30-045-28877

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

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

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Elm Ridge Exploration	Contact: Amy Mackey
Address: PO Box 156, Bloomfield, NM 87413	Telephone No.: (505) 632-3476 Ext 201
Facility Name: West Bisti Coal 25-2Y	Facility Type: Gas Well

Surface Owner: Federal	Mineral Owner:	Lease No.: NM 31311

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	25	25N	13W	1890	FSL	1810	FWL	San Juan

Latitude 36.370115 **Longitude** -108.173372

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: Unknown	Volume Recovered: Unknown
Source of Release: Earth Pit	Date and Hour of Occurrence: Historical	Date and Hour of Discovery: NA
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Produced Water from a gas well at the above mentioned location formerly discharged into an earthen pit on location. The well has been altered to no longer drain into an earthen pit, but instead into an Above Ground Storage Tank (AST).

Describe Area Affected and Cleanup Action Taken.*
On September 24, 2009, approximately 133 cubic yards of 'Production Sludge' was removed from the earthen pit to extents of approximately 24' x 22' x 8' below ground surface. All sludge was taken to Envirotech's NMOCD permitted soil remediation facility, Landfarm #2. Sludge was removed to visual extents of contamination, where confirmation samples were collected; see attached ***Analytical Results***. A sample was collected at the bottom at eight (8) feet below ground surface, and a composite sample was collected from each of the four (4) walls at 24' x 22' and analyzed in the field for TPH via USEPA Method 418.1, and in Envirotech's laboratory for benzene and BTEX via USEPA Method 8021 and for total chlorides via USEPA Method 4500B. All samples returned results below 100 mg/kg TPH, 0.2 mg/kg of benzene, 50 mg/kg of total BTEX and the 250 mg/kg total chloride standard, except for the sample collected from the north wall, which returned results of 295 mg/kg total chlorides. This confirms that a release has occurred. Elm Ridge Exploration will comply with Rule 29 from this point forward with the district office of the OCD.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ms. Amy Mackey	Approved by District Supervisor:	
Title: Administrative Manager	Approval Date:	Expiration Date:
E-mail Address: amackey1@elmridge.net	Conditions of Approval:	Attached ☐
Date: 6/15/10 Phone: 505-632-3476 Ext 201		

* Attach Additional Sheets If Necessary

envirotech

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Elm Ridge Exploration	Project #:	03056-0219
Sample No.:	1	Date Reported:	10/22/2009
Sample ID:	North Wall	Date Sampled:	9/24/2009
Sample Matrix:	Soil	Date Analyzed:	9/24/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	**24**	**20.0**

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: **West Bisti Coal 25-2Y**

Instrument calibrated to 200 ppm standard. Zeroed before each sample

Toni McKnight
Analyst

Toni McKNight
Printed

James McDaniel
Printed

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 info@envirotech-inc.com envirotech-inc.com

envirotech

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Elm Ridge Exploration	Project #:	03056-0219
Sample No.:	2	Date Reported:	10/22/2009
Sample ID:	South Wall	Date Sampled:	9/24/2009
Sample Matrix:	Soil	Date Analyzed:	9/24/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	**16**	**20.0**

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: **West Bisti Coal 25-2Y**

Instrument calibrated to 200 ppm standard. Zeroed before each sample

Toni McKnight
Analyst

Toni McKNight
Printed

James McDaniel
Printed

5796 US Highway 64, Farmington, NM 87401 | Ph (505)632-0615 Fr (800)362-1879 Fx (505) 632-1865 info@envirotech-inc.com envirotech-inc.com

envirotech

EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS

Client:	Elm Ridge Exploration	Project #:	03056-0219
Sample No.:	3	Date Reported:	10/22/2009
Sample ID:	East Wall	Date Sampled:	9/24/2009
Sample Matrix:	Soil	Date Analyzed:	9/24/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	**24**	**20.0**

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: **West Bisti Coal 25-2Y**

Instrument calibrated to 200 ppm standard. Zeroed before each sample

Analyst

Toni McKNight
Printed

James McDaniel
Printed

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 info@envirotech-inc.com envirotech-inc.com

envirotech

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Elm Ridge Exploration	Project #:	03056-0219
Sample No.:	4	Date Reported:	10/22/2009
Sample ID:	West Wall	Date Sampled:	9/24/2009
Sample Matrix:	Soil	Date Analyzed:	9/24/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	**20**	**20.0**

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: **West Bisti Coal 25-2Y**

Instrument calibrated to 200 ppm standard. Zeroed before each sample

Analyst

Toni McKNight
Printed

James McDaniel
Printed

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 info@envirotech-inc.com envirotech-inc.com

envirotech

EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS

Client:	Elm Ridge Exploration	Project #:	03056-0219
Sample No.:	5	Date Reported:	10/22/2009
Sample ID:	Bottom @ 8' BGS	Date Sampled:	9/24/2009
Sample Matrix:	Soil	Date Analyzed:	9/24/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	**24**	**20.0**

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: **West Bisti Coal 25-2Y**

Instrument calibrated to 200 ppm standard. Zeroed before each sample

Analyst

Toni McKNight
Printed

James McDaniel
Printed

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 info@envirotech-inc.com envirotech-inc.com

envirotech

CONTINUOUS CALIBRATION
EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS

Cal. Date: 24-Sep-09

Parameter	Standard Concentration mg/L	Concentration Reading mg/L
TPH	100	
	200	210
	500	
	1000	

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

Toni McKnight
Analyst

10/22/09
Date

Toni McKnight
Print Name

Review

10/22/09
Date

James McDaniel
Print Name

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 info@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	ElmRidge	Project #:	03056-0219
Sample ID:	East Wall	Date Reported:	09-30-09
Laboratory Number:	51822	Date Sampled:	09-24-09
Chain of Custody:	8049	Date Received:	09-24-09
Sample Matrix:	Soil	Date Analyzed:	09-29-09
Preservative:	Cool	Date Extracted:	09-28-09
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**ND**	**0.9**
Toluene	**3.7**	**1.0**
Ethylbenzene	**2.5**	**1.0**
p,m-Xylene	**3.2**	**1.2**
o-Xylene	**3.3**	**0.9**
Total BTEX	**12.7**	

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: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	ElmRidge	Project #:	03056-0219
Sample ID:	South Wall	Date Reported:	09-30-09
Laboratory Number:	51823	Date Sampled:	09-24-09
Chain of Custody:	8049	Date Received:	09-24-09
Sample Matrix:	Soil	Date Analyzed:	09-29-09
Preservative:	Cool	Date Extracted:	09-28-09
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**ND**	**0.9**
Toluene	**4.4**	**1.0**
Ethylbenzene	**5.7**	**1.0**
p,m-Xylene	**6.0**	**1.2**
o-Xylene	**5.7**	**0.9**
Total BTEX	**21.8**	

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: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	ElmRidge	Project #:	03056-0219
Sample ID:	Bottom 1' BGS of Pit	Date Reported:	09-30-09
Laboratory Number:	51824	Date Sampled:	09-24-09
Chain of Custody:	8049	Date Received:	09-24-09
Sample Matrix:	Soil	Date Analyzed:	09-29-09
Preservative:	Cool	Date Extracted:	09-28-09
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**ND**	**0.9**
Toluene	**ND**	**1.0**
Ethylbenzene	**ND**	**1.0**
p,m-Xylene	**ND**	**1.2**
o-Xylene	**ND**	**0.9**
Total BTEX	**ND**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	**96.0 %**
	1,4-difluorobenzene	**96.0 %**
	Bromochlorobenzene	**96.0 %**

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: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	ElmRidge	Project #:	03056-0219
Sample ID:	West Wall	Date Reported:	09-30-09
Laboratory Number:	51825	Date Sampled:	09-24-09
Chain of Custody:	8049	Date Received:	09-24-09
Sample Matrix:	Soil	Date Analyzed:	09-29-09
Preservative:	Cool	Date Extracted:	09-28-09
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**ND**	**0.9**
Toluene	**ND**	**1.0**
Ethylbenzene	**ND**	**1.0**
p,m-Xylene	**ND**	**1.2**
o-Xylene	**ND**	**0.9**
Total BTEX	**ND**	

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: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	ElmRidge	Project #:	03056-0219
Sample ID:	North Wall	Date Reported:	09-30-09
Laboratory Number:	51826	Date Sampled:	09-24-09
Chain of Custody:	8049	Date Received:	09-24-09
Sample Matrix:	Soil	Date Analyzed:	09-29-09
Preservative:	Cool	Date Extracted:	09-28-09
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**ND**	**0.9**
Toluene	**ND**	**1.0**
Ethylbenzene	**ND**	**1.0**
p,m-Xylene	**ND**	**1.2**
o-Xylene	**ND**	**0.9**
Total BTEX	**ND**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	**96.0 %**
	1,4-difluorobenzene	**96.0 %**
	Bromochlorobenzene	**96.0 %**

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: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505)632-0615 Fr (800)362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	09-29-BT QA/QC	Date Reported:	09-30-09
Laboratory Number:	51803	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	09-29-09
Condition:	N/A	Analysis:	BTEX

Calibration	I-Cal RF:	C-Cal RF:	%Diff.	Blank Conc.	Detect. Limit
		Accept. Range 0 - 15%			
Benzene	1.1545E+006	1.1568E+006	0.2%	ND	0.1
Toluene	6.7383E+005	6.7518E+005	0.2%	ND	0.1
Ethylbenzene	5.2883E+005	5.2989E+005	0.2%	ND	0.1
p,m-Xylene	1.2809E+006	1.2835E+006	0.2%	ND	0.1
o-Xylene	4.9060E+005	4.9159E+005	0.2%	ND	0.1

Duplicate Conc. (ug/kg)	Sample	Duplicate	%Diff.	Accept. Range	Detect. Limit
Benzene	1.4	1.2	14.3%	0 - 30%	0.9
Toluene	17.0	18.1	6.5%	0 - 30%	1.0
Ethylbenzene	5.3	5.2	1.9%	0 - 30%	1.0
p,m-Xylene	12.8	13.0	1.6%	0 - 30%	1.2
o-Xylene	4.0	4.1	2.5%	0 - 30%	0.9

Spike Conc. (ug/kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept. Range %
Benzene	1.4	50.0	50.4	98.1%	39 - 150
Toluene	17.0	50.0	65.9	98.4%	46 - 148
Ethylbenzene	5.3	50.0	51.5	93.1%	32 - 160
p,m-Xylene	12.8	100	111	98.1%	46 - 148
o-Xylene	4.0	50.0	52.6	97.4%	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 51803, 51822 - 51826, 51829, 51842, and 51846 - 51847.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505)632-0615 Fr (800)362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

Chloride

Client:	Elm Ridge	Project #:	03056-0219
Sample ID:	East Wall	Date Reported:	09-30-09
Lab ID#:	51822	Date Sampled:	09-24-09
Sample Matrix:	Soil	Date Received:	09-24-09
Preservative:	Cool	Date Analyzed:	09-29-09
Condition:	Intact	Chain of Custody:	8049

Parameter	Concentration (mg/Kg)
Total Chloride	**230**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

Chloride

Client:	Elm Ridge	Project #:	03056-0219
Sample ID:	South Wall	Date Reported:	09-30-09
Lab ID#:	51823	Date Sampled:	09-24-09
Sample Matrix:	Soil	Date Received:	09-24-09
Preservative:	Cool	Date Analyzed:	09-29-09
Condition:	Intact	Chain of Custody:	8049

Parameter	Concentration (mg/Kg)
Total Chloride	**130**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

Chloride

Client:	Elm Ridge	Project #:	03056-0219
Sample ID:	Bottom (1' BGS of Pit)	Date Reported:	09-30-09
Lab ID#:	51824	Date Sampled:	09-24-09
Sample Matrix:	Soil	Date Received:	09-24-09
Preservative:	Cool	Date Analyzed:	09-29-09
Condition:	Intact	Chain of Custody:	8049

Parameter	Concentration (mg/Kg)
Total Chloride	**175**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505)632-0615 Fr (800)362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

Chloride

Client:	Elm Ridge	Project #:	03056-0219
Sample ID:	West Wall	Date Reported:	09-30-09
Lab ID#:	51825	Date Sampled:	09-24-09
Sample Matrix:	Soil	Date Received:	09-24-09
Preservative:	Cool	Date Analyzed:	09-29-09
Condition:	Intact	Chain of Custody:	8049

Parameter	Concentration (mg/Kg)
Total Chloride	**185**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

Chloride

Client:	Elm Ridge	Project #:	03056-0219
Sample ID:	North Wall	Date Reported:	09-30-09
Lab ID#:	51826	Date Sampled:	09-24-09
Sample Matrix:	Soil	Date Received:	09-24-09
Preservative:	Cool	Date Analyzed:	09-29-09
Condition:	Intact	Chain of Custody:	8049

Parameter	Concentration (mg/Kg)
Total Chloride	**295**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505)632-0615 Fr (800)362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

CHAIN OF CUSTODY RECORD

8049

Client:	Project Name / Location:	ANALYSIS / PARAMETERS
Elm Ridge	Earth Pit Closure / West Bisti Coal 25-24	
Client Address:	Sampler Name:	
	Toni McKnight	
Client Phone No.:	Client No.:	
	03056-0219	

Sample No./ Identification	Sample Date	Sample Time	Lab No.	Sample Matrix	No./Volume of Containers	Preservative: H_2O_2	Preservative: HCl	Preservative: Cool	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	PAH	TPH (418.1)	CHLORIDE				Sample Cool	Sample Intact
East Wall	9/24/09	12:00	51822	Soil Solid Sludge Aqueous	1/40Z			✓		✓								✓				✓	✓
South Wall	9/24/09	11:58	51823	Soil Solid Sludge Aqueous	1/40Z			✓		✓								✓				✓	✓
Bottom (1' BGS of Pit)	9/24/09	11:04	51824	Soil Solid Sludge Aqueous	1/40Z			✓		✓								✓				✓	✓
West Wall	9/24/09	12:02	51825	Soil Solid Sludge Aqueous	1/40Z			✓		✓								✓				✓	✓
North Wall	9/24/09	11:56	51826	Soil Solid Sludge Aqueous	1/40Z			✓		✓								✓				✓	✓
Background	9/24/09	12:15	51827	Soil Solid Sludge Aqueous	1/40Z			✓		✓								✓				✓	✓
				Soil Solid Sludge Aqueous																			
				Soil Solid Sludge Aqueous																			
				Soil Solid Sludge Aqueous																			
				Soil Solid Sludge Aqueous																			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	9/24/09	1715	Kendall Argo	9/24/09	17:15
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

envirotech
Analytical Laboratory
5796 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • lab@envirotech-inc.com

ACCENT Printing • Form 28-0807

envirotech
Analytical Laboratory

Chloride

Client:	Elm Ridge	Project #:	03056-0219
Sample ID:	Background	Date Reported:	10-19-09
Lab ID#:	52112	Date Sampled:	10-14-09
Sample Matrix:	Soil	Date Received:	10-15-09
Preservative:	Cool	Date Analyzed:	10-16-09
Condition:	Intact	Chain of Custody:	8202

Parameter	Concentration (mg/Kg)
Total Chloride	**35**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

CHAIN OF CUSTODY RECORD

8202

Client: Elmridge	Project Name / Location: West Bisti Coal 25-24
Client Address:	Sampler Name: R. Jones
Client Phone No.:	Client No.: 03056-0219

ANALYSIS / PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab No.	Sample Matrix	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl	Preservative Cool	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	PAH	TPH (418.1)	CHLORIDE				Sample Cool	Sample Intact
Background	10/14/08	16:00	52112	(Soil) Sludge Solid Aqueous	1-4oz			X										X				✓	✓
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	10/15	8:45	[signature]	10/15/09	0845
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

envirotech
Analytical Laboratory

5796 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • lab@envirotech-inc.com

ACCENT Printing • Form 28-0807

envirotech

Bill of Lading

MANIFEST # 34314

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

DATE 9-24-09 JOB# 03056-029

LOAD NO.	COMPLETE DESCRIPTION OF SHIPMENT						TRANSPORTING COMPANY			
	POINT OF ORIGIN	DESTINATION	MATERIAL	GRID	YDS	BBLS	COMPANY	TRK#	TIME	DRIVER SIGNATURE
1	Elm Ridge W Bisti Coal 25-29	LF-II	Cont Soil	E-25	12	—	4-4	78	1:20	John McKinney
					12					

RESULTS:

-298	CHLORIDE TEST	1
	PAINT FILTER TEST	1

LANDFARM EMPLOYEE:

NOTES: ENTERED SEP 25 2009

"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 John McKinney COMPANY Elm Ridge SIGNATURE John McKinney

COMPANY CONTACT Mack PHONE 327-2711 DATE 9-24-09

envirotech

Bill of Lading

MANIFEST # 34328

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

DATE 9-25-09 JOB# 03056-0249

LOAD NO.	COMPLETE DESCRIPTION OF SHIPMENT						TRANSPORTING COMPANY			
	POINT OF ORIGIN	DESTINATION	MATERIAL	GRID	YDS	BBLS	COMPANY	TRK#	TIME	DRIVER SIGNATURE
1	West Bisti Code 25-T2Y	LF II	Cont. Soil	G-25	12	—	4-4	78	3:25	
2	" "	" "	" "	G-25	25	—	4-4	74	3:28	
					37					

RESULTS:

268	CHLORIDE TEST	2
	PAINT FILTER TEST	2

LANDFARM EMPLOYEE:

NOTES: ENTERED SEP 2 9 2009

"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 Tim Kinney COMPANY Elm Ridge SIGNATURE

COMPANY CONTACT Mark PHONE 327-2711 DATE 9-25-09

ACCENT Printing • Form 28-1212

envirotech

Bill of Lading

MANIFEST # 34345

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

DATE 9-25-09 JOB# 03056-0219

LOAD NO.	COMPLETE DESCRIPTION OF SHIPMENT						TRANSPORTING COMPANY			
	POINT OF ORIGIN	DESTINATION	MATERIAL	GRID	YDS	BBLS	COMPANY	TRK#	TIME	DRIVER SIGNATURE
1	~~Elm Ridge~~ ~~W Bisticool 25-29~~	Elm Ridge W Bisticool	Clean Fill	—	12	—	4-4	78	8:35	
2	Envirotech	25-29	" "	—	12	—	4-4	75	8:40	
3	" "	" "	" "	—	12	—	4-4	78	10:20	
4	" "	" "	" "	—	12	—	4-4	75	10:35	
5	" "	" "	" "	—	12	—	4-4	78	12:16	
6	" "	" "	" "	—	12	—	4-4	75	12:30	
7	" "	" "	" "	—	12	—	4-4	78	2:10	
					84					

RESULTS:

	CHLORIDE TEST	
	PAINT FILTER TEST	

LANDFARM EMPLOYEE:

NOTES: ENTERED SEP 29 2009

"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 J. McKinnes COMPANY Elm Ridge SIGNATURE

COMPANY CONTACT Mark PHONE 327-2711 DATE 9-28-09

envirotech

Bill of Lading

MANIFEST # 34315

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

DATE 9-24-09 JOB# 03056-0219

LOAD NO.	COMPLETE DESCRIPTION OF SHIPMENT						TRANSPORTING COMPANY			
	POINT OF ORIGIN	DESTINATION	MATERIAL	GRID	YDS	BBLS	COMPANY	TRK#	TIME	DRIVER SIGNATURE
1	Envirotech	Elm Ridge W Brst. Coal 25-24	clean F.11	—	12	—	444	78	1:25	
					12					

RESULTS:

	CHLORIDE TEST	
	PAINT FILTER TEST	

LANDFARM EMPLOYEE:

NOTES: ENTERED SEP 25 2009

"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 T-McKee COMPANY Elm Ridge SIGNATURE

COMPANY CONTACT MKR PHONE 327-2711 DATE 9-24-09

ACCENT Printing • Form 28-1212

envirotech

Bill of Lading

MANIFEST # 34344

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

DATE 9-28-09 JOB# 03056-0219

LOAD NO.	COMPLETE DESCRIPTION OF SHIPMENT						TRANSPORTING COMPANY			
	POINT OF ORIGIN	DESTINATION	MATERIAL	GRID	YDS	BBLS	COMPANY	TRK#	TIME	DRIVER SIGNATURE
1	Elm Ridge W Bisti Com 252Y	LF-II	Cont Soil	G-25	12	-	4-4	78	8:30	
2	" "	" "	" "	G-25	12	-	" "	75	8:46	
3	" "	" "	" "	G-25	20	-	4-4	24	850	
4	" "	" "	" "	G-25	12	-	" "	78	10:35	
5	" "	" "	" "	G-25	12	-	" "	75	10:35	
6	" "	" "	" "	H-25	12	-	" "	78	12:26	
7	" "	" "	" "	H-25	12	-	" "	75	12:30	
8	" "	" "	" "	H-25	12	-	" "	78	2:10	
9	" "	" "	" "	H-25	14	-	" "	75	2:30	
					118					

-268(a)

RESULTS:

-268(3)	CHLORIDE TEST	9
	PAINT FILTER TEST	9

LANDFARM EMPLOYEE:

NOTES: ENTERED SEP 29 2009

"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 J. McKinney COMPANY Elm Ridge SIGNATURE

COMPANY CONTACT Mark PHONE 327-2711 DATE 9-28-09

envirotech

February 9, 2010 Project No. 03056-0219

Mr. Brad Jones
New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505 Phone (505) 476-3487

RE: C-141 RELEASE NOTIFICATION FORM FOR THE WEST BISTI COAL 25-2Y WELL SITE

Dear Mr. Jones,

Please find enclosed a C-141 Release Notification Form and additional supporting closure documentation for the West Bisti Coal 25-2Y well site owned and operated by Elm Ridge Exploration.

The previous additional 'Closure Plan' submitted by Envirotech, Inc. for Elm Ridge Exploration was a remediation plan and was not intended to be an alternative closure plan. All closure activities from this point forward will comply with Rule 29 with the district office of the OCD.

We appreciate the opportunity to be of service. If you have any questions or require additional information, please contact our office at (505) 632-0615.

Respectfully Submitted,
ENVIROTECH, INC.

James McDaniel
Project Scientist
jmcdaniel@envirotech-inc.com

Enclosure: C-141 Release Notification Form
Analytical Results
Bills of Lading
Proof of Notification

Cc: Client File No. 03056

RECEIVED OCD
2010 JUN 18 A 11:16

envirotech

September 14, 2009 Project No. 03056-0219

Mr. Mark Kelly
Bureau of Land Management
1235 La Plata Highway, Suite A
Farmington, New Mexico 87401 Phone: (505) 599-8900

RE: WEST BISTI COAL 25-2Y EARTH PIT CLOSURE NOTIFICATION

Dear Mr. Kelly,

Please accept this letter and attached Sundry Notice as the necessary surface owner notification for earth pit closure activities at the West Bisti Coal 25-2Y well site, owned and operated by Elm Ridge Exploration. The West Bisti Coal 25-2Y well site is located in Unit K, Section 25, Township 25N, Range 13W, San Juan County, New Mexico. Closure activities are scheduled to begin on September 21, 2009 and continue through September 25, 2009.

We appreciate the opportunity to be of service. If you have any questions or require additional information, please contact our office at (505) 632-0615.

Respectfully Submitted,
ENVIROTECH, INC.

James McDaniel
Project Scientist
jmcdaniel@envirotech-inc.com

Enclosure: Sundry Notice

Cc: Client File No. 03056

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE – Other instructions on page 2.

5. Lease Serial No.
NM-61273

6. If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No.

1. Type of Well
☐ Oil Well ☑ Gas Well ☐ Other

8. Well Name and No.
West Bisti Coal 25-2Y

2. Name of Operator
Elm Ridge Exploration

9. API Well No.
30-045-28877

3a. Address
PO Box 156
Bloomfield, NM 87413

3b. Phone No. *(include area code)*
(505) 632-3476

10. Field and Pool or Exploratory Area

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
1890 FSL 1810 FWL, K-25-25N-13W, Lat. 36.370115 long. -108.173372

11. Country or Parish, State
San Juan County, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other Closure of an Earth Pit
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Elm Ridge Exploration plans to begin closure activities for an earthen pit located at the above mentioned site. All formal notifications have been made. Closure activities are scheduled to being on Monday, September 21, 2009 and last through September 25, 2009.

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*
Ms. Amy Mackey

Title Administrative Manager

Signature

Date 09/14/2009

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13 - Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment.

NOTICES

The Privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and grantingapproval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c)and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

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

RECEIVED
2009 FEB 2 PM 1 07

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
July 21, 2008

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.
For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

Type of action: ☐ Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
☒ Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
☐ Modification to an existing permit
☐ Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

Operator: Elm Ridge Resources OGRID #: 149052

Address: P.O. Box 156; Bloomfield, NM 87413

Facility or well name: West Bisti Coal 25-2Y

API Number: 3004528877 OCD Permit Number:

U/L or Qtr/Qtr K Section 25 Township 25N Range 13W County: San Juan

Center of Proposed Design: Latitude 36.370203 Longitude -108.173319 NAD: ☐1927 ☒ 1983

Surface Owner: ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
☒ Pit: Subsection F or G of 19.15.17.11 NMAC **Ceased operation in October 2008**

Temporary: ☐ Drilling ☐ Workover

☒ Permanent ☐ Emergency ☐ Cavitation ☐ P&A

☐ Lined ☒ Unlined Liner type: Thickness _____mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____

☐ String-Reinforced

Liner Seams: ☐ Welded ☐ Factory ☐ Other _____ Volume: _____bbl Dimensions: L 30' x W 34' x D 2'

3.
☐ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC

Type of Operation: ☐ P&A ☐ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)

☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other _____

☐ Lined ☐ Unlined Liner type: Thickness _____mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____

Liner Seams: ☐ Welded ☐ Factory ☐ Other _____

4.
☐ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC

Volume: _____bbl Type of fluid: Manufacturer:

Tank Construction material:

☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off

☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other

Liner type: Thickness _____mil ☐ HDPE ☐ PVC ☐ Other _____

5.
☐ **Alternative Method:**

Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

11.
Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9
- ☐ Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____

☐ Previously Approved Operating and Maintenance Plan API Number: _____ *(Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)*

13.
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H_2S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

14.
Proposed Closure: 19.15.17.13 NMAC
Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

Type: ☐ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☒ Permanent Pit ☐ Below-grade Tank ☐ Closed-loop System ☐ Alternative

Proposed Closure Method: ☒ Waste Excavation and Removal
- ☐ Waste Removal (Closed-loop systems only)
- ☐ On-site Closure Method (Only for temporary pits and closed-loop systems)
  - ☐ In-place Burial ☐ On-site Trench Burial
- ☐ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

15.
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☒ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☒ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- ☒ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☒ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☒ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- ☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

16.

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D NMAC)

Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please provide the information below) ☐ No

Required for impacted areas which will not be used for future service and operations:

☐ Soil Backfill and Cover Design Specifications - - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

17.

Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC

Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 50 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☐ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☐ No

18.

On-Site Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC

☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC

☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC

☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC

☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC

☐ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC

☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)

☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

19.
Operator Application Certification:

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Ms. Amy Mackey Title: Administrative Manager

Signature: Amy Mackey Date: 1-28-09

E-mail address: amackey1@elmridge.net Telephone: (505)632-3476 Ext. 201

20.
OCD Approval: ☐ Permit Application (including closure plan) ☑ Closure Plan (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature: Carl J. Chavez **Approval Date:** 2/19/2009

Title: Environmental Engineer **OCD Permit Number:**

21.
Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☐ **Closure Completion Date:**

22.
Closure Method:

☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)

☐ If different from approved plan, please explain.

23.
Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:

Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.

Disposal Facility Name: Disposal Facility Permit Number:

Disposal Facility Name: Disposal Facility Permit Number:

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

Required for impacted areas which will not be used for future service and operations:

☐ Site Reclamation (Photo Documentation)
☐ Soil Backfilling and Cover Installation
☐ Re-vegetation Application Rates and Seeding Technique

24.
Closure Report Attachment Checklist: ***Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.***

☐ Proof of Closure Notice (surface owner and division)
☐ Proof of Deed Notice (required for on-site closure)
☐ Plot Plan (for on-site closures and temporary pits)
☐ Confirmation Sampling Analytical Results (if applicable)
☐ Waste Material Sampling Analytical Results (required for on-site closure)
☐ Disposal Facility Name and Permit Number
☐ Soil Backfilling and Cover Installation
☐ Re-vegetation Application Rates and Seeding Technique
☐ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude Longitude NAD: ☐1927 ☐ 1983

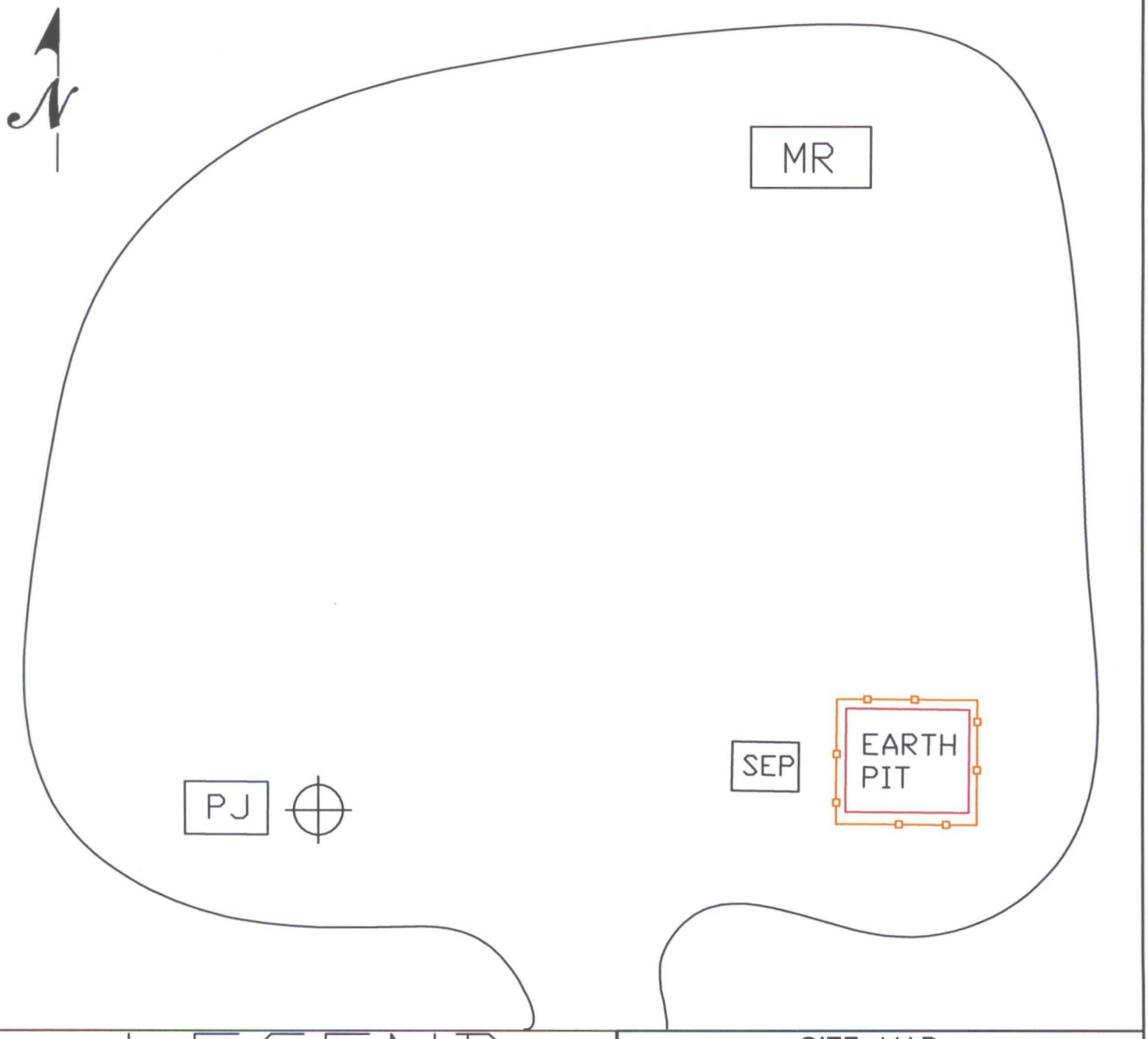
25.
Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): Title:

Signature: Date:

E-mail address: Telephone:



LEGEND

4' Tall Hogwire Fencing

Berm

Well Head

SITE MAP
ELM RIDGE EXPLORATION
WEST BISTI COAL 25-2Y
SEC 25 TWN 25N RGE 13W
SAN JUAN COUNTY, NEW MEXICO

SCALE: NTS	FIGURE NO. A	REV
PROJECT NO03056-0136		

REVISIONS

NO.	DATE	BY	DESCRIPTION

MAP DRWN	MDD	11/17/08	BASE DRWN		

ENVIRONMENTAL SCIENTISTS & ENGINEERS
ENVIROTECH
5796 U.S. HIGHWAY 64, FARMINGTON, NM 87410 505-632-0615

EARTHEN PIT CLOSURE PLAN

SITE NAME:

WEST BISTI COAL 25-2Y
UNIT LETTER K, SECTION 25, TOWNSHIP 25N, RANGE 13W
SAN JUAN COUNTY, NEW MEXICO
LATITUDE 36.370203 LONGITUDE -108.173319

SUBMITTED TO:

MR. WAYNE PRICE
NEW MEXICO OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DRIVE
SANTA FE, NEW MEXICO 87505
(505) 476-3490

SUBMITTED BY:

MS. AMY MACKEY
ELM RIDGE EXPLORATION
P.O. BOX 156
BLOOMFIELD, NEW MEXICO 87413
(505) 632-3476 EXT. 201

JANUARY 2009

EARTHEN PIT CLOSURE PLAN
ELM RIDGE EXPLORATION
WEST BISTI COAL 25-2Y
SAN JUAN COUNTY, NEW MEXICO

TABLE OF CONTENTS

INTRODUCTION 1

SCOPE OF CLOSURE ACTIVITIES 1

REPORTING 3

INTRODUCTION

Elm Ridge Exploration would like to submit a closure plan for the earthen pit at the West Bisti Coal 25-2Y well site located in the NE ¼ SW ¼ of Section 25, Township 25N, Range 13W, San Juan County, New Mexico. This closure plan has been prepared in conformance with the closure requirements of 19.15.17.13 NMAC.

SCOPE OF CLOSURE ACTIVITIES

The purpose of this closure plan is to provide the details of activities involved in the closure of the permanent unlined pit at the West Bisti Coal 25-2Y well site. The following scope of closure activities has been designed to meet this objective:

1) Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge Exploration, will close all former earthen pits prior to the closure date agreed upon by the New Mexico Oil Conservation Division of December 31, 2009.

2) In accordance with of Subsection A of 19.15.17.13 NMAC, Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge Exploration, will close any earthen pits at a date the division requires because of imminent danger to fresh water, public health, or the environment.

3) Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge Exploration, will close earthen pits first which seem to pose a greater risk to fresh water, public health, or the environment. This will be determined by the locations proximity to surface water sources and distance to groundwater.

4) No less than 60 days prior to any earthen pit closure activities, Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge Exploration, will provide written notification to the Santa Fe NMOCD office as well as a schedule of on-site activities, as in accordance with 19.15.17.13 Subsection J Paragraph (3) NMAC.

5) No less than 24 hours and no greater than one (1) week prior to earthen pit removal Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge Exploration, will provide written notification to the appropriate surface owner as well as a schedule of on-site activities, as in accordance with 19.15.17.13 Subsection J Paragraph (1) NMAC. Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge Exploration, will notify the surface owner by certified mail, return receipt requested, that the operator plans to close an earthen pit. The return receipt will be used to ensure that the surface owner has received written notification no less than 24 hours and no greater than one (1) week prior to the beginning of BGT closure activities. Evidence of mailing of the notice to the address of the surface owner shown in the county tax records is sufficient to demonstrate compliance with this requirement. Closure activities that will take place on tribal land will have notifications sent by certified mail, return receipt requested, to the appropriate tribal office. Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge Exploration, will notify the Bureau of Land Management (BLM) of closure activities for wells located on federal land per a Sundry Notice, as in accordance with 19.15.17.13 Subsection J Paragraph (1) NMAC. All notices will be sent in such a way that the surface owner received notice at least 24 hours prior to the beginning of

closure activities.

6) Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge Exploration, will remove all liquids, and/or sludge, to visual extents, prior to closure sampling. Material will be disposed of at Envirotech's Landfarm #2, Permit # NM-01-0011, TNT Environmental Inc. Landfarm, Permit # NM-01-0008, Industrial Ecosystems Inc. (IEI) Landfarm, Permit # NM-01-0010B or Basin Disposal, Permit # NM-01-0005, depending on the consistence of the material removed, as in accordance with 19.15.17.13 Subsection C Paragraph (1) NMAC .

7) Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge Exploration, will remove all on-site equipment associated with this earthen pit unless it is required for some other purpose, as in accordance with 19.15.17.13 Subsection C Paragraph (2) NMAC. The equipment that meets the requirements of 19.15.9.712 Subsection A NMAC and 19.15.9.712 Subsection D Paragraph (1) will be disposed of at San Juan County Regional Landfill. Waste that is classified by 19.15.9.712 Subsection D Paragraph (2) will be sampled accordingly to determine acceptance of this material at the San Juan County Regional Landfill. Waste that is unable to be accepted at the San Juan County Regional Landfill will be submitted to the OCD on a case-by-case basis in accordance with Paragraph (3) of Subsection D of 19.15.9.712.

8) Once the earthen pit is removed to visual extents of contamination, a five (5)-point composite sample will be collected from directly below the liner(s) or at native soil. Additional discrete samples will be collected from any area that is wet, discolored, or show other evidence of a release. All samples being collected will be analyzed for benzene, and total BTEX via USEPA Method 8021B, TPH via USEPA Method 418.1, and chlorides via USEPA 300.1, as in accordance with 19.15.17.13 Subsection C Paragraph (3) NMAC.

9) Depending on soil sample results the area will be either backfilled or the area will be excavated.
    a. If soil samples do not exceed the regulatory standards of 0.2 mg/kg benzene, 50 mg/kg BTEX, 100 mg/kg TPH, and 250 mg/kg or background concentration of chlorides, as in accordance with 19.15.17.13 Subsection C Paragraph (3) NMAC.
        i. Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge Exploration, shall submit a Form C-141 with the laboratory results so that the division may review the results to determine if additional delineation is required in accordance with Paragraph (4) of Subsection C of 19.15.17.13 NMAC.
        ii. Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge Exploration, will backfill the excavation or impacted area with non-waste containing, earthen material, in accordance with 19.15.17.13 Subsection E Paragraph (6) NMAC. A soil cover shall be installed for all backfilled excavations consisting of the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater in accordance with Subsections H of 19.15.17.13 NMAC. The operator shall construct the soil cover to the site's existing grade and prevent ponding of water and erosion of the cover material.
        iii. All areas of the well site that are no longer utilized on a day to day basis for the production of oil and/or gas, Elm Ridge Exploration, or a

contractor acting on behalf of Elm Ridge Exploration, will substantially restore, re-contour and re-vegetate the areas, in accordance with 19.15.17.13 Subsections G and I NMAC. The operator shall notify the division when it has been re-seeded and when it has achieved successful re-vegetation. For re-vegetation methods, please see attached re-vegetation plan.

b. If soil samples exceed the regulatory standards stated above.
   i. Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge Exploration, shall submit a Form C-141 with the laboratory results so that the division may review the results to determine if additional delineation is required in accordance with Paragraph (4) of Subsection C of 19.15.17.13 NMAC.
   ii. Activities beyond this point will be in accordance with 19.15.3.116 NMAC and 19.15.11.19 NMAC.

REPORTING

Elm Ridge Exploration will submit a closure report within 60 days following the earthen pit closure. The closure report will consist of a form C-144 with all supporting data and a form C-141 with all supporting data. The supporting data will include proof of closure notice to the surface owner and the OCD, confirmation sampling analytical results, a site diagram, soil backfilling and cover installation, re-vegetation rates, re-seeding techniques and site reclamation photo documentation if applicable, along with all other information related to the onsite activities.

We appreciate the opportunity to be of service. If you have any questions or require further information, please do not hesitate to contact our office at (505) 632-3476 Ext. 201.

Respectfully Submitted:
Elm Ridge Exploration

Amy Mackey
Elm Ridge Exploration

Elm Ridge Exploration

Re-Seeding Techniques and Seed Mixture Ratios

These applied practices by Elm Ridge Exploration will at a minimum comply with the New Mexico Oil Conservation Divisions rule 19.15.17.13, Subsection I NMAC Elm Ridge Exploration has adopted these re-seeding application techniques, ratios and mixtures as their standard operating procedures.

1. The first growing season after closure of a below grade tank or pit, all areas of the well site not utilized for the production of oil and/or gas on a daily basis will be re-seeded with the specified seed mixture.

2. The seed mixture used will be certified with no primary or secondary noxious weeds in seed mixtures. The seed labels from each bag shall be available for inspection while seed is being sown.

3. The operator shall accomplish seeding by drilling on the contour whenever practical or by other division-approved methods. The operator shall obtain vegetative cover that equals 70% of the native perennial vegetative cover (un-impacted by overgrazing, fire or other intrusion damaging to native vegetation) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover through two successive growing seasons. During the two growing seasons that prove viability, there shall be no artificial irrigation of the vegetation.

4. Hand seeding with hydro-mulch, excelsior netting or mulch with netting is required on the cut/fill slopes. Mulch will be spread at a rate of 2,000-3,000 pounds per acre.

5. Compacted areas determined by visual inspection will be ripped to a depth of twelve (12) inches below ground surface and disked to a depth of six (6) inches before seeding. Seeding shall be done with a disk type drill with two (2) boxes for various seed sizes. The drill rows shall be eight (8) to ten (10) inches apart. Seed shall be planted at no less than one-half (1/2) inch deep or more than one (1) inch deep. The seeder shall be followed with a drag, packer, or roller to ensure uniform coverage of the seed and adequate compaction. Drilling shall be done on the contour where possible, but not up and down the slope.

6. Where slopes are too steep for contour drilling a hand seeder shall be used. Seed shall be covered to the depth stated above by whatever means is practical. If the seed is unable to be covered by the means listed above, the prescribed seed mixture amount will be doubled.

7. Elm Ridge Exploration shall repeat seeding or planting until it successfully achieves the required vegetative cover of 70% of the native perennial vegetation cover.

8. Upon abandonment of a well site, if the retention of the access road is not considered necessary for the management and multiple uses of the natural resources, or by the surface owner, it will be ripped a minimum of twelve (12) inches in depth. After ripping, water bars will be installed. All ripped surfaces are to be protected from vehicular travel by construction of a dead end ditch and earthen barricade at the entrance to these ripped areas. Re-seeding of areas affected by the ditch and barriers will be re-seeded if necessary.

9. Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge Exploration, will inform the division once successful re-vegetation has occurred.

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

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

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Elm Ridge Exploration	Contact: Amy Mackey
Address: PO Box 156, Bloomfield, NM 87413	Telephone No.: (505) 632-3476 Ext 201
Facility Name: West Bisti Coal 25-2Y	Facility Type: Gas Well

Surface Owner: Federal	Mineral Owner:	Lease No.: NM 31311

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	25	25N	13W	1890	FSL	1810	FWL	San Juan

Latitude 36.370115 **Longitude** -108.173372

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: Unknown	Volume Recovered: Unknown
Source of Release: Earth Pit	Date and Hour of Occurrence: Historical	Date and Hour of Discovery: NA
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Produced Water from a gas well at the above mentioned location formerly discharged into an earthen pit on location. The well has been altered to no longer drain into an earthen pit, but instead into an Above Ground Storage Tank (AST).

Describe Area Affected and Cleanup Action Taken.*
On September 24, 2009, 'Production Sludge' was removed from the earthen pit to extents of approximately 24' x 22' x 8' below ground surface. Sludge was removed to visual extents of contamination, where confirmation samples were collected; see attached ***Analytical Results***. A sample was collected at the bottom at eight (8) feet below ground surface, and a composite sample was collected from each of the four (4) walls at 24' x 22' and analyzed in the field for TPH via USEPA Method 418.1, and in Envirotech's laboratory for benzene and BTEX via USEPA Method 8021 and for total chlorides via USEPA Method 4500B. All samples returned results below 100 mg/kg TPH, 0.2 mg/kg of benzene, 50 mg/kg of total BTEX and the 250 mg/kg total chloride standard, except for the sample collected from the north wall, which returned results of 295 mg/kg total chlorides, 260 mg/kg above the background determined for this site. This confirms that a release has occurred. Please see the attached West Bisti Coal 25-2Y Closure Plan.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ms. Amy Mackey	Approved by District Supervisor:	
Title: Administrative Manager	Approval Date:	Expiration Date:
E-mail Address: amackey1@elmridge.net	Conditions of Approval:	Attached ☐
Date: 11/19/09 Phone: 505-632-3476 Ext 201		

* Attach Additional Sheets If Necessary

RELEASE CLOSURE PLAN

SITE NAME:

WEST BISTI COAL 25-2Y
UNIT LETTER K, SECTION 25, TOWNSHIP 25N, RANGE 13W
SAN JUAN COUNTY, NEW MEXICO
LATITUDE 36.370115 LONGITUDE -108.173372

SUBMITTED TO:

MR. BRAD JONES
NEW MEXICO OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DRIVE
SANTA FE, NEW MEXICO 87505
(505) 476-3490

SUBMITTED BY:

MS. AMY MACKEY
ELM RIDGE EXPLORATION
P.O. BOX 156
BLOOMFIELD, NEW MEXICO 87413
(505) 632-3476 EXT. 201

OCTOBER 2009

INTRODUCTION

The purpose of this release closure plan is to provide the details of activities involved in the closure of the confirmed release from the former earthen pit located at the West Bisti Coal 25-2Y well site located in Unit K, Section 25, Township 25N, Range 13W, San Juan County, New Mexico. On September 24, 2009, 'production sludge' was removed from the former earthen pit located at the West Bisti Coal 25-2Y well site. The 'production sludge' was removed to visual extents of approximately 24' x 22' x 8' below the ground surface (BGS). One (1) composite sample was collected at these extents of excavation from each of the four (4) walls, and one (1) sample was collected from the bottom at eight (8) feet BGS. Each of these earthen pit samples were analyzed in the field for total petroleum hydrocarbons (TPH) via USEPA Method 418.1 with all samples returning results below the 100 mg/kg standard required by the 'Pit Rule'. Each sample was then collected into a four (4)-ounce glass jar, capped headspace free, and transported with ice under chain of custody to Envirotech's laboratory to be analyzed for benzene and BTEX via USEPA Method 8021 and for total chlorides via USEPA Method 4500B. Each of the samples returned results below the 100 mg/kg TPH standard, the 0.2 mg/kg benzene standard, the 50 mg/kg BTEX standard and the 250 mg/kg above background total chloride standard, except the sample collected from the north wall, which returned chloride results of 295 mg/kg; see ***Analytical Results***. A background sample was collected, and analyzed in Envirotech's laboratory for total chlorides via USEPA Method 4500B. The background sample returned results of 35 mg/kg total chloride. This data shows that the sample collected from the north wall returned results of 260 mg/kg above the background determined for this site, 10 mg/kg above the regulatory limit, confirming that a release has occurred at this site.

Closure Plan

Elm Ridge Exploration is proposing to close the remainder of the earthen pit in place citing precedence set forth in the New Mexico Oil Conservation Division (NMOCD) 'Pit Rule'.

- The samples collected from the earthen pit were dry, and did not contain groundwater.
- No water wells or cathodic well data exists in the area within 1 mile; see attached ***iWATERS Database Search***. A water well is shown approximately 2.29 miles to the south-east with a depth to groundwater of 100 feet. This well is approximately 155 feet lower in elevation than the Bisti Coal 25-2Y well site; see attached ***Topographic Map***. This indicates that the depth to groundwater at the West Bisti Coal 25-2Y well site is over 100 feet.
- The nearest surface water is approximately 5,075 feet to the south-east of the West Bisti Coal 25-2Y well site; see attached ***Topographic Map***.
- According to an iWATERS database search, no registered water wells exist within 1,000 feet of the West Bisti Coal 25-2Y well site; see attached ***iWATERS Database Search***.
- The West Bisti Coal 25-2Y well site is not located within an area overlying a subsurface mine; see attached ***Mine Map***.
- The West Bisti Coal 25-2Y well site is not within 300 feet of a permanent residence, school, hospital, institution or church; see attached ***Aerial Photograph***.

- The West Bisti Coal 25-2Y well site is not within incorporated municipal boundaries; see attached ***Topographic Map***.

- The West Bisti Coal 25-2Y well site is not located within 500 feet of a wetland; see attached ***Wetlands Map***.

- The West Bisti Coal 25-2Y well site is not located within an unstable area. This data was obtained from frequent site visits during closure activities by Envirotech, Inc. personnel.

- The West Bisti Coal 25-2Y well site is not within a 100 year flood plain; see attached ***FEMA Map.***

Currently, the NMOCD allows on-site burial of drill pits that meet these criteria, outlined in 19.15.17.10 Subpart A NMAC. The chloride levels found in the earthen pit at the West Bisti Coal 25-2Y well site are well below the 1,000 mg/kg chloride standard allowed for on-site burial at well sites with groundwater depths greater than 100 feet from the bottom of the drill pit based on rule 19.15.17.10 Subpart C . Elm Ridge Exploration is proposing to bury the remainder of the chlorides found at this site based on the analytical results found and the siting criteria determined for this site, which indicate that the chlorides levels found at this site "do not pose a threat to present or foreseeable beneficial use of fresh waters, public health and the environment."

REPORTING

Elm Ridge Exploration will submit a closure report within 60 days following the earthen pit final closure. The closure report will consist of a form C-144 with all supporting data. The supporting data will include proof of closure notice to the surface owner and the OCD, confirmation sampling analytical results, a site diagram, soil backfilling and cover installation, re-vegetation rates, re-seeding techniques and site reclamation photo documentation if applicable, along with all other information related to the onsite activities.

We appreciate the opportunity to be of service. If you have any questions or require further information, please do not hesitate to contact our office at (505) 632-3476 Ext. 201.

Respectfully Submitted:
Elm Ridge Exploration

Amy Mackey
Elm Ridge Exploration

envirotech

EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Elm Ridge Exploration	Project #:	03056-0219
Sample No.:	1	Date Reported:	10/22/2009
Sample ID:	North Wall	Date Sampled:	9/24/2009
Sample Matrix:	Soil	Date Analyzed:	9/24/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	**24**	**20.0**

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: **West Bisti Coal 25-2Y**

Instrument calibrated to 200 ppm standard. Zeroed before each sample

Analyst

Toni McKNight
Printed

James McDaniel
Printed

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 info@envirotech-inc.com envirotech-inc.com

envirotech

EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Elm Ridge Exploration	Project #:	03056-0219
Sample No.:	2	Date Reported:	10/22/2009
Sample ID:	South Wall	Date Sampled:	9/24/2009
Sample Matrix:	Soil	Date Analyzed:	9/24/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	**16**	**20.0**

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: **West Bisti Coal 25-2Y**

Instrument calibrated to 200 ppm standard. Zeroed before each sample

Toni McKnight
Analyst

Toni McKNight
Printed

James McDaniel
Printed

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 info@envirotech-inc.com envirotech-inc.com

envirotech

EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Elm Ridge Exploration	Project #:	03056-0219
Sample No.:	3	Date Reported:	10/22/2009
Sample ID:	East Wall	Date Sampled:	9/24/2009
Sample Matrix:	Soil	Date Analyzed:	9/24/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	**24**	**20.0**

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: **West Bisti Coal 25-2Y**

Instrument calibrated to 200 ppm standard. Zeroed before each sample

Toni McKnight
Analyst

Toni McKNight
Printed

James McDaniel
Printed

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 info@envirotech-inc.com envirotech-inc.com

envirotech

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Elm Ridge Exploration	Project #:	03056-0219
Sample No.:	4	Date Reported:	10/22/2009
Sample ID:	West Wall	Date Sampled:	9/24/2009
Sample Matrix:	Soil	Date Analyzed:	9/24/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	**20**	**20.0**

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: **West Bisti Coal 25-2Y**

Instrument calibrated to 200 ppm standard. Zeroed before each sample

Toni McKnight
Analyst

Toni McKNight
Printed

James McDaniel
Printed

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 info@envirotech-inc.com envirotech-inc.com

envirotech

EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Elm Ridge Exploration	Project #:	03056-0219
Sample No.:	5	Date Reported:	10/22/2009
Sample ID:	Bottom @ 8' BGS	Date Sampled:	9/24/2009
Sample Matrix:	Soil	Date Analyzed:	9/24/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	**24**	**20.0**

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: **West Bisti Coal 25-2Y**

Instrument calibrated to 200 ppm standard. Zeroed before each sample

Analyst

Toni McKNight
Printed

James McDaniel
Printed

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 info@envirotech-inc.com envirotech-inc.com

envirotech

CONTINUOUS CALIBRATION
EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS

Cal. Date: 24-Sep-09

Parameter	Standard Concentration mg/L	Concentration Reading mg/L
TPH	100	
	200	210
	500	
	1000	

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

Toni McKnight
Analyst

10/22/09
Date

Toni McKnight
Print Name

Review

10/22/09
Date

James McDaniel
Print Name

5796 US Highway 64, Farmington, NM 87401 | Ph (505)632-0615 Fr (800)362-1879 Fx (505) 632-1865 info@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	ElmRidge	Project #:	03056-0219
Sample ID:	East Wall	Date Reported:	09-30-09
Laboratory Number:	51822	Date Sampled:	09-24-09
Chain of Custody:	8049	Date Received:	09-24-09
Sample Matrix:	Soil	Date Analyzed:	09-29-09
Preservative:	Cool	Date Extracted:	09-28-09
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**ND**	**0.9**
Toluene	**3.7**	**1.0**
Ethylbenzene	**2.5**	**1.0**
p,m-Xylene	**3.2**	**1.2**
o-Xylene	**3.3**	**0.9**
Total BTEX	**12.7**	

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: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	ElmRidge	Project #:	03056-0219
Sample ID:	South Wall	Date Reported:	09-30-09
Laboratory Number:	51823	Date Sampled:	09-24-09
Chain of Custody:	8049	Date Received:	09-24-09
Sample Matrix:	Soil	Date Analyzed:	09-29-09
Preservative:	Cool	Date Extracted:	09-28-09
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**ND**	**0.9**
Toluene	**4.4**	**1.0**
Ethylbenzene	**5.7**	**1.0**
p,m-Xylene	**6.0**	**1.2**
o-Xylene	**5.7**	**0.9**
Total BTEX	**21.8**	

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: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	ElmRidge	Project #:	03056-0219
Sample ID:	Bottom 1' BGS of Pit	Date Reported:	09-30-09
Laboratory Number:	51824	Date Sampled:	09-24-09
Chain of Custody:	8049	Date Received:	09-24-09
Sample Matrix:	Soil	Date Analyzed:	09-29-09
Preservative:	Cool	Date Extracted:	09-28-09
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**ND**	**0.9**
Toluene	**ND**	**1.0**
Ethylbenzene	**ND**	**1.0**
p,m-Xylene	**ND**	**1.2**
o-Xylene	**ND**	**0.9**
Total BTEX	**ND**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	**96.0 %**
	1,4-difluorobenzene	**96.0 %**
	Bromochlorobenzene	**96.0 %**

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: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	ElmRidge	Project #:	03056-0219
Sample ID:	West Wall	Date Reported:	09-30-09
Laboratory Number:	51825	Date Sampled:	09-24-09
Chain of Custody:	8049	Date Received:	09-24-09
Sample Matrix:	Soil	Date Analyzed:	09-29-09
Preservative:	Cool	Date Extracted:	09-28-09
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**ND**	**0.9**
Toluene	**ND**	**1.0**
Ethylbenzene	**ND**	**1.0**
p,m-Xylene	**ND**	**1.2**
o-Xylene	**ND**	**0.9**
Total BTEX	**ND**	

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: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	ElmRidge	Project #:	03056-0219
Sample ID:	North Wall	Date Reported:	09-30-09
Laboratory Number:	51826	Date Sampled:	09-24-09
Chain of Custody:	8049	Date Received:	09-24-09
Sample Matrix:	Soil	Date Analyzed:	09-29-09
Preservative:	Cool	Date Extracted:	09-28-09
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**ND**	**0.9**
Toluene	**ND**	**1.0**
Ethylbenzene	**ND**	**1.0**
p,m-Xylene	**ND**	**1.2**
o-Xylene	**ND**	**0.9**
Total BTEX	**ND**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	**96.0 %**
	1,4-difluorobenzene	**96.0 %**
	Bromochlorobenzene	**96.0 %**

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: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505)632-0615 Fr (800)362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	09-29-BT QA/QC	Date Reported:	09-30-09
Laboratory Number:	51803	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	09-29-09
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/Kg)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc	Detect. Limit
Benzene	1.1545E+006	1.1568E+006	**0.2%**	**ND**	**0.1**
Toluene	6.7383E+005	6.7518E+005	**0.2%**	**ND**	**0.1**
Ethylbenzene	5.2883E+005	5.2989E+005	**0.2%**	**ND**	**0.1**
p,m-Xylene	1.2809E+006	1.2835E+006	**0.2%**	**ND**	**0.1**
o-Xylene	4.9060E+005	4.9159E+005	**0.2%**	**ND**	**0.1**

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect. Limit
Benzene	**1.4**	**1.2**	**14.3%**	**0 - 30%**	**0.9**
Toluene	**17.0**	**18.1**	**6.5%**	**0 - 30%**	**1.0**
Ethylbenzene	**5.3**	**5.2**	**1.9%**	**0 - 30%**	**1.0**
p,m-Xylene	**12.8**	**13.0**	**1.6%**	**0 - 30%**	**1.2**
o-Xylene	**4.0**	**4.1**	**2.5%**	**0 - 30%**	**0.9**

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	**1.4**	**50.0**	**50.4**	**98.1%**	**39 - 150**
Toluene	**17.0**	**50.0**	**65.9**	**98.4%**	**46 - 148**
Ethylbenzene	**5.3**	**50.0**	**51.5**	**93.1%**	**32 - 160**
p,m-Xylene	**12.8**	**100**	**111**	**98.1%**	**46 - 148**
o-Xylene	**4.0**	**50.0**	**52.6**	**97.4%**	**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 51803, 51822 - 51826, 51829, 51842, and 51846 - 51847.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

Chloride

Client:	Elm Ridge	Project #:	03056-0219
Sample ID:	East Wall	Date Reported:	09-30-09
Lab ID#:	51822	Date Sampled:	09-24-09
Sample Matrix:	Soil	Date Received:	09-24-09
Preservative:	Cool	Date Analyzed:	09-29-09
Condition:	Intact	Chain of Custody:	8049

Parameter	Concentration (mg/Kg)
Total Chloride	**230**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

Chloride

Client:	Elm Ridge	Project #:	03056-0219
Sample ID:	South Wall	Date Reported:	09-30-09
Lab ID#:	51823	Date Sampled:	09-24-09
Sample Matrix:	Soil	Date Received:	09-24-09
Preservative:	Cool	Date Analyzed:	09-29-09
Condition:	Intact	Chain of Custody:	8049

Parameter	Concentration (mg/Kg)
Total Chloride	**130**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983. Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505)632-0615 Fr (800)362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

Chloride

Client:	Elm Ridge	Project #:	03056-0219
Sample ID:	Bottom (1' BGS of Pit)	Date Reported:	09-30-09
Lab ID#:	51824	Date Sampled:	09-24-09
Sample Matrix:	Soil	Date Received:	09-24-09
Preservative:	Cool	Date Analyzed:	09-29-09
Condition:	Intact	Chain of Custody:	8049

Parameter	Concentration (mg/Kg)
Total Chloride	**175**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983. Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

Chloride

Client:	Elm Ridge	Project #:	03056-0219
Sample ID:	West Wall	Date Reported:	09-30-09
Lab ID#:	51825	Date Sampled:	09-24-09
Sample Matrix:	Soil	Date Received:	09-24-09
Preservative:	Cool	Date Analyzed:	09-29-09
Condition:	Intact	Chain of Custody:	8049

Parameter	Concentration (mg/Kg)
Total Chloride	**185**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

Chloride

Client:	Elm Ridge	Project #:	03056-0219
Sample ID:	North Wall	Date Reported:	09-30-09
Lab ID#:	51826	Date Sampled:	09-24-09
Sample Matrix:	Soil	Date Received:	09-24-09
Preservative:	Cool	Date Analyzed:	09-29-09
Condition:	Intact	Chain of Custody:	8049

Parameter	Concentration (mg/Kg)
Total Chloride	**295**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Earth Pit Closure / West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

CHAIN OF CUSTODY RECORD

8049

Client:	Project Name / Location:	ANALYSIS / PARAMETERS
ElmRidge	Earth Pit Closure / West Bisti Coal 25-24	
Client Address:	Sampler Name: Toni McKnight	
Client Phone No.:	Client No.: 03056-0219	

Sample No./ Identification	Sample Date	Sample Time	Lab No.	Sample Matrix	No./Volume of Containers	Preservative: $HgCl_2$	Preservative: HCl	Preservative: Cool	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	PAH	TPH (418.1)	CHLORIDE				Sample Cool	Sample Intact
East Wall	9/24/09	12:00	51822	(Soil) Solid Sludge Aqueous	1/40z			✓		✓								✓				✓	✓
South Wall	9/24/09	11:58	51823	(Soil) Solid Sludge Aqueous	1/40z			✓		✓								✓				✓	✓
Bottom (1' BGS of Pit)	9/24/09	11:04	51824	(Soil) Solid Sludge Aqueous	1/40z			✓		✓								✓				✓	✓
West Wall	9/24/09	12:02	51825	(Soil) Solid Sludge Aqueous	1/40z			✓		✓								✓				✓	✓
North Wall	9/24/09	11:56	51826	(Soil) Solid Sludge Aqueous	1/40z			✓		✓								✓				✓	✓
Background	9/24/09	12:15	51827	(Soil) Solid Sludge Aqueous	1/40z			✓		✓								✓				✓	✓
				Soil Solid Sludge Aqueous																			
				Soil Solid Sludge Aqueous																			
				Soil Solid Sludge Aqueous																			
				Soil Solid Sludge Aqueous																			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	9/24/09	17:15	Kendall Argabright	9/24/09	17:15
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

envirotech
Analytical Laboratory
5796 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • lab@envirotech-inc.com

envirotech
Analytical Laboratory

Chloride

Client:	Elm Ridge	Project #:	03056-0219
Sample ID:	Background	Date Reported:	10-19-09
Lab ID#:	52112	Date Sampled:	10-14-09
Sample Matrix:	Soil	Date Received:	10-15-09
Preservative:	Cool	Date Analyzed:	10-16-09
Condition:	Intact	Chain of Custody:	8202

Parameter	Concentration (mg/Kg)
Total Chloride	**35**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983. Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **West Bisti Coal 25-2Y.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

CHAIN OF CUSTODY RECORD

8202

Client: Elmridge	Project Name / Location: West Bisti Coal 25-24
Client Address:	Sampler Name: R. Jones
Client Phone No.:	Client No.: 03056-0219

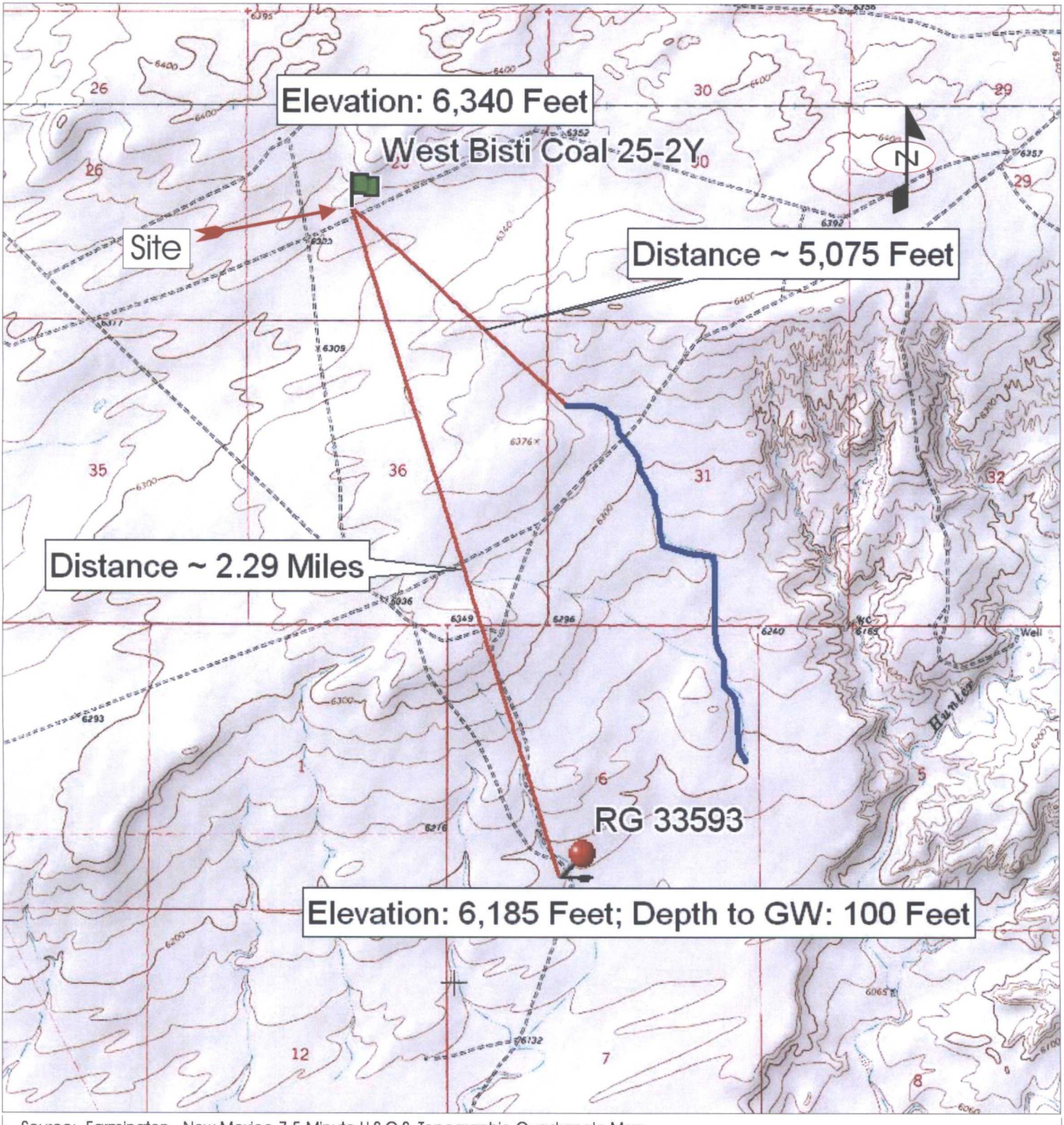
ANALYSIS / PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab No.	Sample Matrix	No./Volume of Containers	Preservative HgCl₂	Preservative HCl	Preservative cool	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	PAH	TPH (418.1)	CHLORIDE				Sample Cool	Sample Intact
Background	10/14/09	16:00	52112	(Soil) Sludge Solid Aqueous	1-4oz			✓										✓				✓	✓
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	10/15	8:45	[signature]	10/15/09	0845
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

envirotech
Analytical Laboratory

5796 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • lab@envirotech-inc.com



Source: Farmington, New Mexico 7.5 Minute U.S.G.S. Topographic Quadrangle Map
Scale: 1:24,000 1" = 2000'

Elm Ridge Exploration West Bisti Coal 25-2Y Section 25, Township 25N, Range 13W San Juan County, New Mexico	ENVIROTECH INC. ENVIRONMENTAL SCIENTISTS & ENGINEERS 5796 U.S. HIGHWAY 64 FARMINGTON, NEW MEXICO 87401 PHONE (505) 632-0615	Vicinity Map Figure 1
PROJECT No 03056-0219 | Date Drawn: 10/22/09		DRAWN BY: James McDaniel | PROJECT MANAGER: James McDaniel

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	Sub basin	Use	County	Q 64	Q 16	Q 4	Sec	Twp	Rng	X	Y	Depth Well	Depth Water	Water Column
RG 33593		DOM	XX	4		06	24N	12W		216282	4026140*	155	100	55

Average Depth to Water: **100 feet**

Minimum Depth: **100 feet**

Maximum Depth: **100 feet**

Record Count: 1

PLSS Search:

Township: 24N **Range:** 12W

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

No records found.

PLSS Search:

Township: 25N **Range:** 13W

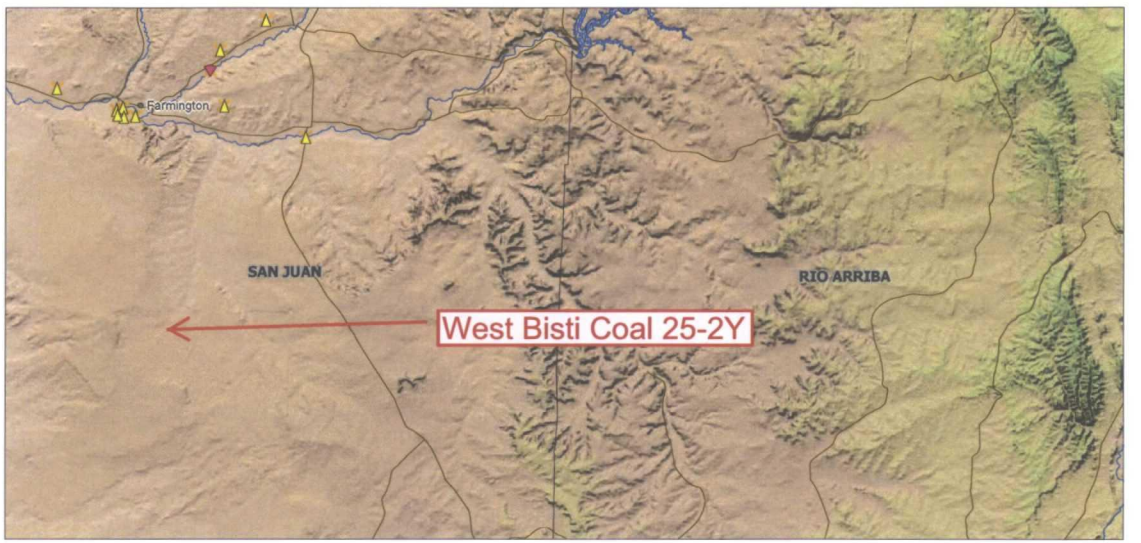
MMQonline Public Version

Mines, Mills & Quarries Commodity Groups

- Aggregate & Stone Mines
- Coal Mines
- Industrial Minerals Mines
- Industrial Minerals Mills
- Metal Mines and Mill Concentrate
- Potash Mines & Refineries
- Smelters & Refinery Ops.
- Uranium Mines
- Uranium Mills

Mines, Mills & Quarries Status

- Active Mining



SCALE 1 : 918,081

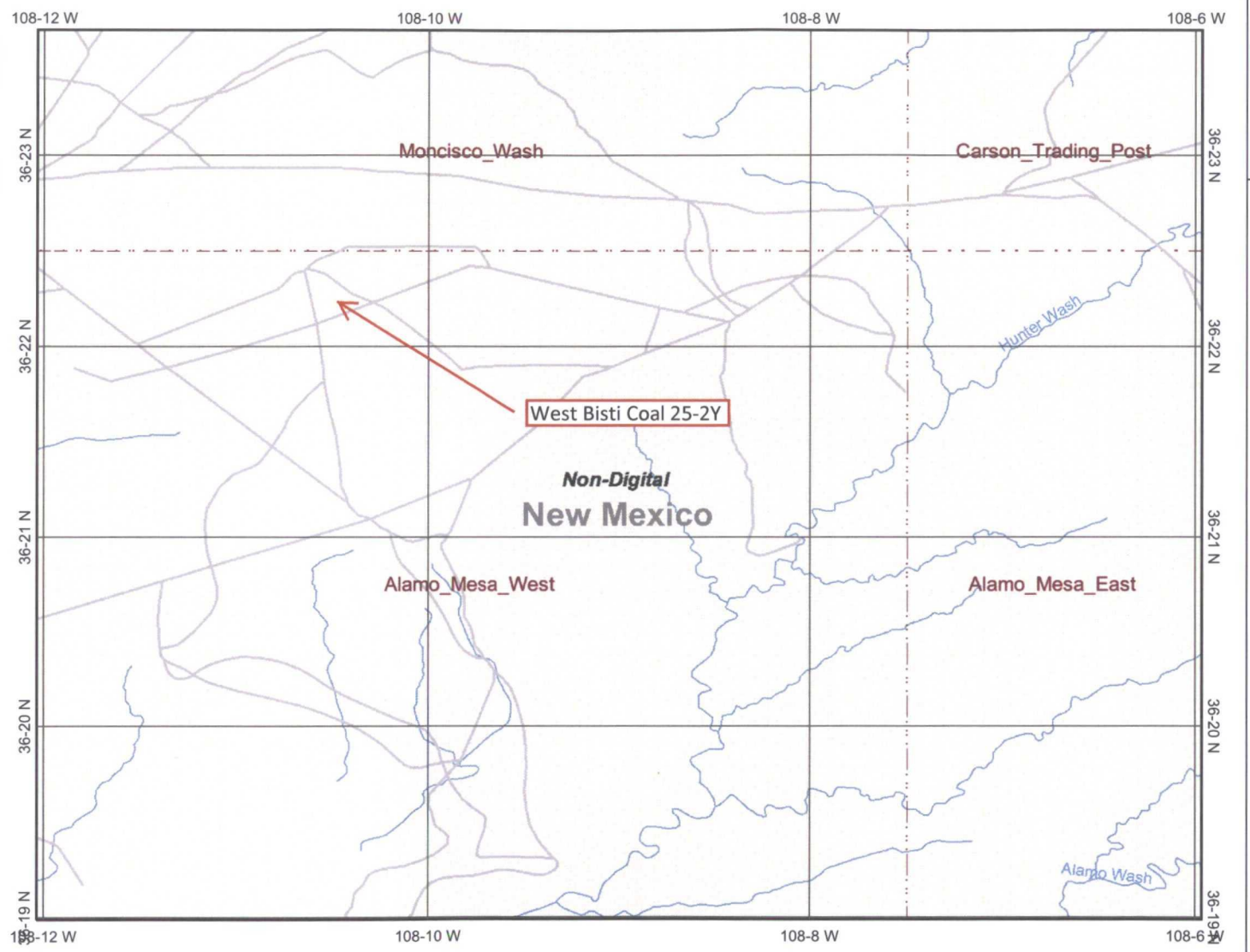
10 0 10 20 30

MILES

N

Aerial Photograph

Internet Mapping Framework

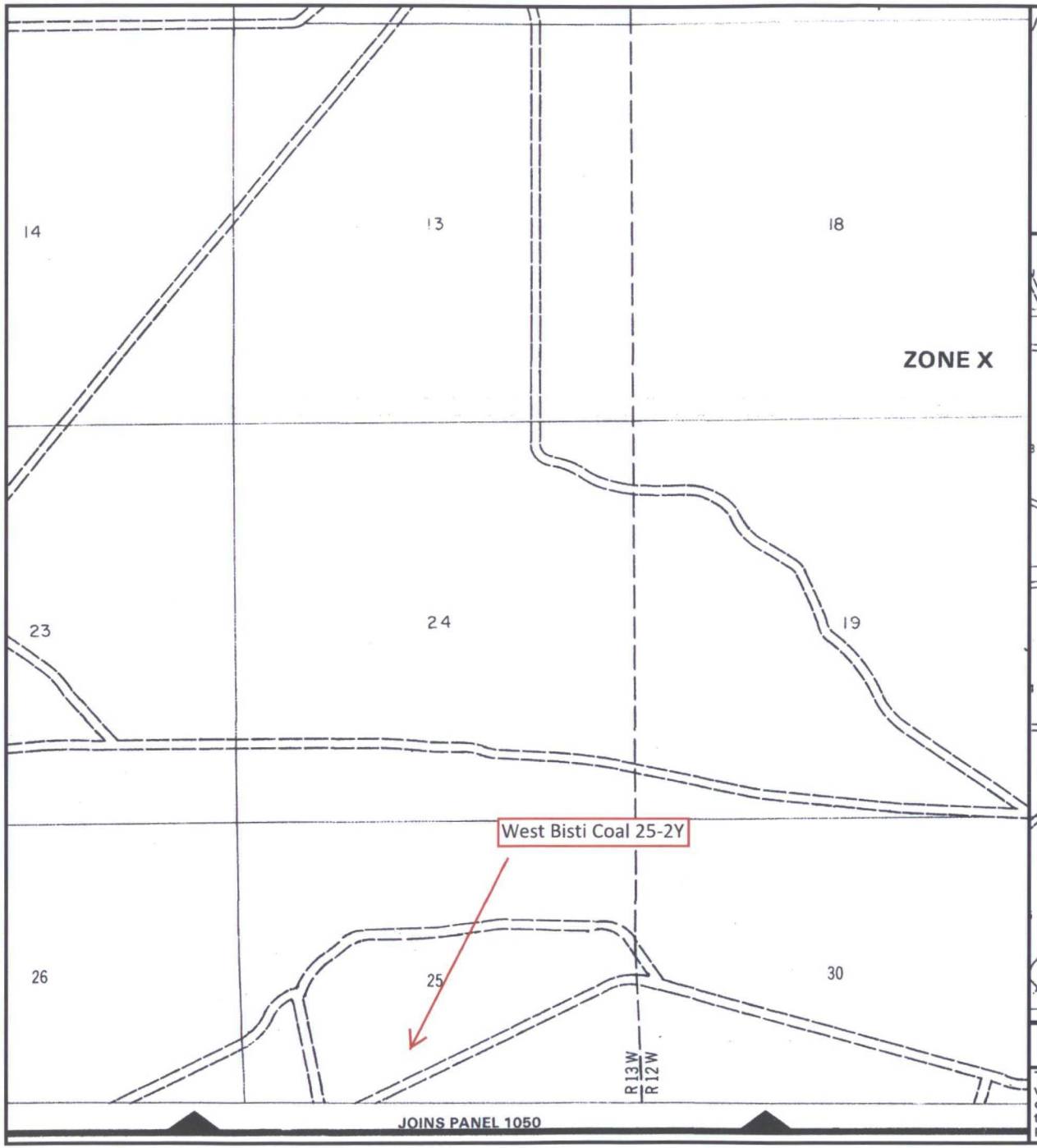


Legend

- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- Cities
- USGS Quad Index 24K
- Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan
- NHD Streams
- Counties 100K
- States 100K
- South America
- North America

Scale: 1:60,578

Map center: 36° 21' 19" N, 108° 9' 0" W



N

APPROXIMATE SCALE

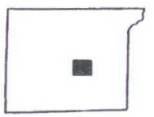
2000 0

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

SAN JUAN COUNTY,
NEW MEXICO
UNINCORPORATED AREAS

PANEL 875 OF 1450
(SEE MAP INDEX FOR PANELS NOT PRINTED)



PANEL LOCATION

COMMUNITY-PANEL NUMBER
350064 0875

EFFECTIVE DATE:
AUGUST 4, 1988

Federal Emergency Management Agency