

# Ocotillo ENVIRONMENTAL

Dirt Work • On-Site Remediation • Soil Testing • Excavation

December 14, 2007

Mr. Steve Frazier  
Thomas Petroleum  
3307 NW County Road  
Hobbs, New Mexico 88240

**Re: Spill Remediation Report  
Yates Petroleum, Wyatt BHT State #1 30-015-34553  
Unit Letter C, Section 6, Township 25 South, Range 30 East  
Eddy County, New Mexico**

Dear Mr. Frazier:

Thomas Petroleum (Thomas) has retained Ocotillo Environmental, LLC (Ocotillo) to remediate impacts to soil from a diesel spill at the Yates Petroleum, Wyatt BHT State #1 lease. The well is located in the northeast quarter (NE/4) of the northwest quarter (NW/4), Section 6, Township 25 South, Range 30 East, Eddy County, New Mexico. Approximately 332 gallons (8 barrels) of diesel fuel was released from the day tank onto the well pad, with no liquids being recovered from the site. The liquid spilled off the well pad and flowed for a distance of approximately 24 feet to the south. Figure 1 shows the site location.

Based on published literature (1961), well records of the New Mexico State Engineer, and well records of the United States Geological Survey, groundwater occurs at approximately 263 feet bgs (below ground surface) at the site. No domestic water wells are located within 1,000 feet of the site. The NMOCD has established RRALs for benzene, total BTEX and TPH resulting from spills of natural gas liquids ("Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993"). Remediation levels for benzene, total BTEX and TPH were calculated using the following NMOCD criteria:

Criteria	Result	Ranking Score
Depth-to-Groundwater	50 - 99 Feet	10
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1000 Horizontal Feet	0
<b>Total:</b>		<b>10</b>

The following RRALs have been assigned based on NMOCD criteria:

**Benzene** 10 mg/kg  
**Total BTEX** 50 mg/kg  
**TPH** 5,000 mg/kg

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December 14, 2007  
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**Remediation Activity**

On November 29, 2007, excavation of the impacted soil began at the northern portion of the spill area, on the well pad. Excavation continued to the south, until samples were collected from the bottom of the excavation. The soil samples were placed in clean glass sample jars, labeled, chilled in an ice chest, and delivered under chain-of-custody control to Cardinal Laboratories, located in Hobbs, New Mexico. Soil samples were analyzed for total petroleum hydrocarbons (TPH) by EPA method SW-846-8015M, including gasoline range organics (GRO) and diesel range organics (DRO), for BTEX by EPA method SW-846-8021B, and for chlorides by EPA method 4500. Table 1 presents a summary of the laboratory analyses of soil from the excavation. Figure 2 shows the spill boundary with sample locations. Appendix A presents laboratory data and chain of custody documentation. Appendix B provides photographs.

Referring to Table 1, all samples collected from the spill area reported BTEX, TPH and chloride concentrations below the RRALs. Approximately 96 cubic yards of soil was disposed at Controlled Recovery, Inc. (CRI).

As all confirmation samples reported BTEX, TPH, and chloride concentrations below the RRALs (50 mg/kg, 5,000 mg/kg and 250 mg/kg, respectively), the excavation was backfilled on December 4, 2007. The excavated area on the wellpad was backfilled with stockpiled caliche from the original wellpad construction, and the excavated area to the south was backfilled with native sand from the area.

Ocotillo Environmental appreciates the opportunity to be of service to you. If you have any questions or need additional information, please call me at (505) 441-7244. I may also be reached by email at [Cindy.Crain@gmail.com](mailto:Cindy.Crain@gmail.com).

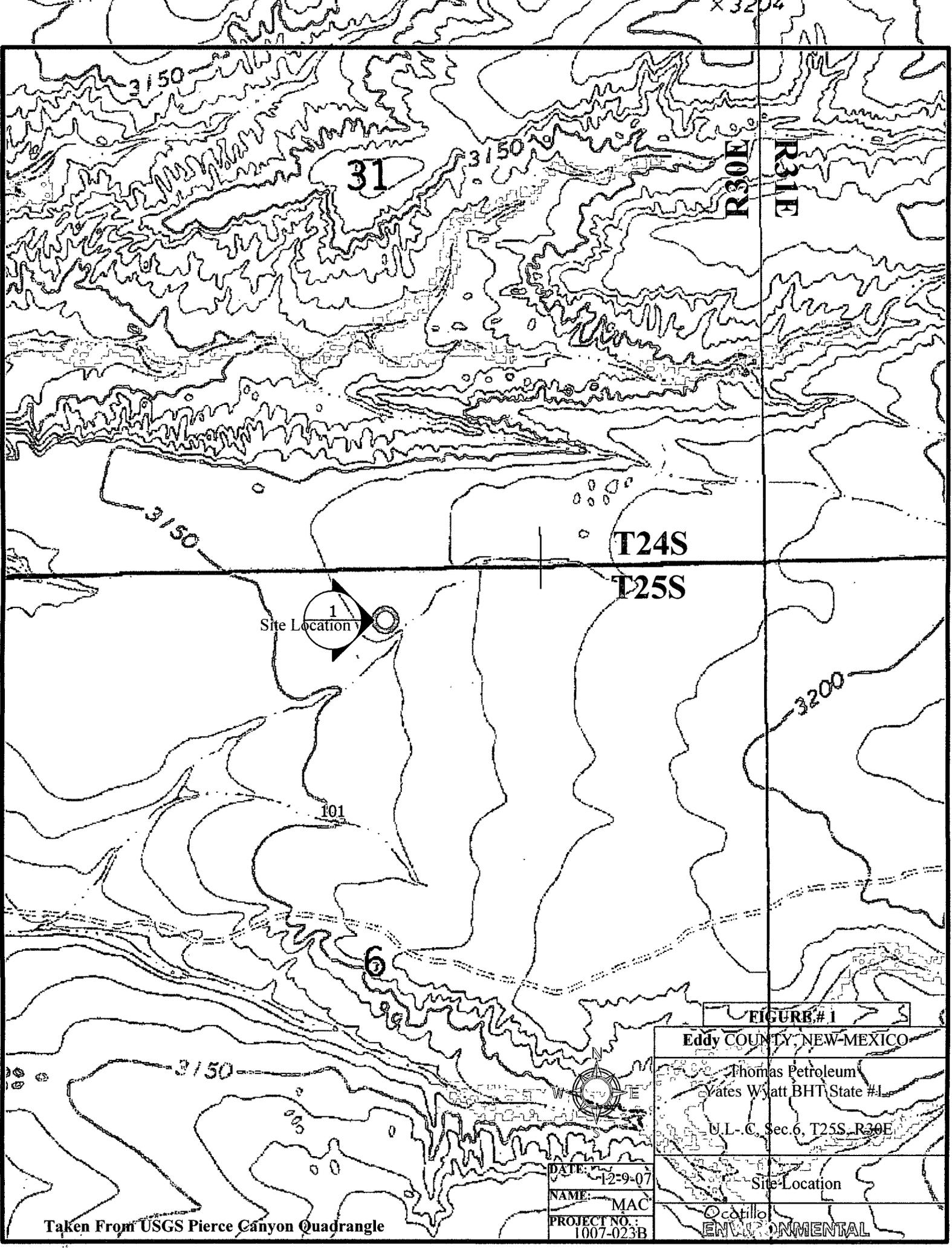
Sincerely,  
**Ocotillo Environmental, LLC**



Cindy K. Crain, P.G.  
Environmental Manager

Cc: Mike Stubblefield, Yates Petroleum

## **FIGURES**



x 3204

31

R30E

R31E

T24S

T25S

Site Location

101

6

3200

3150

FIGURE # 1

Eddy COUNTY, NEW-MEXICO

Thomas Petroleum  
Vates Wyatt BHT State #1

U.L.-C. Sec. 6, T25S, R30E

Site Location



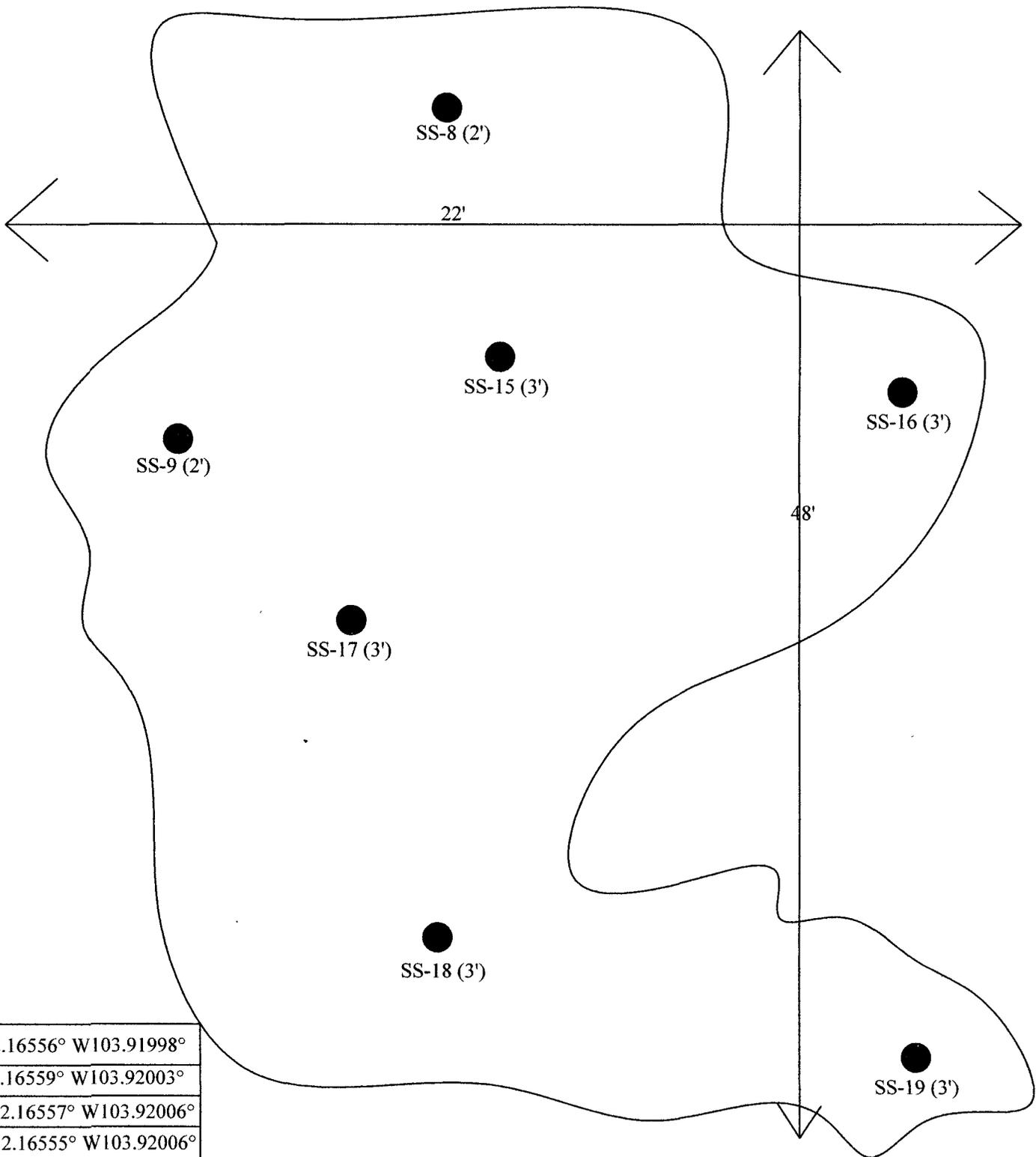
DATE: 12-9-07

NAME: MAC

PROJECT NO.: 1007-023B

Cotillo ENVIRONMENTAL

Taken From USGS Pierce Canyon Quadrangle



SS-8 N32.16556° W103.91998°
SS-9 N32.16559° W103.92003°
SS-15 N32.16557° W103.92006°
SS-16 N32.16555° W103.92006°
SS-17 N32.16560° W103.92008°
SS-18 N32.16558° W103.92010°
SS-19 N32.16555° W103.92014°

**LEGEND**

● SS-8 (2') Soil Sample Location With Depth (feet bgs)



DATE:	12-10-07
NAME:	MAC
PROJECT NO.:	1007-037C

**Figure # 2**

Eddy COUNTY, NEW MEXICO

Thomas Petroleum  
Yates Wyatt BHT State #1  
UL-C, Sec. 6, T25S, R30E

Site Drawing With Soil Sample Locations

*Ocotillo*  
**ENVIRONMENTAL**

## **TABLE**

**Table 1:**  
**Summary of Laboratory Analysis of Soil Samples**  
**Thomas Petroleum, Yates Wyatt BHT State #1**  
**Section 6, Township 25 South, Range 30 East**  
**Eddy County, New Mexico**

Sample Date	Soil Sample Number	Sample Depth (feet BGS)	TPH (GRO) C8 - C12 mg/kg	TPH (DRO) C12 - C28 mg/kg	Total TPH C8 - C28 mg/kg	Benzene mg/kg	Total BTEX mg/kg	Chloride (mg/kg)
<b>RRAL</b>					<b>5000</b>	<b>10</b>	<b>50</b>	<b>250</b>
11/29/07	SS-8	2	<10	<10	<20	<0.001	0.024	<16
	SS-9	2	<10	<10	<20	<0.001	<0.006	<16
	SS-15	3	<10	<10	<20	<0.001	<0.006	<16
	SS-16	3	<10	<10	<20	<0.001	<0.006	<16
	SS-17	3	<10	<10	<20	<0.001	<0.006	<16
	SS-18	3	<10	<10	<20	<0.001	0.006	<16
	SS-19	3	<10	41	41	<0.001	0.004	16

Notes:

1. BGS: Depth in feet below ground surface
2. mg/kg: Milligrams per kilogram
3. GRO: Gasoline Range Organics
4. DRO: Diesel Range Organics

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	SS-9	2	<10	<10	<20	<0.001	<0.006	<16
	SS-15	3	<10	<10	<20	<0.001	<0.006	<16
	SS-16	3	<10	<10	<20	<0.001	<0.006	<16
	SS-17	3	<10	<10	<20	<0.001	<0.006	<16
	SS-18	3	<10	<10	<20	<0.001	0.006	<16
	SS-19	3	<10	41	41	<0.001	0.004	16

Notes:

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3. GRO: Gasoline Range Organics
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## **APPENDIX A**

### **Laboratory Data and Chain of Custody Documentation**



PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603  
 PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
 OCOTILLO ENVIRONMENTAL, LLC  
 ATTN: CINDY CRAIN  
 2125 FRENCH DR  
 HOBBS, NM 88240  
 FAX TO (432) 272-0304

Receiving Date: 11/30/07      Sampling Date: 11/29/07  
 Reporting Date: 12/03/07      Sample Type: SOIL  
 Project Number: 1007-037C      Sample Condition: COOL & INTACT  
 Project Name: WYATT "BHT" STATE #1      Sample Received By: NF  
 Project Location: EDDY COUNTY, NM      Analyzed By: AB

LAB NUMBER	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		11/30/07	11/30/07	11/30/07	11/30/07
H13801-1	SS-8 @ 2'	<0.001	0.002	0.002	0.020
H13801-2	SS-9 @ 2'	<0.001	<0.001	<0.001	<0.003
H13801-3	SS-15 @ 3'	<0.001	<0.001	<0.001	<0.003
H13801-4	SS-16 @ 3'	<0.001	<0.001	<0.001	<0.003
H13801-5	SS-17 @ 3'	<0.001	<0.001	<0.001	<0.003
H13801-6	SS-18 @ 3'	<0.001	0.002	0.001	0.003
H13801-7	SS-19 @ 3'	<0.001	<0.001	<0.001	0.004
Quality Control		0.107	0.096	0.095	0.300
True Value QC		0.100	0.100	0.100	0.300
% Recovery		107	96	95	100
Relative Percent Difference		2.4	1.2	1.0	1.3

METHOD: EPA SW-846 8021B

*Bryson J. Cook*  
 Chemist

*12/03/07*  
 Date

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PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

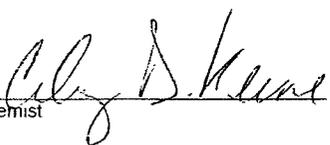
ANALYTICAL RESULTS FOR  
 OCOTILLO ENVIRONMENTAL LLC  
 ATTN: CINDY CRAIN  
 P O. BOX 1816  
 HOBBS, NM 88241  
 FAX TO: (432) 272-0304

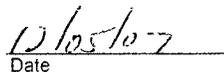
Receiving Date: 11/30/07  
 Reporting Date: 12/05/07  
 Project Number: 1007-037C  
 Project Name: WYATT "BHT" STATE #1  
 Project Location: EDDY COUNTY, NM

Sampling Date: 11/29/07  
 Sample Type: SOIL  
 Sample Condition: COOL & INTACT  
 Sample Received By: NF  
 Analyzed By: CK/KS

LAB NUMBER	SAMPLE ID	GRO (C <sub>6</sub> -C <sub>12</sub> ) (mg/kg)	DRO (>C <sub>12</sub> -C <sub>28</sub> ) (mg/kg)	CI* (mg/kg)
ANALYSIS DATE		12/04/07	12/04/07	11/30/07
H13801-1	SS-8 @ 2'	<10.0	<10.0	<16
H13801-2	SS-9 @ 2'	<10.0	<10.0	<16
H13801-3	SS-15 @ 3'	<10.0	<10.0	<16
H13801-4	SS-16 @ 3'	<10.0	<10.0	<16
H13801-5	SS-17 @ 3'	<10.0	<10.0	<16
H13801-6	SS-18 @ 3'	<10.0	<10.0	<16
H13801-7	SS-19 @ 3'	<10.0	41.0	16
Quality Control		453	382	510
True Value QC		500	500	500
% Recovery		90.6	76.4	102
Relative Percent Difference		0.9	<0.1	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M, Std. Methods 4500-C1B  
 \*Analyses performed on 1:4 w:v aqueous extracts

  
 Chemist

  
 Date

H13801TCL Ocotillo

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.



**CARDINAL LABORATORIES**

101 East Mainland, Hobbs, NM 88240 211 Beechwood, Abilene, TX 75603  
 (505) 393-2426 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

Company Name: <u>Ocotillo Environmental LLC</u>		BILL TO		ANALYSIS REQUEST														
Project Manager: <u>Cindy Crain</u>		PO #																
Address: <u>2125 French Dr.</u>		Company: <u>Ocotillo</u>																
City: <u>Hobbs</u> State: <u>NM</u> Zip: <u>88240</u>		Attn:																
Phone #: <u>575-441-7244</u> Fax #: <u>432-272-0304</u>		Address:																
Project #: <u>1001-037C</u> Project Owner: <u>Yates</u>		City:																
Project Name: <u>W. path "BHT" State #1</u>		State: Zip:																
Project Location: <u>Eddy County NM</u>		Phone #:																
Sample Name: <u>Steve Cannon</u>		Fax #:																
ID	Sample I.D.	GRAB OR COMP #	CONTAINERS	MATRIX						PRESERV		SAMPLING		DATE	TIME	CALORIDE	TPH 8015 M	BTEX 8021 B
				GROUNDWATER	WASTEWATER	SOIL	SOIL	SLUDGE	OTHER	ICE/COOL	OTHER							
H13801-1	55-8 @ 2'	1											11/20/05	11:50				
2	55-9 @ 2'	1											"	11:56				
3	55-15 @ 3'	1											"	3:04				
4	55-16 @ 3'	1											"	3:12				
5	55-17 @ 3'	1											"	3:22				
6	55-18 @ 3'	1											"	3:29				
7	55-19 @ 3'	1											"	3:37				

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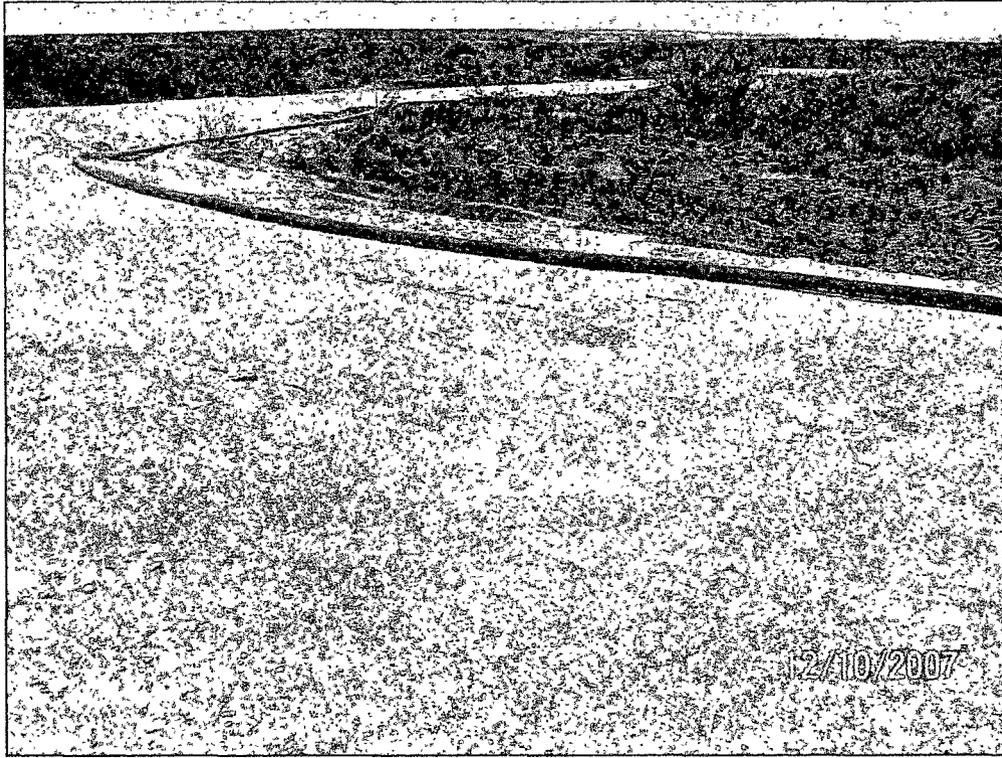
Requested By: <u>Steve Cannon</u>	Date: <u>11-30-05</u>	Received By: <u>Neil Tulett</u>	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Date:	Received By:	Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) Sample - UPS - Bus - Other	Sample Condition: Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	CHECKED BY: <u>NT</u>	REMARKS: <u>Fax # 432-272-0304</u>	

Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

## **APPENDIX B**

### **Photographs**

**THOMAS PETROLEUM  
Yates, Wyatt BHT State #1**



**1. View to southeast of remediated area.**



**2. View to west of remediated area.**