

District III  
1000 Rio Brazos Rd.,  
Aztec, NM 87410

Submit 1 Copy to District Office  
and 1 Copy to Santa Fe Office

State of New Mexico Energy, Minerals, and Natural Resources Dept.  
OIL CONSERVATION DIVISION  
P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

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OIL CON. DIV.  
DIST. 3

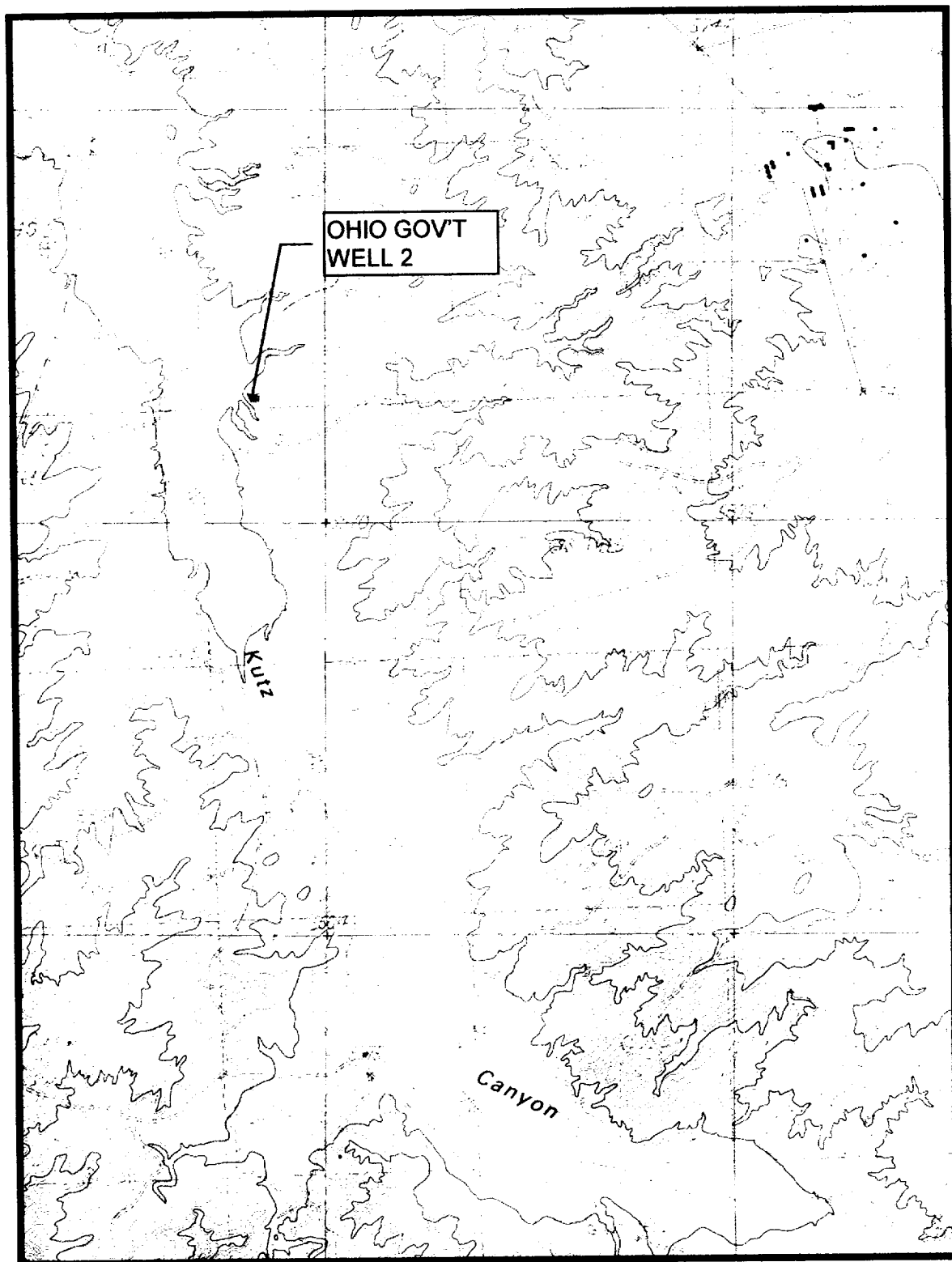
### PIT REMEDIATION AND CLOSURE REPORT

Operator:	Marathon Oil Company	Telephone:	(505) 326-2783
Address:	P.O. Box 1439, Farmington, NM 87499		
Facility/Well Name:	OHIO Govt 2		
Location: Unit or 1/4 1/4:	SE SE <u>P</u>	Section <u>15</u>	T <u>28N</u> R <u>11W</u> County: <u>San Juan</u>
Pit Type: Separator:	<u>X</u>	Dehydrator:	Other:
Land Status:	BLM <u>X</u>	State	Fee Other

Pit Location:	Pit Dimensions: Length:	<u>70'</u>	Width:	<u>30'</u>	Depth:	<u>8'</u>
(Attach Diagram)	Reference: Wellhead	<u>X</u>	Other			
	Footage from Reference:	<u>100 ft south of wellhead</u>				
	Direction from Reference:	<u>S</u>	Degrees	East	North	<u>180</u>
				West	South	

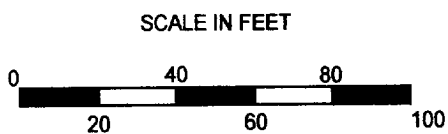
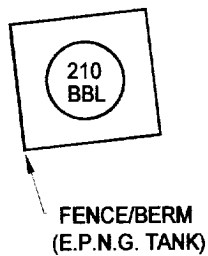
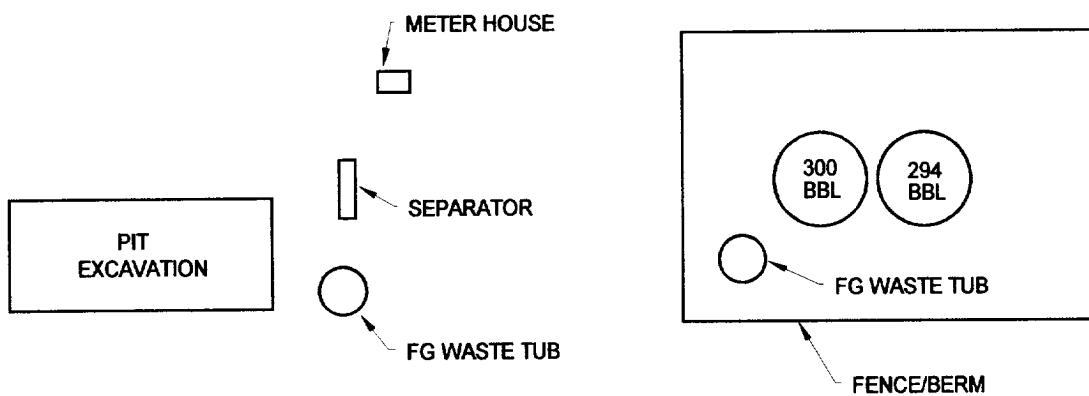
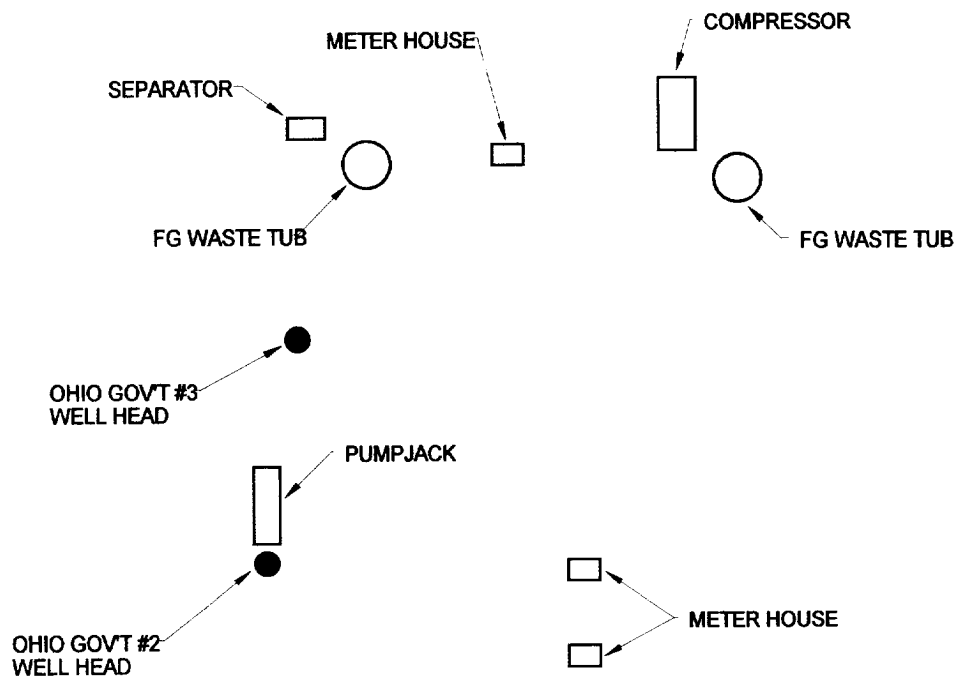
<b>Depth to Groundwater:</b>		
(Vertical distance from contaminants to seasonal high water elevation of groundwater)	Less than 50 feet	(20 points)
	50 feet to 99 feet	(10 points)
	Greater than 100 feet	(0 points) <u>20</u>
<b>Wellhead Protection Area:</b>		
(Less than 200 feet from a private domestic water source, or; less than 1000 feet from all other water sources)	Yes	(20 points)
	No	(0 points) <u>0</u>
<b>Distance to Surface Water:</b>		
(Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet	(20 points)
	200 feet to 1000 feet	(10 points)
	Greater than 1000 feet	(0 points) <u>20</u>
<b>RANKING SCORE (TOTAL POINTS)</b>		<u>40</u>

<b>Date Remediation Started:</b> <u>1994</u>		<b>Date Completed:</b> <u>09/24/99</u>	
<b>Remediation Method:</b> (Check all that apply)	<b>Excavation</b> <u>X</u>	<b>Approx. Cubic Yards</b> <u>600</u>	
	<b>Landfarmed</b> <u>X</u>	<b>In Situ Bioremediation</b> _____	
	<b>Other</b> _____		
<b>Remediation Location:</b>		<b>Onsite</b> <u>X</u>	<b>Offsite</b> _____
(ie landfarmed onsite, name and location of offsite facility)			
<b>General Description of Remedial Action:</b> _____			
Pit was excavated in 1994 and contaminated soil was landfarmed on-site.			
<b>Groundwater Encountered:</b>		<b>No</b> <u>X</u>	<b>Yes</b> _____ <b>Depth</b> _____
<b>Final Pit Closure Sampling</b> (if multiple samples, attach sample results and diagram of sample locations and depths)	<b>Sample Location</b>	<u>Excavation Pit</u>	
		<u>Landfarm (2 On-Site Locations)</u>	
	<b>Sample Depth</b>	<u>Excavation Pit - 2 ft bgs</u>	
		<u>Landfarm - 1.5 ft bgs</u>	
	<b>Sample Date</b>	<u>09/24/99</u>	<b>Sample Time</b> <u>1200</u>
	<b>Sample Results</b>	<u>See Attached Results</u>	
	<b>Benzene (ppm)</b>	_____	
	<b>Total BTEX (ppm)</b>	_____	
	<b>Field Headspace (ppm)</b>	<u>1.4</u>	
	<b>TPH</b>	<u>1.5</u>	
<b>Groundwater Sample</b>		<b>Yes</b> _____ <b>No</b> <u>X</u>	(If yes, attach sample results)
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.			
<b>Date</b> <u>10-18-99</u>		<u>Ross Kennemer, Project Manager (AES)</u>	
<b>Signature</b> <u>Ross Kennemer</u>		<b>Printed Name and Title</b>	



**FIGURE 1. SITE LOCATION MAP  
(UNIT P S15 T28N R11W)**

**BLOOMFIELD QUADRANGLE  
NEW MEXICO - SAN JUAN COUNTY  
7.5 MINUTE SERIES (TOPOGRAPHIC)  
1985 PROVISIONAL EDITION**



ANIMAS ENVIRONMENTAL SERVICES

FIGURE 2. SITE PLAN

OHIO GOVT WELL #2  
UNIT P S15 T28N R11W  
SAN JUAN COUNTY, NM  
NM-020498

10/8/99

RK

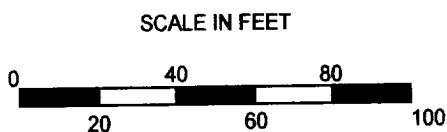
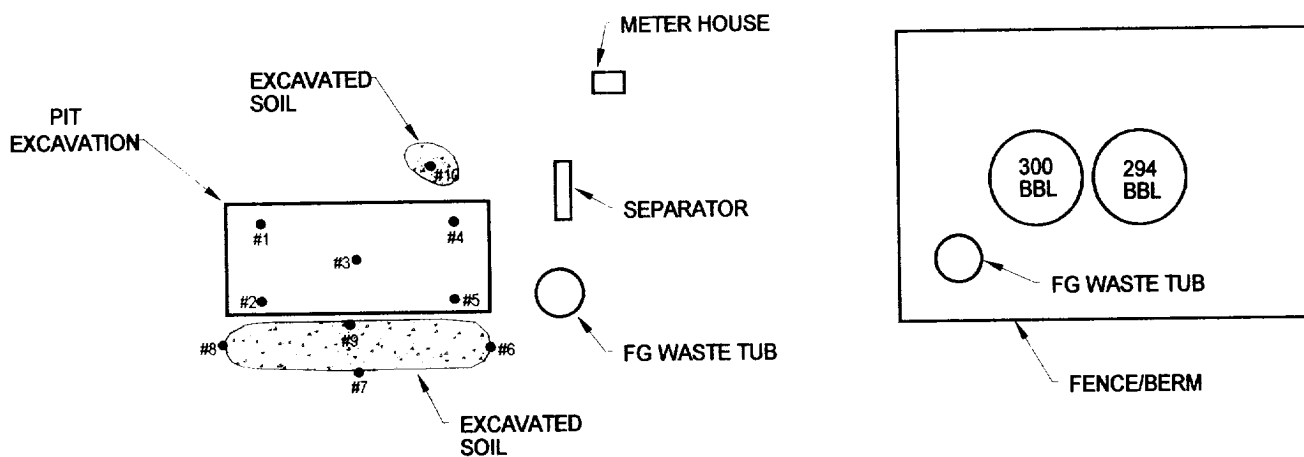
MARTH/OHIO2SP



**FIELD AND LABORATORY ANALYSIS RESULTS  
SEPTEMBER 24, 1999**

SAMPLE ID	OVM	TPH
#1	ND	**
#2	ND	**
#3	ND	**
#4	ND	**
#5	1.4	**
#6	ND	**
#7	ND	**
#8	ND	**
#9	ND	**
#10	ND	**
PIT COMPOSITE	ND	1.5
EXCAVATED SOIL COMPOSITE	ND	2.6

NOTE:  
 FIELD SAMPLES ANALYZED WITH OVM PID METER CALIBRATED TO 100 PPM.  
 FIELD SAMPLE RESULTS REPORTED AS PPM (mg/kg).  
 LABORATORY SAMPLES ANALYZED PER EPA METHOD 8015 (TPH)  
 LABORATORY SAMPLE RESULTS REPORTED AS PPM (mg/kg).  
 PIT COMPOSITE CONSISTED OF 5 POINTS.  
 EXCAVATED SOIL COMPOSITE CONSISTED OF 5 POINTS.  
 ND = NOT DETECTED  
 \*\* = NOT ANALYZED



**LEGEND**  
 ● #1 SOIL SAMPLE LOCATION

ANIMAS ENVIRONMENTAL SERVICES

FIGURE 3. SAMPLE LOCATIONS

OHIO GOV'T WELL #2	10/8/99
UNIT P S15 T28N R11W	RK
SAN JUAN COUNTY, NM	MARTH/OHIO2SB
NM-020498	

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

September 30, 1999

Mr. Ross Kennemer  
Animas Environmental  
P.O. Box 5314  
Farmington, New Mexico 87499

Project No.: 95047  
Job No.: 504701

Dear Mr. Kennemer,

Enclosed are the analytical results for the Marathon Oil Company samples collected from the location designated as "Ohio Gov. Wells, Kutz Wash South of Bloomfield". Four soil samples were collected by Animas Environmental personnel on 09/24/99 and 09/26/99, and were delivered to the Envirotech Laboratory on 09/27/99 for Total Petroleum Hydrocarbon (TPH) analysis per EPA Method 8015, modified for soil.

The samples were documented on Envirotech Chain of Custody No. 7407 and assigned Laboratory Nos. G120 (Ohio Gov #2 Pit Composite), G121 (Ohio Gov #2 Backfill Composite), G122 (Ohio Gov #2C Pit Composite), and G123 (Ohio Gov #2C Backfill Composite) for tracking purposes.

The samples were extracted on 09/27/99 and analyzed on 09/29/99 using USEPA or equivalent methods.

Should you have any questions or require additional information, please do not hesitate to contact us at (505) 632-0615.

Respectfully submitted,  
Envirotech, Inc.



Stacy W. Sender  
Environmental Scientist/Laboratory Manager

enc.

SWS\sws

95047111.wpd

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

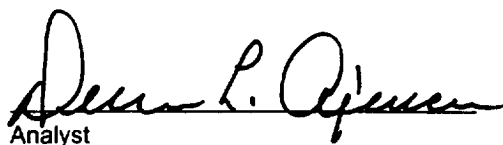
Client:	Marathon Oil	Project #:	504701
Sample ID:	Ohio Gov #2 Pit Comp.	Date Reported:	09-29-99
Laboratory Number:	G120	Date Sampled:	09-24-99
Chain of Custody No:	7407	Date Received:	09-27-99
Sample Matrix:	Soil	Date Extracted:	09-27-99
Preservative:	Cool	Date Analyzed:	09-29-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	1.5	0.1
Total Petroleum Hydrocarbons	1.5	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Ohio Gov. Wells, Kutz Wash South of Bloomfield.

  
Analyst

  
Review

# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

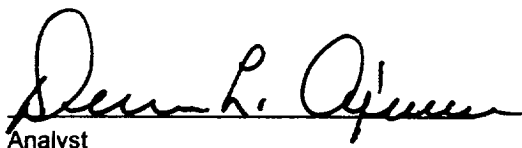
Client:	Marathon Oil	Project #:	504701
Sample ID:	Ohio Gov #2 Backfill Comp.	Date Reported:	09-29-99
Laboratory Number:	G121	Date Sampled:	09-24-99
Chain of Custody No:	7407	Date Received:	09-27-99
Sample Matrix:	Soil	Date Extracted:	09-27-99
Preservative:	Cool	Date Analyzed:	09-29-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	ND	0.2
Diesel Range (C10 - C28)	2.6	0.1
Total Petroleum Hydrocarbons	2.6	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Ohio Gov. Wells, Kutz Wash South of Bloomfield.

  
Analyst

  
Review



# ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

## EPA Method 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

### Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	09-29-TPH QA/QC	Date Reported:	09-29-99
Laboratory Number:	G112	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	09-29-99
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	06-17-99	2.6200E-002	2.6173E-002	0.10%	0 - 15%
Diesel Range C10 - C28	06-17-99	2.7356E-002	2.7301E-002	0.20%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	ND	0.2
Diesel Range C10 - C28	ND	0.1
Total Petroleum Hydrocarbons	ND	0.2

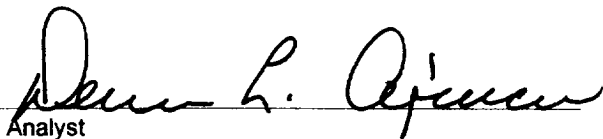
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	10.8	10.7	0.9%	0 - 30%
Diesel Range C10 - C28	4.3	4.3	0.0%	0 - 30%

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	10.8	250	260	100%	75 - 125%
Diesel Range C10 - C28	4.3	250	254	100%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: QA/QC for samples G112 - G116 and G120 - G123.

  
Analyst

  
Review

## 7407

[illegible]

## **Project Summary**

Pursuant to requirements set forth in the New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (OCD) Pit Remediation and Closure Guidelines, Animas Environmental Services (AES), on behalf of Marathon Oil Company, collected soil samples from an excavated separator pit and associated stockpiled soils at the Ohio Gov't 2 well. This well is located in Unit P of Section 15, T28N, R11W, San Juan County, New Mexico. A site location map is provided as Figure 1.

## **Previous Work**

In 1994, approximately 600 cubic yards (yds) of contaminated soil were excavated from an unlined separator pit and stockpiled on-site. The pit was excavated to an average depth of eight ft below the ground surface (bgs). Subsequently the excavation was left open in order to facilitate further remediation by aeration. A site plan illustrating the location of the excavation and stockpiled soils is included as Figure 2.

## **Pit Remediation and Closure Sampling**

On September 24, 1999, AES personnel collected soil samples from the excavated pit and associated stockpiled soils for confirmation of effective remediation. A hand auger was used to collect five representative samples from two ft below the base of the excavation and five representative samples from the stockpiled soils. Samples from the stockpiled soils were collected at approximately 1.5 ft below the surface.

Each sample was field screened with an organic vapor meter (OVM) by heated headspace analysis. Composite samples, consisting of five points each, were also collected and submitted for laboratory analysis of total petroleum hydrocarbons (TPH) by EPA Method 8015. Sample locations and the results of the field and laboratory analysis are presented in Figure 3.

## **Results**

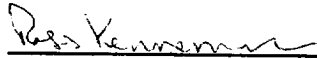
The results of the field and laboratory analysis of the excavation and stockpiled soils indicate residual contaminant concentrations to be at or near non-detectable levels and that the excavation and soils have been sufficiently remediated to warrant closure.

## **Recommendations**

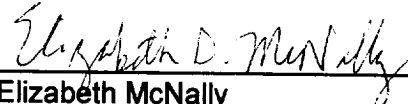
Based on the aforementioned findings, AES recommends seeking OCD approval to close the excavation by backfilling and contouring with the stockpiled soils and purchased fill, if required.

**Certification and Limitations**

I hereby certify that I am an Environmental Scientist experienced in subsurface sampling of the nature described, and I am fully familiar with the contents of this Pit Remediation and Closure Report. The contents of this report are based on the premise that the data collected is reflective of the defined project area and on the assumption that site conditions are as they were found to be during sample collection.



Ross Kennemer  
Project Scientist



Elizabeth McNally  
Environmental Engineer