

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: <u>Elm Ridge Resources</u> Telephone: <u>(505) 632-3476</u> e-mail address: <u>amackey1@elmridge.net</u>		
Address: <u>P.O. Box 156, Bloomfield, New Mexico, 87413</u>		
Facility or well name: <u>State of New Mexico No. 36-21</u>	API #: <u>3004524901</u>	U/L or Qtr/Qtr <u>C</u> Sec <u>36</u> T <u>24N</u> R <u>8W</u>
County: <u>San Juan</u> Latitude <u>36.276439</u>	Longitude <u>-107.63541</u>	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: <u>65</u> bbl Type of fluid: <u>Produced water and incidental oil</u> Construction material: Double-walled, with leak detection? Yes ☐ If not, explain why not. No, Tank in place prior to rule 50	
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) 20
Ranking Score (Total Points)		20

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:
Encountered bedrock on bottom and West Wall, BTEX results are attached. Excavated North wall up to separator and meter run, contamination still present.
Dug test hole on north side of meter house, no visible contamination was noted and wall tested clean. Only a small amount of residual contamination was left in place beneath the meter house
Tank Battery receives oil from State of NM 36-21 and 36-31

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: 8/30/06

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.

Approval:
DEPUTY OIL & GAS INSPECTOR, DIST. III

Printed Name/Title Brandon Powell

Signature Brandon Powell

Date: AUG 30 2006

Method 418.1 Analysis Log Total Petroleum Hydrocarbons

Date 7/24/06

Analyst G. Crabtree

Location ~~State~~ State of NM 36-21 & 36-31 Instrument Foxboro

Job No. 03056-040-045

Sample No.	Sample Description	Sample Wt. (g)	Volume Freon (mL)	Dilution Factor	Abs. Reading	TPH (mg/kg)	OVM (mg/kg)
1	EAST WALL Composite	5.0	20	4	0.011	76.3	9
2	WEST WALL Composite	5.0	20	4	0.7	4,858	40
3	NORTH WALL Composite	5.0	20	4	0.57	3,956	501
4	SOUTH WALL Composite	5.0	20	4	0.014	97.1	20
5	Bottom Composite AT 12' BGS	5.0	20	4	0.4	2,776	234

Infrared Spectrophotometer Calibration

New Freon _____

Date Standards Prepared _____

Standard Concentration (mg/L)	Absorbance
100	_____
200	<u>190</u>
500	_____
1000	_____

I-CAL RF: _____

C-CAL RF: _____

RSD: _____ %

% Difference: _____ %

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

C-Cal Difference +/- 10%

CLIENT: Elm Ridge
Reserves

ENVIROTECH INC.
ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64-9014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

LOCATION NO: _____
C.O.C. NO: _____

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: STATE of NM WELL #: 36-21-436-3 PIT: Sep
QUAD/UNIT: C SEC: 36 TWP: 24N RNG: 8W PM: NMPA7 CNTY: San Juan ST: NM
QTR/FOOTAGE: _____ CONTRACTOR: _____

DATE STARTED: 7/24/06
DATE FINISHED: 7/25/06
ENVIRONMENTAL SPECIALIST: GWC

EXCAVATION APPROX. 48 FT. x 28 FT. x 12 FT. DEEP. CUBIC YARDAGE: 530
DISPOSAL FACILITY: Envirotech LF # 2 REMEDIATION METHOD: Landfarm
LAND USE: _____ LEASE: _____ FORMATION: _____

FIELD NOTES & REMARKS:
PIT LOCATED APPROXIMATELY 125 FT. 40° FROM WELLHEAD.
DEPTH TO GROUNDWATER: >100 NEAREST WATER SOURCE: >1000 NEAREST SURFACE WATER: <200
NMCD RANKING SCORE: 20 NMCD TPH CLOSURE STD: 100 PPM

CHECK ONE:
☐ PIT ABANDONED
☐ STEEL TANK INSTALLED

SOIL AND EXCAVATION DESCRIPTION:
Soil WAS excavated to A maximum reasonable extent. SAND stone WAS encountered 12' BGS. A SANDstone ledge WAS ALSO encountered on the west wall. Excavation WAS completed up to separator & meter house on north side. North wall WAS still contaminated, however Test hole on North side tested Clean, Pit walls AND bottom WAS sprayed with potassium permanganate

SCALE
0 FT

FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm

PIT PERIMETER

OVM RESULTS

PIT PROFILE

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1	
2	
3	
4	
5	

LAB SAMPLES		
SAMPLE ID	ANALYSIS	TIME

X - bottom sample location
* - wall sample location

TRAVEL NOTES: _____

CALLOUT: _____

ONSITE: _____

Method 418.1 Analysis Log Total Petroleum Hydrocarbons

Date 7/25/06

Analyst G. Crabtree

Location State of NM 36-21 d 36-31

Instrument Infracal

Job No. 03056-040-045

Sample No.	Sample Description	Sample Wt. (g)	Volume Freon (mL)	Dilution Factor	Abs. Reading	TPH (mg/kg)	OVM (mg/kg)
1	Composite of Test hole wall	5.0	20	4	15	60	1

Infrared Spectrophotometer Calibration

New Freon _____

Date Standards Prepared _____

Standard Concentration (mg/L)	Absorbance
100	_____
200	<u>221</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
QUALITY ASSURANCE REPORT

Client:	Elm Ridge Resources	Project #:	03056-040-045
Sample ID:	QA/QC	Date Reported:	7/26/2006
Laboratory Number:	01-24-TPH.QA/QC	Date Sampled:	N/A
Sample Matrix:	Freon-113	Date Analyzed:	7/24/2006
Preservative:	N/A	Date Extracted:	7/24/2006
Condition:	N/A	Analysis Needed:	TPH

Calibration	I-Cal Date	C-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
	05-22-04	7/24/2006	1,735	1,818	4.8%	+/- 10%

Blank Conc. (mg/Kg)	Concentration	Detection Limit
TPH	ND	5.0

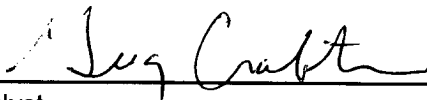
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
TPH	2,471	2,352	4.8%	+/- 30%

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept Range
TPH	2,471	2,000	5,030	112.5%	80 - 120%

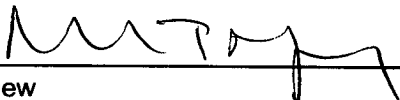
ND = Parameter not detected at the stated detection limit.

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

Comments: QA/QC for State of NM 36-21



Analyst



Review

EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS

Client:	Elm Ridge Resources	Project #:	03056-040-045
Sample No.:	1	Date Reported:	7/26/2006
Sample ID:	Composite Sample of East Wall	Date Sampled:	7/24/2006
Sample Matrix:	Soil	Date Analyzed:	7/24/2006
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	76.3	5.0

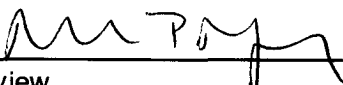
ND = Parameter not detected at the stated detection limit.

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

Comments: State of NM 36-21



Analyst



Review

EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS

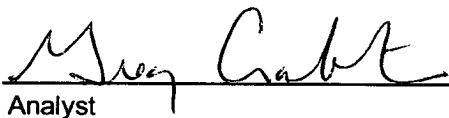
Client:	Elm Ridge Resources	Project #:	03056-040-045
Sample No.:	2	Date Reported:	7/26/2006
Sample ID:	Composite Sample of West Wall	Date Sampled:	7/24/2006
Sample Matrix:	Soil	Date Analyzed:	7/24/2006
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

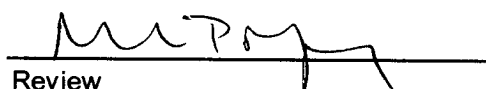
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	4,860	5.0

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: **State of NM 36-21**
Sandstone ledge encountered, further excavation to the west
was not possible


Analyst


Review

ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Elm Ridge Resources	Project #:	03056-040-045
Sample No.:	3	Date Reported:	7/26/2006
Sample ID:	Composite Sample of North Wall	Date Sampled:	7/24/2006
Sample Matrix:	Soil	Date Analyzed:	7/24/2006
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	3,960	5.0
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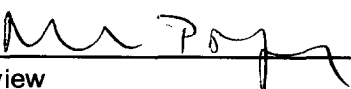
ND = Parameter not detected at the stated detection limit.

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

Comments: **State of NM 36-21**



Analyst



Review

EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS

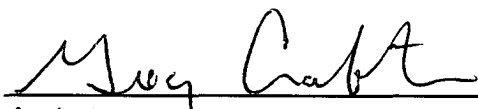
Client:	Elm Ridge Resources	Project #:	03056-040-045
Sample No.:	4	Date Reported:	7/26/2006
Sample ID:	Composite Sample of South Wall	Date Sampled:	7/24/2006
Sample Matrix:	Soil	Date Analyzed:	7/24/2006
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	97.1	5.0

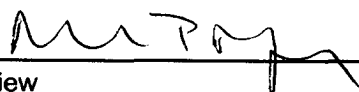
ND = Parameter not detected at the stated detection limit.

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

Comments: State of NM 36-21



Analyst



Review

EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS

Client:	Elm Ridge Resources	Project #:	03056-040-045
Sample No.:	5	Date Reported:	7/26/2006
Sample ID:	Composite Sample of bottom 12' BGS	Date Sampled:	7/24/2006
Sample Matrix:	Soil	Date Analyzed:	7/24/2006
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

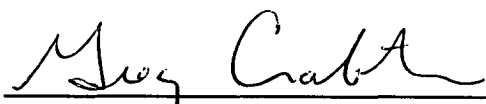
Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
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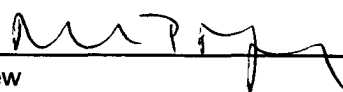
Total Petroleum Hydrocarbons	2,780	5.0
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ND = Parameter not detected at the stated detection limit.

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

Comments: **State of NM 36-21**
Sandstone encountered 12' BGS


Analyst

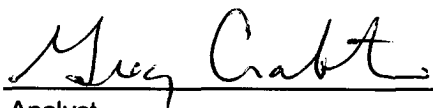

Review

CONTINUOUS CALIBRATION
EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS

Cal. Date: 24-Jul-06

Parameter	Standard Concentration mg/L	Concentration Reading mg/L
TPH	100	221
	200	
	500	
	1000	

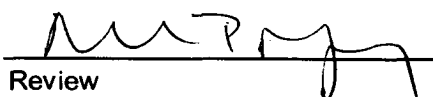
The accepted percent relative deviation (%RSD) of the calibration factor is less than 20% over the working range.



Analyst

7/26/06

Date



Review

8/28/06

Date

EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS

Client:	Elm Ridge Resources	Project #:	03056-040-045
Sample No.:	1	Date Reported:	7/26/2006
Sample ID:	Composite sample of Test Hole Wall	Date Sampled:	7/25/2006
Sample Matrix:	Soil	Date Analyzed:	7/25/2006
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	60.0	5.0

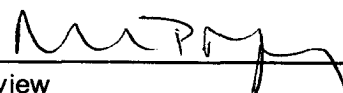
ND = Parameter not detected at the stated detection limit.

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

Comments: **State of NM 36-21**

Instrument calibration 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	Project #:	03056-040-045
Sample ID:	North Wall Composite	Date Reported:	07-26-06
Laboratory Number:	37957	Date Sampled:	07-24-06
Chain of Custody:	1239	Date Received:	07-24-06
Sample Matrix:	Soil	Date Analyzed:	07-26-06
Preservative:	Cool	Date Extracted:	07-25-06
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	20.0	1.8
Toluene	85.6	1.7
Ethylbenzene	2,080	1.5
p,m-Xylene	1,080	2.2
o-Xylene	269	1.0
Total BTEX	3,530	

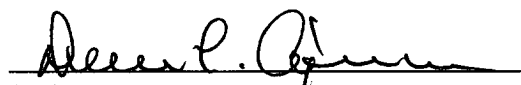
ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	98.0 %
	1,4-difluorobenzene	98.0 %
	Bromochlorobenzene	98.0 %

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: State of NM 36-21 & 36-31


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	Elm Ridge	Project #:	03056-040-045
Sample ID:	Bottom 12' Composite	Date Reported:	07-26-06
Laboratory Number:	37958	Date Sampled:	07-24-06
Chain of Custody:	1239	Date Received:	07-24-06
Sample Matrix:	Soil	Date Analyzed:	07-26-06
Preservative:	Cool	Date Extracted:	07-25-06
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	43.8	1.8
Toluene	539	1.7
Ethylbenzene	134	1.5
p,m-Xylene	696	2.2
o-Xylene	123	1.0
Total BTEX	1,540	

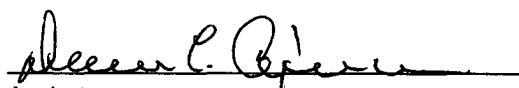
ND - Parameter not detected at the stated detection limit.

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: State of NM 36-21 & 36-31


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	07-26-BTEX QA/QC	Date Reported:	07-26-06
Laboratory Number:	37952	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-26-06
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff.	Blank Conc	Detect. Limit
		Accept. Range 0 - 15%			
Benzene	7.1908E+007	7.2053E+007	0.2%	ND	0.2
Toluene	9.4539E+007	9.4729E+007	0.2%	ND	0.2
Ethylbenzene	4.4328E+007	4.4417E+007	0.2%	ND	0.2
p,m-Xylene	1.6968E+008	1.7002E+008	0.2%	ND	0.2
o-Xylene	9.0510E+007	9.0691E+007	0.2%	ND	0.1

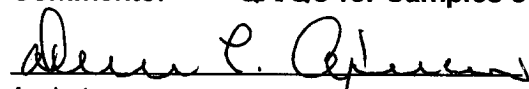
Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect. Limit
Benzene	7.5	7.4	1.3%	0 - 30%	1.8
Toluene	17.4	17.4	0.0%	0 - 30%	1.7
Ethylbenzene	ND	ND	0.0%	0 - 30%	1.5
p,m-Xylene	77.4	77.3	0.1%	0 - 30%	2.2
o-Xylene	30.9	30.8	0.3%	0 - 30%	1.0

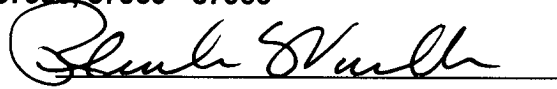
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	7.5	50.0	57.5	100.0%	39 - 150
Toluene	17.4	50.0	67.3	99.9%	46 - 148
Ethylbenzene	ND	50.0	49.9	99.8%	32 - 160
p,m-Xylene	77.4	100	177	99.7%	46 - 148
o-Xylene	30.9	50.0	80.7	99.8%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for Samples 37952, 37957 - 37958, 37960 - 37966


Analyst


Review

6321

san juan reproduction 578-1299

Bill of Lading

2581

MANIFEST #

DATE 8/16/06

PHONE: (505) 632-0615 • 5796 U.S. HIGHWAY 64 • FARMINGTON, NEW MEXICO 87401

JOB #

DATE 8/16/06

COMPLETE DESCRIPTION OF SHIPMENT

[illegible]

"I certify the material hauled from the above location has not been added to or mixed with, and is the same material received from the above mentioned Generator, and that no additional materials have been added."

NAME Jason Holden

COMPANY EnviroTech

SIGNATURE

COMPANY CONTACT
san juan reproduction 578-126

PHONE

DATE _____

8/16/06

ENTERED AUG 18 2008



ENVIROTECH INC.

PHONE: (505) 632-0615 • 5796 U.S. HIGHWAY 64 • FARMINGTON, NEW MEXICO 87401

Bill of Lading

MANIFEST #

06952

DATE

2017/06

JOB # 03

LOAD

COMPLETE DESCRIPTION OF SHIPMENT

TRANSPORTING COMPANY

[illegible]

"I certify the material hauled from the above location has not been added to or mixed with, and is the same material received from the above mentioned Generator, and that no additional materials have been added."

NAME

1000

COMPANY

SIGNATURE

COMPANY CONTACT

1. $\mathcal{A} = \{A_1, A_2, \dots, A_n\}$ is a family of sets.

PHONE

DATE

10

25378

MANIFEST #

DATE 8-21-06

PHONE: (505) 632-0615 • 5796 U.S. HIGHWAY 64 • FARMINGTON, NEW MEXICO 87401

JOB # 03056-040-045

"I certify the material hauled from the above location has not been added to or mixed with, and is the same material received from the above mentioned Generator, and that no additional materials have been added."

NAME Jim Cardoza

COMPANY

SIGNATURE

COMPANY CONTACT
san juan reproduction 578-126

PHONE

DATE 8-21-06

Bill of Lading

MANIFEST #

25912

DATE 8/22/06 JOB # 03056-b40-045

"I certify the material hauled from the above location has not been added to or mixed with, and is the same material received from the above mentioned Generator, and that no additional materials have been added."

COMPANY Envirostech

SIGNATURE

COMPANY CONTACT
san juan reproduction 578-126

PHONE

DATE 8/22/06

san i van reproduction 578-126