DET LIMIT 0.00018 VERIFIED VERIFIED SLINO UNITS NAME Turbidity NAME Mercury, cold vapor Tw/bn RH 3 NTU Category Category

RADIAN

ed: 09/09/88 ID Artesia MW-3 AND DEFINITIONS FOR	70	Work Order # 88-09-044 Continued From Above NAME Mercury, cold vapor Category
NOTES AND DEFINITIONS FOR TH DET LIMIT = DETECTION L ND = not detected at de NA = not analyzed * = less than 5 times t N\A = not available	THIS REPORT. V LIMIT detection limit 5 the detection limit	
SAMPLE ID Artesia MW-3	FRACTION <u>O3A</u> TEST CODE TURB Date % Time Collected <u>O9/08/88</u>	NAME Turbidity Category
	VERIFIED	
ANALYST TAM INSTRMT 2100A	NALYZED <u>09/09/88</u>	UNITSNTU
Turbidity	2y 11 1.0	
NOTES AND DEFINITIONS FOR TH DET LIMIT = DETECTION L ND = not detected at de NA = not analyzed NA = less than 5 times t NNA = not available	THIS REPORT. detection limit the detection limit	

Page 11' Received: 09/09/88

Austin REPO

RAS

REPORT

Work Order # 88-09-044

SAMPLE
IJ
Artesia
∰- 4

FRACTION <u>041</u> TEST CODE HG C Date & Time Collected <u>09/08/88</u>

NAME Mercury, cold vapor

Category

403 403

ANALYZED 09/16/88

SLINO ug/ml

VERIFIED _

RHH

ANALYTE Mercury

RESULT

DET LIMIT

B 0.00018

NOTES AND DEFINITIONS FOR THIS REPORT

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

N\A = not available

less than 5 times the detection limit

SAMPLE ID Artesia MW-4

FRACTION 04A TEST CODE TURB Date & Time Collected 09/08/88

NAME Turbidity

Category

ANALYST INSTRMT 2100A

ANALYZED 09/09/88

UNITS

VERIFIED

7

ZIC

ANALYTE RESULT DET LIMIT

Turbidity

Page 12 Received: 09/09/88

SAMPLE ID Artesia MW-4

REPORT

Work Order # 88-09-044 Continued From Above

FRACTION <u>04A</u> TEST CODE TURB Date & Time Collected <u>09/08/88</u> Austin REPU Results by Sample

NAME Turbidity
Category

NOTES AND DEFINITIONS FOR THIS REPORT. NA = not analyzed ND = not detected at detection limit NNA = not available * = less than 5 times the detection limit DET LIMIT = DETECTION LIMIT

RADIAN

Austin

Work Order # 88-09-046

10/21/88 14:16:25

Received: 09/09/88

FACILITY WORK ID COMPANY INVOICE REPORT Radian
TO Bl. 1 P.O. # CLIENT Artesia MW-SAMPLE IDENTIFICATION Artesia MW-4 Artesia MW-3 Artesia MW-2 ATTEN Linda Bendele TAKEN TRANS TYPE Sept 88 - July DTS PRINCE. Odessa, PHILLIPS P under separate cover UPS Phillips Petroleum Austin radiochemistru SAMPLES BETA RA 226 ALPHA an interferent present. specific, matrix was not within acceptable limits indicating @ Indicates that spike recovery for this analysis on the Potential error for such low values ranges between 50 and PREPARED Radian Analytical Services * Indicates a value less Footnotes and Comments Radium 226 <u>Gross alpha radiation</u> <u>Gross beta radiation</u> PHONE ATTEN BY 8501 Mo-pac B1 512-454-4797 <u>Austin, TX 78720-1088</u> PO Box 201088 TEST CODES and NAMES used on this report than 5 times the detection limit CERTIFIED BY CONTACT BENDELE

100%

Page 2 Received: 09/09/88

RAS - Austin REPORT Results By Test

Work Order # 88-09-046

SAMPLE	Test: ALPHA DCi/	Test: BETA	Test: RA 226
01 -	7 (2)	9 (3)	0.3 (0.1)
Artesia MW-1	pCi/L	pCi/L	pCi/L
02 -	22 (5)	32 (7)	0.9 (0.1)
Artesia MW-2	PC1/L	pCi/L	pCi/L
○	12 (G)	11 (4)	0.1 (0.1)
Artesia MW-3	pCi/L	pCi/L	pCi/L
0.4	14 (2)	20 (3)	0.4 (0.1)
Artesia MW-4	pCi/L	pCi/L	pCi/L

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Received: 09/09/88

- Austin

Test Methodology REPORT

Work Order # 88-09-046

TEST CODE ALPHA NAME Gross alpha radiation

confidence level. expressed as: value (+ or -The value in parentheses is a + or - one sigma value. 1 sigma). One sigma = one standard deviation, 68% Results are thus

EST CODE BETA NAME Gross beta radiation

confidence level. expressed as: value in parentheses is a + or - one sigma value. value (+ or - 1 sigma). One sigma = one standard deviation, 68% Results are thus

EST CODE RA 226 NAME Radium 226

68% confidence level. expressed as: The value in parentheses is a + or - one sigma value. value (+ or - one sigma). One sigma — one standard deviation, Results are

Received: 09/08/88

- Austin REPORT 10/12/88 07:20:23

Work Order # 88-09-039

OMPANY Phillips Petroleum CLIENT PHILLIPS P OMPANY Phillips Petroleum		ATTEN Linda Bendele		Austin	TO B1. 1	REPORT Radian
	PHONE 512-454-4797	ATTEN	Austin, TX 78720-1088	PO Box 201088	BY 8501 Mo-pac Bl.	PREPARED Radian Analytical Servi

COMPANY

WORK ID

Artesia - coliform

TAKEN

TYPE TRANS

UPS

INVOICE P. O. #

under separate cover

CERTIFIED BY Dallace

CONTACT BENDELE

Footnotes and Comments

Potential error for such low values ranges between 50 and 100% * Indicates a value less than 5 times the detection limit

@ Indicates that spike recovery for this analysis on the an interferent present. specific matrix was not within acceptable limits indicating

COLI T Total coliform EST CODES and NAMES used on this report

Artesia MW-4 Artesia MW-2 Artesia MW-3

Artesia MW-1

SAMPLE IDENTIFICATION

20 Jul - 80 lds

Page 2 Received: 09/08/88

RAS

Austin REPORT Results By Test

Work Order # 88-09-039

SAMPLE I	Test:COLI T	
01	200	
	9000	
03	<10	
Artesia MW-3 04	<10	
Artesia MW-4		arbitanismi Atalaksi nasetalainista atkan at

 $\left(\overline{a}\right)$

Particules/Merbecide

Data Flags:

TERMS USED IN THIS REPORT:

EPA method and QC specifications. Analyte - A chemical for which a sample is to be analyzed. The analysis will meet

Compound - See Analyte.

concentration factor. (Refer to Factor, below) specified by EPA. laboratories' method detection limits to verify that they meet or are lower than those quantitation specified by EPA for a method. Radian staff regularly assess their Detection Limit - The method specified detection limit, which is the lower limit Note, the detection limit may vary from that specified by EPA by the

specified. analyses and accompanying QC tests in conformance with EPA methods unless otherwise standard methods for analysis of environmental samples. EPA Method - The EPA specified method used to perform an analysis. Radian will perform its EPA has specified

within the instrument calibration range will have a factor of 10. of the method will have a factor of 1. A sample diluted 10 times to bring the analytes differs from that specified by a given EPA method. A sample prepared to the specifications Factor - The concentration or dilution factor by which the sample extract or digestate is concentrated 10 times more than specified will have a factor of 0.1. Conversely, a sample which

Matrix - The sample material. Generally, it will be soil, water, air, oil, or solid

the analytical summary. Radian Work Order - The unique Radian identification code assigned to the samples reported in

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NTU	ml/hr	sodatu	æ	mg/Kg	mg/L	ug/M3	ug/Kg	ug/L	
turbidity unit; nephelometric turbidity unit	milliliters per hour; rate of settlement of matter in water	conductance unit; microohms/centimeter	percent; usually used for percent recovery of QC standards	milligrams per kilogram (parts per million);soils/solids	milligrams per liter (parts per million);liquids/water	micrograms per cubic meter; air samples	micrograms per kilogram (parts per billion); soils/solids	micrograms per liter (parts per billion); liquids/water	

NAIG43

Notes and Definitions

Data Flags:

- detection limit is approached. approximate. uncertainty of the analysis will increase exponentially as the method The asterisk(\star) is used to flag results which are less than five times the method specified detection limit. Studies have shown that the These results should be considered
- digestion spike. These spikes have not been subjected to the This flag indicates that a spike is an analytical and/or postextraction or digestion step.
- B Since traces of the background contaminant will vary from sample to sample, the sample results are not corrected from the amount in the This flag indicates that the analyte was detected in the reagent blank
- Most methods of gas chromatography recommend reanalysis on a second column of dissimilar phase to resolve compounds of interest from interferences that may occur and for analyte confirmation. indicates that the analyte has been confirmed on a second column. This flag

report narrative. The reported value is estimated because of the presence of interthe sample diluted so that higher levels fall into calibration range. bration range of the instrument. Therefore two analyses are performed, dilution factor. In an analysis some compounds can exceed the cali-This flag identifies analytes identified in analysis at a secondary one at the concentration of some of the analytes, and a second with The potential source of the interference is included in the

Notes and Definitions

Data Flags:

extract is diluted and re-analyzed. This flag identifies a GC/MS result whose concentration exceeds the compounds have a response greater than full scale, the sample or calibration range for that specific analysis. Usually if one or more

A result or value is not available for this parameter, usually a criteria but the result is less than the sample quantitation limit. data indicate the presence of a compound that meets the identification detection limit. where a response factor of 1 is assumed, or when the mass spectral when estimating a concentration for tentatively identified compounds Indicates an estimated value for GC/MS data. This flag is used either

IA This analyte was not analyzed.

NC detection limit. ence (RPD) Applies to RPD and spike recovery results. The relative percent differ spike added concentration is considered insignificant. is greater than four times the spike added concentration because the is not calculated when a result is less than five times the A spike recovery is not calculated when the result

at or above the specified detection limit. The value to the right of This flag (or <) is used to denote analytes which are not detected the < symbol is the method specified detection limit for the sample.

Data Flags:

NR This analyte was not requested by the client.

This analyte or surrogate was not added (spiked) to the sample for this analysis.

S O spike duplicate result. difference) values for duplicate analyses and matrix spike/matrix This quality control standard is outside method or laboratory speccolumn of dissimilar phase to resolve compounds of interest from in-Most methods of gas chromatography recommend reanalysis on a second This flag indicates that a specific result from a metals analysis has terferences that may occur and for analyte confirmation. tical QC spike, and surrogate recoveries; and to RPD(relative percent is applicable for samples from a regular sampling program. indicates that the analyte has been confirmed previously. control limits. This flag is applied to matrix spike, analy-This flag This flag

column of dissimilar phase to resolve compounds of interest from in-Most methods of gas chromatography recommend reanalysis on a second indicates that second column was not requested. terferences that may occur and for analyte confirmation. This flag

been obtained using the Method of Standard Addition.

NAIGA

ANALYTICAL DATA SUMMARY

Phillips 66 Associate Laboratory Data for Radian Work Order: 8811001

Method: EPA 608 Pesticides		Matrix: water	Ħ		
Factor:	1.0	1.0		1.0	1.0
Results in:	ug/L	ug/L		ug/L	ug/L
Sample ID:	Method			Artesia	Artesia
	Blank		MW-2	MW-3	MW-4
Lindane	< 0.01	< 0.01	< 0.01	< 0.01	^ 0.01
Endrin	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Toxaphene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

For a detailed description of flags and technical terms in this report refer to the glossary.

ANALYTICAL DATA SUMMARY

Phillips 66
Associate Laboratory Data for Radian Work Order: 8811001

For a detailed description of flags and technical terms in this report refer to the glossary.



ODESSA. TEXAS 79762 4001 PENBROOK

January 19, 1989

Quarterly Groundwater Monitoring Analyses Artesia, Eunice, Lee and Lusk Plants

Mr. Dave Boyer Environmental Bureau Chief New Mexico Oil Conservation Division P. O. Box 2088 Santa Fe, New Mexico 87501

Dear Mr. Boyer:

Per your request, attached please find copies of the third quarter groundwater monitoring analyses for the above referenced plants.

If you should have any questions regarding this information, please contact me at (915) 367-1316.

Very truly yours,

Michael D. Ford

Environmental Analyst

Michael D. End

MDF

Attachments

RADIAN

	SAMPLE IDENTIFICATION of Artesia MW-1 of Artesia MW-2 of Presia MW-2 duplicate of Peagent blank 10/88 - FRAGG		P.O. # INVOICE under separate cover	WORK ID Artesia TAKEN MF	ATTEN <u>Linda Bendele</u> CLIENT <u>PHILLIPS P</u> COMPANY <u>Phillips Petroleum</u> FACILITY <u>Odessa, TX</u>	REPORT Radian TO B1.1 Austin	Page 1 Received: 10/28/88
DOGGO FE EPAGO MHO C					SAMPLES		RAS -
0000	! ⊣	en		* Price		PREI	Aus
stion stion metho ride, ride, ific ific	Silver, ICF Gross alpha Arsenic, qu Barium, ICF Gross beta Cadmium, IC Chloride, 1	Indicates ecific ma interfer	ro I	ا (سنا ۵	ATTEN F	PREPARED R BY 8 P.	in 2/01/88
method 3020 , method 6010 d 602 ES IC cold vapor "" conductance , ICPES	TEST CODES and cpes traphite AA cpes ICPES ICPES iform	that spike trix was not ent present.	s a value less	pounds present 2 duplicate for interference.	1-4797	Radian Analytical 8501 Mo-pac Bl. PO Box 201088 Austin, TX 78720-	tin REPORT 12/01/88 11:38:15
XYLENE	NAMES USED NA E NO3 P3 G PHEN PHEN RA 226 SE G SO4 IC	recovery fo within acc	than 5 tim low values	in Artesia 602 + xul		Services 1088	
Turbidity Xulenes,		for this	imes the	<u>sia MW-1</u> xylene.			Work
es, EPA	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	analysi limits	detect s betwe	Artes	co ·	ERTIFIED	Order #
602 602	rimetr e AA	s on the indicating	ion limit en 50 and	ia MW-2,		D BY	Work Order # 88-10-151
	i c	;ing	t. 100%.	and	m		51

Page 2 Received: 10/28/88

70 70 00 Austin REPORT REPORT

Work Order # 88-10-151

SAMPLE Sample Id	Test: AG E	Test: ALPHA BCi/ 21(3)	Test: AS G 0.012	Test: <u>BA E</u> 0.05*	Test: BETA PC1/ 17(3)
Artesia MW-1	<0.03	pci/L 43(7)	0.054	0. 90	pci/L 17(3)
Artesia MW-2		pCi/L			pÇi/L
CAMBIC	Tash Off	Ta, 4. 71 TO	Tart. Col T	Tast. CB E	NCVCVU + T
SAMPLE	Test: CD F	Test:CL IC		Test: CR E	Test:

Sample Id O1 Artesia MW-1 02	(0.005	160 160 880	176 360	lest: CR L vq/m1 0.03 0.03	lest: <u>DG3020</u> date complete 11/02/88 11/02/88
SAMPLE	Test: DG6010	Test: FE E	Test: F IC	Test:MHO	Test: MN E
01	11/04/88	⟨0.04	2. 7	1460	0.08
Artesia MW-1				1440	
				1460	
				1420	
20	11/04/88	2.1	Э	3810	2.4
Artesia MW-C				2000	- ••

3820

RADIAN

Page 3 Received: 10/28/88 Sample Sample Artesia MW-1 rtesia MW-2 SAMPLE SAMPLE 01 2 date complete est: NA E est: D66010 350 110 ng/ml RAS Austin EON : 159 Results By Test mg/L as N . 왕 0.16 REPORT est: PB G <0.001 (0.001 ug/ml mg/L Test: MHO est:PH Work Order # 88-10-151 Continued From Above pH units 3700 3650 6.70 6.70 6. 70 6.82 6.84 6. 82 6.82 6.71 mq/L as phenol est: PHEN est: ME 0.008* <0.005

•

RAS

Work Order # 88-10-151

Page 4 Received: 10/28/88 Sample Id Artesia MW-1 Artesia MW-2 SAMPLE S S 01 1.45(.09) pci/L Test: RA 226 0.38(.05) pCi/L Austin REPORT
Results By Test 9 35 :15a <0.004 <0.004 uq/ml Test: 504 I mg/L as SO4 98 27 est: TOC 42 3 Σ 12 $\frac{\omega}{2}$ <u>;</u> mq/L

: :



SAMPLE ID Artesia MW-1 Received: 10/28/88

> RAS Austin

Work Order # 88-10-151

Results by Sample

FRACTION OIJ TEST CODE EPA602
Date & Time Collected 10/27/88 NAME EPA method 602 Category

VERIFIED 5

541-73-1	106-	108-	100-	108-	71-	•	ANALYST CL TRMT D
73-1	106-46-7	108-90-7	100-41-4	108-88-3	71-43-2	CAS#	INJEC
1,3-Dichlorobenzene	1,4-Dichlorobenzene	Chlorobenzene-A	Ethylbenzene	Toluene	Benzene	COMPOUND	INJECTED 11/03/88 FILE # _
UN	ND	NO	2.1	1	15	RESULT	
0.40	0.30	0.30	0.30	0.20	0.20	DET LIMIT	UNITS _
							ug/L

SURROGATES

98-08-8 a, a, a-Trifluorotoluene 125**% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed
* = less than 5 times the detection limit

N\A = not available

Second column confirmation NOT performed unless otherwise noted

Received: 10/28/88

SAMPLE ID Artesia MW-1

Austin

Work Order # 88-10-151 Continued From Above

Results by Sample

FRACTION OLD TEST CODE EPA602
Date % Time Collected 10/27/88 Category

NAME EPA method 602

A-Chlorobenzene and p-xylene co-elute Quantitated as chlorobenzene unless otherwise noted.

.

Page 7 Received: 10/28/88	RAS - Austin REPORT Results by Sample	Work Order # 88-10-151
SAMPLE ID Artesia MW-1	Date % Time Collected 10/27/88	NAME Mercury, cold vapor Category
	VERIFIED	RHH
ANALYST KCP	ANALYZED 11/14/88	UNITS ug/ml
AN	ANALYTE RESULT DET LIMIT	
	Mercury <u>ND 0.0002</u>	
NOTES AND DEFINITIONS FO DET LIMIT = DETECTI ND = not detected a NA = not analyzed * = less than 5 tim N\A = not available	IONS FOR THIS REPORT. DETECTION LIMIT ected at detection limit lyzed n 5 times the detection limit ailable	
SAMPLE ID Artesia MW-1	FRACTION O1A TEST CODE TURB	NAME Turbidity
	Date % Time Collected 19/27/88	Category
	VERIFIED	LM
ANALYST TAM INSTRMT HACH	4NALYZED 10/28/88	UTN STINU
	ANALYTE RESULT DET LIMIT	
Tur	Turbidity 11 1.0	



CAS # COMPOUND RESULT DET LIMIT 106-42-3 p-Xylene-A 1.0 0.20 108-38-3 m-Xylene ND 0.20 95-47-6 o-Xylene ND 0.10 NOTES AND DEFINITIONS FOR THIS REPORT. DET LIMIT = DETECTION LIMIT ND = not detected at detection limit	ANALYSTCL INJECTD 11/03/88 FILE #	SAMPLE ID Artesia MW-1 FRACTION 01J TEST CODE XYLEN Date & Time Collected 10/27/88	NOTES AND DEFINITIONS FOR THIS REPORT. DET LIMIT = DETECTION LIMIT ND = not detected at detection limit NA = not analyzed * = less than 5 times the detection limit N\A = not available	SAMPLE ID <u>Artesia MW-1</u> FRACTION <u>OIA</u> TEST CODE TURB Date & Time Collected <u>10/27/88</u>	Page 8 RAS - Austin REPORT Received: 10/28/88
		TEST CODE XYLENE NAME Xylenes, EPA 602		TEST CODE TURB NAME Turbidity Llected 10/27/88 Category	REPORT Sample

SAMPLE ID Artesia MW-1 Received: 10/28/88

Austin

Work Order # 88-10-151 Continued From Above

Results by Sample

FRACTION 01J TEST CODE XYLENE NAME Xylenes, EPA 602
Date % Time Collected 10/27/88 Category

Category _

Chlorobenzene and p-xylene co-elute. Q = daily EPA standard recovery outside 95% confidence interval. Quantitated as chlorobenzene unless otherwise noted.

RADIAN

Page 10 Received: 10/28/88 SAMPLE ID Artesia MW-2

RAS - Austin

REPORT

Work Order # 88-10-151

Results by Sample

JOE EPA602 NAME EPA method 602

Category

FRACTION 02J TEST CODE EPA602 Date & Time Collected 10/27/88

VERIFIED ____CL

TRMTD	INJE	FILE #	these sections are resistant to the section of the	UNITS
(CAS#	COMPOUND	RESULT	DET LIMIT
	71-43-2	Benzena	1.7	1.0
	108-85-3	Toluene	4. 5*	1.0
	100-41-4	Ethylbenzene	59	1.5
	108-90-7	Chlorobenzene-A	ON	1.5
	106-46-7	1,4-Dichlorobenzene	UN	1.5
	541-73-1	1,3-Dichlorobenzene	NO	2.0
	95-50-1	1,2-Dichlorobenzene	ND	ಬ ೦

SURROGATES

98-08-8 a, a, a-Trifluorotoluene 118% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed * = less than 5 times the detection limit

N\A = not available

Second column confirmation NOT performed unless otherwise noted.

Page 11 Received: 10/28/88

SAMPLE ID Artesia MW-2

Austin

Work Order # 88-10-151 Continued From Above

Results by Sample

NAME EPA method 602

FRACTION 02J TEST CODE EPA602
Date & Time Collected 10/27/88

Category

A-Chlorobenzene and p-xylene co-elute. Quantitated as chlorobenzene unless otherwise noted.

:

Page 12 Received: 10/28/88	RAS - Austin REPORT Results by Sample	Work Order # 88-10-151
SAMPLE ID Artesia MW-2	FRACTION 021 TEST CODE HG C	NAME Mercury, cold vapor Category
	VERIFIED	
ANALYST KCP	ANALYZED 11/14/88	UNITS ug/ml
ANALYTE	TE RESULT DET LIMIT	
Mercury	UT 9 0.0002	
NOTES AND DEFINITIONS FOR THIS R DET LIMIT = DETECTION LIMIT ND = not detected at detect NA = not analyzed * = less than 5 times the d N\A = not available	THIS REPORT. ULIMIT detection limit s the detection limit	
SAMPLE ID Artesia MW-2	FRACTION 02A TEST CODE TURB Date % Time Collected 10/27/88	NAME Turbidity Category
	VERIFIED	D
ANALYST TAM INSTRMT HACH	ANALYZED 10/28/88	UNITS STINU
ANALYTE	TE RESULT DET LIMIT	
Turbidity	ity 12 1.0	



TITIONS FOR THIS REPORT. = DETECTION LIMIT etected at detection limit nalyzed han 5 times the detection limit available FRACTION 02J TEST Date % Time Collecte INJECTD 11/03/88 FILE #	CAS # COMPOUND RESULT DET LIMIT 106-42-3 p-Xylene-A ND 1.0 1.0 1.0 1.0 1.0 1.0 1.0 95-47-6 o-Xylene ND 0.50	STANDAGIS
EPORT. ion limit etection	FRACTION 02J TEST CODE XYLENE Date % Time Collected 10/27/88 VERIFIED 11/03/88 FILE # UNI	FRACTION 02J TEST CODE XYLENE NAME Date % Time Collected 10/27/88 VERIFIED VERIFIED VIIIONO NO NO 1.0 Lene ND 1.0 Lene ND 0.50

Page 14 Received: 10/28/88

SAMPLE ID Artesia MW-2

Austin

REPORT

Work Order # 88-10-151 Continued From Above

Results by Sample

FRACTION 02J TEST CODE XYLENE NAME Xylenes, EFA 602
Date & Time Collected 10/27/88 Category

Q = daily EPA standard recovery outside 95% confidence interval. Chlorobenzene and p-xylene co-elute. otherwise noted. Quantitated as chlorobenzene unless



SAMPLE ID Artesia MW-2 duplicate Received: 10/28/88

Austin

Work Order # 88-10-151

Results by Sample

FRACTION 03A TEST CODE EPA602 NAME EPA method 602
Date % Time Collected 10/27/88 Category

							(ANALYST CL TRMT D	
95-50-1	541-73-1	106-46-7	108-90-7	100-41-4	108-88-3	71-43-2	CAS#	INJECT	
1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Chlorobenzene-A	Ethylbenzene	Toluene	Benzene	COMPOUND	INJECTED 11/03/88 FILE # _	
ND	ND	NO	ND	64	4.6*	17	RESULT	THE STREET STREET, STR	<
2.0	2.0	1.5	1.5	1.5	1.0	1.0	RESULT DET LIMIT	UNITS ug/L	VERIFIEDCL

NOTES AND DEFINITIONS FOR THIS REPORT.

98-08-8

a, a, a-Trifluorotoluene

119**% recovery

SURROGATES

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N\A = not available

Second column confirmation NOT performed unless otherwise noted.

Page 16 Received: 10/28/88

Austin

Work Order # 88-10-151 Continued From Above

Results by Sample

NAME EPA method 602

Category

SAMPLE ID Artesia MW-2 duplicate FRACTION <u>03A</u> TEST CODE <u>EPA602</u>

Date & Time Collected <u>10/27/88</u>

A-Chlorobenzene and p-xylene co-elute Quantitated as chlorobenzene unless

otherwise noted.

Page 17 Received: 10/28/88

SAMPLE ID Artesia NW-2 duplicate

RAS Austin

REPORT

Work Order # 88-10-151

NAME Xylenes, EPA 602

Category

FRACTION 03A TEST CODE XYLENE Date & Time Collected 10/27/88 Results by Sample

VERIFIED CL

ANALYST

INJECTD 11/03/88

ONITS

106-42-3 108-38-3 95-47-6 p-Xylene-A COMPOUND m-Xylene o-Xylene RESULT DET LIMIT 0.50 1.0

CAS #

SURROGATES

a, a, a-Trifluorotoluene 119% recovery

NOTES AND DEFINITIONS FOR THIS REPORT DET LIMIT = DETECTION LIMIT

8-80-86

ND = not detected at detection limit

NA = not analyzed

less than 5 times the detection limit

N\A = not available

Ø Second column confirmation NOT performed = daily EPA standard recovery outside unless otherwise noted

Chlorobenzene and p-xylene co-elute 95% confidence interval.

Quantitated as chlorobenzene unless otherwise noted.

: #

Received: 10/28/88

SAMPLE ID reagent blank

RAS Austin

REPORT

Work Order # 88-10-151

Results by Sample

FRACTION <u>04A</u> TEST CODE <u>EPA602</u> NATION NATION <u>04A</u> TEST CODE <u>EPA602</u> NATION NATION NATIONAL NATION NAME EPA method 602 Category

P INJECTED 11/03/88 FILE # VERIFIED STINO P

ANALYST

CAS# COMPOUND RESULT DET LIMIT

108-88-3 71-43-2 Toluene Benzene RO B 0.20 0.20

541-73-1 106-46-7 95-50-1 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene S E 3 0.40 0.30 0,40

108-90-7

Chlorobenzene-A

30

0.30

Ethylbenzene

S

0.30

100-41-4

SURROGATES

98-09-8 a, a, a-Trifluorotoluene N\A% recovery

NOTES AND DEFINITIONS FOR THIS REPORT

ND = not detected at detection limit DET LIMIT = DETECTION LIMIT

NA = not analyzed

* = less than 5 times the detection limit

N\A = not available

Second column confirmation NOT performed unless otherwise noted

: #

SAMPLE ID reagent blank Received: 10/28/88

Continued From Above Work Order # 88-10-151

Results by Sample

FRACTION 04A TEST CODE EPA602 NAME EPA method 602
Date & Time Collected not specified Category

Category

A-Chlorobenzene and p-xylene co-elute. Quantitated as chlorobenzene unless otherwise noted.

OR DORATION

Page 20 Received: 10/28/88

SAMPLE ID reagent blank

RAS - Austin

REPORT

Work Order # 88-10-151

NAME Xylenes, EPA 602

Category

Results by Sample
FRACTION <u>04A</u> TEST CODE XYLENE NO Date & Time Collected not specified

VERIFIED CL

ANALYST CL

INJECTD 11/03/88

FILE #

DNITS UQ

CAS # COMPOUND RESULT DET LIMIT
106-42-3 p-Xylene-A ND 0.20
108-38-3 m-Xylene ND 0.20
95-47-6 o-Xylene ND 0.10

SURROGATES

a, a, a-Trifluorotoluene N\A% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

ND = not detected at detection limit

8-80-85

ND = not detected at detection limit
NA = not analyzed

* = less than 5 times the detection limit NNA = not available

Second column confirmation NOT performed unless otherwise noted.

Q = daily EPA standard recovery outside 95% confidence interval.

Chlorobenzene and p-xylene co-elute.

Quantitated as chlorobenzene unless otherwise noted.

: #

Page 21 Received: 10/28/88

RAS

Work Order # 88-10-151

Austin REFORT
 NonReported Work

FRACTION AND TEST CODES FOR WORK NOT REPORTED ELSEWHERE

₩ 700 710 SPR602 SPR602

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12/02/88	Austin
12: 27: 29	REPORT

Work Order # 88-10-152

INVOICE	P. O. #	TYPE	TRANS	TAKEN	WORK ID	•	FACILITY	COMPANY	CLIENT	ATTEN		_	rangag
under separate cover	ombone, state-addres streets take descendants descendants des and addressed breas series and between all proposed and problems and addressed by the series of the series o	dens språnform i detaum förd dår vir, svamminningsprin stödente, bekingsprins federalsprins septembliske frake dekydametersprins federalsprins frake dekydametersprins frake d	UPS	ME	Artesia		Odessa, TX		PHILLIPS P SAMPLES 5	ATTEN Linda Bendele	Austin	81.1	Du Cariotti

PHONE	ATTEN			ΥÐ	PREPARED
512-454-4797		Austin, TX 78720-1088	PO Box 201088	8501 Mo-pac B1.	Radian Analytical Services

CONTACT BENDELE

ZFIED BY

Unknown compounds present in Artesia MW-3 for 602 + xylene

acceptance limits indicating an interferent present R-matrix spike recovery for this analysis was not within

Previously Reported on Footnotes and Comments 12/01/88

Potential error for Indicates a value less such low values than 5 times ranges between the detection limit 50 and 100%

specific matrix was not within acceptable limits indicating Indicates that spike recovery for this analysis on the interferent present.

SAMPLE IDENTIFICATION

400 reagent blank Artesia MW-3 trip blank rtesia MW-4 rtesia MW-3 duplicate

10/BB-32PD

COLI

CE M

Chromium,

ICPES

Total coliform

Chioride,

IC

admium,

ICPES

063020)G601C

Digestion, method

method

601 302

EPA602

EPA method 602 Digestion,

ICPES

luoride,

BETA BA E AS G ALPHA

<u>Gross beta radiation</u>

CD

ME

Specific conductance

cold yapor

ICPES TEST CODES and NAMES used on this report

Silver,

Gross alpha radiation

Arsenic, graphite

AA

Barıum,

ICPES

C								III III
XYLENE	TOC TOC	\$E 6	m	PH G	iω	NA E	N M	DASO COLISM
Turbidity Xylenes, EPA 602	Sulfate, IC Total organic carbon		tal	PH Qraphite AA	te, colori	Sodium, ICPES	Manganese, ICPES	

Page 2 Received: 10/28/88

Austin REPORT REPORT

Work Order # 88-10-152

ib Ti): 		
ertesia MW-4			Artensia Ma	01	SAMPLE !
11/04/88				11/04/88	Test: DG6010
<0.04				2.4	Test: FE E
2.9	· • • • • • • • • • • • • • • • • • • •			<u>,</u>	Test: F IC
2500	1890	1850	1900	1960	Test: MHO
0.90				4.0	Test: MN E

RADIAN

		Artesia MW-4				T C	01	SAMPLE I	Artesia MW-3 du				SAMPLE I	Page 3 Received: 10/28/88
			150				100	Test: NA E	11/17/88				Test: <u>DG6010</u>	RAS
			0.05*				0.41	Test: NO3					lest: FE E	Austin Results By
- +4 			<0.001				<0.001R	Test: PB G					Test: F IC	REPORT
	6. 81	6. 82	6. 82	6.76	6.76	6. 78	6.80	Test: PH units		2420	2400	2440	Test: MHO	Work Order # 88-10-152 Continued From Above
_			⟨0.005				<0.005	Test: PHEN					Test: MN E	0M Above

RADIAN

Page 4 Received: 10/28/88	RA SA	Austin Results By T	REPORT Test	Work Order # 88-10-152 Continued From Above	88-10-152 om Above
SAMPLE I	Test: NA E	Test: NO3	Test: PB G	Test:PH units	Test: PHEN
				6. 80	
SAMPLE I	Test:RA 226	Test: SE 8	Test: <u>504 IC</u>	Test: TOC	
Artesia MW-3	0.38(.05) pci/L	(0, 004R	640	i Li	·
				!!!!!	
				23	
				19	
02	0.36(.05)	<0.004	580	12	
Artesia RW-4	bC1/F			(J)	
				14	
				4	
A					

Page 5

SAMPLE ID Artesia MW-3 Received: 10/28/88

Austin

Work Order # 88-10-152

Results by Sample

FRACTION OIJ TEST CODE EPA502 NAME EPA method 602
Date & Time Collected 10/27/88 Category Category

VERIF1ED CL

	0.40	ON	1,2-Dichlorobenzene	95-50-1	
	0.40	MD	1,3-Dichlorobenzene	541-73-1	
	0.30	ND	1,4-Dichlorobenzene	106-46-7	
	0.30	ON	Chlorobenzene-A	108-90-7	
	0.30	ND	Ethylbenzene	100-41-4	
	0.20	GN	Toluene	108-88-3	
	0.20	0.94	Benzene	71-43-2	
	DET LIMIT	RESULT	COMPOUND	CAS#	
<u> </u>	ONI TS	With the state of	INJECTED 11/03/88 FILE # _	·	ANALYST BM

SURROGATES

98-08-8 a, a, a-Trifluorotoluene 101% recovery

NOTES AND DEFINITIONS FOR THIS REPORT

DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed
* = less than 5 times the detection limit

.

N\A = not available

Second column confirmation NOT performed

unless otherwise noted

Received: 10/28/88

SAMPLE ID Artesia MW-3

Austin

Work Order # 88-10-152 Continued From Above

Results by Sample

FRACTION OID TEST CODE EPA602 NAME EPA method 602
Date & Time Collected 10/27/88 Category

A-Chlorobenzene and p-xylene co-elute Quantitated as chlorobenzene unless otherwise noted

.

Page / Received: 10/28/88	RAS - Austin REPURI Results by Sample	Work Urder # 88-10-152
SAMPLE ID Artesia NW-3	PRACTION O11 TEST CODE HG C Date & Time Collected 10/27/88	NAME Mercury, cold vapor Category
	VERIF1ED	
INTERMT 403	ANALYZED 11/14/88	UNITS <u>ug/ml</u>
	ANALYTE RESULT DET LIMIT	
- An	Mercury ND 0.0002	
NOTES AND DEFINITIONS FOR DET LIMIT = DETECTION ND = not detected at NA = not analyzed * = less than 5 times N\A = not available	IONS FOR THIS REPORT. DETECTION LIMIT ected at detection limit lyzed n 5 times the detection limit ailable	
SAMPLE ID Artesia MW-3	FRACTION O1A TEST CODE TURB Date & Time Collected 10/27/88	NAME Turbidity Category
	VERIFIED	LM
ANALYST TAM INSTRMT HACH	ANALYZED 10/28/88 UN	UNITS NTU
ANA	ANALYTE RESULT DET LIMIT	
Turb	Turbidity 16 10	



Page 8 Received: 10/28/88	RAS - Austin REPORT Results by Sample	Work Order # 88-10-152 Continued From Above
SAMPLE ID Artesia MW-3	Date % Time Collected 10/2//88	NAME Turbidity Category
NOTES AND DEFINITIONS FOR THIS R DET LIMIT = DETECTION LIMIT ND = not detected at detect NA = not analyzed * = less than 5 times the d N\A = not available	THIS REPORT. N LIMIT detection limit s the detection limit	
SAMPLE ID Artesia MW-3	FRACTION OIJ TEST CODE XYLENE Date & Time Collected 10/27/88	NAME Xylenes, EPA 602 Category
ANALYST BM	FILE #	CL
	INJECTD 11/03/88	UNITSug/L
CAS # 106-42-3 108-38-3 95-47-6	COMPOUND RESULT DET LIMIT p-Xylene-A ND 0.20 m-Xylene ND 0.20 o-Xylene ND 0.10	· ·
8-80-86	SURROGATES a,a,a-Trifluorotoluene <u>101</u> % recovery	
DEF	THIS REPORT. LIMIT detection limit	
= less than 5	detec	
Second column confirmation unless otherwise noted.	nation NOT performed oted.	

Received: 10/28/88

SAMPLE ID Artesia MW-3

Austin

Work Order # 88-10-152 Continued From Above

Results by Sample

FRACTION O1J TEST CODE XYLENE NAME Xylenes, EPA 602

Date & Time Collected 10/27/88

Category

Q = daily EPA standard recovery outside Chlorobenzene and p-xylene co-elute. 95% confidence interval. Quantitated as chlorobenzene unless

otherwise noted

Received: 10/28/88 SAMPLE ID Artesia MW-4

> AUSTIN

REPORT

Work Order # 88-10-152

Results by Sample

FRACTION 02J TEST CODE EPA602
Date % Time Collected 10/27/88

NAME EPA method 602 Category

VERIFIED C

ANALYST 541-73-1 106-46-7 108-90-7 100-41-4 108-88-3 95-50-1 71-43-2 CAS# INJECTED 11/03/88 1,3-Dichlorobenzene 1, 2-Dichlorobenzene 1,4-Dichlorobenzene Chlorobenzene-A Ethylbenzene COMPOUND FILE # Toluene Benzene RESULT DET LIMIT زم _ 20 GN GN E G 0 20 0.30 0.20 0.40 0.40 0.30 0 STING 30

SURROGATES

98-08-8 a, a, a-Trifluorotoluene 102% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.

DET LIMIT - DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

less than 5 times the detection limit

: :

N\A = not available

Second column confirmation NOT performed unless otherwise noted

Page 11 Received: 10/28/88

SAMPLE ID Artesia MW-4

Austin

Work Order # 88-10-152 Continued From Above

Results by Sample

FRACTION 02J TEST CODE EPA602
Date % Time Collected 10/27/88 NAME EPA method 602

Category

A-Chlorobenzene and p-xylene co-elute Quantitated as chlorobenzene unless otherwise noted.

: E

Page 12 Received: 10/28/88	RAS - Austin REPORT Results by Sample	Work Order # 88-10-152
SAMPLE ID Artesia NW-4	FRACTION OZI TEST CODE HG C Date % Time Collected 10/27/88	NAME Mercury, cold vapor Category
	VERIFJED) <u>RHH</u>
ANALYST KCP	4NALYZED <u>11/14/88</u> U	UNITS ug/ml
	ANALYTE RESULT DET LIMIT	
	Mercury ND 0,0002	
NOTES AND DEFINITIONS FO DET LIMIT = DETECTI ND = not detected a NA = not analyzed * = less than 5 tim N\A = not available	IONS FOR THIS REPORT. DETECTION LIMIT ected at detection limit lyzed n 5 times the detection limit ailable	
SAMPLE ID Artesia MW-4	FRACTION OZA TEST CODE TURB Date & Time Collected 10/27/88	NAME Turbidity Category
	VERIFIED)
ANALYST TAM INSTRMT HACH	ANALYZED 10/28/88 UI	UTU STINU
	ANALYTE RESULT DET LIMIT	
T	Turbidity 9 1.0	



Page 13 Received: 10/28/88	RAS - Austin REPORT Results by Sample	Work Order # 88-10-15 Continued From Above
SAMPLE ID Artesia NW-4	FRACTION 02A TEST CODE TURB Date % Time Collected 10/27/88	NAME Turbidity Category
NOTES AND DEFINITIONS FOR THIS R DET LIMIT = DETECTION LIMIT ND = not detected at detect NA = not analyzed * = less than 5 times the d N\A = not available	THIS REPORT. VLIMIT Jetection limit the detection limit	
SAMPLE ID Artesia MW-4	Date % Time Collected 10/27/88	NAME Xylenes, EPA 602 Category
	VERIFIED	CL
ANALYSTCL INSTRMTD	INJECTD 11/03/88 FILE #UN	UNITSug/L
CAS # 106-42-3 108-38-3 95-47-6	COMPOUND RESULT DET LIMIT p-xylene-A ND 0.20 m-xylene ND 0.20 o-xylene ND 0.10	
8-80-85	SURROGATES a,a,a-Trifluorotoluene <u>102</u> % recovery	
NOTES AND DEFINITIONS FOR THIS R DET LIMIT = DETECTION LIMIT ND = not detected at detect NA = not analyzed * = less than 5 times the d N\A = not available Second column confirmation unless otherwise noted.	FOR THIS REPORT. TION LIMIT at detection limit imes the detection limit le firmation NOT performed e noted.	

Page 14 Received: 10/28/88

SAMPLE ID Artesia Ma-4

Austin

Work Order # 88-10-152 Continued From Above

Results by Sample

PRACTION 02J TEST CODE XYLENE NAME Xylenes, EPA 602

Date & Time Collected 19/27/88

Category

Chlorobenzene and p-xylene co-elute. = daily EPA standard recovery outside Quantitated as chlorobenzene unless 95% confidence interval. otherwise noted.

Received: 10/28/88

SAMPLE ID trip blank

Austin

Work Order # 88-10-152

Results by Sample

FRACTION 04A TEST CODE EPA402
Date & Time Collected 10/27/88 NAME EPA method 602

Category

			VE	VERIFIED	CL
ANALYST BM	INJECTI	FILE # _		STINO	J/bn
	CAS#	COMPOUND	RESULT I	DET LIMIT	
	71-43-2	Benzene	NO	0.20	
	108-88-3	Toluene	NO	0.20	
	100-41-4	Ethylbenzene	NO	0.30	
	108-90-7	Chlorobenzene-A	ON	0.30	
	106-46-7	1,4-Dichlorobenzene	ND	0.30	
	541-73-1	1,3-Dichlorobenzene	ND	0.40	
	95-50-1	1,2-Dichlorobenzene	NO	0.40	

SURROGATES

98-08-8 a, a, a-Trifluorotoluene 101% recovery

NOTES AND DEFINITIONS FOR THIS REPORT. DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed * = less than 5 times the detection limit

N\A = not available

Second column confirmation NOT performed unless otherwise noted

Page 16 Received: 10/28/88

SAMPLE ID trip blank

Austin

REPORT

Work Order # 88-10-152 Continued From Above

Results by Sample

FRACTION 04A TEST CODE EPA602
Date % Time Collected 10/27/88 NAME EPA method 602 Category

A-Chlorobenzene and p-xylene co-elute. Quantitated as chlorobenzene unless otherwise noted.

Page 17 SAMPLE ID trip blank Received: 10/28/88

> 70 A C Austin

> > REPORT

Work Order # 88-10-152

Results by Sample

NAME Xulenes, EPA 602

Category

FRACTION 04A TEST CODE XYLENE Date % Time Collected 10/27/88

VERIFIED P

INJECTD 11/03/88

UNITS

105-42-3 108-38-3 95-47-6 CAS # p-Xylene-A COMPOUND m-Xylene o-Xylene RESULT DET LIMI'I 0. 20 0. 10

SURROGATES

a, a, a-Trifluorotoluene 101% recovery

NOTES AND DEFINITIONS FOR THIS REPORT DET LIMIT = DETECTION LIMIT

8-60-85

NA = not analyzed ND = not detected at detection limit

Second column confirmation NOT performed N\A = not available * = less than 5 times the detection limit

= daily EPA standard recovery outside unless otherwise noted

95% confidence interval.

Chlorobenzene and p-xylene co-elute

Quantitated as chlorobenzene unless otherwise noted

: #

Received: 10/28/88

SAMPLE ID reagent blank

Austin

Work Order # 88-10-152

Results by Sample

FRACTION 05A TEST CODE EPA602 NAME EPA method 602
Date & Time Collected not specified Category

Category

			VE.	VERIFIED	CL
ANALYSTCL	IN ICOTO	TN ECTED 11/03/88 FILE # _	Man e a un fina de mina de la compansión e e e tempo de la compansión de la compansión de la compansión de la c		
	CAS#	COMPOUND	RESULT I	DET LIMIT	
	71-43-2	Benzene	ON	0.20	
	108-88-3	Toluene	ND	0.20	
	100-41-4	Ethylbenzene	ND	0.30	
	108-90-7	Chlorobenzene-A	S S	0.30	
	106-46-7	1,4-Dichlorobenzene	ON	0.30	
	541-73-1	1,3-Dichlorobenzene	UN	0.40	
	95-50-1	1,2-Dichlorobenzene	ND	0.40	

SURROGATES

98-08-8 a, a, a-Trifluorotoluene NIA% recovery

NOTES AND DEFINITIONS FOR THIS REPORT.
DET LIMIT = DETECTION LIMIT

ND = not detected at detection limit

NA = not analyzed

* = less than 5 times the detection limit

N\A = not available

Second column confirmation NOT performed

unless otherwise noted

Page 19 Received: 10/28/88 SAMPLE ID reagent blank

> Austin Results by Sample

Work Order # 88-10-152 Continued From Above

Category

A-Chlorobenzene and p-xylene co-elute. otherwise noted. Quantitated as chlorobenzene unless FRACTION 05A TEST CODE EPA502 NAME EPA method 602
Date % Time Collected not specified Category

Received: 10/28/88 Page 20

SAMPLE ID reagent blank

AUSTIN

REPORT

Work Order # 88-10-152

Category

PRACTION 05A TEST CODE XYLENE NAME Xylenes, EPA 602

Date % Time Collected not specified Category Results by Sample

VERIFIED 2

ANALYST

INJECTD 11/03/88

FILE #

UNITS

106-42-3 108-38-3 95-47-6 CAS # p-Xylene-A COMPOUND m-Xylene o-Xylene RESULT DET LIMIT 0.10 0. 20

SURROGATES

a, a, a-Trifluorotoluene

N\A% recovery

8-80-85

DET LIMIT = DETECTION LIMIT

NOTES AND DEFINITIONS FOR THIS REPORT

ND = not detected at detection limit

NA = not analyzed

 $N\setminus A = not available$ * - less than 5 times the detection limit

Second column confirmation NOT performed unless otherwise noted

O daily EPA standard recovery outside 95% confidence interval.

Chlorobenzene and p-xylene co-elute Quantitated as chlorobenzene unless otherwise noted.

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Page 21 Received: 10/28/88

RAG - Austin

Work Order # 88-10-152

tin
NonReported Work

FRACTION AND TEST CODES FOR WORK NOT REPORTED ELSEWHERE

SPR602 SPR602

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306 Received: 12/07/88

REPORT Radian

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15/08/88 08: V

29: 54	REPORT

Work Order # 88-12-036

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ATTEN			ВЧ	PREPARED
512-454-4797	Austin, TX 78720-1088	PO Box 201088	1	Radian Analytical Services

CONTACT BENDELE

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Footnotes and Comments

WORK ID

Lusk & Artesia,

XOZ

TAKEN

TRANS TYPE

INVOICE P. O.

under separate cover

Lusk MW-2

SAMPLE IDENTIFICATION

XOT

Artesia MW-1 Artesia MW-2

LUSK MW-4

COMPANY

VILITA

Odessa.

Phillips Petroleum

CLIENT

PHILLIPS P

SAMPLES

æ

ATTEN Linda Bendele

Potential error for such low values ranges between 50 and 100%. * Indicates a value less than 5 times the detection limit.

specific matrix was not within acceptable limits indicating @ Indicates that spike recovery for this analysis on the an interferent present.

Total organic TEST CODES and NAMES used on this report

12/88-322 GT.

Artesia MW-4

Artesia MW-3

Page 3 Received: 12/07/88

RAS Austin REPORT
 Results By Test

Work Order # 88-12-036 Continued From Above

	Artesia nw-0	07			ALCESTO IM-C	06				05			SAMPLE :	
0.14	0. 05	0.05	0. 07	0. 05	0.08	0.09	0.11	0.08	0.08	0.06	0. 20	0.13	Test: TOX	
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														•
·	 -							~ ~~~	··· ••• ••• ••					

Page 4 Received: 12/07/88

RAS

- Austin REPORT Results By Test

Work Order # 88-12-036 Continued From Above

08 0.09
0. 12
0.12
0. 11

Petrules/berbuils

Data Flags:

TERMS USED IN THIS REPORT:

Analyte - A chemical for which a sample is to be analyzed. EPA method and QC specifications. The analysis will meet

Compound - See Analyte

concentration factor. (Refer to Factor, below) specified by EPA. Note, the detection limit may vary from that specified by EPA by the quantitation specified by EPA for a method. Radian staff regularly assess their laboratories' method detection limits to verify that they meet or are lower than those Detection Limit - The method specified detection limit, which is the lower limit of f

analyses and accompanying QC tests in conformance with EPA methods unless otherwise standard methods for analysis of environmental samples. EPA Method - The EPA specified method used to perform an analysis. Radian will perform its EPA has specified

differs from that specified by a given EPA method. A sample prepared to the specifications of the method will have a factor of 1. A sample diluted 10 times to bring the analytes within the instrument calibration range will have a factor of 10. Conversely, a sample which is concentrated 10 times more than specified will have a factor of 0.1. Factor - The concentration or dilution factor by which the sample extract or digestate Conversely, a sample which

Matrix - The sample material. Generally, it will be soil, water, air, oil, or solid

the analytical summary. Radian Work Order - The unique Radian identification code assigned to the samples reported in

mg/Kg mg/L ug/M3 ug/Kg ml/hr sodan milliliters per hour; rate of settlement of matter in water turbidity unit; nephelometric turbidity unit conductance unit; microohms/centimeter milligrams per kilogram (parts per million); soils/solids milligrams per liter (parts per million); liquids/water micrograms per cubic meter; air samples micrograms per kilogram (parts per billion); soils/solids micrograms per liter (parts per billion); liquids/water percent; usually used for percent recovery of QC standards

Notes and Definitions

Data Flags:

- approximate. detection limit is approached. The asterisk(*) is used to flag results which are less than five times the method specified detection limit. Studies have shown that the uncertainty of the analysis will increase exponentially as the method These results should be considered
- digestion spike. These spikes have not been subjected to the This flag indicates that a spike is an analytical and/or postextraction or digestion step.
- Since traces of the background contaminant will vary from sample to sample, the sample results are not corrected from the amount in the This flag indicates that the analyte was detected in the reagent blank
- Most methods of gas chromatography recommend reanalysis on a second terferences that may occur and for analyte confirmation. column of dissimilar phase to resolve compounds of interest from inindicates that the analyte has been confirmed on a second column. This flag

C

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B

one at the concentration of some of the analytes, and a second with bration range of the instrument. Therefore two analyses are performed, dilution factor. In an analysis some compounds can exceed the cali-This flag identifies analytes identified in analysis at a secondary report narrative. The reported value is estimated because of the presence of intersample diluted so that higher levels fall into calibration range The potential source of the interference is included in the

NAIGA9

Notes and Definitions

Data Flags:

This flag identifies a GC/MS result whose concentration exceeds the extract is diluted and re-analyzed. compounds have a response greater than full scale, the sample or calibration range for that specific analysis. Usually if one or more

N/A A result or value is not available for this parameter, usually a criteria but the result is less than the sample quantitation limit. data indicate the presence of a compound that meets the identification when estimating a concentration for tentatively identified compounds detection limit. where a response factor of 1 is assumed, or when the mass spectral Indicates an estimated value for GC/MS data. This flag is used either

NA This analyte was not analyzed.

NC ND spike added concentration is considered insignificant. detection limit. is greater than four times the spike added concentration because the Applies to RPD and spike recovery results. is not calculated when a result is less than five times the A spike recovery is not calculated when the result The relative percent differ

This flag (or <) is used to denote analytes which are not detected at or above the specified detection limit. The value to the right of the < symbol is the method specified detection limit for the sample.

MAIGAS

Data Flags:

R This analyte was not requested by the client.

This analyte or surrogate was not added (spiked) to the sample for this analysis.

This quality control standard is outside method or laboratory spec-Most methods of gas chromatography recommend reanalysis on a second spike duplicate result. difference) values for duplicate analyses and matrix spike/matrix tical QC spike, and surrogate recoveries; and to RPD(relative percent is applicable for samples from a regular sampling program. terferences that may occur and for analyte confirmation. column of dissimilar phase to resolve compounds of interest from inified control limits. indicates that the analyte has been confirmed previously. This flag is applied to matrix spike, analy-This flag This flag

O

7

S

been obtained using the Method of Standard Addition. This flag indicates that a specific result from a metals analysis has

terferences that may occur and for analyte confirmation. column of dissimilar phase to resolve compounds of interest from in-Most methods of gas chromatography recommend reanalysis on a second indicates that second column was not requested. This flag

C

naigaș

RADIAN

Page 1

Client: PHILLIPS 66
PHILLIPS 66

ODESSA, TEXAS 77480

01A ARTESIA MW-1 02A ARTESIA MW-2 03A ARTESIA MW-4 04A ARTESIA MW-3

EPA METHOD 8080

Lab No: A8-10-107

RESULTS IN ug/L

CAS #	COMPOUND	01 A	02A	03 A	04A
58-89-9	gamma-BHC,(Lindane)	0.25 *	<0.19	<0.19	<0.094
72-20-8	Endrin	<0.19	<0.19	<0.19	0.02 J
8001-35-2	Toxaphene	<0.94	<0.94	<0.94	<0.47
72-43-5	Methoxychlor	<9.4	<9.4	<9.4	<4.7

SURROGATE RECOVERIES	(results	in % rec	overy)	
Dibutylchlorendate	101	83	86	85
2,4,5,6-Tetrachloro-m-xylene	128	97	98	1511

NOTES AND DEFINITIONS FOR THIS REPORT.

QC = OUTSIDE CONTROL LIMITS.

* = LESS THAN 5 TIMES THE DETECTION LIMIT.

B = DETECTED IN REAGENT BLANK; BACKGROUND SUBTRACTION NOT PERFORMED.

ND = NOT DETECTED AT DETECTION LIMIT.

NA = NOT ANALYZED.

 $N\setminus A = NOT AVAILABLE.$

NS = NOT SPIKED.

J = DETECTED AT LESS THAN THE SPECIFIED DETECTION LIMIT.

RADIAN

Page 2

•

05A REAGENT BLANK

Client: PHILLIPS 66

PHILLIPS 66

ODESSA, TEXAS 77480

EPA METHOD 8080

Lab No: A8-10-107

RESULTS IN ug/L

CAS #	COMPOUND	ACO
58-89-9	gamma-BHC, (Lindane)	<0.010
72-20-8	Endrin	<0.010
8001-35-2	Toxaphene	<0.050
72-43-5	Methoxychlor	<0.50

SURROGATE RECOVERIES (results in % recovery)

Dibutylchlorendate 76
2,4,5,6-Tetrachloro-m-xylene 64

NOTES AND DEFINITIONS FOR THIS REPORT.

QC = OUTSIDE CONTROL LIMITS.

* = LESS THAN 5 TIMES THE DETECTION LIMIT.

B = DETECTED IN REAGENT BLANK; BACKGROUND SUBTRACTION NOT PERFORMED.

ND = NOT DETECTED AT DETECTION LIMIT.

NA = NOT ANALYZED.

 $N\setminus A = NOT AVAILABLE.$

NS = NOT SPIKED.

J = DETECTED AT LESS THAN THE SPECIFIED DETECTION LIMIT.

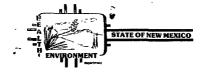
ANALYTICAL DATA SUMMARY

PHILLIPS 66 Associate Laboratory Data for Radian Work Order: 8901039

Method: EPA 8150 Herbicides		Matrix: water	er	
Results in: Sample ID:	ug/L Artesia MW-1	ug/L Artesia MW-2	ug/L Arresia	ug/L Artesia
2,4-D	40.4	40.4	<0.5	9.0>
2,4,5-TP (Silvex)	40.4	4.0>	<0.3	<0.3

For a detailed description of flags and technical terms in this report refer to the glossary.

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P.O. Box 968 Santa Fe, New Mexico 87504 505-984-0020

4/7/86

Dave

Here is a summary of our results for Phillips Antesia, Eunice, Les & Zusk. I have the original lab sheets if you want to see them.

- Ann C. x2931

Copy meach

RESULTS OF SAMPLING

PHILLIPS PETROLEUM GAS REFINERIES

ARTESIA, EUNICE, LEE AND LUSK

Attached are the results for the New Mexico Environmental Improvement Division's samples taken at the Phillips plants in August 1986. At each plant, samples were taken from each of the RCRA wells (4 wells per plant). At Lusk and Artesia, samples were also taken from surface impoundments. Table 1 identifies each sample.

All samples were collected by Alice Barr with the assistance of Kelley Crossman. The samples were appropriately preserved and shipped under chain-of-custody to the State Laboratory in Albuquerque for analysis. Table 2 gives the analytical procedure for each parameter. Note that calcium and magnesium are reported under both General Chemistry and Metals. The Gen. Chem results were obtained by the Water Chemistry Section using wet analytical techniques; the Metals results were obtained by the Metals Section using ICAP.

All results are in milligrams per liter (mg/l), except as follows:

pH units conductivity micromhos/cm (lab cond. at 25 °C) temperature degrees Celcius parts per billion

Abbreviations and symbols used to report the results are as follows:

Cond. conductivity GEN. CHEM. general chemistry not detected (see below) ND NR not reported parts per billion PPB temperature (in Celcius) Temp. TDS total dissolved solids (total filterable residue) TOC total organic carbon less than < greater than > approximately tentative identification

The value of many metals is reported as ND (none detected). The detection limits, in mg/l, were as follows:

Arsenic	0.005
Mercury	0.0005
Selenium	0.005
Manganese	0.05
All others	0.1

TABLE 1. SAMPLE IDENTIFICATION, PHILLIPS PETROLEUM PLANTS

NOTE: The designation of a well as upgradient or downgradient is Phillip's designation.

Phillips Petroleum -- Artesia

Phillips Petroleum -- Eunice

MW-1	monitoring well 1, upgradient
MW-2	monitoring well 2, downgradient
MW-3	monitoring well 3, downgradient
MW-4	monitoring well 4, downgradient

Phillips Petroleum -- Lee

MW-1	monitoring well 1, upgradient
MW-2	monitoring well 2, downgradient
MW-3	monitoring well 3, downgradient
MW-4	monitoring well 4, downgradient
Blank	Field blank using deionized water

Phillips Petroleum -- Lusk

MW-1	monitoring well 1, upgradient
MW-2	monitoring well 2, downgradient
MW-3	monitoring well 3, downgradient
MW-4	monitoring well 4, downgradient
R-PND,w	RCRA pond, surface water
R-PND,s	RCRA pond, sediment
O-PND,s	Oily pond next to RCRA pond, sludge

TABLE 2. ANALYTICAL METHODS

PARAMETER	PRESERVATION	ANALYTICAL METHOD
Gen. Chem.		
Field pH	none	Hach Mini pH Meter
Field Cond.	none	Yellow Springs S-C-T Meter
Calcium	ice	EPA Method 215.2
Magnesium	ice	EPA Methods 130.2 and 215.3
Sodium	ice	Std. Methods 325(b)
Potassium	ice	Std. Methods 325(b)
Bicarbonate	ice	EPA Method 310.1
Chloride	ice	EPA Method 325.2
Sulfate	ice	EPA Method 375.2
TDS	ice	EPA Method 160.1
Fluoride	ice	EPA Method 340.2
Nitrate-N	ice, H ₂ SO ₄	EPA Method 352.2
TOC	ice, H ₂ SO ₄	EPA Method 415.1
Metals		
Arsenic	HNO ₃	EPA Method 206.2
Mercury	HNO ₃	EPA Method 245.1
Selenium	HNO ₃	EPA Method 270.2
All others (ICAP Scan)	HNO ₃	EPA Method 207
Organics		
GC/MS Purgeables	lce	EPA Method 624
-		

PHILLIPS PETROLEUM -- ARTESIA

	MW-1	MW-3	MW-6	Blank*
GEN CHEM				
Field pH	6.9	6.9	7.0	-
Field Cond.	2500	2040	1420	-
Field Temp.	23	23	23	-
Lab pH '	7.96	7.84	7.67	7.25
Lab Cond.	2172	1983	1437	34
Calcium	270.4	172.0	176.8	6.67
Magnesium	98.6	111.3	67.8	0.33
Sodium	193.2	202.4	71.3	4.6
Potassium	1.56	5.46	0.78	0
Bicarbonate	115	366.1	238.8	8.3
Chloride	378.5	464.8	142.1	4.1
Sulfate	638.4	79.3	424.5	8.0
TDS	1913	1345	1305	25
Fluoride	1.59	2.57	1.89	0.10
Nitrate-N	9.15	0.08	0.3	1.12
TOC	8.08	22.9	13.7	1.1
<u>METALS</u>				
Arsenic	0.018	0.049	0.014	ND
Mercury	ND	ND	ND	ND
Selenium	ND	ND	ND	ND
Aluminum	1.3	1.8	0.4	ND
Barium	ND	0.3	ND	ND
Beryllium	ND _	ND _	ND	ND
Boron	0.5	0.7	0.4	ND
Cadmium	ND	ND	ND	ND _
Calcium	285	160	185	3.5
Chromium	ND	ND	ND	ND
Cobalt	ND	ND	ND	ND
Copper	ND	ND	ND	ND
Iron	0.7	2.5	0.4	ND
Lead	ND	ND	ND	ND
Magnesium	106	79	63	0.3
Manganese	0.37	0.6	0.08	ND
Molybdenum	ND	ND	ND	ND
Nickel	ND	ND	ND	ND
Silicon	28	2.1	25	2.2
Silver	ND	ND	ND	ND
Strontium	5.1	3.3	3.2	ND
Tin	ND	ND	ND	ND
Vanadium	ND	ND	ND	ND
Ytrrium	ND	ND	ND	ND
Zinc	ND	ND	ND	ND

 $^{{\}bf *Sample\ containers\ filled\ in\ the\ field,\ tapping\ NMEID\ deionized\ water\ container.}$

PHILLIPS PETROLEUM -- ARTESIA, cont.

	PND-1,w*	PND-4,s*	
METALS Arsenic Mercury	0.020 0.0016	0.064 ND	
Selenium	ND	ND	
Aluminum	0.6	ND	
Barium	ND	0.4	
Beryllium	ND	ND	
Boron	ND	0.5	
Cadmium	ND	ND	
Calcium	20	200	
Chromium	0.3	ND	
Cobalt	ND	ND	
Copper	ND	ND	
Iron	3.7	0.4	
Lead	ND	ND	
Magnesium	3.5	58	
Manganese	ND	ND	
Molybdenum	ND	ND	
Nickel	ND	ND	
Silicon	2.3	1.4	
Silver	ND	ND	
Strontium	0.1	2.5	
Tin	ND	ND	
Vanadium	ND	ND	
Ytrrium	ND	ND	
Zinc	0.6	ND	

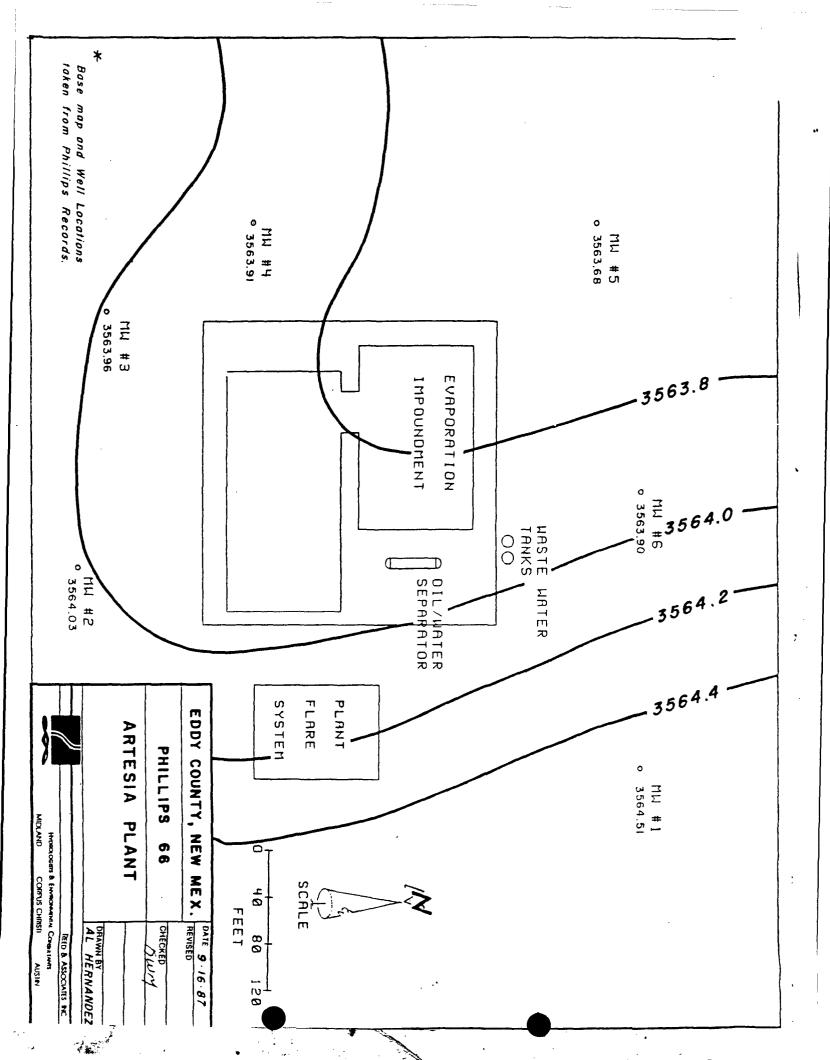
^{*&}quot;w" denotes a water sample; "s" denotes a sediment or sludge sample.

PHILLIPS PETROLEUM -- ARTESIA

Gas Chromatograph/Mass Spectrometer Purgeable Screen Results in [brackets] are tentative (unconfirmed) results.

SAMPLE	ORGANICS DETECTED	PPB
MW-1	None Detected	
MW-3	Benzene Tetrahydrofuran	[>200]
MW-6	Benzene Tetrathydrofuran	2 [2]
PND-2,s*	None Detected	
PND-3,w*	Benzene Toluene Note: This sample had an organic phase floating on top, which was not analyzed.	10 5
Blank	Trichloromethane Bromodichloromethane Dibromochloromethane Bromoform	19 5 4 [1]

^{*&}quot;w" denotes a water sample; "s" denotes a sediment or sludge sample.



Phillips Plants



PHILLIPS PETROLEUM COMPANY

May 2 2 1565

BARTLESVILLE, OKLAHOMA 74004 PHONE: 918 661-6600 CABLE CODE: PHILPETROL TELEX: 49-2455

HAZARDOUS WASTE SECTION

ENGINEERING AND SERVICES

March 21, 1986

Lusk, Lee, Eunice and Artesia Plants Supplemental Sampling Results

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Jack Ellvinger, Environmental Supervisor Hazardous Waste Section New Mexico Environmental Improvement Division P. O. Box 968 Harold-Runnels Building Santa Fe, NM 87501-0968

Dear Mr. Ellvinger:

Samples were procured from the Iusk, Lee, Eunice and Artesia Plants' water sampling wells and surface impoundments in the Fall of 1985 during a joint sampling effort by Phillips and the New Mexico Environmental Improvement Division (EID). Each sample that was procured was split between Phillips and the EID. Results of the analysis of Phillips' samples are attached.

Referring to the attached data, please note that for the Lusk, Lee and Eunice Plants, "well #1" corresponds to the "upgradient" well; in the case of the Artesia Plant, "well #3" is the upgradient well. Samples from monitoring wells #1 and #2 at the Eunice Plant were lost because the containers holding these samples froze and broke while being stored in a laboratory refrigerator prior to analysis. Analyses of the samples for metals were performed by Southwestern Laboratories of Midland, Texas. Analyses of the samples for volatile and semivolatile compounds were performed by the Phillips Research Center, located in Bartlesville, Oklahoma.

Phillips requests that EID provide Phillips a copy of all analytical results from the analysis of EID's split samples from the Lusk, Lee, Eunice and Artesia Plants.

It is Phillips' understanding that EID is currently preparing a public notice which, when published by EID in a local newspaper (or broadcast via radio or television), will extend to the public and to Phillips the opportunity to submit comments on the closure plans previously submitted by Phillips for the Lusk, Lee, Eunice and Artesia Plants. The Lusk plan is dated January 23, 1984; the other three plans are dated July 27, 1984. Following the comment period and after any questions are adequately addressed, EID will proceed with the administrative actions necessary to RCRA-close the Lusk, Lee, Eunice and Artesia Plants.

Mr. Jack Ellvinger, Environmental Supervisor March 21, 1986 Page 2

If you have any questions regarding the Lusk, Lee, Eunice or Artesia Plants, please contact either Frank Collis at (918) 661-1063 or W. C. Stoltz at (918) 661-5613.

Very truly yours,

B. F. Ballard, Director Environment Control

10 D4 Phillips Building

BFB:FPC:tsv/B:002 Enclosure



SOUTHWESTERN LABORATORIES

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

1703 W. Industrial Avenue [915 - 683-3348] • P.O. Box 2150 • Midland, Texas 79701

Client No. 3355796

File No. <u>C-1950-W</u>

Report No. 36785

Report Date 10-14-85

Date Received __

8-30-85

Delivered By __

M. Ford

Report of tests on:

Water

Client:

Phillips Petroleum Company

Identification:

Artesia Plant, Well No. 3

up 3 radient

		mg/L
ArsenicLess	than	0.05
BariumLess	than	1
CadmiumLess	than	0.01
ChromiumLess	than	0.05
LeadLess	than	0.05
MercuryLess	than	0.002
SeleniumLess	than	0.01
SilverLess	than	0.05
NickelLess	than	0.2
Cyanide		0.005

Technician: JDN, GMB

Copies

3cc Phillips Petroleum Company

Attn: Mike Ford

SOUTHWESTERN LABORATORIES

offer and are not necessary indicative of the quantities of apparently identical or sensor of volunt



Water

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-Client NO. 3355796

Report No. ______36784__

Report Date 10-14-85

Date Received __

8-30-85

Cient:

Report of tests on:

Phillips Petroleum Company

Delivered By ____

M. Ford

Identification:

Artesia Plant, Well No. 1

	mg/L
ArsenicLess than	0.05
BariumLess than	1
CadmiumLess than	0.01
ChromiumLess than	0.05
LeadLess than	0.05
MercuryLess than	0.002
SeleniumLess than	0.01
SilverLess than	0.05
NickelLess than	0.2
Cvanide	0.001

Technician:

JDN, GMB

Coales

3cc Phillips Petroleum Company

Attn: Mike Ford

A am M. Burch

Pormouse for the exclusive use of the client to whom they are accretised. The use of our name must, where his prior writter, signify 4. (i) and regions some my 50 Tell of and are not necessarily now you of the accretised of the accretised and are not necessarily not acceptable of the accretised of t

Swl

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1703 W. Industrial Avenue [915 - 683-3348] • P.O. Box 2150 • Midland, Texas 79701 Client No. 3355796

File No. C-1950-W

36786 Report No.

Report Date _____10-14-85

Report of tests on: Water

Date Received 8-30-85

Clent:

Phillips Petroleum Company

Delivered By _____ M. Ford_

Identification:

Artesia Plant, Well No. 6

mg/L -----Less than 0.05 Barium-----Less than 1 Cadmium-----Less than 0.01 Chromium-----Less than 0.05 Lead-----Less than 0.05 Mercury-----Less than 0.002 Selenium-----Less than 0.01 Silver----Less than 0.05 Nickel-----Less than 0.2

Technician:

JDN, GMB

Cooles

3cc Phillips Petroleum Company

Attn: Mike Ford

e addressed. The use of hur name must receive our phon written Addroval. Gun rettens and reports. Allex it and not necessarial indicative of the quantities of apparently decide and smaller ormalists.

119904

8-30-85

M. Ford



SOUTHWESTERN LABORATORIES

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

1703 W. Industrial Avenue [915 - 683-3348] • P.O. Box 2150 • Midland, Texas 79701 Client No. 3355796

> C-1950-W 36787 Report No. 10-14-85 Report Date __

Date Received

Delivered By

Report of tests on: Water

Client:

Phillips Petroleum Company

identification:

Artesia Plant, Pit Water

		mg/L
ArsenicLess	than	0.05
BariumLess	than	1
CadmiumLess	than	0.01
ChromiumLess	than	0.05
LeadLess	than	0.05
MercuryLess	than	0.002
SeleniumLess	than	0.01
SilverLess	than	0.05
NickelLess	than	0.2
Cyanide		0.003

Technician:

JDN, GMB

Copies

3cc Phillips Petroleum Company

Attn: Mike Ford



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Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

1703 W. Industrial Avenue [915 - 683-3348] • P.O. Box 2150 • Midland, Texas 79701 Client No. 3355796

File No. C-1950-X

Report No. 27904

Report Date _____10-23-85

Report of tests on:

Sludge

Date Received

9-3-85

Cient:

Phillips Petroleum Company

Delivered By Phillips

Identification:

Artesia Plant Pit Sludge

SW-846-Total Metals, Method 3050

	p.p.m.
ArsenicLess than	0.5
Barium	#450 *
CadmiumLess than	3
Chromium*	≖593 •
LeadLess than	5
Mercury,	1242
:Nickel	20
SeleniumLess than	0.1
SilverLess than	3

Technician:

MAW, GMB

Copies

3cc Phillips Petroleum Company

Attn: Mike Ford

BOUTHWESTERN LABORATORIES

Funktivis with reports over a che expassive use of the cown to whom they are addressed. The use of our name must receive our phonywritten approval. Our lettern of a reports of the Hill County of the Hill County of the County of the Guardines of apparents identical on sensor products.

TABLE I

VOLATILE ORGANIC ANALYSES OF ARTESIA PLANT WATER SAMPLES

Sample received: September 5, 1985

•	Concentration, ppb					- W6CC
Analysis	up granicat Surface					
	M.W. #1	M.W. #3 ²	M.W. #6	Impoundment	Pit Sludge	e (catie
Chloromethane	<1	=2:5	1-2	<1	d4 74 -	- NO 5TI
Vinyl Chloride	<1	<1	<1	<1	<1	
Chloroethane	<1	<1	<1	<1	<1	
Bromomethane	<1	<1	<1	<1	<1	
l, l-dichloroethylene	<1	<1	<1	<1	<1	
Methylene Chloride	2.5	6:6	7:5	₂ 2 ₹6	2-8	100 100
trans-1,2-dichloroethylene	<1	<1	<1	<1	<1	,
1,1-dichloroethane	<1	<1	<1	<1	<1	
Chloroform	-t=:-7 =	-kiril	1.8	2425=	1-4-	53 ALL.
1,2-dichloroethane	<1	<1	<1	<1	<1	
1,1,1-trichloroethane	<1	<1	<1	<1	<1	
Benzene	<1	<1	#3:-9**	16 -7		C PPD
Carbontetrachloride	<1	<1	<1	<1	<1	, .
1,2-dichloropropane	<1	<1	<1	<1	<1	
Bromodichloromethane	<1	<1	<1	<1	<1	
Trichloroethylene	<1	≺ 1	<1	<1	<1	
2-chloroethylvinyl Ether	<1	<1	<1	<1	<1	
trans-1,3-dichloropropene	<1	<1	<1	<1	<1	
cis-1,3-dichloropropene	<1	<1	<1	<1	<1	
1,1,2-trichloroethane	<1	<1	<1	<1	<1	
Toluene	-1.0	<1	<i>₽</i> 7:5'	9.4.	-41º 7	50 pp.
Dibromochloromethane	<1	<1	<1	<1	<1	* *
1,1,2,2-tetrachloroethylene	<1	<1	<1	< 1	< 1	
Chlorobenzene	<1	<1	<1	<1	<u><1</u>	
Ethylbenzene	<1	<1	<1	<1		15 7 7 2
Bromoform	<1	₹1	<1	< 1	<1	*
1,1,2,2-tetrachloroethane	<1	<1	₹1	₹1	₹1	
31509-	40-1	40-2	40-3	41-1	41-2	

Attachment to Olb-22-86

TABLE I
SEMIVOLATILE ORGANIC ANALYSES OF ARTESIA PLANT WATER SAMPLES

Sample received: September 5, 1985

Analysis	Concentration, ppb Surface				
				Impound-	Pit
	M.W. #1	M.W. #3	M.W. #6	ment	
	n. #. #1	n.w. ¥3	n.w. vo	ment	Sludge
Bis(2-chloroethyl)ether	<20	<20	<20	<300	<20
1,3-dichlorobenzene	<20	<20	<20	<300	<20
1,4-dichlorobenzene	<20	<20	<20	<300	<20
1,2-dichlorobenzene	<20	<20	<20	<300	<20
Bis(2-chloroisopropyl)ether	<20	<20	<20	<300	<20
N-nitorsodi-n-propylamine	<20	<20	<20	<300	<20
Nitrobenzene	<20	<20	<20	<300	<20
Hexachloroethane	<20	<20	<20	<300	<20
Isophorone	<20	<20	<20	<300	<20
n-nitrosodimethylamine	<20	<20	<20	<300	<20
Bis-(2-chloroethoxy)methane	<20	<20	<20	<300	<20
1,2,4-trichlorobenzene	<20	<20	<20	<300	<20
Naphthalene	<20	<20	<20	<300	<20
Hexachlorobutadiene	<20	<20	<20	<300	<20
Hexachlorocyclopentadiene	<20	<20	<20	<300	<20
2-chloronaphthalene	<20	<20	<20	<300	<20
2,6-dinitrotoluene	<20	<20	<20	<300	<20
Dimethylphthalate	<20	<20	<20	<300	<20
Acenaphthylene	<20	<20	<20	<300	<20
Acenaphthene	<20	<20	<20	<300	<20
2,4-dinitrotoluene	<20	<20	<20	<300	<20
Diethylphthalate	<20	<20	<20	<300	<20
Fluorene	<20	<20	<20	<300	<20
4-chlorophenylphenylether	<20	<20	<20	<300	<20
N-nitrosodiphenylamine	<20	<20	<20	<300	<20
4-bromophenylphenylether	<20	<20	<20	<300	<20
Hexachlorobenzene	<20	<20	<20	<300	<20
Phenanthrene	<20	<20	<20	<300	<20
Anthracene	<20	<20	<20	<300	<20
Dibutyl phthalate	<20	<20	<20	<300	<20
Fluoranthene	<20	<20	<20	<300	<20
Pyrene	<20	<20	<20	<300	<20
Benzylbutylphthalate	<20	<20	<20	<300	<20
Bis(2-ethylhexyl)phthalate	<20	<20	<20	<300	<20
Benzidine	<20	<20	<20	<300	<20
Di-n-octylphthalate	<20	<20	<20	<300	<20
Benzo(b&k)fluoranthene	<20	<20	<20	<300	<20
Benzo(a)pyrene	<20	<20	<20	<300	<20
3-3'-dichlorobenzidine	<20	<20	<20	<300	<20
Chrysene & benzo(a)anthracene	<20	<20	<20	<300	<20
Indeno(1,2,3-c,d)pyrene	<20	<20	<20	<300	<20
Dibenzo(a,h)anthracene	<20	<20	<20	<300	<20
Benzo(g,h,i)perylene	<20	<20	<20	<300	<20
Phenol	<20	<20	<20	<300	<20
2-chlorophenol	<20	₹20 -	<20	<300	<20
2-nitrophenol	<20	<20	<20	<300	<20
2,4-dimethylphenol	<20	<20	<20	<300	<20
2,4-dichlorophenol	<20	<20	<20	<300	<20
4-chloro-3-methylphenol	<20	<20	<20	<300	<20
2,4,6-trichlorophenol	<20	<20	<20	<300	<20
2,4-dinitrophenol	<20	<20	<20	<300	<20
4-nitrophenol	<20	<20	<20	<300	<20
2-methyl-4,6-dinitrophenol	<20	<20	<20	<300	<20
Pentachlorophenol	<20	<20	<20	<300	<20
31509-	40-1	40-2	40-3	41-1	41-2

PUBLIC NOTICE

NEW MEXICO ENVIRONMENTAL IMPROVEMENT DIVISION HAZARDOUS WASTE SECTION P.O.Box 968 Santa Fe, New Mexico 87504

PUBLIC NOTICE NO. 5

March 28,1986

NOTICE OF INTENT TO TERMINATE INTERIM STATUS
AND TO CLOSE THE SURFACE IMPOUNDMENT USED FOR THE DISPOSAL OF
HAZARDOUS WASTE

The State of New Mexico is authorized to operate a hazardous waste management program in lieu of the Federal program for those portions of the Resource Conservation and Recovery Act (RCRA) in effect prior to the enactment of the Hazardous and Solid Waste Amendments of 1984 (HSWA). The HWSA imposes additional requirements on hazardous waste management facilities which will be administered and enforced by the U.S. Environmental Protection Agency (EPA) until the State of New Mexico receives additional authorization for these requirements. Therefore, both the EPA and the New Mexico Environmental Improvement Division (NMEID) of the State Health and Environment Department will determine whether to approve Phillip's Petroleum Artesia Natural Gasoline Plant (Phillip's Artesia Plant) request for termination of interim status and the proposed closure plan.

Under authority of the New Mexico Hazardous Waste Act (§ 74-4-1 et. seq. NMSA 1983 Repl. Pamp.) and the New Mexico Hazardous Waste Management Regulations (HWMR-2), the NMEID proposes to terminate the interim status of Phillip's Artesia Plant, EPA I.D. Number NMD000709667, located ten miles east and four miles south of Artesia, New Mexico (32° 45′N, 104° 12′W) and to approve a closure plan for the surface impoundment used for the disposal of hazardous waste at that site. Phillip's Artesia Plant is involved in the production of natural gasoline and has conducted disposal of hazardous wastes in a surface impoundment associated with those processes.

The decision to terminate interim status is based on Phillip's Artesia Plant's request to withdraw its Part A application for a hazardous waste disposal permit. As a result of changes in its waste management practices, the company will no longer be subject to the requirements of HWMR-2, Section 206.C. for the disposal of hazardous wastes. Termination of interim status is to be accomplished through permit denial as required by EID. The cause for this permit denial is a request by the Company and does not suggest any wrongdoing on the part of the Company.

The proposed closure plan describes the procedures to be used to demonstrate that none of the standing liquids, waste and waste residues, the liner (if any) and underlying and surrounding contaminated soil remaining are hazardous waste. If that demonstration can be made then the surface impoundment is no longer subject to the requirements of HWMR-2 as provided for in Section 206.C.6.f.(2).

Persons wishing to comment upon the proposed termination of interim status or upon the proposed closure plan, or who wish to request a public hearing, should

submit, in writing, comments and requests, along with the requestor's name and address to the New Mexico Health and Environment Department, Environmental Improvement Division, 1190 St. Francis Drive, P.O.Box 968, Santa Fe, New Mexico 87504-0968, ATTENTION: Peter H. Pache. Requests for a public hearing shall state the nature of the issues proposed to be raised in the hearing. These comments and/or requests must be received no later than May 19,1986 to be considered.

The administrative record for these decisions consist of a permit application (Part A), a "notice of intent to terminate interim status", a fact sheet, a closure plan, and related correspondence. The administrative record may be reviewed at either the EID District Office, 200 E. 5th Street, Roswell, New Mexico, or the EID Central Office, Harold Runnels Building, 1190 St. Francis Drive, Santa Fe, New Mexico.

To obtain a copy of the administrative record or any part thereof, please contact:

Peter H. Pache, Program Manager Hazardous Waste Section New Mexico Environmental Improvement Division 1190 St. Francis Drive, P.O.Box 968 Santa Fe, New Mexico 87504-0968 (505) 827-2924

All written comments submitted on the proposed termination of interim status and/or the proposed closure plan will be considered in formulating a final decision. The EID will notify Phillip's Artesia Plant and each person who submitted a written comment during the public comment period of the final decisions or of any public hearing which may be scheduled.

If, after consideration of all written comments, these proposed actions become EID's final decisions, EID will issue to Phillip's Artesia Plant a Notice of Termination, immediately terminating the interim status of the Company's facility. The Notice of Termination will require that the Company's closure activities be performed in conformity with applicable State law, as well as within the terms of the Company's closure plan.

FACT SHEET

Intent to Terminate Interim Status and to Close Under the New Mexico Hazardous Waste Act

Activity: Termination of Phillips Petroleum Company's Artesia Natural Gasoline

Plant Interim Status and closure of it's surface impoundment.

Facility Name: Artesia Natural Gasoline Plant

EPA I.D. Number: NMD000709667

Location: The plant is located approximately ten miles East and four miles South

of Artesia, New Mexico.

Landowner: Phillips Petroleum Company

Facility Operator: Phillips Petroleum Company

Comment Period:

Any person, including the applicant, who wishes to comment on the tentative decisions to terminate the facility's interim status and to approve the proposed closure plan may do so by submitting written comments to the New Mexico Environmental Improvement Division (NMEID), Harold Runnels Building, 1190 St. Francis Drive, P. O. Box 968, Santa Fe, New Mexico 87504-0968, ATTENTION: Peter H. Pache, (505) 827-2924. All such comments must be received by May 19, 1986 to be considered. Note that the termination of interim status is achieved through permit denial, as required by EID regulations; however, no wrongdoing on the part of the facility is to be inferred.

Procedures for Requesting a Hearing:

Any person, including the applicant, who wishes to request a public hearing concerning the proposed actions may do so by submitting a written request to the New Mexico Environmental Improvement Division (NMEID), P. O. Box 968, Harold Runnels Building, 1190 St. Francis Drive, Santa Fe, New Mexico, 87504-0968, ATTENTION: Peter H. Pache. Any request for a hearing shall be submitted in writing and shall state the nature of the issues proposed to be raised in the hearing. All requests must include the requestor's name and address. Requests for a hearing must be received by April 30, 1986 to be considered.

Interim Status Activities:

Since November 19, 1980, Phillips Petroleum Company's Artesia Natural Gasoline Plant has been operating under interim status (defined in N.M. Hazardous Waste Management Regulations) as a hazardous waste disposal facility. Primary industrial activities conducted at the facility include processing raw natural gas for liquid hydrocarbon recovery and processing acid gas for recovery of elemental sulfur. These activities require use of a cooling tower; chemicals containing chromium, a corrosion inhibitor and characteristic toxic waste, were used in the cooling tower until September 26, 1983. On September 26, 1983, the use of chromium at the facility was discontinued. All wastes have been disposed of in an unlined surface impoundment on site.

Reasons Supporting Decision to Terminate Interim Status:

On August 3, 1984, Phillips Petroleum Company submitted a revised closure and post-closure plan for the Artesia Natural Gasoline Plant surface impoundment which was used for disposal of cooling tower blowdown water containing chromium. In the closure plan Phillips states that the use of chromium contained in cooling tower blowdown water has been discontinued and requests that the interim status authorization to operate be withdrawn. NMEID's review of the closure and post-closure plan indicated that the company's request to withdraw interim status and retain their EPA I.D. Number was justified. Therefore NMEID is hereby formally proposing to terminate Artesia Natural Gasoline Plant's interim status by denying a permit.

Closure of the Facility:

The facility is currently operating under interim status. If this tentative decision becomes the final administrative disposition of the permit application, interim status will terminate and closure will begin immediately. Phillip's Artesia Natural Gasoline Plant closure plan has been previously submitted and reviewed by NMEID. A copy is available for public review at the NMEID Central Office, Harold Runnels Building, 1190 St. Francis Drive, Santa Fe, New Mexico and the NMEID District IV Office at 200 East Fifth Street, Roswell, New Mexico. The public notice and this fact sheet include the proposed approval of the closure plan for this facility's surface impoundment. The public is provided an opportunity to submit written comments on the plan, or request a public hearing as previously described elsewhere in this fact sheet. The owner/operator must implement the approved closure plan in accordance with its stipulated time schedule.

If the groundwater has been or will be impacted by a release of hazardous constituents from the surface impoundment, closure of the impoundment shall not relieve Phillips Petroleum Company of remedial liability.

Final Decisions:

All written comments submitted on the proposed termination of interim status and/or the proposed closure plan will be considered in formulating a final decision. The NMEID will notify Phillips Petroleum Company and each person who submitted a written comment during the public comment period of the final decisions made, or of any public hearing which may be scheduled.