

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Form C-144
June 1, 2004

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☒ No ☐

Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

Operator: Elm Ridge Resources Telephone: (505) 632-3476

e-mail address: amackey1@elmridge.net

Address: #20 CR 5060, Bloomfield, New Mexico, 87413

Facility or well name: Candado No. 20A API #: 3003921452 U/L or Qtr/Qtr O Sec 3 T 26N R 7W

County: Rio Arriba Latitude 36.510550 Longitude -107.559083

NAD: 1927 ☒ 1983 ☐

Surface Owner: Federal ☒ State ☐ Private ☐ Indian ☐

Pit

Type: Drilling ☐ Production ☐ Disposal ☒

Workover ☐ Emergency ☐

Lined ☐ Unlined ☒

Liner type: Synthetic ☐ Thickness _____ mil Clay ☐

Pit Volume _____ bbl

Below-grade tank

Volume: _____ bbl Type of fluid:

Construction material:

Double-walled, with leak detection? Yes ☐ If not, explain why not.

Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)

Less than 50 feet

(20 points)

50 feet or more, but less than 100 feet

(10 points)

100 feet or more

(0 points)

0

Wellhead protection area: (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)

0

Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)

Less than 200 feet

(20 points)

200 feet or more, but less than 1000 feet

(10 points)

1000 feet or more

(0 points)

10

Ranking Score (Total Points)

10

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if you are burying in place) onsite ☐ offsite ☒ If offsite, name of facility Envirotech, Landfarm #2. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☒ Yes ☐ If yes, show depth below ground surface _____ ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments:

Approximately 40 cubic yards of contaminated soil was excavated and transported to Envirotech's Landfarm #2 for remediation

Maximum reasonable extent of excavation was reached at bedrock 5' below ground surface. BTEX sample taken and analyzed via method 8021B

Bottom of excavation was sprayed with potassium permanganate solution

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date: 3/9/06

Printed Name/Title Ms. Amy Mackey, Production Technician

Signature Amy Mackey

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Oil & GAS INSPECTOR, DIST. 8

Printed Name/Title Denny Felt

Signature Denny Felt

Date: MAR 16 2006

CLIENT: <u>Elm Ridge</u>	ENVIROTECH INC. <small>ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64-3014 FARMINGTON, NEW MEXICO 87401 PHONE: (505) 632-0615</small>	LOCATION NO: _____ C.O.C. NO: _____
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<h2 style="margin:0">FIELD REPORT: CLOSURE VERIFICATION</h2>	PAGE No: <u>1</u> of <u>1</u>
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LOCATION: NAME: <u>CANCADO</u> WELL #: <u>20A</u> PIT: <u>SEP</u> QUAD/UNIT: <u>SW/SE</u> SEC: <u>3</u> TWP: <u>26N</u> RNG: <u>7W</u> PM: <u>NMNM</u> CNTY: <u>RA</u> ST: <u>NM</u> QTR/FOOTAGE: _____ CONTRACTOR: <u>Franks</u>	DATE STARTED: <u>1/9/06</u> DATE FINISHED: <u>1/13/06</u> ENVIRONMENTAL SPECIALIST: <u>GWC</u>
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EXCAVATION APPROX. <u>23</u> FT. x <u>20</u> FT. x <u>5</u> FT. DEEP.	CUBIC YARDAGE: <u>40</u>
DISPOSAL FACILITY: <u>Envirotech Landfarm #2</u> REMEDIATION METHOD: <u>Land farm</u>	
LAND USE: _____ LEASE: _____ FORMATION: _____	

FIELD NOTES & REMARKS:	PIT LOCATED APPROXIMATELY <u>88'</u> FT. <u>220°</u> FROM WELLHEAD. DEPTH TO GROUNDWATER: <u>>160</u> NEAREST WATER SOURCE: <u>>1000</u> NEAREST SURFACE WATER: <u>200-1000</u> NMDCD RANKING SCORE: <u>10</u> NMDCD TPH CLOSURE STD: <u>1,000</u> PPM
SOIL AND EXCAVATION DESCRIPTION:	<div style="border: 1px solid black; padding: 5px;"> CHECK ONE : <input type="checkbox"/> PIT ABANDONED <input checked="" type="checkbox"/> STEEL TANK INSTALLED </div>

Approximately 40 yd³ was excavated and transported to Envirotech's Landfarm #2 for remediation. Maximum reasonable extent of excavation was reached at 5' (bedrock). Pit was sprayed with potassium permanganate. BTEX results attached.

FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
1420	Sides		5.0	20	4	3	12
1425	bottom 5'		5.0	20	40	30	1200

SCALE

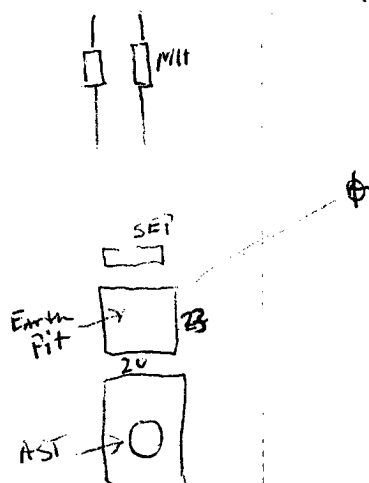


0 FT

PIT PERIMETER

OVM
RESULTS

PIT PROFILE



SAMPLE ID	FIELD HEADSPACE P10 (ppm)
1 Sides	1
2 Bottom 5'	380
3	
4	
5	

LAB SAMPLES		
SAMPLE ID	ANALYSIS	TIME



x - bottom sample
* - well sample

TRAVEL NOTES:	CALLOUT: _____	ONSITE: _____
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ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

Method 418.1 Analysis Log Total Petroleum Hydrocarbons

Date 1/9/06

Analyst G. Crabtree

Location CANDADO 20A

Instrument Infracal

Job No. 03056-040-013

Sample No.	Sample Description	Sample Wt. (g)	Volume Freon (mL)	Dilution Factor	Abs. Reading	TPH (mg/kg)	OVM (mg/kg)
1	Pit composite sample	5.0	20	4	567	2268	176

Infrared Spectrophotometer Calibration

New Freon _____

Date Standards Prepared _____

Standard Concentration (mg/L)	Absorbance
100	_____
200	<u>218</u>
500	_____
1000	_____

I-CAL RF: _____

RSD: _____ %

QA/QC Acceptance Criteria: I-CAL RSD +/- 20%

C-CAL RF: _____

% Difference: _____ %

C-Cal Difference +/- 10%

**EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS**

Client:	Elm Ridge Resources	Project #:	03056-040-013
Sample No.:	1	Date Reported:	1/10/2006
Sample ID:	Composite sample of pit area	Date Sampled:	1/9/2006
Sample Matrix:	Soil	Date Analyzed:	1/9/2006
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
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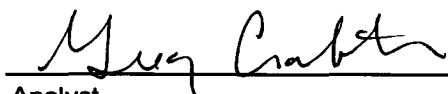
Total Petroleum Hydrocarbons	2,270.0	5.0
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ND = Parameter not detected at the stated detection limit.


References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **Candado No. 20A**

Instrument callibration checked against 200 ppm standard. Zeroed before each sample



Analyst



Review

ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

Method 418.1 Analysis Log Total Petroleum Hydrocarbons

Date 1/13/06

Analyst G. Crabtree

Location CANDADO 20-A

Instrument Infracal

Job No. 03056-040-013

Sample No.	Sample Description	Sample Wt. (g)	Volume Freon (mL)	Dilution Factor	Abs. Reading	TPH (mg/kg)
1	Composite sample of pit walls	5.0	20	4	3	12
2	5 point composite of bottom @ 5' shale layer	5.0	20	40	430	1200

0.0m

1

380

Infrared Spectrophotometer Calibration

New Freon _____

Date Standards Prepared _____

Standard Concentration (mg/L)	Absorbance
100	_____
200	<u>215</u>
500	_____
1000	_____

I-CAL RF: _____

C-CAL RF: _____

RSD: _____ %

% Difference: _____ %

QA/QC Acceptance Criteria: I-CAL RSD +/- 20%

C-Cal Difference +/- 10%

**EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS**

Client:	Elm Ridge Resources	Project #:	03056-040-013
Sample No.:	2	Date Reported:	1/16/2006
Sample ID:	Composite sample of pit walls	Date Sampled:	1/13/2006
Sample Matrix:	Soil	Date Analyzed:	1/13/2006
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
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Total Petroleum Hydrocarbons	ND	20.0
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ND = Parameter not detected at the stated detection limit.


References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **Candado No. 20A**

Instrument callibration checked against 200 ppm standard. Zeroed before each sample



Analyst



Review

**EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS**

Client:	Elm Ridge Resources	Project #:	03056-040-013
Sample No.:	3	Date Reported:	1/16/2006
Sample ID:	Composite sample of pit bottom @ 5	Date Sampled:	1/13/2006
Sample Matrix:	Soil	Date Analyzed:	1/13/2006
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	1,200.0	200.0

ND = Parameter not detected at the stated detection limit.

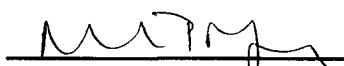
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **Candado No. 20A**

Instrument callibration checked against 200 ppm standard. Zeroed before each sample



Analyst



Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Elm Ridge Resources	Project #:	03056-040-013
Sample ID:	Candado 20A	Date Reported:	01-16-06
Laboratory Number:	35742	Date Sampled:	01-13-06
Chain of Custody:	15376	Date Received:	01-13-06
Sample Matrix:	Soil	Date Analyzed:	01-16-06
Preservative:	Cool	Date Extracted:	01-16-06
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	1.8
Toluene	148	1.7
Ethylbenzene	1,040	1.5
p,m-Xylene	882	2.2
o-Xylene	119	1.0
Total BTEX	2,190	

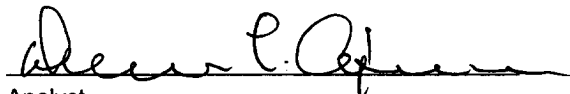
ND - Parameter not detected at the stated detection limit.

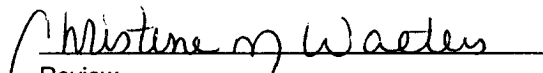
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	99.0 %
	1,4-difluorobenzene	99.0 %
	Bromochlorobenzene	99.0 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Rio Arriba Country Bottom Composite @ 5'.


Analyst


Review