District III
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Aztec, NM 87410

Submit 1 Copy to District Office
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OCT 27 1999
OIL CON. DIV.
DIST. 3

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

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 C Govt C-2		
Location: Unit or 1/4 1/4:	SW NW E **Section** 26 **T** 28N **R** 11W	**County:**	San Juan
Pit Type: Separator:	X **Dehydrator:**	**Other:**	
Land Status:	**BLM** X **State** **Fee**	**Other**	

Pit Location:	**Pit Dimensions: Length:**	25'	**Width:**	25'	**Depth:** 20'
(Attach Diagram)	**Reference: Wellhead**	X	**Other**		
	Footage from Reference:	200 ft southwest of wellhead			
	Direction from Reference:	45 **Degrees**		**East**	**North**
		X		**West**	**South**

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

Date Remediation Started: 1994 **Date Completed:** 09/26/99

Remediation Method: (Check all that apply) **Excavation** X **Approx. Cubic Yards** 475
Landfarmed X **In Situ Bioremediation** _____
Other _____

Remediation Location: (Ie landfarmed onsite, name and location of offsite facility) **Onsite** X **Offsite** _____

General Description of Remedial Action:
Pit was excavated in 1994 and contaminated soil was landfarmed on-site.

Groundwater Encountered: **No** X **Yes** _____ **Depth** _____

Final Pit Closure Sampling (if multiple samples, attach sample results and diagram of sample locations and depths)

Sample Location Excavation Pit
Landfarm
Sample Depth Excavation Pit - 2 ft bgs
Landfarm - 1.5 ft bgs
Sample Date 09/26/99 **Sample Time** 1200
Sample Results See Attached Results
Benzene (ppm) _____
Total BTEX (ppm) _____
Field Headspace (ppm) 208
TPH 2

Groundwater Sample Yes No X (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Date 10-18-99 Ross Kennemer, Project Manager (AES)

Signature Ross Kennemer Printed Name and Title

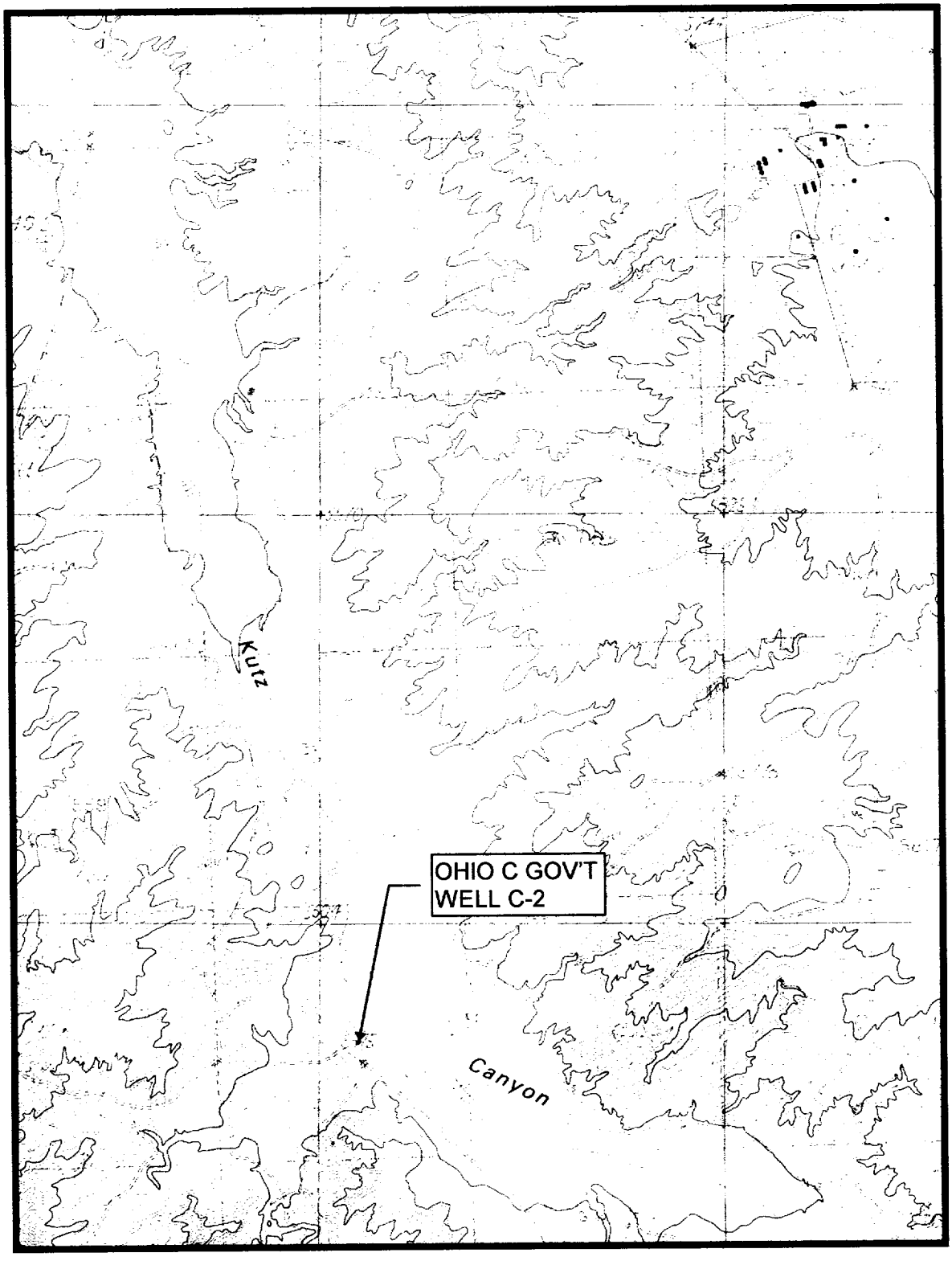
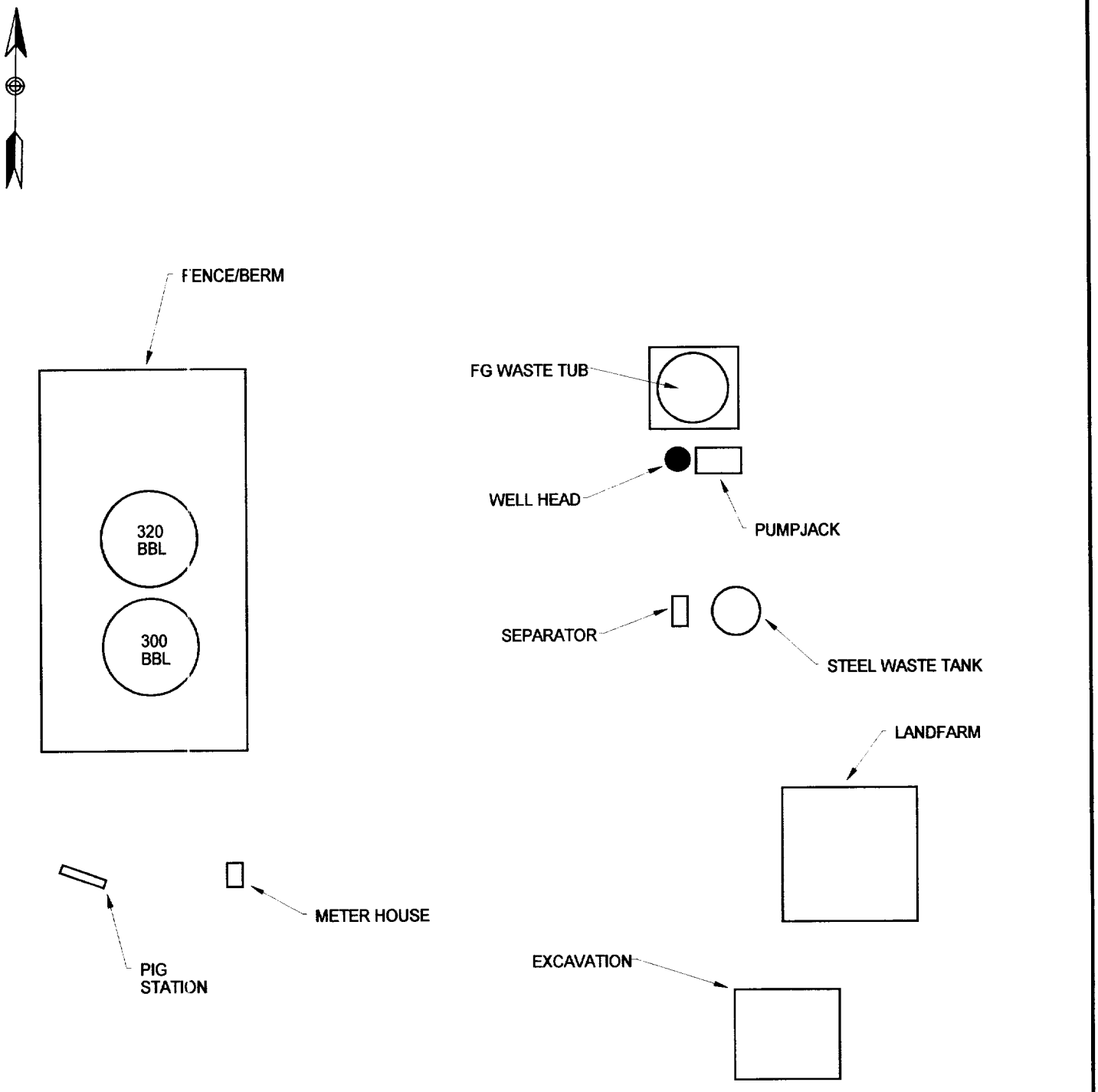


FIGURE 1. SITE LOCATION MAP
(UNIT E S26 T28N R11W)

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



SCALE IN FEET

0 40 80

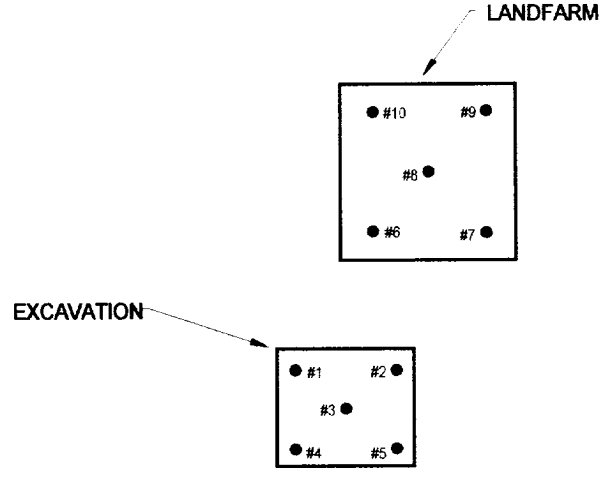
20 60 100

ANIMAS ENVIRONMENTAL SERVICES	
FIGURE 2. SITE PLAN	
OHIO GOV'T WELL C-2 UNIT E S26 T28N R11W SAN JUAN COUNTY, NM NM-020501	10/8/99 RK MARTH/OHIOC2SP

FIELD AND LABORATORY ANALYSIS RESUTLS
SEPTEMBER 26, 1999

SAMPLE ID	OVM	TPH
#1	ND	**
#2	ND	**
#3	1.1	**
#4	208	**
#5	17.1	**
#6	ND	**
#7	ND	**
#8	ND	**
#9	ND	**
#10	ND	**
PIT COMPOSITE	ND	2.0
LANDFARM COMPOSITE	ND	1.1

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.
LANDFARM COMPOSITE CONSISTED OF 5 POINTS.
ND = NOT DETECTED
** = NOT ANALYZED



SCALE IN FEET

0 40 80
20 60 100

LEGEND

#1 SOIL SAMPLE LOCATION

ANIMAS ENVIRONMENTAL SERVICES	
FIGURE 3. SAMPLE LOCATIONS	
OHIO GOV'T WELL C-2 UNIT E S26 T28N R11W SAN JUAN COUNTY, NM NM-020501	10/8/99 RK MARTH/OHIOC2SB

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. Sendler

Stacy W. Sendler
Environmental Scientist/Laboratory Manager

enc.

SWS\sws

95047l11.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 2C Pit Comp.	Date Reported:	09-29-99
Laboratory Number:	G122	Date Sampled:	09-26-99
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)	**2.0**	**0.1**
Total Petroleum Hydrocarbons	**2.0**	**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

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

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 2C Backfill Comp.	Date Reported:	09-29-99
Laboratory Number:	G123	Date Sampled:	09-26-99
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)	**1.1**	**0.1**
Total Petroleum Hydrocarbons	**1.1**	**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

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

CHAIN OF CUSTODY RECORD

7407

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
Marathon Oil Company Attn: Gary	Ohio Gov. Wells Kutz Wash South of Bloomfield	
Sampler: Ross Kennemer Animas Environmental	Client No. Bill to Marathon 95047-01	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	8015 gas/diesel						Remarks
Ohio Gov #2 Pit composite	9/24/99	1530	G120	Soil	1	✓						
Ohio Gov #2 Backfill composite	9/24/99	1600	G121	Soil	1	✓						
Ohio Gov 2c Pit composite	9/26/99	1215	G122	Soil	1	✓						
Ohio Gov 2c Backfill composite	9/26/99	1230	G123	Soil	1	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Ross Kennemer	9/27/99	1250	C. Jack Collins	9/27/99	1250
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

Results to
Ross Kennemer, Animas Envir.
PO Box 5314
Farm 87499

ENVIROTECH INC.
5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

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 landfarm at the Ohio C Gov't C-2 well. This well is located in Unit E of Section 26, T28N, R11W, San Juan County, New Mexico. A site location map is provided as Figure 1.

Previous Work

In 1994, approximately 475 cubic yards (yds) of contaminated soil were excavated from an unlined separator pit and landfarmed within a bermed area on-site. The pit was excavated to an approximate depth of 20 feet (ft) below the ground surface (bgs) where competent sandstone was encountered. Subsequently, the excavation was left open in order to facilitate further remediation by aeration. A site plan illustrating the location of the excavation and landfarm is included as Figure 2.

Pit Remediation and Closure Sampling

On September 26, 1999, AES personnel collected soil samples from the excavated pit and associated landfarm for confirmation of pit and backfill remediation. A hand auger was used to collect five representative samples from two ft below the base of the excavation, and a sampling spatula was used to collect five representative samples from the soils located within the landfarm. Landfarm samples were collected at approximately 1.5 ft bgs.

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 TPH analysis for the excavation reveal residual contaminant concentrations to be well below action levels; however, an OVM reading at one location (#4 in southwest corner) was 208 parts per million (ppm), which does exceed the allowable level for benzene or total benzene, toluene, ethylbenzene, and xylene (BTEX).

Field and laboratory analyses confirm that the soils located within the landfarm have been sufficiently remediated to allow their use as backfill.

Recommendations

Although residual contaminant concentrations exceeding the allowable level for benzene or total BTEX remain, AES does not believe the concentration is at a level which would warrant additional excavation or further "open pit" aeration. Additionally, because the excavation extends to sandstone, further excavation is impractical.

Therefore, AES recommends: 1) seeking OCD approval to either close the excavation by backfilling and contouring with the soils located within the landfarm and purchased fill, if required, or 2) applying a nutrient and possibly a bacterial solution to the base of the excavation to augment biodegradation followed by backfilling and contouring.

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