

# REPORTS

# DATE: 2/5/1996



Midland Division Exploration Production Conoco Inc. 10 Desta Drive, Suite 100W --Midland, TX 79705-4500 5(215) 686-5488

Mr. William C. Olson Environmental Bureau New Mexico Oil Conservation Division Post Office Box 3088 Santa Fe, NM 87504

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Dear Mr. Olson:

## RE: GROUNDWATER CLOSURE FOR ERIN STAYS COM 1E SEC. 2, T 25N, R 11W.

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Recently, Conoco performed additional test on our on-site landfarm and groundwater plumes. The results indicated that the TPH level met closure standards while BTEX levels at the saturated clay level have continued to rise. No additional sources have been added to the site that could increase the contamination since the unlined pits had been removed in 1994. The results point to the fact that groundwater encountered is limited and vertical/lateral isolation is present. It's Conoco's conclusion that after ceasing discharge, the contaminated water remaining in the saturated clays are emitting concentrated BTEX levels within the isolated plume areas. Limited yields of .30 gal/hr for DP #3 and .25 gal/hr for DP #4 was noted during our latest sampling events in October of 1995. The compilation of assessment work has indicated that post monitoring methods outside of the plume are impractical or impossible due to the lack of water down gradient of the contamination. Bullet points below summarize our current activity to date.

- Discharge has been ceased into unlined pits for subject site since November of 1994.
- Initial boring and sampling was performed by On-Site Technologies, LTD.
- Gross soil contamination was excavated down to bedrock formation at the pit locations.
- The pits were back filled with clean sandy soil.
- The soil contamination was thin spread over the well location.
- The landfarm site has reached TPH limits for closure.
- The purched aquifer (plume area) has been re-tested for BETEX levels.

Enclosed is additional background data and test results associated with the site. Please include this in our site delineation for Erin Stay Com 1E report from Western Technologies.

The site assessments and analysis reports concludes that the pocket of contamination will remain stationary and should degrade over time. Conoco is requesting that the OCD grant conditional closure regarding groundwater contamination and that without further incident no additional assessment, sampling or remediation will be added to the site. Thank you for your continued support.

Respectfully yours,

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Environmental Coordinator

## Summations from Environmental Contractors

#### **ON-SITE TECHNOLOGIES**

On September 30, 1994, the initial assessment for pit closure was performed for the Erin Stays by On-Site Technologies prior to the Conoco acquisition from Nassau. The investigation included the drilling of 7 test holes to a depth of approximately 30 feet. Four out of the seven test holes revealed localized groundwater or damp soil. Of the four containing groundwater, one was a test hole drilled in the center of the dehydrator pit (DP1) and the second was drilled in the center of the separator pit (DP2). DP1 and 2 was sampled and determined that contamination existed down to 28 feet and into a perched water zone. One additional well (DP4) had contamination within the saturated phase at approximately 28 feet situated southwest of DP1. Well DP3 did have groundwater but test revealed trace amounts (below regulatory limits). The remainder of the wells (TH 5,6,7) were dry holes (Diagram 1).

To the south of the location about three hundred feet is the beginning of a small arroyo that slopes to the southwest. It's total depth near the location is about six feet. Running through the location from a southwest/northeast direction is a natural gas pipeline.

It appears from the surface topography that the water encountered at the location is the result of the location creating it's own aquifer. The well casing, pipeline, and other facilities upon the location have possibly formed natural conduits to collect surface runoff, which appeared to have traversed the sands described in the same manner as the contaminates from the pits and came to rest on the slate/clay layer. TDS was measured at 6,182 ppm. Visual observation of the water encountered in DP2 did not indicate any particular direction of flow. To further corroborate the theory of isolation, contamination was identified in DP1 but very little groundwater was present, and DP 2,3,4 had a static water level of about two feet below surface. The water hydraulic gradient appeared to be on the order of 0.013 ft/ft to 0.033 ft/ft. The fact that DP3 had no contamination that exceeded NMWQCC regulatory action levels, lateral/vertical movement of any residual contaminates would be slight after discharge was ceased.

#### **TIERRA SPECIAL PROJECTS**

On October 14, 1994, Nassau contracted the excavation of the separator pit and the dehydrator pit. Both pits were excavated to a depth of thirty feet. Tierra Special Projects Manager, Ms. Connie Dinning PE, observed the excavation activities and determined that the dehydration pit area encountered damp sand directly above a shale/clay layer at approximately 29 to 30 feet deep. The bedrock layer was observed to be six to eight inches thick and impermeable to associated pit discharges and water migration. The separator pit had the same soil characteristics and depths but revealed water yielding approximately one gallon per hour during the pit excavation process. The contaminated soil was thinly spread across the location for natural biodegradation, the accumulation of free water during the excavation was removed from the separator pit, and the pits were backfilled with clean soil.

#### **WESTERN TECHNOLOGIES**

On May 18, 1995, Western Technologies Inc. performed an additional assessment for full delineation of the contaminated vadose, capillary fringe, and phreatic zones. The investigation confirmed 1994 data and identified isolated plumes down gradient toward the southwest of former pit locations. This investigation substantiated that the plume produced by the pits had no lateral movement between the seven month investigation interval and revealed that the location was void of down gradient connectors for continued lateral/vertical migration. Attempts to sample the water was difficult due to the fact that the previous saturated zone provided limited or no yield after ceasing discharge and excavation of the pits in October of 94.

United Sector       None       Image: Sector       SANDS: undifferentiated.         0.0       0.0       0 <th>DATE DRILLED: 05-2 LOCATION: See</th> <th>23-1995 Site Plan</th> <th>(Figure 1)</th> <th></th> <th></th> <th>BOM NUMBER: B#7 ELEVATION: Not Determined</th>	DATE DRILLED: 05-2 LOCATION: See	23-1995 Site Plan	(Figure 1)			BOM NUMBER: B#7 ELEVATION: Not Determined
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PIT CLOSURE DOCUMENTATION - SAMPLING RESULTS NOTES

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PIT CLOSURE DOCUMENTATION - SAMPLING RESULTS NOTES

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PIT CLOSURE DOCUMENTATION - SAMPLING RESULTS NOTES

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PIT CLOSURE DOCUMENTATION - SAMPLING RESULTS NOTES

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PIT CLOSURE DOCUMENTATION - SAMPLING RESULTS NOTES

SAMPLE SAMPLE EVENT # TYPE OF PIT: SEP PIT SAMPLE EVENT # 6 A Ava Sury Jang 12.1 asuthrap. OFF BIT · Maria 227 2 \$ 7 200°F SAMPLE EVENT # S + , 52 54A, Maist, STIME. N . : : : 4 <u>-</u>9 SAMPLE EVENT # d. \$ 2 Ş ~ SAA 0 544, DE4 4 HARD. SAMPLE EVENT # <u>.</u> 2 2 2 \$ ~ λ ₩ SAMPLE EVENT # 2 Ō 00 SAA 2 Ξ ~ 4 ERIN STAYS Curr to Sur, BORING # S Der, Less, 50 SW 7 10+ 301 Se. Rose. CUTTAR 10/11/94 SAMPLE EVENT # 10143 0. 36 1.7 5 LOCATION OF PIT DATE OF SAMPLE LOCATION OF SAMPLE TEMPERATURE OF SAMPLE FIELD METHOD RESULTS (PPMS) EQUIV UNITS LAB RESULTS IN PPM: TPH (GRAB/COMPOSITE) TPH VAPORS (EQUIN UNITS) DEPTH OF SAMPLE(S) **BENZENE RESPONSE FACTOR** METHOD (418.1 OR MOD 8015) ADJUSTED FOR BENZENE DESCRIPTION OF SAMPLE NOTES TYPE OF SAMPLE:

ERIN STAY COM #1E NE/NW SEC 2, T25N,R11W, NMPM SAN JUAN COUNTY, NM

DEHY PIT ASSESSMENT 9/30/94 PIT LOCATED @ APPROX. 100' EAST OF WELL HEAD PIT BOTTOM APPROX. 4' BELOW SITE GRADE.

SOIL PROFILE: (ALL REFERENCED TO SITE GRADE) 00-25' SILTY MEDIUM SAND TO SANDY SILT (SM/ML); LT BRN, MOIST, FIRM. 25-27' SILTY SAND TO SANDY SILT(SM/ML); SAA, WET TO SATURATED. 27'+ SILTY CLAY (ML/CL); MOIST TO WET, STIFF, SL.PLASTIC.

DIMPACTED SOILS: GREY TO OLIVE BROWN, MOIST, STRONG PETROLEUM & GLYCOL ODOR. FROM PIT BOTTOM TO GROUNDWATER @ 27' BELOW SITE GRADE. 1/4" FREE PRODUCT ON WATER SAMPLE COLLECTED 9/30/94.

# ANALYTICAL SUMMARY

SAMPLE	OVM	TPH	BENZ.
	(ppm)	(ppm)	(ppb)
TH#1@3'	1164		
TH#1@6'	1497	12750	
TH#1@9+'	773		
TH#1@15'	399		
TH#1@19'	1410		
TH#1@21'	455	220	
TH#1@24'	1371		
TH#1@27'	997		
TH#2@9'	ND	· ۱	
TH#2@17'	ND		
TH#2@22'	ND	] '	
TH#1@GW	-		9664

SCALE: 1": 15'



CONOCO NASSAU PTT ASS SAN JUAN BA	INC. ESSMENTS SIN, NM	ASSESSMENT SUMMARY	ON SITE TECHNOLOGIES LTD
PROJECT: ERIN STAY O	OM #1E, DENY PIT	DRWN: OCT 3, 1994	P.O. BOX 2466, PARAENKITUN, NM 87499
PROJECT NO: 4-11	27( PIT #13)	DRWN DY: MKL	(303) 125-3647
SHEET: 1	FULE: 41127P13.CAD	REVISED:	

ERIN STAY COM #1E NE/NW SEC 2, T25N,R11W, NMPM SAN JUAN COUNTY, NM

SEP PIT ASSESSMENT 9/30/94 PIT LOCATED @ APPROX. 100'WEST OF WELL HEAD PIT BOTTOM @ 3.5' BELOW SITE GRADE

SOIL PROFILE: (ALL REFERENCED TO SITE GRADE)D D0-27' SILTY MEDIUM SAND TO SANDY SILT (SM/ML); LT BRN, MOIST, FIRM. D27' SILTY SAND TO SANDY SILT(SM/ML); SAA, WET TO SATURATED. D33'+ SILTY CLAY (ML/CL); MOIST TO WET, STIFF, SLPLASTIC.

DIMPACTED SOILS: GREY TO BLACK, MOIST, PLASTIC, STRONG PETROLEUM ODOR. IN IMMEDIATE PIT AREA TO GROUNDWATER AT 27' BELOW SITE GRADE. OUTSIDE OF PIT ONLY IN VADOSE ZONE ABOVE GROUNDWATER. SHEEN OBSERVED ON WATER SAMPLED 9/30/94.

# ANALYTICAL SUMMARY

SAMPLE	OVM	TPH	BENZ
	(ppm)	(ppm)	(ppb)
TH#1@3'	187		
TH#1@6'	1469	3850	
TH#1@9'	1507		
TH#1@15'	1402		
TH#1@21'	1309		
TH#1@27'	ND		
TH#2@9'	ND		
TH#2@12	ND		
TH#2@18'	ND		
TH#2@21'	ND		
TH#2@24'	ND		
TH#2@27+'	161	18	
TH#1@GW	_		5176

TH#2	PIT FENCE	TH#1@GW   -  _ 51/6	
L EST. GRADIE	23		
CONOCO INC. NASSAU PIT ASSESSMENTS SAN JUAN BASIN, NM	ASSESSMENT SUMMARY		
PROJECT. ERIN STAY COM #IE, SEP PIT	DRWN: OCT 3, 1994	UN SITE TECHNOLOGIES, LTD. P.O. BOX 2445, FARMENOTON, NM 87499	
PROJECT NO: 4-1127( PTT #14)	DRWN BY: MKL	(303) 123-3447	
SHEET: 1 FILE: 41127P14.CAD	REVISED:		



LAB: (505) 325-5667'

## QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 10/1/94

Internal QC No.: 0222-STD Surrogate QC No.: 0223-STD Reference Standard QC No.: 0300-STD

Method Blank	
Analytes in Blank	Amount
· · · · · · · · · · · · · · · · · · ·	
Average Amount of All Analytes In Blank	<0.1 ppb

**Calibration Check** 

Calibration Standards	Units of Measure	*True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20	20	1	15%
Toluene	ddd	20	20	0	15%
Ethylbenzene	ppb	20	19	6	15%
m,p-Xylene	ddd	40	38	5	15%
o-Xylene	ppb	20	19	4	15%

#### Spike Results

	1- Percent	2 - Percent			
Analyte	Recovered	Recovered	Limit	%RSD	Limit
Benzene	100	102	(39-150)	2	20%
Toluene	95	96	(46-148)	0	20%
Ethylbenzene	99	98	(32-160)	0	20%
m,p-Xylene	101	102	(35-145)	1	20%
o-Xylene	99	103	(35-145)	2	20%

Surrogate	Recoveries

Laboratory	S1	\$2	<b>S</b> 3
Identification	Percent	Percent	Percent
	Recovered	Recovered	Recovered
Limits	(70-130)		
			ļ
3362-2150	100	<b></b>	ļ
		<u> </u>	
		<b></b>	<u> </u>
			<u> </u>
		<u></u>	

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#### S1: Hourobenzene

P. O. BOX 2606 • FARMINGTON, NM 87499



LAB: (505) 325-5667

## AROMATIC VOLATILE ORGANICS

Attn:	Michael K. Lane			Date:	10/1/94	
Company: On Site Technologies, Ltd.				Lab ID:	2150	
Address: 657 W. Maple					Sample ID:	3362
City, State: Farmington, NM 87401			Job No.	4-1127		
Project Nam	ne:	Conoco				
Project Loca	ation:	ESC #1E	/ Dhy Pit / T1	' @ GW		
Sampled by	<b>':</b>	MKL	Date:	9/30/94	Time:	13:15
Analyzed by	y:	DLA	Date:	10/1/94		
Sample Man	trix:	Water				

## Aromatic Volatile Organics

Component	Measured Concentration ug/L	Detection Limit Concentration ug/L
Benzene	9,664	0.2
Toluene	33,648	0.2
Ethylbenzene	2,515	0.2
m,p-Xylene	30,459	0.2
o-Xylene	10,607	0.2
	TOTAL 86.893 ua/L	

ND - Not Detectable

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

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)~ 64 10/3/94 Approved by: Date:

P. O. BOX 2606 • FARMINGTON, NM 87499

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#### LAB: (505) 325-5667

TECHNOLOGIES, LTD.

## AROMATIC VOLATILE ORGANICS

Attn:	Michael a	K. Lane			Date:	10/1/94
Company: On Site Technologies, Ltd.				Lab ID:	2150	
Address: 657 W. Maple				Sample ID:	3363	
City, State:	Farmingt	ton, NM 874	01		Job No.	4-1127
Project Nan	ne:	Сопосо				
Project Loc	ation:	ESC #1E	/ Sep. Pit / T	1 @ GW		
Sampled by	/:	MKL	Date:	9/30/94	Time:	13:30
Analyzed b	y:	DLA	Date:	10/1/94		
Sample Ma	trix:	Water				

## Aromatic Volatile Organics

Component	Measured Concentration ug/L	Detection Limit Concentration ug/L
Benzene	5,176	0.2
Toluene	12,423	0.2
Ethylbenzene	2,061	0.2
m,p-Xylene	10,746	0.2
o-Xylene	3,312	0.2
	TOTAL 33.719 UO/L	

ND - Not Detectable

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

)~ (4 10/3/94 Approved by: Date:

#### P. O. BOX 2606 • FARMINGTON, NM 87499

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LAB: (505) 325-5667

## TOTAL PETROLEUM HYDROCARBONS

Attn:	Michael	Lane		Da	ate:	10/3/94
Company:	On Site	Technologies, Ltd.		La	ab ID:	2150
Address: 657 W. Maple					mple No.	3360
City, State:	Farming	ton, NM 87401		Jo	ob No.	4-1127
Project Nar	ne:	Сопосо				
<b>Project Loc</b>	ation:	ESC #1E / Dhy	. Pit / T1 Composite	0 @ 3'-6'		
Sampled by	/:	MKL	Date:	9/30/94 Ti	ime:	10:30
Analyzed b	y:	DC	Date:	10/3/94		
Type of Sa	mple:	Soil				

#### Laboratory Analysis

Laboratory		Total Petroleum
Identification	Sample Identification	Hydrocarbons
,	Сопосо	
3360-2150	ESC #1E / Dhy. Pit / T1 Composite @ 3'-6'	12,750 mg/kg

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

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#### P. O. BOX 2606 • FARMINGTON, NM 87499

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LAB: (505) 325-5667

## TOTAL PETROLEUM HYDROCARBONS

Attn:	Michael	Lane		C	Date:	10/3/94
Company:	On Site	Technologies, Ltd.		· L	ab ID:	2150
Address:	657 W.	Maple		S	ample No.	3364
City, State:	Farming	ton, NM 87401		J	lob No.	4-1127
Project Nar	ne:	Conoco				
<b>Project Loc</b>	ation:	ESC #1E / Dhy	y. Pit / T1 @ 21'			
Sampled by	<b>/</b> :	MKL	Date:	9/30/94 1	Time:	10:45
Analyzed b	y:	DC	Date:	10/3/94		
Type of Sa	mple:	Soil				

#### Laboratory Analysis

Laboratory Identification	Sample Identification	Total Petroleum Hydrocarbons
	Conoco	
3364-2150	ESC #1E / Dhy. Pit / T1 @ 21'	220 mg/kg

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

Approved by: 10 /3 /94 Date:

#### P. O. BOX 2606 • FARMINGTON, NM 87499

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LAB: (505) 325-566?

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TOTAL PETROLEUM HYDROCARBONS

Attn:	Michael	Lane			Date:	10/3/94
Company:	On Site	Technologies, Ltd.			Lab ID:	2150
Address:	657 W.	Maple			Sample No.	3358
City, State:	Farming	ton, NM 87401			Job No.	4-1127
Project Nan	ne:	Conoco				
Project Loc	ation:	ESC #1E / Se	p. Pit / T1 Composite :	3'-9'		
Sampled by	/:	MKL	Date:	9/30/94	Time:	11:30
Analyzed b	y:	DC	Date:	10/3/94		
Type of Sa	mple:	Soil				

#### Laboratory Analysis

Laboratory		Total Petroleum
Identification	Sample Identification	Hydrocarbons
	Conoco	
3358-2150	ESC #1E / Sep. Pit / T1 Composite 3'-9'	3,850 mg/kg

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

Approved by: 10/3/91 Date:

#### P. O. BOX 2606 • FARMINGTON, NM 87499

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LAB: (505) 325-5667

# TOTAL PETROLEUM HYDROCARBONS

Attn:	Michael	Lane		Date:	10/3/94
Company:	On Site	Technologies, Ltd.		Lab ID:	2150
Address:	657 W.	Maple		Sample No.	3359
City, State	: Farming	ton, NM 87401		Job No.	4-1127
Project Nar	ne:	Conoco			
Project Loc	ation:	ESC #1E / Sep	. Pit / T2 @ 27'		
Sampled by	y:	MKL	Date:	9/30/94 Time:	12:40
Analyzed b	y:	DC	Date:	10/3/94	
Type of Sa	mple:	Soil			

#### Laboratory Analysis

Laboratory		Total Petroleum
Identification	··· Sample Identification	Hydrocarbons
	Сопосо	
3359-2150	ESC #1E / Sep. Pit / T2 @ 27'	18 mg/kg

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

10/3/94 Approved by: Date:

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LAB: (505) 325-5667

## TOTAL PETROLEUM HYDROCARBONS

Attn:	Michael	Lane			Date:	10/3/94
Company:	On Site	Technologies, Ltd.			Lab ID:	2150
Address:	657 W.	Maple			Sample No.	3360
City, State:	Farming	ton, NM 87401			Job No.	4-1127
Project Nan	ne:	Conoco				
Project Loc	ation:	ESC #1E / Dhy.	Pit / T1 Composite	@ 3'-6'		
Sampled by	/:	MKL	Date:	9/30/94	Time:	10:30
Analyzed b	y:	DC	Date:	10/3/94		
Type of Sa	mple:	Soil				

#### Laboratory Analysis

Laboratory		Total Petroleum
Identification	· · Sample Identification	Hydrocarbons
	Conoco	
3360-2150	ESC #1E / Dhy. Pit / T1 Composite @ 3'-6'	12,750 mg/kg

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

)~ 6x 10/3/91 Approved by: Date:

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LAB: (505) 325-5667

## TOTAL PETROLEUM HYDROCARBONS

Attn:	Michael	Lane			Date:	10/3/94
Company:	On Site	Technologies, Ltd.			Lab ID:	2150
Address:	657 W.	Maple			Sample No.	3364
City, State:	Farming	ton, NM 87401			Job No.	4-1127
Project Nar	ne:	Conoco		·		
Project Loc	ation:	ESC #1E / Dh	y. Pit / T1 @ 21'			
Sampled by	y:	MKL	Date:	9/30/94	Time:	10:45
Analyzed b	y:	DC	Date:	10/3/94		
Type of Sa	mple:	Soil				

## Laboratory Analysis

Laboratory		Total Petroleum
Identification	Sample Identification	Hydrocarbons
	Conoco	
3364-2150	ESC #1E / Dhy. Pht / T1 @ 21'	220 mg/kg

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

)~ [~] 10 ]3 ]94 Approved by: Date:

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## LAB: (505) 325-5667

# **QUALITY ASSURANCE REPORT**

for EPA Method 8020

Date Analyzed: 10/5/94

Internal QC No.: 0222-STD Surrogate QC No.: 0223-STD Reference Standard QC No.: 0300-STD

Method Blank Analytes in Blank Amount Average Amount of All Analytes In Blank <0.1 ppb

**Calibration Check** 

Calibration Standards	Units of Measure	•True Velue	Analyzod Value	% Diff	Limit
Benzene	ppb	20	20	2	15%
Toluene	ppb	20	19	3	15%
Ethylbenzene	ppb	20	18	8	15%
m,p-Xylene	ppb	40	37	8	15%
o-Xylene	ppb	20	18	10	15%

#### Spike Results

	1- Percent	2 - Percent		j	
Analyte	Recovered	Recovered	Limit	%RSD	Limit
Benzene	100	102	(39-150)	2	20%
Toluene	95	96	(46-148)	0	20%
Ethylbenzene	99	98	(32-160)	0	20%
m,p-Xylene	101	102	(35-145)	1	20%
o-Xylene	99	103	(35-145)	2	20%

#### Surrogate Recoveries

Laboratory	S1	<u>\$2</u>	S3
Identification	Percent	Percent	Percent
	Recovered	Recovered	Recovered
Limits	(70-130)		
3421-2172	94	L	

#### S1: Flourobenzene

P. O. BOX 2606 • FARMINGTON, NM 87499

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LAB: (505) 325-5667

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TECHNOLOGIES, LTD.

## AROMATIC VOLATILE ORGANICS

Attn:	Michael	ichael Lane			Date:	10/5/94
Company:	On Site	Technologies	, Ltd.		Lab ID:	2172
Address:	ress: 657 W. Maple				Sample ID:	3422
City, State: Farmington, NM 87401				Job No.	4-1127	
Project Nam	ıe:	Conoco				
<b>Project Loca</b>	ation:	ESC #1E	, Dehy Pit			
Sampled by	:	MKL	Date:	10/5/94	Time:	9:00
Analyzed by	<b>y</b> :	DLA	Date:	10/5/94		
Sample Mat	trix:	Water				

#### Aromatic Volatile Organics

Component	Measured Concentration ug/L	Detection Limit Concentration ug/L
Benzene	10,098	0.2
Toluene	18,949	0.2
Ethylbenzene	1,347	0.2
m,p-Xylene	9,714	0.2
o-Xylene	2,428	0.2
	TOTAL 42.536 Ua/L	

ND - Not Detectable

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: )~-6-4 10/5/14 Date:

#### P. O. BOX 2606 • FARMINGTON, NM 87499

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ON SITE TECHNOLOGIES, LTD.

OFF: (505) 325-8786

## AROMATIC VOLATILE ORGANICS

LAB: (505) 325-5667

Attn:	Michael Lane				Date:	10/5/94
Company:	ny: On Site Technologies, Ltd.				Lab ID:	2172
Address:	ddress: 657 W. Maple			Sample ID:	3421	
City, State: Farmington, NM 87401				Job No.	4-1127	
Project Nan	ne:	Сопосо				
Project Loc	ation:	ESC #1E	, Sep. Pit			
Sampled by	<i>/</i> :	MKL	Date:	10/5/94	Time:	8:40
Analyzed b	y:	DLA	Date:	10/5/94		
Sample Ma	trix:	Water				,

#### Aromatic Volatile Organics

	Measured	Detection Limit
Component	Concentration ug/L	Concentration ug/L
Benzene	10,929	0.2
Toluene	19,771	0.2
Ethylbenzene	932	0.2
m,p-Xylene	6,932	0.2
o-Xylene	1,815	0.2
	TOTAL 40.380 U0/1	

ND - Not Detectable

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: 10/5/94 Date:

#### P. O. BOX 2606 • FARMINGTON, NM 87499

Transformer, Robert and Annal Annal Annal Annal Annal Annal

ON SITE TECHNOLOGIES, LTD.

OFF: (505) 325-8786

## TOTAL DISSOLVED SOLIDS ANALYSIS

Attn:	Michael	Lane			Date:	10/6/94
Company:	Company: On Site Technologies, Ltd.				Lab ID:	2172
Address: 657 W. Maple				Sample No.	3421	
City, State: Farmington, NM 87401				Job No.	4-1127	
Project Nam	ne:	Сопосо				
<b>Project Loca</b>	ation:	ESC #1E, Sep. Pit				
Sampled by		MKL	Date:	10/5/94	Time:	8:40
Analyzed by	y:	DLA	Date:	10/6/94		
Type of Sar	nple:	Soil				

#### Laboratory Analysis

Laboratory		Total Dissolved
Identification	Sample Identification	Solids
	Conoco	
3421-2172	ESC #1E, Sep. Pit	6,182 mg/L

Method -

Standard Methods Method 2540 C. Total Dissolved Solids Dried at 180C

Approved by:  $1 \cdot \frac{1}{6} = \frac{1}{74}$ 

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LAB: (505) 325-5667

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 10/12/94

Internal QC No.: 0222-STD Surrogate QC No.: 0223-STD Reference Standard QC No.: 0300-STD

Method Blank

Analytes in Blank	Amount
Average Amount of All Analytes In Blank	<0.1 ppb

Calibration Check

Celibration Standards	Units of Measure	•True Value	Analyzad Value	% Diff	Limít
Benzene	ppb	20	20	2	15%
Toluene	ppb	20	19	3	15%
Ethylbenzene	ppb	20	20	0	15%
m,p-Xylene	ppb	40	38	4	15%
o-Xylene	ppb	20	20	1	15%

Spike	Results				
Analyte	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	101	100	(39-150)	0	20%
Toluene	103	103	(46-148)	0	20%
Ethylbenzene	100	99	(32-160)	1	20%
m,p-Xylene	97	101	(35-145)	3	20%
o-Xylene	103	100	(35-145)	3	20%

Surrogate Recoveries

Laboratory	S1	S2	S3
Identification	Percent	Percent	Percent
	Recovered	Recovered	Recovered
Limits	(70-130)		
3514-2186	99		

110 0

S1: Flourobenzene

P. O. BOX 2606 • FARMINGTON, NM 87499



LAB: (505) 325-5667

# AROMATIC VOLATILE ORGANICS

Attn:	Michael	lichael Lane			Date:	10/12/94
Company:	On Site	Technologies	s, Ltd.		Lab ID:	2186
Address:	Idress: 657 W. Maple				Sample ID:	3514
City, State: Farmington, NM 87401			Job No.	4-1127		
Project Nam	ie:	Сопосо				
Project Loca	ation:	ESC #1E	E DP #3			
Sampled by	:	MKL	Date:	10/11/94	Time:	18:15
Analyzed by	/:	DLA	Date:	10/12/94		
Sample Mat	trix:	Water				

#### Aromatic Volatile Organics

Component	Measured Concentration ug/L	Detection Limit Concentration ug/L
Benzene	3.2	0.2
Toluene	5.4	0.2
Ethylbenzene	ND	0.2
m,p-Xylene	18.7	0.2
o-Xylene	0.2	0.2
	TOTAL 27.4 ug/L	

ND - Not Detectable

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: Def Date: p-12-94

#### P. O. BOX 2606 • FARMINGTON, NM 87499

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• ON SITE TECHNOLOGIES, LTD.

OFF: (505) 325-8786

#### LAB: (505) 325-5667

## AROMATIC VOLATILE ORGANICS

Attn:	Michael	Lane			Date:	10/12/94
Company:	On Site	Technologies	s, Ltd.		Lab ID:	2186
Address:	657 W.	Maple			Sample ID:	3515
City, State:	Farming	ton, NM 874	01		Job No.	4-1127
Project Nam	ne:	Сопосо				
<b>Project Loca</b>	ation:	ESC #1E	E DP #4			
Sampled by	<b>/:</b>	MKL	Date:	10/11/94	Time:	18:30
Analyzed by	γ:	DLA	Date:	10/12/94		
Sample Mat	trix:	Water				

#### Aromatic Volatile Organics

Component	Measured Concentration ug/l	Detection Limit Concentration ug/L
Benzene	1,191	0.2
Toluene	2,122	0.2
Ethylbenzene	147	0.2
m,p-Xylene	756	0.2
o-Xylene	237	0.2
	TOTAL 4,452 ug/L	

ND - Not Detectable

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: 20 9-Date: 10-12-94

P. O. BOX 2606 • FARMINGTON, NM 87499

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ON SITE TECHNOLOGIES, LTD.

OFF: (505) 325-8786

## TOTAL PETROLEUM HYDROCARBONS

LAB: (505) 325-5667

Attn:	Michael	Lane		Date:	10/12/94
Company:	On Site	Technologies, Ltd.		Lab ID:	2186
Address:	657 W.	Maple		Sample No.	3516
City, State:	Farming	ton, NM 87401		Job No.	4-1127
Project Nar	ne:	Conoco			
<b>Project Loc</b>	ation:	ESC #1E TH	#6 (DP #4 )		
Sampled by	/:	MKL	Date:	10/11/94 Time:	13:45
Analyzed b	y:	DLA	Date:	10/12/94	
Type of Sa	mple:	Soil			

#### Laboratory Analysis

Laboratory		Total Petroleum
Identification	Sample Identification	Hydrocarbons
	Conoco	
3516-2186	ESC #1E TH #6 (DP #4 )	998 mg/kg

Method - EPA Method 418.1 Total Petroleum Hydrocarbons

Approved by: DAQu Date: 10-12-94

#### P. O. BOX 2606 • FARMINGTON, NM 87499

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## **VOLATILE AROMATIC HYDROCARBONS**

#### Conoco Inc.

Project ID:	Erin Stays	Report Date:	05/16/95
Sample ID:	Erin Stays 1E DP 3	Date Sampled:	05/10/95
Lab ID:	G00442	Date Received:	05/10/95
Sample Matrix:	Water	Date Extracted:	NA
Condition:	Cool/Intact	Date Analyzed:	05/16/95

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	2.9	0.4
Toluene	10.8	0.4
Ethylbenzene	2.1	0.4
m,p-Xylenes	4.1	0.4
o-Xylene	1.1	0.4

ND - Analyte not detected at the stated detection limit.

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	Bromofluorobenzene	97.0	75 -125%
Reference:	Method 5030, Purge and Methods for Evaluating Se Protection Agency, Septe	Trap; Method 8020, Aromatic Vo olid Wastes, SW-846, United Sta mber 1986.	platile Organics; Test ates Environmental

Comments:

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Review

2506 W. Main Street Farmington, New Mexico 87401

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## **VOLATILE AROMATIC HYDROCARBONS**

#### Conoco Inc.

Project ID:	Erin Stays	Report Date:	05/16/95
Sample ID:	Erin Stays 1E DP 4	Date Sampled:	05/10/95
Lab ID:	G00441	Date Received:	05/10/95
Sample Matrix:	Water	Date Extracted:	NA
Condition:	Cool/Intact	Date Analyzed:	05/15/95

Target Analyte	Concentration (ppb)	Detection Limit (ppm)
Benzene	20,700	1.0
Toluene	31,600	1.0
Ethylbenzene	910	1.0
m,p-Xylenes	6,290	1.0
o-Xylene	1,580	1.0

ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	Percent Recovery	Acceptance Limits
	Bromofluorobenzene	82.6	75 -125%
Reference:	Method 5030, Purge and Methods for Evaluating So Protection Agency, Septe	Trap; Method 8020, Aromatic Vo olid Wastes, SW-846, United Sta mber 1986.	latile Organics; Test tes Environmental

Comments:

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	<b>MENTATION</b>	N - SAMPLI	ING RESU	LTS NOTES				
LOCATION OF PIT	ERIN S-	TAYS IE			TYPE OF PTT:	DHP 4	SEP	
	SAAAPLE Event / /	SAMPLE EVENT /	SAMPLE EVENT #	SAMPLE Event /	SAMPLE EVENT #	SAMPLE EVENT #	SAMPLE EVENT /	SAMPLE - EVENT /
DATE OF BAMPLE	10/11/95							
1919153 17PE OF SAMPLE: (GRABACOMPOSITE)	AMUSTARN 9 PT. ContrastTE							
DEPTH OF SAMPLE(\$)	0 - 10 "							
ELD METHOD RESULTS (PPMS)	ΥN							
RENZENE NUSPONSE FACTOR	74.							•
ADULISTED FOR BENZENE EQUIY UNITS	Ð							7
C B RESULTS IN PPM: METHOD (414.1 OR MOD #015)	418.1							
TPH	38							
SI:41	Purico 9 17. Canposite ON Landfran							
96. 8	A164.							
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## Inter Mountain Laboratories, Inc.

2506 W. Main Street Farmington, New Mexico 87401

## TOTAL PETROLEUM HYDROCARBONS EPA METHOD 418.1

## Conoco, Inc.

Project:	Not Given
Matrix:	Soil
Condition:	Intact/Cool

 Date Reported:
 11/07/95

 Date Sampled:
 10/16/95

 Date Received:
 10/16/95

 Date Extracted:
 10/24/95

 Date Analyzed:
 10/24/95

Sample ID	Lab ID	Result (mg/kg)	Detection Limit (mg/kg)
Erin Stays 1E Landfarm	0395G01909	38	10

ND - Analyte not detected at stated detection level.

**References:** 

Method 418.1: Petroleum Hydrocarbons, Total Recoverable, USEPA Chemical Analysis of Water and Waste, 1978.

Method 3550: Ultrasonic Extraction of Non-Volatile and Semi-Volatile Organic Compounds from Solids, USEPA SW-846, Rev. 1, July 1992.

Reported by:\_\_\_\_\_

## **VOLATILE AROMATIC HYDROCARBONS**

#### Conoco, Inc.

Water-BTEX	Report Date:	11/07/95
Erin Stays 1E DP 3	Date Sampled:	10/23/95
0395G01969	Date Received:	10/24/95
Water	Date Extracted:	NA
Cool/Intact	Date Analyzed:	10/31/95

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	29.6	2.0
Toluene	67.6	2.0
Ethylbenzene	4.3	2.0
m,p-Xylenes	17.1	2.0
o-Xylene	4.7	2.0

ND - Analyte not detected at the stated detection limit.

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	Bromofluorobenzene	85.6	75 -125%
Reference:	Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.		

Comments:

Project ID:

Sample ID: Lab ID:

Sample Matrix: Condition:

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Review

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Inter Mountain Laboratories, Inc.

2506 W. Main Street Farmington, New Mexico 87401

# **VOLATILE AROMATIC HYDROCARBONS**

## Conoco, Inc.

Water-BTEX	Report Date:	11/07/95
Erin Stays 1E DP 4	Date Sampled:	10/23/95
0395G01968	Date Received:	10/24/95
Water	Date Extracted:	NA
Cool/Intact	Date Analyzed:	10/31/95

Target Analyte	Concentration (ppb)	Detection Limit (ppm)
Benzene	29,000	2.0
Toluene	38,100	2.0
Ethylbenzene	1,110	2.0
m,p-Xylenes	6,900	2.0
o-Xylene	2,020	2.0

ND - Analyte not detected at the stated detection limit.

Quality Control:	<u>Surrogate</u>	Percent Recovery	Acceptance Limits
	Bromofluorobenzene	85.7	75 -125%
Reference:	Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.		

Comments:

Project ID:

Sample ID: Lab ID:

Sample Matrix: Condition:

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