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State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division

Submit 2 Copies to appropriate District Office in accordance

District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 Santa	1220 South St. Francis Dr. Santa Fe. NM 87505			with Rule 116 on back side of form	
Release Notificat	tion and Co	rrective A	ction		
	<b>OPERA</b>	ſOR	🛛 Initia	al Report 🔲 Final Report	
Name of Company: Elm Ridge Exploration	Contact: Am	y Mackey		,	
Address: P.O. Box 156, Bloomfield, NM 87413	Telephone N	lo.: (505) 632-3	3476 Ext 201		
Facinty Name. Dist Coal 28-1	Facinity Typ	e. Gas wen		)	
Surface Owner: Federal Mineral Own	ner:		Lease N	lo.: NM 51013	
LOCAT	ION OF REI	LEASE		· .	
Unit LetterSectionTownshipRangeFeet from theNoB2825N12W790	orth/South Line FNL	Feet from the 1850	East/West Line FEL	County San Juan	
Latitude36.377	25 Longitu	ide <u>-108.11417</u>	<u> </u>		
NATU	RE OF RELI	EASE			
Type of Release: Produced Water	Volume of	Release: Unknow	wn Volume F	Recovered: Unknown	
Source of Release: Earth Pit	Date and H Historical	lour of Occurrence	ce: Date and	Hour of Discovery: NA	
Was Immediate Notice Given?	If YES, To	Whom?			
By Whom?	Date and H	lour	· · · · · · · · · · · · · · · · · · ·	·····	
Was a Watercourse Reached?	If YES, Vo	lume Impacting	the Watercourse.		
If a Watercourse was Impacted, Describe Fully.*		· · · · ·			
Produced water from gas wen at the introduced location formerly dis into an earthen pit, but instead into an Above Ground Storage Tank (A Describe Area Affected and Cleanup Action Taken.* From August 10, 2009, through August 12, 2009, 'Production Sludge All sludge was taken to Envirotech's NMOCD permitted soil remedia where confirmation samples were collected; see attached <i>Analytical I</i> and a composite was collected from the four (4) walls at 20' x 20', an laboratory for benzene and BTEX via USEPA Method 8021 and for t x 20' due to well site equipment and the edge of the well pad. The we that a release has occurred at the above mentioned site; see <i>Analytica</i> with the district office of the OCD. I hereby certify that the information given above is true and complete regulations all operators are required to report and/or file certain releas public health or the environment. The acceptance of a C-141 report b should their operations have failed to adequately investigate and reme	AST). e' was removed fro ation facility, Land <b>Results</b> . A sample and analyzed in the total chlorides via all composite retu all composite retu of <b>Results</b> . Elm Ri to the best of my ase notifications and by the NMOCD m ediate contaminati	om the earthen pi ifarm #2. Sludge was collected at field for TPH via USEPA Method rned chloride res dge Exploration knowledge and u nd perform correc arked as "Final R on that pose a thu	t to extents of appro- e was removed to vi- the bottom at nine t USEPA Method 4 4500B. Excavation ults of 345 mg/kg a will comply with R understand that purs- ctive actions for rel- ceport" does not reli- reat to ground water	eximately 20' x 20' x 9' deep. isual extents of contamination, (9) feet below ground surface 18.1, and in Envirotech's n could not continue beyond 20' bove background, confirming ule 29 from this point forward suant to NMOCD rules and eases which may endanger ieve the operator of liability r, surface water, human health	
federal, state, or local laws and/or regulations.		OIL CON	SERVATION	DIVISION	
Signature:	Approved by	District Supervis	sor:		
Title: Administrative Manager	Approval Dat	ie:	Expiration	Date:	
E-mail Address: amackey1@elmridge.net	Conditions of	f Approval:		Attached	
Date: 6-13-70 Phone: 505-632-3476 Ext 201					

\* Attach Additional Sheets If Necessary



# EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Elm Ridge Exploration	Project #:	03056-0168
Sample No.:	1	Date Reported:	9/4/2009
Sample ID:	Bottom Composite @ 9'	Date Sampled:	8/10/2009
Sample Matrix:	Soil	Date Analyzed:	8/10/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	52	5.0

ND = Parameter not detected at the stated detection limit.

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

Comments: Bisti Coal 28-1

Instrument calibrated to 200 ppm standard. Zeroed before each sample

eview Robyn Jones **James McDaniel** Printed Printed

# Senvirotech

# EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Client:	Elm Ridge Exploration	Project #:	03056-0168
Sample No.:	2	Date Reported:	9/4/2009
Sample ID:	Wall Composite @ 20' x 20'	Date Sampled:	8/10/2009
Sample Matrix:	Soil	Date Analyzed:	8/10/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact	•	

		Det
	Concentration	Limit
Parameter	(mg/kg)	(mg/kg)

Total Petroleum Hydrocarbons	40	5.0
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ND = Parameter not detected at the stated detection limit.

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

Comments: Bisti Coal 28-1

Instrument calibrated to 200 ppm standard. Zeroed before each sample

Robyn Jones Printed

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James McDaniel Printed



CONTINUOUS CALIBRATION EPA METHOD 418.1 TOTAL PETROLEUM HYDROCARBONS

Cal. Date: 10-Aug-09

Parameter	Standard Concentration mg/L	Concentration Reading mg/L	
ТРН	100		
	200	193	*
	500	•	
	1000		

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

Robyn Jon Print Na Review **James McDaniel Print Name** 

Date



# EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Client:	Elmridge	Project #:	03056-0172
Sample ID:	Bottom (9' B.Pit)	Date Reported:	08-20-09
Laboratory Number:	51312	Date Sampled:	08-12-09
Chain of Custody No:	7754	Date Received:	08-17-09
Sample Matrix:	Soil	Date Extracted:	08-18-09
Preservative:	Cool	Date Analyzed:	08-19-09
Condition:	Intact	Analysis Requested:	8015 TPH

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

ND - Parameter not detected at the stated detection limit.

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

Comments: Bisti Coal 28-1

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Analyst	
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سلکم Review



# EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Elmridge	Project #:	03056-0172
Wall Composite	Date Reported:	08-20-09
51311	Date Sampled:	08-12-0 <del>9</del>
7754	Date Received:	08-17-09
Soil	Date Extracted:	08-18-09
Cool	Date Analyzed:	08-19-09
Intact	Analysis Requested:	8015 TPH
	Elmridge Wall Composite 51311 7754 Soil Cool Intact	ElmridgeProject #:Wall CompositeDate Reported:51311Date Sampled:7754Date Received:SoilDate Extracted:CoolDate Analyzed:IntactAnalysis Requested:

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

ND - Parameter not detected at the stated detection limit.

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

Comments: Bisti Coal 28-1

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Analys	t	0	

Review



# EPA Method 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

#### **Quality Assurance Report**

Client:	QA/QC		Project #:		N/A
Sample ID:	08-19-09 QA/	QC	Date Reported:		08-20-09
Laboratory Number:	51287		Date Sampled:		N/A
Sample Matrix:	Methylene Chlo	ride	Date Received:		N/A
Preservative:	N/A		Date Analyzed:		08-19-09
Condition:	N/A		Analysis Reque	sted:	ТРН
	· Il Call Date		C-COURF	Mi Differencei	Accept: Range
Gasoline Range C5 - C10	05-07-07	9.7902E+002	9.7941E+002	0.04%	0 - 15%
Diesel Range C10 - C28	05-07-07	9.3636E+002	9.3673E+002	0.04%	0 - 15%
Elentscones (me/Lome/Ke))	NS 2411 NO 25	Concentration		Detection	4 4
Gasoline Range C5 - C10	-	ŇĎ		0.2	-
Diesel Range C10 - C28		ND		0.1	
Total Petroleum Hydrocarbons		ND		0.2	
Duplicate conc. (ms//ksi)	Sample +	Duplicate	*% Difference	Accepti Range	¢1+
Gasoline Range C5 - C10	ND	ND	0.0%	0 - 30%	
Diesel Range C10 - C28	230	227	1.1%	0 - 30%	
Spike Cones (Intrike)	Sample	Spike Added		-% Recovery	Accept/Range
Gasoline Range C5 - C10	ND	250	243	97.2%	75 - 125%
Diesel Range C10 - C28	230	250	485	101%	75 - 125%

ND - Parameter not detected at the stated detection limit.

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

Comments:

QA/QC for Samples 51287 - 51290 and 51311 - 51312.

Analyst

-m Weeter Review



Client:	Elmridge	Project #:	03056-0172
Sample ID:	Bottom (9' B.Pit)	Date Reported:	08-20-09
Laboratory Number:	51312	Date Sampled:	08-12-09
Chain of Custody:	7754	Date Received:	08-17-09
Sample Matrix:	Soil	Date Analyzed:	08-19-09
Preservative:	Cool	Date Extracted:	08-18-09
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)	
Benzene	ND	0.9	
Toluene	4.7	1.0	
Ethylbenzene	1.2	1.0	
p,m-Xylene	4.7	1.2	
o-Xylene	3.6	0.9	
Total BTEX	14.2		

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: Bisti Coal 28-1

Analyst

Christin Multers Review



Client:	Elmridge	Project #:	03056-0172
Sample ID:	Wall Composite	Date Reported:	08-20-09
Laboratory Number:	51311	Date Sampled:	08-12-09
Chain of Custody:	7754	Date Received:	08-17-09
Sample Matrix:	Soil	Date Analyzed:	08-19-09
Preservative:	Cool	Date Extracted:	08-18-09
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)	
Benzene	ND	0.9	
Toluene	3.5	1.0	
Ethylbenzene	1.1	1.0	
p,m-Xylene	3.3	1.2	
o-Xylene	3.2	0.9	
Total BTEX	11.1		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	97.0 %
	1,4-difluorobenzene	97.0 %
	Bromochlorobenzene	97.0 %

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: Bisti Coal 28-1

Analyst

10070 Review



Client:	N/A		Project #:		N/A
Laboratory Number	U8-19-BI UA/UC		Date Reported:		08-20-09
Sample Matrix	Soil		Date Sampled.		N/A
Preservative:	N/A		Date Analyzed		08-19-09
Condition:	N/A		Analysis:		BTEX
P			····· <b>/·</b> ···		
Calibration and	- M-CaliRE	C-CaliRF	· / KDiff	Blank	Detect.
Dotection Elmit	*(ug/Ľ)	Accept: Ren	ge0 - 15%	Conc?	Eimin
Bennen a			0.00/	ND	
Benzene	4.0036E+006	4.0116E+006	0.2%	ND	0.1
	3.7371E+006	3.7446E+006	0.2%		0.1
Etnyibenzene	3.3158E+006	3.3224E+006	0.2%	ND	0.1
p,m-Xylene	8.5339E+006	8.5510E+006	0.2%	ND	0.1
o-vyiene	3.1635E+006	3.1698E+006	<b>Q.2%</b>	ND	U.1
			<b>*</b> -		
Duplicate Conce	ug/Kci)	Duplicate.	«%Diff):	AcceptiRange	DetectLimit
Renzene		A 7	A 49/	0 - 30%	0.0
Toluene	4.5	4.7	4.170	0 - 30%	0.9
Ethylhenzene	9.4	11.7	4.470	0 20%	1.0
n m-Yviene	5.4 24 0	0.0	5.0%	0.30%	1.0
p,ill-Aylene	24.0	22.0	5.0%	0 - 30%	1.2
	:				
Spike Conc. (ug/	(d)	Amount Spiked"	Spiked Sampley	Recovery	AcceptiRange
Benzene	4.9	50.0	53.8	98.0%	39 - 150
Toluene	11.4	50.0	59.2	96.4%	46 - 148
Ethylbenzene	94	50.0	56.2	94.6%	32 - 160
n m-Xvlene	24.0	100	112	04.0%	AG 140
o-Xviene	14.2	50.0	61 7	91.0%	40 - 140
U-Ayicine .	17.4	50.0	. 01.7	30.1%	40 - 140
ND - Parameter not o	letected at the stated detection limit.				
References:	Method 5030B, Purge-and-Trap, Test Metho December 1996.	ods for Evaluating	Solid Waste, SW-8-	46, USEPA,	
	Method 8021B, Aromatic and Halogenated Photoionization and/or Electrolytic Conducti	Volatiles by Gas Ct vity Detectors, SW	nromatography Usir -846, USEPA Dece	19 mber 1996.	
Comments:	04/0C for Samples 51287 - 512	\ 88 51309 543	10 51212	1 8131 <i>1 -</i> 24345	
<u> </u>	wate for earthies offer - 312	vv, v 1308, 313	10 - 91912, dill		
()				•	

Analyst

milalen Review



#### Chloride

Client:	Elm Ridge	Project #:	03056-0172
Sample ID:	Background	Date Reported:	08-20-09
Lab ID#:	51313	Date Sampled:	08-14-09
Sample Matrix:	Soil	Date Received:	08-17-09
Preservative:	Cool	Date Analyzed:	08-19-09
Condition:	Intact	Chain of Custody:	7754

#### Parameter

# Concentration (mg/Kg)

**Total Chloride** 

45

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:

Analyst

ico tens Review



#### Chioride

Client:	Elm Ridge	Project #:	03056-0172
Sample ID:	Bottom (9' B. Pit)	Date Reported:	08-20-09
Lab ID#:	51312	Date Sampled:	08-12-09
Sample Matrix:	Soil	Date Received:	08-17-09
Preservative:	Cool	Date Analyzed:	08-19-09
Condition:	Intact	Chain of Custody:	7754

Parameter

### Concentration (mg/Kg)

**Total Chloride** 

250

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:

Analyst

Beview



#### Chloride

Client:	Elm Ridge	Project #:	03056-0172
Sample ID:	Wall Composite	Date Reported:	08-20-09
Lab ID#:	51311	Date Sampled:	08-12-09
Sample Matrix:	Soli	Date Received:	08-17-09
Preservative:	Cooi	Date Analyzed:	08-19-09
Condition:	Intact	Chain of Custody:	7754

#### Parameter

#### **Total Chloride**

380

3

Concentration (mg/Kg)

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:

Analyst

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# **CHAIN OF CUSTODY RECORD**

7754

Client: Project Name / Location:										· .		YSIS		AME	TERS									
Elmikidae Bisti Coal 28-1									_					,										
Client Address		s	ampler Name:	_						5)	21)	Ô												
		-	K. Jon	eS						801		826	s											
Client Phone No.:		C	lient No.:							ğ	٩ ٩	B	leta	lei lei		Ŧ		<del>⊊</del>	ш				<u>8</u>	tact
			0305-6	-01	172					Meth	(Me	Met	≥ 8	N N		Mith	ĺ	418	<b>DH</b>		· ·		Ö	e lu
Sample No./	Sample	Sample	Lab No	S	ample	No./Volume	Pre	serva	tive	ЭH	Ш	Ω Ω	₹ E	E		٩ ٩	I	Ţ					du	đ
Identification	Date	Time			Matrix	Containers	HyCl	на	<b>(16</b>	ピ	BT	8	R R	S	ц В	12	A	Ē	<u> </u>				Sa	Sa
Background	SILLO	1 12:30	51313	Solid	Sludge Aqueous	1-402	-		X		•								$\checkmark$	_			$\times$	$\times$
Bottom (9'B.P.)	8/170	2 1012	51312	Solid	Sludge Aqueous	1-404			X	Ø	N								Ø			ŀ	$\times$	$\times$
Wall composit	27/2/0	10:2	51311	Solid	Sludge Aqueous	140E			X	Ń	V								X				$\times$	$\times$
				Soli Solid	Sludge Aqueous																			
				Soil Solid	Sludge Aqueous																			
			+ N <sup>1</sup> 5	Soil Soild	Sludge Áqueous																			
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				Soil Solid	Sludge Aqueous																			
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			_	Soil Solid	Sludge Aqueous									5	د <b>د</b>									
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envirotech

# **Bill of Lading**

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

LOAD	CON	IPLETE DESCR	IPTION OF SHIF	PMENT			TRA	NSPOR	TING CC	OMPANY
NO.	POINT OF ORIGIN	DESTINATION	MATERIAL	GRID	YDS	BBLS	COMPANY	TRK#	TIME	DRIVER SIGNATURE
1	ELARidge Bisticoal28#1	LFIF	CONIT 30,L	G-16	10		4-4	178	73D	John molan's
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RESUL	TS:		Arula	Lineo	∽		NOTES		ALIC. 1	1 8 2009
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that no additional materials have been added."

NAME Tohn metimel	COMPANY Lagr Four	SIGNATURE Tohm Juni
COMPANY CONTACT MACK	PHONE 327-27/1	DATE 8-13-09

ACCENT Printing • Form 28-1212

envirotech

**Bill of Lading** 

34019
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PHONE:	(505) 632-0615 •	5796 U.S. HIGHWAY 64	• FARMINGTON,	NEW MEXICO 8740
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DATE 8-13-09 JOB# 0.3056-0172

MANIFEST #\_

LOAD	CO	MPLETE DESCR	IPTION OF SHIF	MENT				ANSPOR	TING CC	)MPANY
NO.	POINT OF ORIGIN	DESTINATION	MATERIAL	GRID	YDS	BBLS	COMPANY	TRK#	TIME	DRIVER SIGNATURE
	ENVIROTECH	Bisti Coal	Filsoil	_	12		4-4-	178	730	Johnman
		28#1			10					
					15					
				-						
										-
										1
										-
RESUL	TS:		Gary				NOTES:	ERED	AUG	1 8 2009
$\square$	PAINT FILTER TEST		Kobin	son		<u>e</u>	5	*** #		
"I certify that no	the material hauled from th additional materials have be	e above location ha en added."	s not been added	to or mixed	with, and is	s the san	ne material received	from the	above n	nentioned Generator, and
NAME	John McKinney	,	COMPANY	four-	Four		SIGI	NATURE	Joh	making
COMPA	NY CONTACT		PHONE	327-2	7//		DAT	e_ <u>Š</u>	~13	<u>~ 09</u>



March 10, 2010

Project No. 03056-0172

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 BISTI COAL 28-1 WELL SITE

Dear Mr. Jones,

Please find enclosed a C-141 Release Notification Form and additional supporting closure documentation for the Bisti Coal 28-1 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 local division 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 Bills of Lading Proof of Notification

Cc: Client File No. 03056

RECEIVED OCD



Project No. 03056-0172

August 3, 2009

Mr. Mark Kelly Bureau of Land Management 1235 La Plata Highway, Suite A Farmington, New Mexico 87401

Phone: (505) 599-8900

### RE: BISTI COAL 28-1 EARTH PIT CLOSURE NOTIFICATION

Dear Mr. Kelly,

Please accept this letter and attached Sundry Notice as the necessary surface owner notification for closure activities at the Bisti Coal 28-1 well site, owned and operated by Elm Ridge Exploration. The Bisti Coal 28-1 well site is located in Unit B, Section 28, Township 25N, Range 12W, San Juan County, New Mexico. Closure activities are scheduled to begin on August 10, 2009 and continue through August 14, 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 incdaniel@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	
. Lease Serial No. M-51013	·	·
If Indian, Allotte	e or Tribe Name	

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 pag	<i>ie 2.</i>	7. If Unit of CA/Agree	ement, Name and/or No.
1. Type of Well					8 Well Name and No	
	Gas Well	Other			Bisti Coal 28-1	·
2. Name of Operator Elm Ridge Exploration					9. API Well No. 30-045-28561	
3a. Address PO Box 156			3b. Phone No. (incl	ude area code)	10. Field and Pool or I	Exploratory Area
Bloomfield, NM 87413			(505) 632-3476		11 Constant on Design	0
4. LOCATION OF Well (FOOL 780 FNL 1850 FEL, B-28-25N-12	ige, Sec., 1.,K.,N W, Lat. 36.37725 k	ng108.11416		·	San Juan County, N	
	12. CHECK T	HE APPROPRIATE BO	X(ES) TO INDICAT	E NATURE OF N	OTICE, REPORT OR OTH	ER DATA
TYPE OF SUBMIS	SION			TYPE OF	ACTION	
Notice of Intent		Acidize	Deepen Fracture Tr	reat	Production (Start/Resume) Reclamation	Water Shut-Off
Subsequent Report		Casing Repair	New Const	truction	Recomplete Temporarily Abandon	Other Closure of an Earth Pit
Final Abandonment l	Notice	Convert to Injection	Plug Back		Water Disposal	
Closure activities are sci	ans to begin a neduled to bein	g on Monday, August 1	aarinen pit localad 10, 2009 and last ti	ar the above men trough August 14,	2009.	incauons nave been made.
	<u>n</u>	1		•		
Ms. Arny Mackey	toregoing is true	Aud correct. Name (Printed	a Typed) Titl	e Administrative	Manager	
Signature	= /(		Dai	e 08/03/2009	· · · ·	
	*	THIS SPACE	FOR FEDERA	L OR STATE	OFFICE USE	
Approved by			<u></u>	Title		Date
Conditions of approval, if an that the applicant holds legal entitle the applicant to condu	y, are attached. A or equitable title act operations the	pproval of this notice does to those rights in the subje- con.	s not warrant or certif ct lease which would	Office		
Title 18 U.S.C. Section 100 fictitious or fraudulent states	and Title 43 U.S.	C. Section 1212, make it a tations as to any matter wi	a crime for any person	knowingly and will	fully to make to any departme	ent or agency of the United States any false

(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

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

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
Theorem is the approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the nvironment. 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 Exploration OGRID #: 149052
Address: P.O. Box 156; Bloomfield, NM 87413
Facility or well name: Bisti Coal 28-1
API Number: <u>3004528561</u> OCD Permit Number: <b>B</b>
U/L or Qtr/Qtr _B Section _ 28 Township _25N Range 12W County: San Juan
Center of Proposed Design: Latitude <u>36.377310</u> Longitude -108.114092 NAD: 1927 1983
Surface Owner: X 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: Thicknessmil 🔲 LLDPE 🗋 HDPE 🔲 PVC 🔲 Other
String-Reinforced
Liner Seams:  Welded Factory Other Volume: bbl Dimensions: L 10' x W 10 x D 5'
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
<ul> <li>A.</li> <li>Below-grade tank: Subsection I of 19.15.17.11 NMAC</li> <li>Volume:bbl Type of fluid:</li> <li>Tank Construction material:</li> <li>Secondary containment with leak detection </li> <li>Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off</li> <li>Visible sidewalls and liner </li> <li>Visible sidewalls only </li> <li>Other</li> <li>Liner type: Thicknessmil </li> <li>HDPE </li> <li>PVC </li> <li>Other</li></ul>
s.           Alternative Method:           Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks)

Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)

Four foot height, four strands of barbed wire evenly spaced between one and four feet

Alternate. Please specify <u>4' tall hogwire fencing with pipe railing</u>

Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)

#### Screen 🛛 Netting 🗌 Other\_

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10.

Monthly inspections (If netting or screening is not physically feasible)

Signs: Subsection C of 19.15.17.11 NMAC

12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

Signed in compliance with 19.15.3.103 NMAC

#### **Administrative Approvals and Exceptions:**

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval.

Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

Siting Criteria (regarding permitting): 19.15.17.10 NMAC

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. 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. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.

Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	Yes No
<ul> <li>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).0.</li> <li>Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	🗌 Yes 🗌 No
<ul> <li>Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</li> <li>(Applies to temporary, emergency, or cavitation pits and below-grade tanks) (</li> </ul>	□ Yes □ No □ NA
<ul> <li>Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</li> <li>(Applies to permanent pits)</li> <li>Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</li> </ul>	☐ Yes ☐ No ☐ NA
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 search; 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.	Yes No
Within 500 feet of a wetland.	Yes No
Within the area overlying a subsurface mine.	🗌 Yes 🗌 No
<ul> <li>Within an unstable area.</li> <li>Engineering measures incorporated into the design; NM Bureau of Geology &amp; Mineral Resources; USGS; NM Geological Society; Topographic map</li> </ul>	🗌 Yes 🗌 No
Within a 100-year floodplain. - FEMA map	Yes No

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
<ul> <li>Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC</li> <li>Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC</li> <li>Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC</li> <li>Design Plan - based upon the appropriate requirements of 19.15.17.12 NMAC</li> <li>Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC</li> </ul>
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. <u>Closed-loop Systems Permit Application Attachment Checklist</u> : Subsection B of 19.15.17.9 NMAC <i>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.</i>
<ul> <li>Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9</li> <li>Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC</li> <li>Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC</li> <li>Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC</li> <li>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</li> </ul>
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
Permanent rits 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         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         Muisance or Hazardous Odors, including H <sub>2</sub> S, 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 19.15.17.9 NMAC and 19.15.17.13 NMAC
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)
Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)
15. <u>Waste Excavation and Removal Closure Plan Checklist:</u> (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan Plane indicate by a check mark in the bay that the documents are stricted.
Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
<ul> <li>Contirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC</li> <li>Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)</li> </ul>
<ul> <li>Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC</li> <li>Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC</li> <li>Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC</li> </ul>

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<sup>16.</sup> Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or E Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids an facilities are required.	<b>Laul-off Bins Only:</b> (19.15.17.13.1 d drill cuttings. Use attachment if a	D NMAC) more than two
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 area Yes (If yes, please provide the information below) No	s that will not be used for future server	vice and operations?
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         Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13         Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17	Subsection H of 19.15.17.13 NMA NMAC .13 NMAC	С
<sup>17.</sup> 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. Re provided below. Requests regarding changes to certain siting criteria may require administrative considered an exception which must be submitted to the Santa Fe Environmental Bureau office fo demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.	commendations of acceptable sour approval from the appropriate dist or consideration of approval. Justi	ce material are rict office or may be fications and/or
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 n	earby 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 n	earby 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 n	earby wells	□ Yes □ No □ NA
<ul> <li>Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercoulake (measured from the ordinary high-water mark).</li> <li>Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	rse or lakebed, sinkhole, or playa	Yes 🗌 No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at th - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	e time of initial application.	🗋 Yes 🗋 No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five househ watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of the state engineer - iWATERS database; Visual inspection (certification) of	olds use for domestic or stock e at the time of initial application. he proposed site	🗌 Yes 🗌 No
<ul> <li>Within incorporated municipal boundaries or within a defined municipal fresh water well field cover adopted pursuant to NMSA 1978, Section 3-27-3, as amended.</li> <li>Written confirmation or verification from the municipality; Written approval obtained from the municipality.</li> </ul>	ed under a municipal ordinance he municipality	Yes 🗌 No
<ul> <li>Within 500 feet of a wetland.</li> <li>US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (cert</li> </ul>	ification) of the proposed site	Yes No
<ul> <li>Within the area overlying a subsurface mine.</li> <li>Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Div</li> </ul>	ision	🗌 Yes 🗌 No
<ul> <li>Within an unstable area.</li> <li>Engineering measures incorporated into the design; NM Bureau of Geology &amp; Mineral Reso Society; Topographic map</li> </ul>	urces; USGS; NM Geological	🗌 Yes 🗍 No
Within a 100-year floodplain. - FEMA map		Yes No
<ul> <li>18.</li> <li>On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items by a check mark in the box, that the documents are attached.</li> <li>Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.1</li> <li>Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.1.</li> <li>Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.13 NMAC</li> <li>Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 1</li> <li>Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in</li> </ul>	must be attached to the closure pla 5.17.10 NMAC 19.15.17.13 NMAC ments of 19.15.17.11 NMAC the appropriate requirements of 19. section F of 19.15.17.13 NMAC 9.15.17.13 NMAC case on-site closure standards cann	an. Please indicate, 15.17.11 NMAC of 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

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19.		
Operator Application	<u>Certification</u> :	
I hereby certify that th	enformation submitted with this applicat	ion is true, accurate and complete to the best of my knowledge and belief.
Name (Print):	Ms. Amy Mackey	Title: <u>Administrative Manager</u>
Signature		Data: 3-2-09
Signature.		
E-mail address:	amackey1@elmridge.net	Telephone: <u>505-632-3476 Ext. 201</u>
0. <u> OCD Approva</u> l:	Permit Application (including closure plan Signature:	Approval Date: 21(0/10
Title: Enun	mountant Engineer	OCD Permit Number:
21. <u>Closure Report (requi</u> Instructions: Operato The closure report is resection of the form uni	ired within 60 days of closure completio rs are required to obtain an approved clo equired to be submitted to the division wi til an approved closure plan has been obt	<u>(n)</u> : Subsection K of 19.15.17.13 NMAC sure plan prior to implementing any closure activities and submitting the closure rep of thin 60 days of the completion of the closure activities. Please do not complete this tained and the closure activities have been completed.
·		Closure Completion Date:
2. <u>Closure Method</u> : Waste Excavation a If different from ap	and Removal	od 🗌 Alternative Closure Method 🔲 Waste Removal (Closed-loop systems only
<u>Closure Report Regar</u> nstructions: Please ir wo facilities were utili	ding Waste Removal Closure For Close adentify the facility or facilities for where zed.	ed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: e the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more
Disposal Facility Nan	ne:	Disposal Facility Permit Number:
Disposal Facility Nar	ne:	Disposal Facility Permit Number:
Vere the closed-loop sy Yes (If yes, pleas	ystem operations and associated activities se demonstrate compliance to the items be	performed on or in areas that <i>will not</i> be used for future service and operations? slow) $\square$ No
Required for impacted in Site Reclamation	areas which will not be used for future ser (Photo Documentation) and Cover Installation pplication Rates and Seeding Technique	vice and operations:
4. Closure Report Attack mark in the box, that the	ament Checklist: Instructions: Each of the documents are attached. Notice (surface owner and division)	the following items must be attached to the closure report. Please indicate, by a chec
<ul> <li>Proof of Deed No</li> <li>Proof of Deed No</li> <li>Plot Plan (for on</li> <li>Confirmation Saa</li> <li>Waste Material S</li> <li>Disposal Facility</li> <li>Soil Backfilling a</li> <li>Re-vegetation Aq</li> <li>Site Reclamation</li> <li>On-site Closure</li> </ul>	otice (required for on-site closure) -site closures and temporary pits) mpling Analytical Results (if applicable) Sampling Analytical Results (required for Name and Permit Number and Cover Installation pplication Rates and Seeding Technique (Photo Documentation) Location: Latitude	on-site closure) Longitude NAD: 1927 1983
<ul> <li>Proof of Deed No</li> <li>Proof of Deed No</li> <li>Plot Plan (for on-</li> <li>Confirmation Sat</li> <li>Waste Material S</li> <li>Disposal Facility</li> <li>Soil Backfilling a</li> <li>Re-vegetation Ap</li> <li>Site Reclamation On-site Closure</li> </ul> 5. Dperator Closure Cer hereby certify that the belief. I also certify that	otice (required for on-site closure) -site closures and temporary pits) mpling Analytical Results (if applicable) Sampling Analytical Results (required for one Name and Permit Number and Cover Installation pplication Rates and Seeding Technique (Photo Documentation) Location: Latitude <u>tification</u> : information and attachments submitted w at the closure complies with all applicable	on-site closure) Longitude NAD: 1927 1983 th this closure report is true, accurate and complete to the best of my knowledge and closure requirements and conditions specified in the approved closure plan.
<ul> <li>Proof of Closure</li> <li>Proof of Deed No</li> <li>Plot Plan (for on-</li> <li>Confirmation Sai</li> <li>Waste Material S</li> <li>Disposal Facility</li> <li>Soil Backfilling a</li> <li>Re-vegetation Ap</li> <li>Site Reclamation</li> <li>On-site Closure</li> </ul> 5. <b>Dperator Closure Cer</b> hereby certify that the belief. I also certify that Name (Print):	otice (required for on-site closure) -site closures and temporary pits) mpling Analytical Results (if applicable) Sampling Analytical Results (required for on Name and Permit Number and Cover Installation pplication Rates and Seeding Technique (Photo Documentation) Location: Latitude <u>tification:</u> information and attachments submitted w at the closure complies with all applicable	on-site closure) Longitude NAD: 1927 1983 //ith this closure report is true, accurate and complete to the best of my knowledge and closure requirements and conditions specified in the approved closure plan Title:
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# **EARTHEN PIT CLOSURE PLAN**

SITE NAME:

BISTI COAL 28-1 UNIT LETTER B, SECTION 28, TOWNSHIP 25N, RANGE 12W SAN JUAN COUNTY, NEW MEXICO LATITUDE 36.377310 LONGITUDE -108.114092

**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

# **FEBRUARY 2009**

## EARTHEN PIT CLOSURE PLAN ELM RIDGE EXPLORATION BISTI COAL 28-1 SAN JUAN COUNTY, NEW MEXICO

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#### INTRODUCTION

Elm Ridge Exploration would like to submit a closure plan for the earthen pit at the Bisti Coal 28-1 well site located in the NW ¼ NE ¼ of Section 28, Township 25N, Range 12W, 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 Bisti Coal 28-1 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 a 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

Earthen Pit Closure Plan Elm Ridge Exploration Bisti Coal 28-1 Page 2

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 nonwaste 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.

111.

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

Earthen Pit Closure Plan Elm Ridge Exploration Bisti Coal 28-1 Page 3

contractor acting on behalf of Elm Ridge Exploration, will substantially restore, recontour 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 )

- 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: Ilm Ridge Exploration Amy Mackey

Elyn 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.

	·	
<u>District 1</u> 1625 N. French Dr., Hobbs, NM 88240 <u>District II</u> 1301 W. Grand Avenue, Artesia, NM 88210 <u>District III</u> 1000 Rio Brazos Road, Aztec, NM 87410 <u>District IV</u> 1220 S. St. Francis Dr., Santa Fe, NM 87505	State of New Mexico Energy Minerals and Natural Resources Department Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505	Form C-14 July 21, 200 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.
<u>Pit, C</u>	losed-Loop System, Below-Grade	<u>Fank, or</u>
Proposed Alte	mative Method Permit or Closure I	Plan Application
Type of action: Permit Closur Modif Closur Closur below-grade tank, or propos	of a pit, closed-loop system, below-grade tank, or e of a pit, closed-loop system, below-grade tank, ication to an existing permit e plan only submitted for an existing permitted or ed alternative method	or proposed alternative method or proposed alternative method r non-permitted pit, closed-loop system,
Instructions: Please submit one application	tion (Form C-144) per individual pit, closed-loop syst	em, below-grade tank or alternative request
Please be advised that approval of this request does no environment. Nor does approval relieve the operator of	t relieve the operator of liability should operations result i of its responsibility to comply with any other applicable go	n pollution of surface water, ground water or the overnmental authority's rules, regulations or ordinances.
Operator: Elm Ridge Exploration	OGRID #	: 149052
Address:P.O. Box 156; Bloomfield, NM 874	<u>413</u>	
Facility or well name: Bisti Coal 28-1	· · · · · · · · · · · · · · · · · · ·	
API Number: <u>3004528561</u>	OCD Permit Number:	
U/L or Otr/Otr B Section 28 1	ownship 25N Range 12W Cou	nty: San Juan
Center of Proposed Design: Latitude 36.377310	) Longitude $-108  114092$ NAD $\Box 192$	
Surface Owner: $\square$ Federal $\square$ State $\square$ Private $\square$	Tribal Trust or Indian Allotment	
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<ul> <li>2.</li> <li>Pit: Subsection F or G of 19.15.17.11 NMA Temporary: Drilling Workover</li> <li>Permanent Emergency Cavitation I Lined Unlined Liner type: Thickness</li> <li>String-Reinforced</li> <li>Liner Seams: Welded Factory Other</li> </ul>	C Ceased of P&Amil [] LLDPE [] HDPE [] PVC [] Ot Volume: bbl	beration in October 2008 her $\underline{}$ Dimensions: L 10' x W 10 x D 5'
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Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks)

Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)

Four foot height, four strands of barbed wire evenly spaced between one and four feet

Alternate. Please specify <u>4' tall hogwire fencing with pipe railing</u>

Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)

Screen 🛛 Netting 🗌 Other

10.

Monthly inspections (If netting or screening is not physically feasible)

Signs: Subsection C of 19.15.17.11 NMAC

12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

Signed in compliance with 19.15.3.103 NMAC

#### Administrative Approvals and Exceptions:

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval.

Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

Siting Criteria (regarding permitting): 19.15.17.10 NMAC

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. 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. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.

<ul> <li>Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.</li> <li>NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells</li> </ul>	Yes No
<ul> <li>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).0.</li> <li>Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	Yes 🗋 No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - (Applies to temporary, emergency, or cavitation pits and below-grade tanks) (	Yes No
<ul> <li>Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</li> <li>(Applies to permanent pits)</li> <li>Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</li> </ul>	□ Yes □ No □ NA
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 search; 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.	Yes No
Within 500 feet of a wetland.	Yes No
Within the area overlying a subsurface mine.	Yes No
<ul> <li>Within an unstable area.</li> <li>Engineering measures incorporated into the design; NM Bureau of Geology &amp; Mineral Resources; USGS; NM Geological Society; Topographic map</li> </ul>	🗋 Yes 🗍 No
Within a 100-year floodplain. - FEMA map	Yes No

11.         Temporary Pits, Emergency Pits, and Instructions: Each of the following iten attached.         Hydrogeologic Report (Below-graded)         Hydrogeologic Data (Temporary artering Criteria Compliance Demonstrong)         Design Plan - based upon the approxton Operating and Maintenance Plan - Identification Closure Plan (Please complete Boxton 19.15.17.13 NMAC	Below-graue Tanks Permit Application A ns must be attached to the application. Pla de Tanks) - based upon the requirements of nd Emergency Pits) - based upon the require strations - based upon the appropriate requi opriate requirements of 19.15.17.11 NMAC based upon the appropriate requirements of es 14 through 18, if applicable) - based upon	ttachment Checklist: Subsecti ase indicate, by a check mark in Paragraph (4) of Subsection B of ements of Paragraph (2) of Subsec ements of 19.15.17.10 NMAC 19.15.17.12 NMAC in the appropriate requirements of	on B of 19.15.17.9 NMAC the box, that the documents are 19.15.17.9 NMAC ction B of 19.15.17.9 NMAC
Previously Approved Design (attach	copy of design) API Number:	or Permit Nu	nber:
12. Closed-loop Systems Permit Applicatio	n Attachment Checklist: Subsection B o	f 19 15 17 9 NMAC	
Instructions: Each of the following item	as must be attached to the application. Ple	use indicate, by a check mark in	the box, that the documents are
attached.         Geologic and Hydrogeologic Data         Siting Criteria Compliance Demon         Design Plan - based upon the appro         Operating and Maintenance Plan -         Closure Plan (Please complete Box         and 19.15.17.13 NMAC	(only for on-site closure) - based upon the restrations (only for on-site closure) - based uppriate requirements of 19.15.17.11 NMAC based upon the appropriate requirements of the through 18, if applicable) - based upon	equirements of Paragraph (3) of s pon the appropriate requirements 19.15.17.12 NMAC n the appropriate requirements of	Subsection B of 19.15.17.9 of 19.15.17.10 NMAC f Subsection C of 19.15.17.9 NMAC
Previously Approved Design (attach o	copy of design) API Number:		
Previously Approved Operating and M	Maintenance Plan API Number:	(Applies on	ly to closed-loop system that use
above ground steel tanks or haul-off bins	and propose to implement waste removal fo	r closure)	
13.			
Permanent Pits Permit Application Cha         Instructions: Each of the following item         attached.         Hydrogeologic Report - based upor         Siting Criteria Compliance Demons         Climatological Factors Assessment         Certified Engineering Design Plans         Dike Protection and Structural Integ         Leak Detection Design - based upor         Liner Specifications and Compatibi         Quality Control/Quality Assurance         Operating and Maintenance Plan - H         Freeboard and Overtopping Prevent         Nuisance or Hazardous Odors, inclu         Emergency Response Plan         Oil Field Waste Stream Characteriz         Monitoring and Inspection Plan         Erosion Control Plan         Closure Plan - based upon the approx	<b>ecklist:</b> Subsection B of 19.15.17.9 NMAG as must be attached to the application. Plea in the requirements of Paragraph (1) of Subs strations - based upon the appropriate requi s - based upon the appropriate requirements grity Design - based upon the appropriate re n the appropriate requirements of 19.15.17. ility Assessment - based upon the appropriate Construction and Installation Plan based upon the appropriate requirements of tion Plan - based upon the appropriate requirements of station	the indicate, by a check mark in ection B of 19.15.17.9 NMAC rements of 19.15.17.10 NMAC of 19.15.17.11 NMAC quirements of 19.15.17.11 NMA 11 NMAC te requirements of 19.15.17.11 N 19.15.17.12 NMAC rements of 19.15.17.11 NMAC rements of 19.15.17.11 NMAC	the box, that the documents are C MAC NMAC
Proposed Closure: 19.15.17.13 NMAC	able hover Pover 14 through 19 in more	le to the mean accel alarman plan	
Type: Drilling Workover Eme	ergency Cavitation P&A Perm	is to the proposed closure plan. anent Pit  Below-grade Tank	Closed-loop System
Proposed Closure Method: 🛛 Waste Exc Waste Reg On-site Cl	cavation and Removal moval (Closed-loop systems only) losure Method (Only for temporary pits and	closed-loop systems)	
	] In-place Burial 📋 On-site Trench Buri		
	e Closure Method (Exceptions must be sub	mitted to the Santa Fe Environme	ental Bureau for consideration)
Waste Excavation and Removal Closure         closure plan. Please indicate, by a check	e Plan Checklist: (19.15.17.13 NMAC) In mark in the box, that the documents are a bon the appropriate requirements of 19.15.1 blicable) - based upon the appropriate require Number (for liquids, drilling fluids and dril cifications - based upon the appropriate require e appropriate requirements of Subsection I of the appropriate requirements of Subsection	structions: Each of the followin ttached. 7.13 NMAC ements of Subsection F of 19.15. I cuttings) uirements of Subsection H of 19. of 19.15.17.13 NMAC G of 19.15.17.13 NMAC	ng items must be attached to the 17.13 NMAC 15.17.13 NMAC

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<sup>16.</sup> Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13. Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if facilities are required.	D NMAC) <i>more than two</i>		
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 <i>will not</i> be used for future ser Yes (If yes, please provide the information below) No	vice and operations?		
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 NMA         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	c		
<sup>17.</sup> 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 sou provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate dist considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Just demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.	rce material are trict office or may be ifications and/or		
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		
<ul> <li>Ground water is between 50 and 100 feet below the bottom of the buried waste</li> <li>NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells</li> </ul>	☐ Yes ☐ No ☐ NA		
<ul> <li>Ground water is more than 100 feet below the bottom of the buried waste.</li> <li>NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells</li> </ul>	☐ Yes ☐ No ☐ NA		
<ul> <li>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).</li> <li>Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	Yes 🗋 No		
<ul> <li>Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</li> <li>Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</li> </ul>	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		
<ul> <li>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.</li> <li>Written confirmation or verification from the municipality; Written approval obtained from the municipality</li> </ul>	🗌 Yes 🗍 No		
<ul> <li>Within 500 feet of a wetland.</li> <li>US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	Yes 🗌 No		
<ul> <li>Within the area overlying a subsurface mine.</li> <li>Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division</li> </ul>	🗋 Yes 🗌 No		
<ul> <li>Within an unstable area.</li> <li>Engineering measures incorporated into the design; NM Bureau of Geology &amp; Mineral Resources; USGS; NM Geological Society: Topographic map</li> </ul>	🗌 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 pl	an. 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 19.15.17.13 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 I 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 I of 19.15.17.13 NMAC			

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19.	
Operator Application Certification:	and any local to the local of much source descended by
I nereby certify that the information submitted with this application is true, accu	Title Administrative Manager
	Inte:Administrative Manager
Signature:	Date:
E-mail address: amackey1@elmridge.net	Telephone:505-632-3476 Ext. 201
20. <u>OCD Approval</u> : Permit Application (including closure plan) Closure I	Plan (only) OCD Conditions (see attachment)
OCD Representative Signature:	Approval Date:
Title:	OCD Permit Number:
<sup>21.</sup> <u>Closure Report (required within 60 days of closure completion)</u> : Subsection Instructions: Operators are required to obtain an approved closure plan prior The closure report is required to be submitted to the division within 60 days of section of the form until an approved closure plan has been obtained and the c	K of 19.15.17.13 NMAC to implementing any closure activities and submitting the closure report. the completion of the closure activities. Please do not complete this losure activities have been completed.
22.	
Closure Method: Waste Excavation and Removal On-Site Closure Method Altern If different from approved plan, please explain.	ative Closure Method 🔲 Waste Removal (Closed-loop systems only)
<sup>23.</sup> Closure Report Regarding Waste Removal Closure For Closed-loop System Instructions: Please indentify the facility or facilities for where the liquids, dri two facilities were utilized.	s That Utilize Above Ground Steel Tanks or Haul-off Bins Only: lling fluids and drill cuttings were disposed. Use attachment if more than
Disposal Facility Name:	Disposal Facility Permit Number:
Disposal Facility Name:	Disposal Facility Permit Number:
Yes (If yes, please demonstrate compliance to the items below) $\square$ No	r in areas that will not be used for future service and operations?
Required for impacted areas which will not be used for future service and operat Site Reclamation (Photo Documentation) Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique	ions.
24.         Closure Report Attachment Checklist: Instructions: Each of the following is 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	tude NAD: 1927 1983
25. Operator Closure Certification:	
I hereby certify that the information and attachments submitted with this closure belief. I also certify that the closure complies with all applicable closure requirer	report is true, accurate and complete to the best of my knowledge and nents and conditions specified in the approved closure plan.
Name (Print):	Title:
Signature:	Date:
E-mail address:	Telephone:

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Well Head

SAN JUAN COUNTY, NEW MEXICO CALE: NTS FIGURE NO. A REV ROJECT NOD3056-0136 FIGURE NO. A REVISIONS REVISIONS 0. DATE BY DESCRIPTION IAP DRWN MDD 11/17/08 BASE DRWN ENVIRONMENTAL SCIENTISTS & ENGINEERS	SITE MAP ELM RIDGE EXPLORATION BISTI COAL 28-1				
CALE: NTS FIGURE NO. A REV ROJECT NOD3056-0136 FIGURE NO. A REVISIONS O. DATE BY DESCRIPTION AP DRWN MDD 11/17/08 BASE DRWN ENVIRONMENTAL SCIENTISTS & ENGINEERS	SAN JUAN	COUNTY, NEW MEXICO			
ROJECT NOD3056-0136 REVISIONS 0. DATE BY DESCRIPTION IAP DRWN MDD 11/17/08 BASE DRWN ENVIRONMENTAL SCIENTISTS & ENGINEERS	CALE: NTS		REV		
REVISIONS O. DATE BY DESCRIPTION AP DRWN MDD 11/17/08 BASE DRWN ENVIRONMENTAL SCIENTISTS & ENGINEERS	ROJECT NOD3056-0136				
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ENVIRONMENTAL SCIENTISTS & ENGINEERS	AP DRWN MDD 11	/17/08 BASE DRWN			
<b>ENVIROTECH</b>					

5796 U.S. HIGHWAY 64, FARMINGTON, NM 87410 505-632-0615

# **EARTHEN PIT CLOSURE PLAN**

SITE NAME:

BISTI COAL 28-1 UNIT LETTER B, SECTION 28, TOWNSHIP 25N, RANGE 12W SAN JUAN COUNTY, NEW MEXICO LATITUDE 36.377310 LONGITUDE -108.114092

**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

FEBRUARY 2009

## EARTHEN PIT CLOSURE PLAN ELM RIDGE EXPLORATION BISTI COAL 28-1 SAN JUAN COUNTY, NEW MEXICO

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#### **INTRODUCTION**

Elm Ridge Exploration would like to submit a closure plan for the earthen pit at the Bisti Coal 28-1 well site located in the NW ¼ NE ¼ of Section 28, Township 25N, Range 12W, 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 Bisti Coal 28-1 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 a 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 Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge office. 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

Earthen Pit Closure Plan Elm Ridge Exploration Bisti Coal 28-1 Page 2

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 nonwaste 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

Earthen Pit Closure Plan Elm Ridge Exploration Bisti Coal 28-1 Page 3

contractor acting on behalf of Elm Ridge Exploration, will substantially restore, recontour 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.

# **RELEASE CLOSURE PLAN**

# SITE NAME:

BISTI COAL 28-1 UNIT LETTER B, SECTION 28, TOWNSHIP 25N, RANGE 12W SAN JUAN COUNTY, NEW MEXICO LATITUDE 36.37725 LONGITUDE -108.11417

**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** 

Release Closure Plan Elm Ridge Exploration Bisti Coal 28-1 Page 1

#### 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 Bisti Coal 28-1 well site located in Unit B, Section 28, Township 25N, Range 12Ŵ, San Juan County, New Mexico. From August 10, 2009, through August 12, 2009, 'production sludge' was removed from the former earthen pit located at the Bisti Coal 28-1 well site. The 'production sludge' was removed to visual extents of approximately 20' x 20' x 9' below the bottom of the earthen pit, where a sample was collected at native soil. The walls of the earthen pit were excavated to extents of 20' x 20' where excavation could no longer continue due to stability issues from the onsite above ground storage tank and separator on one (1) side, and the edge of the well location on the other side. One (1) composite sample was collected from the walls of the excavation, and one (1) composite sample was collected from the bottom of the excavation. Both earthen pit samples were analyzed in the field for TPH via USEPA Method 418.1 with each sample returning results below the 100 mg/kg standard required by the 'Pit Rule'. Both samples were then collected into four (4)-ounce glass jars, capped headspace free, and transported with ice under chain of custody to Envirotech's laboratory to be analyzed. The samples collected from the earthen pit were analyzed for benzene and BTEX via USEPA Method 8021 and for total chlorides via USEPA Method 4500B. The composite sample collected from the bottom of the excavation was 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 chloride standard. The wall composite sample returned results below the 100 mg/kg TPH standard, the 0.2 mg/kg benzene standard, and the 50 mg/kg BTEX standard, but returned results above the 250 mg/kg total chloride standard at 385 mg/kg total chlorides. A background sample was collected at this location at approximately one (1) foot below ground surface and analyzed in Envirotech's laboratory for total chlorides via USEPA Method 4500B. The background sample returned results of 45 mg/kg total chlorides. The composite sample taken from the walls of the excavation was 345 mg/kg above the background level for chlorides for this site; therefore, confirming that a release has occurred at the Bisti Coal 28-1 well 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 composite sample collected from the walls was dry, and did not contain groundwater.

- A permit submitted by Permit's West for a drill pit at the Bisti Gallup 20-9 well site, approved by the OCD in October of 2008, shows a groundwater elevation at this site of 6,071 feet. The Bisti Coal 28-1 well site is located approximately 4,930 feet to the south-east of the Bisti Gallup 20-9 well site at an elevation of approximately 6,335 feet. These findings indicate that the depth to groundwater is over 100 feet at the Bisti Coal 28-1 well site; see *Topographic Map*.
- The nearest surface water is approximately 1,650 feet to the east of the Bisti Coal 28-1 well site; see *Topographic Map*.
- According to an iWATERS database search, no registered water wells exist within 1,000 feet of the Bisti Coal 28-1 well site; see *iWATERS Database Search*.
- The Bisti Coal 28-1 well site is not located within an area overlying a subsurface mine; see attached *Mine Map*.

- The Bisti Coal 28-1 well site is not within 300 feet of a permanent residence, school, hospital, institution or church; see attached *Aerial Photograph*.
- The Bisti Coal 28-1 well site is not within incorporated municipal boundaries; see attached *Topographic Map*.
- The Bisti Coal 28-1 well site is not located within 500 feet of a wetland; see attached *Wetlands Map*.
- The Bisti Coal 28-1 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 Bisti Coal 28-1 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 wall sample at the Bisti Coal 28-1 well site are well below the 1000 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 in the soil based on the analytical results found and the siting criteria determined for this site, which indicate that the chloride 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

Apry Mackey Elm Ridge Exploration

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 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: P.O. Box 156, Bloomfield, NM 87413	Telephone No.: (505) 632-3476	Ext 201	
Facility Name: Bisti Coal 28-1	Facility Type: Gas Well		

Surface Owner: Federal

Lease No.: NM 51013

### LOCATION OF RELEASE

Mineral Owner:

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
В	28	25N	12W	790	FNL	1850	FEL	San Juan

Latitude <u>36.37725</u> Longitude <u>-108.11417</u>

#### NATURE OF RELEASE

Source of Release: Earth Pit       Date and Hour of Occurrence: Historical       Date and Hour of Discovery: NA         Was Immediate Notice Given?       If YES, To Whom?       If YES, To Whom?         By Whom?       Date and Hour       If YES, Volume Impacting the Watercourse.         Was a Watercourse Reached?       If YES, Volume Impacting the Watercourse.         If a Watercourse was Impacted, Describe Fully.*       Describe Cause of Problem and Remedial Action Taken.*         Produced Water from gas well at the mentioned location formerly discharged into an earthen pit on location. The well has been altered to no longer dratinto an earthen pit, but instead into an Above Ground Storage Tank (AST).         Describe Area Affected and Cleanup Action Taken.*       From August 10, 2009, through August 12, 2009, 'Production Sludge' was removed from the earthen pit to extents of approximately 20' x 20' x 9' deer 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 nine (9) feet below ground surface and a composite was collected from the four (4) walls at 20' x 20', and analyzed in the fiel 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. Excavation could not continue beyond 20' x 20' due to well site equipment and the edge of the well pad. The wall composite returned chloride results of 345 mg/kg above background, confirming that a release has occurred at the above mentioned site; see Analytical Results. Please reference the attached Bisti Coal 28-1 Closure Plan for Elm Ridge Exploration's proposed	Type of Release: Produced Water	Volume of Release: Unknown	Volume Re	covered: Unknown
Was Immediate Notice Given?       If YES, To Whom?         By Whom?       Date and Hour         Was a Watercourse Reached?       If YES, Volume Impacting the Watercourse.         If a Watercourse Reached?       If YES, Volume Impacting the Watercourse.         If a Watercourse was Impacted, Describe Fully.*       If YES, Volume Impacting the Watercourse.         Describe Cause of Problem and Remedial Action Taken.*       Produced Water from gas well at the mentioned location formerly discharged into an earthen pit on location. The well has been altered to no longer dra into an earthen pit, but instead into an Above Ground Storage Tank (AST).         Describe Area Affected and Cleanup Action Taken.*       From August 10, 2009, through August 12, 2009, 'Production Sludge' was removed from the earthen pit to extents of approximately 20' x 20' x 9' deex         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 nine (9) feet below ground surface and a composite was collected from the four (4) walls at 20' x 20', and analyzed in the fiel for TPH via USEPA Method 4050B. Excavation could not continue beyond 20' x 20' way to be was reforeed to the well pad. The wall composite returned chloride results of 345 mg/kg above background, confirming that a release has occurred at the above mentioned site; see Analytical Results. Please reference the attached Bisti Coal 28-1 Closure Plan for Elm Ridge Exploration 's proposed course of action concerning this release.         I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rule	Source of Release: Earth Pit	Date and Hour of Occurrence: Historical	Date and H	our of Discovery: NA
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Signature: OIL CONSERVATION DIVISION	Signature:	OIL CONSERV	VATION I	DIVISION
Printed Name: Ms. Amy Mackey Approved by District Supervisor:	Printed Name: Ms. Amy Mackey	Approved by District Supervisor:		
Title: Administrative Manager     Approval Date:     Expiration Date:	Title: Administrative Manager	Approval Date:	Expiration D	pate:
E-mail Address: amackey1@elmridge.net Conditions of Approval: Attached Date: 10 - 8 - 9 Phone: 505-632-3476 Ext 201	E-mail Address: amackey1@elmridge.net Date: 10 - 8 - 09 Phone: 505-632-3476 Ext 201	Conditions of Approval:		Attached 🗌

\* Attach Additional Sheets If Necessary

19. Operator Application Certification	; 	true ecourate and complete t	a the heat of my knowledge and belie	£
I hereby certily that the information :	submitted with this application is	true, accurate and complete t	o the best of my knowledge and belie	а <b>т.</b>
Name (Print): <b>BRIAN WOOD</b> Tit	le: CONSULTANT	10		,
Signature:	<b>A</b>	Date: 9	<u>-14-08</u>	
e-mail address: brian@permitswest.	<u>.com</u> Telephone: <u>(505) 466-81</u> 2	<u>20</u>		
20. OCD Approval: Applica	ation (including closure plan)	Closure Plan (only)	CD Conditions (see attachment)	
OCD Representative Signature:	BA OM		Approval Date:	0-08
Title: Enviro /SF	<u>&gt;ec</u>	OCD Permit N	umber:	
21. Closure Report (required within 60 Instructions: Operators are required The closure report is required to be s section of the form until an approve	<u>) days of closure completion)</u> : d to obtain an approved closure j submitted to the division within ( d closure plan has been obtained	Subsection K of 19.15.17.13 plan prior to implementing a 60 days of the completion of d and the closure activities he	NMAC ny closure activities and submitting the closure activities. Please do not a ave been completed.	the closure rep complete this
•		Closure C	ompletion Date:	
22. <u>Closure Method</u> : Waste Excavation and Removal If different from approved plan, p	On-Site Closure Method please explain.	Alternative Closure Met	nod 🗌 Waste Removal (Closed-loc	op systems onl
23. <u>Closure Report Regarding Waste F</u> Instructions: Please indentify the fa two facilities were utilized.	<u>Removal Closure For Closed-loc</u> acility or facilities for where the l	op Systems That Utilize Abc liquids, drilling fluids and dr	yve Ground Steel Tanks or Haul-off ill cuttings were disposed. Use attact	<u>f Bins Only</u> : h <i>ment if more</i>
Disposal Facility Name:		Disposal Facilit	y Permit Number:	<del>_</del>
Disposal Facility Name:		Disposal Facilit	y Permit Number:	
Were the closed-loop system operation Yes (If yes, please demonstrated	ons and associated activities perfore e compliance to the items below)	ormed on or in areas that will a	not be used for future service and ope	rations?
Required for impacted areas which w Site Reclamation (Photo Docu Soil Backfilling and Cover Ins Revergetivity Application Pat	vill not be used for future service . mentation) itallation	and operations:		
	es and Securing Technique			
Closure Report Attachment Check mark in the box, that the documents Proof of Closure Notice (surfa Proof of Deed Notice (required Report Plat Plan (for on site closured	<u>list:</u> Instructions: Each of the f are attached. we owner and division) d for on-site closure)	following items must be attac	hed to the closure report. Please ind	licate, by a che
<ul> <li>Confirmation Sampling Analy</li> <li>Waste Material Sampling Ana</li> <li>Disposal Facility Name and Peters</li> </ul>	tical Results (if applicable) lytical Results (required for on-si ermit Number	ite closure)		
Soil Backfilling and Cover Ins	tallation es and Seeding Technique			
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Site Reclamation (Photo Docu On-site Closure Location: Lat <u>25.</u> Operator Closure Certification: I hereby certify that the information a belief. I also certify that the closure of	and attachments submitted with the complies with all applicable closu	his closure report is true, accu	rate and complete to the best of my k ns specified in the approved closure r	nowledge and blan.
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Elm Ridge Exploration Company, LLC Bisti Gallup 20 #9 temporary pit 1980' FSL & 660' FEL Sec. 20, T. 25 N., R. 12 W. San Juan County, New Mexico API #30-045-34002

#### Siting Criteria

1. Ground water is >100' below the bottom of the pit. Closest reported water depth is the U. S. Department of Interior (USDI) well which is >4 miles northeast in 1-25n-12w. Water depth is 210' in the 403' deep USDI well. The USDI well probably produces from the Ojo Alamo sandstone. Pit will be in the Nacimiento Formation. Office of the State Engineer records for the 4 closest townships are attached as Exhibit A.

6,342' graded ground <u>- 10' deep pit</u> 6,332' bottom of pit 6,281' USDI water well ground elevation <u>-210' depth to water</u> 6,071' water level elevation

6,332' bottom of pit <u>- 6,071' water level</u> ≈261' depth to water

2. Pit is not within 300' of a continuously flowing watercourse. Pit is not within 200' of any other significant watercourse as defined by OCD. Closest first order tributary of Hunter Wash is over 1/4 mile south (Exhibit B).

3. Pit is not within 300' of any building. Closest buildings are >1 mile southwest in Section 29 (Exhibits B & C).

4. Pit is not within 1,000' any fresh water well or spring (Exhibits A & B).

5. Pit is not within municipal boundaries or within a municipal fresh water well field (Exhibits A & B).

6. Pit is not within 500' of a wetland (Exhibit D).

7. Pit does not overly a mine (Exhibit E).



# Elm Ridge Exploration Company, LLC Bisti Gallup 20 #9 temporary pit 1980' FSL & 660' FEL Sec. 20, T. 25 N., R. 12 W. San Juan County, New Mexico API #30-045-34002

8. Pit is not in an unstable area. No evidence of earth movement was found during an on site inspection. Maximum grade is  $\approx$ 2%. Over 90% of the pit will be in cut (Exhibit F).

9. Pit is not within a 100 year flood plain (Exhibit G).

10. C-102 is attached as Exhibit H.

11. Closure notice (items 7 & 10 on PAGES 7 & 8 of APD) to surface owner (Navajo Nation) is attached as Exhibit I.

#### Hydrogeology

Surface formation is the badland Nacimiento. According to Stone et al in <u>Hydrogeology</u> and water resources of <u>San</u> Juan <u>Basin</u>, <u>New</u> <u>Mexico</u>, the Nacimiento is mainly a mudstone. There are also medium to coarse grained sandstone layers in the Nacimiento. Transmissivities of 100 feet<sup>2</sup> per day can be found in the coarser continuous sandstones. Water in the more extensive sandstones has a specific conductance of 1,500  $\mu$ mhos. Specific conductance is >2,000  $\mu$ mhos in the finer grained sandstones. The Nacimiento is above the Ojo Alamo sandstone. The Ojo Alamo outcrops to the northeast and southwest of Section 20.

### Alternative for 19.15.17.11 D. (3)

Elm Ridge is proposing an alternate fence. Sheep graze in the project area and hog wire has been found to be more effective than just barbed wire. The operator will fence the pit with a minimum 48" high fence. Fence will consist of minimum 36" woven wire (hog wire) topped with at least 1 strand of barbed wire.





Client:	Elm Ridge Exploration	Project #:	03056-0168
Sample No.:	1	Date Reported:	9/4/2009
Sample ID:	Bottom Composite @ 9'	Date Sampled:	8/10/2009
Sample Matrix:	Soil	Date Analyzed:	8/10/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

		Det.
	Concentration	Limit
Parameter	(mg/kg)	(mg/kg)

Total Petroleum Hydrocarbons525.0

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: Bisti Coal 28-1

Instrument calibrated to 200 ppm standard. Zeroed before each sample

Robyn Jones Printed

eview

James McDaniel
Printed



Client:	Elm Ridge Exploration	Project #:	03056-0168
Sample No.:	2	Date Reported:	9/4/2009
Sample ID:	Wall Composite @ 20' x 20'	Date Sampled:	8/10/2009
Sample Matrix:	Soil	Date Analyzed:	8/10/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

		Det.
	Concentration	Limit
Parameter	(mg/kg)	(mg/kg)

Total Petroleum Hydrocarbons	40	5.0
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ND = Parameter not detected at the stated detection limit.

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

Comments: Bisti Coal 28-1

Instrument calibrated to 200 ppm standard. Zeroed before each sample

Robyn Jones

Review

James McDaniel Printed



Cal. Date:	10-Aug-09		
Parameter	Standard Concentration mg/L	Concentration Reading mg/L	· .
ТРН	100 200 500 1000	193	

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

Robyn Jones Print Name eview **James McDaniel** 

Print Name

Date

4/09 Date



# EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Client: Sample ID: Laboratory Number: Chain of Custody No: Sample Matrix: Preservative: Condition:	Elmridge Bottom (9' B.Pit) 51312 7754 Soil Cool Intact	Project #: Date Reported: Date Sampled: Date Received: Date Extracted: Date Analyzed: Analysis Requested:	03056-0172 08-20-09 08-12-09 08-17-09 08-18-09 08-19-09 8015 TPH
Parameter		Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5	- C10)	ND	0.2
Diesel Range (C10 - C28)		ND	0.1
Total Petroleum Hyd	rocarbons	ND	0.2

ND - Parameter not detected at the stated detection limit.

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

Comments: Bisti Coal 28-1

Analyst

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# EPA METHOD 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

Client:	Elmridge	Project #:	03056-0172
Sample ID:	Wall Composite	Date Reported:	08-20-09
Laboratory Number:	51311	Date Sampled:	08-12-09
Chain of Custody No:	7754	Date Received:	08-17-09
Sample Matrix:	Soil	Date Extracted:	08-18-09
Preservative:	Cool	Date Analyzed:	08-19-09
Condition:	Intact	Analysis Requested:	8015 TPH

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

ND - Parameter not detected at the stated detection limit.

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

Comments: Bisti Coal 28-1

Analyst

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# EPA Method 8015 Modified Nonhalogenated Volatile Organics Total Petroleum Hydrocarbons

#### **Quality Assurance Report**

Client:	QA/QC		Project #:		N/A
Sample ID:	08-19-09 QA/Q	С	Date Reported:		08-20-09
Laboratory Number:	51287		Date Sampled:		N/A
Sample Matrix:	Methylene Chlorid	de	Date Received:		N/A
Preservative:	N/A		Date Analyzed:		08-19-09
Condition:	N/A		Analysis Reques	sted:	TPH
	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	05-07-07	9.7902E+002	9.7941E+002	0.04%	0 - 15%
Diesel Range C10 - C28	05-07-07	9.3636E+002	9.3673E+002	0.04%	0 - 15%
Blank Conc. (mg/L - mg/Kg)		Concentration	9488 	<b>Detection Limit</b>	
Gasoline Range C5 - C10		ND		0.2	
Diesel Range C10 - C28		ND		0.1	
Total Petroleum Hydrocarbons		ND		0.2	
Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range	
Gasoline Range C5 - C10	ND	ND	0.0%	0 - 30%	
Diesel Range C10 - C28	230	227	1.1%	0 - 30%	
Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	ND	250	243	97.2%	75 - 125%
Diesel Range C10 - C28	230	250	485	101%	75 - 125%

ND - Parameter not detected at the stated detection limit.

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

Comments: QA/QC for Samples 51287 - 51290 and 51311 - 51312.

Analyst

Christie Mulceters Review

. F



Client:	Elmridge	Project #:	03056-0172
Sample ID:	Bottom (9' B.Pit)	Date Reported:	08-20-09
Laboratory Number:	51312	Date Sampled:	08-12-09
Chain of Custody:	7754	Date Received:	08-17-09
Sample Matrix:	Soil	Date Analyzed:	08-19-09
Preservative:	Cool	Date Extracted:	08-18-09
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)	
Benzene	ND	0.9	
Toluene	4.7	1.0	
Ethylbenzene	1.2	1.0	
p,m-Xylene	4.7	1.2	
o-Xylene	3.6	0.9	
Total BTEX	14.2		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	96.0 %
	1,4-difluorobenzene	96.0 %
	Bromochlorobenzene	9 <u>6</u> ,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: Bisti Coal 28-1

Analyst

Christen Multen Review



Client:	Elmridge	Project #:	03056-0172
Sample ID:	Wall Composite	Date Reported:	08-20-09
Laboratory Number:	51311	Date Sampled:	08-12-09
Chain of Custody:	7754	Date Received:	08-17-09
Sample Matrix:	Soil	Date Analyzed:	08-19-09
Preservative:	Cool	Date Extracted:	08-18-09
Condition:	Intact	Analysis Requested:	BTEX

		Det.	
	Concentration	Limit	
Parameter	(ug/Kg)	(ug/Kg)	
<b>D</b>			
Benzene	ND	0.9	
Toluene	3.5	1.0	
Ethylbenzene	1.1	1.0	
p,m-Xylene	3.3	1.2	
o-Xylene	3.2	0.9	
Total BTEX	. 11.1		

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	97.0 %
1,4-di	1,4-difluorobenzene	97.0 %
	Bromochlorobenzene	97.0 %

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: Bisti Coal 28-1

Analyst

rate muce Review



Client: Sample ID: Laboratory Number: Sample Matrix: Preservative: Condition:	N/A 08-19-BT QA/QC 51287 Soil N/A N/A		Project #: Date Reported: Date Sampled: Date Received: Date Analyzed: Analysis:		N/A 08-20-09 N/A N/A 08-19-09 BTEX
Calibration and	I-Cal RF:	C-Cal RF:	%Diff.	Blank	Detect.
Detection Limits (ug/L)		Accept. Ra	nge 0 - 15%	Conc	Limit
Benzene	4.0036E+006	4.0116E+006	0.2%	ND	0.1
Toluene	3.7371E+006	3.7446E+006	0.2%	ND	0.1
Ethylbenzene	3.3158E+006	3.3224E+006	0.2%	ND	0.1
p,m-Xylene	8.5339E+006	8.5510E+006	0.2%	ND	0.1
o-Xylene	3.1635E+006	3.1698E+006	0.2%	ND	0.1
Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	e Detect. Limit

Benzene	4.9	4.7	4.1%	0 - 30%	0.9
Toluene	11.4	11.9	4.4%	0 - 30%	1.0
Ethylbenzene	9.4	8.3	11.7%	0 - 30%	1.0
p,m-Xylene	24.0	22.8	5.0%	0 - 30%	1.2
o-Xylene	14.2	14.0	1.4%	0 - 30%	0.9

Spike Conc. (ug/Kg)	Sample A	mount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	4.9	50.0	53.8	98.0%	39 - 150
Toluene	11.4	50.0	59.2	96.4%	46 - 148
Ethylbenzene	9.4	50.0	56.2	94.6%	32 - 160
p,m-Xylene	24.0	100	113	91.0%	46 - 148
o-Xylene	14.2	50.0	61.7	96.1%	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 51287 - 51290, 51308, 51310 - 51312, and 51314 - 51315. return Walles Analyst



Chloride

Parameter		Concentration (mg	/Kg)
Condition:	Intact	Chain of Custody:	7754
Preservative:	Cool	Date Analyzed:	08-19-09
Sample Matrix:	Soil	Date Received:	08-17-09
Lab ID#:	51313	Date Sampled:	08-14-09
Sample ID:	Background	Date Reported:	08-20-09
Client:	Elm Ridge	Project #:	03056-0172

**Total Chloride** 

45

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:

Analyst

Mustur Moeters Review



**Total Chloride** 

Chloride

250

Parameter		Concentration (mg	/Kg)
Condition.	IIIaci	Chain of Custody.	1134
Condition:	Intact	Chain of Custody	7754
Preservative:	Cool	Date Analyzed:	08-19-09
Sample Matrix:	Soil	Date Received:	08-17-09
Lab ID#:	51312	Date Sampled:	08-12-09
Sample ID:	Bottom (9' B. Pit)	Date Reported:	08-20-09
Client:	Elm Ridge	Project #:	03056-0172

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:

Analyst

<u>hrothen Wootles</u> Review



Chloride

Parameter	·	Concentration (mg/Kg)							
Condition:	Intact	Chain of Custody:	7754						
Preservative:	Cool	Date Analyzed:	08-19-09						
Sample Matrix:	Soil	Date Received:	08-17-09						
Lab ID#:	51311	Date Sampled:	08-12-09						
Sample ID:	Wall Composite	Date Reported:	08-20-09						
Client:	Elm Ridge	Project #:	03056-0172						

**Total Chloride** 

380

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:

Analyst

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# **CHAIN OF CUSTODY RECORD**

Client: Project Name / Location:													ANAL	YSIS	/ Par	AMETERS											
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Sample No./	Sample	Sample	Lab No. S		Sample	No./Volume Preservative		U) Hd	TEX		SCRA	ation		CLP	AH	Hd	ЯГО			àmp	amp						
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Bottom (9'B.P.)	8 12/0	7 1012	351312	goil Solid	Sludge Aqueous	1-405	-	X	x	Ø								Ø			$\succ$	$\times$					
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# **MMQonline Public Version**













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

No records found.

PLSS Search:

Section(s): 28, 21

Township: 25N

Range: 12W

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