

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

State of New Mexico  
Energy Minerals and Natural Resources

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

Form C-141  
Revised October 10, 2003

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

**Release Notification and Corrective Action**

**OPERATOR**

☐ Initial Report ☒ Final Report

Name of Company: Elm Ridge Exploration	Contact: Amy Mackey	
Address: PO Box 156, Bloomfield, NM 87413	Telephone No.: (505) 632-3476 Ext 201	
Facility Name: Bisti Coal 18-1	Facility Type: Gas Well	
Surface Owner: Federal	Mineral Owner:	Lease No.: NM 25446

**LOCATION OF RELEASE**

Unit Letter G	Section 18	Township 25N	Range 12W	Feet from the 2510	North/South Line FNL	Feet from the 1850	East/West Line FEL	County San Juan
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Latitude 36.401580 Longitude -108.149890

**NATURE OF RELEASE**

Type of Release: Produced Water	Volume of Release: Unknown	Volume Recovered: Unknown
Source of Release: Earth Pit	Date and Hour of Occurrence: Historical	Date and Hour of Discovery: NA
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

Produced water from a gas well at the above mentioned location formerly discharged into an earthen pit on location. The well has been altered to no longer drain into an earthen pit, but instead into an above ground storage tank (AST).

Describe Area Affected and Cleanup Action Taken.\*

Blow sand was removed from the earthen pit, and approximately one (1) yard of 'production sludge' was removed from the earthen pit. A 5-point composite sample was collected from approximately one (1) foot below the earthen pit once it was removed. The sample was analyzed in the field for total petroleum hydrocarbons (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. The sample returned results below the 'Pit Rule' standards of 100 mg/kg TPH, 0.2 mg/kg benzene, 50 mg/kg BTEX and 250 mg/kg total chlorides, confirming that a release had not occurred. Analytical results are attached for your reference.

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

Signature:		<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Ms. Amy Mackey		Approved by District Supervisor:	
Title: Administrative Manager		Approval Date:	Expiration Date:
E-mail Address: amackey1@elmridge.net		Conditions of Approval:	
Date: <u>9/25/09</u> Phone: 505-632-3476 Ext 201		Attached <input type="checkbox"/>	

\* Attach Additional Sheets If Necessary

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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

Form C-144  
July 21, 2008

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

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

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

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

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

Operator: Elm Ridge Exploration OGRID #: 149052  
Address: P.O. Box 156; Bloomfield, NM 87413  
Facility or well name: Bisti Coal 18-1  
API Number: 3004528140 OCD Permit Number: \_\_\_\_\_  
U/L or Qtr/Qtr G Section 18 Township 25N Range 12W County: San Juan  
Center of Proposed Design: Latitude 36.401580 Longitude -108.149890 NAD: ☐ 1927 ☒ 1983  
Surface Owner: ☒ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.  
☒ **Pit:** Subsection F or G of 19.15.17.11 NMAC  
Temporary: ☐ Drilling ☐ Workover  
☒ Permanent ☐ Emergency ☐ Cavitation ☐ P&A  
☐ Lined ☒ Unlined Liner type: Thickness \_\_\_\_\_ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other \_\_\_\_\_  
☐ String-Reinforced  
Liner Seams: ☐ Welded ☐ Factory ☐ Other \_\_\_\_\_ Volume: \_\_\_\_\_ bbl Dimensions: L 25' x W 10 x D 2'

3.  
☐ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC  
Type of Operation: ☐ P&A ☐ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)  
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other \_\_\_\_\_  
☐ Lined ☐ Unlined Liner type: Thickness \_\_\_\_\_ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other \_\_\_\_\_  
Liner Seams: ☐ Welded ☐ Factory ☐ Other \_\_\_\_\_

4.  
☐ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC  
Volume: \_\_\_\_\_ bbl Type of fluid: \_\_\_\_\_  
Tank Construction material:  
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off  
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other \_\_\_\_\_  
Liner type: Thickness \_\_\_\_\_ mil ☐ HDPE ☐ PVC ☐ Other \_\_\_\_\_

5.  
☐ **Alternative Method:**  
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

6.

**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 \_\_\_\_\_

7.

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

- ☐ Screen ☒ Netting ☐ Other \_\_\_\_\_
- ☐ Monthly inspections (If netting or screening is not physically feasible)

8.

**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

9.

**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.

10.

**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

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.

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

- (*Applies to temporary, emergency, or cavitation pits and below-grade tanks*) (

☐ Yes ☐ No  
☐ NA

Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (*Applies to permanent pits*)

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ 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.

Within 500 feet of a wetland.

☐ Yes ☐ No

Within the area overlying a subsurface mine.

Within an unstable area.

- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map

☐ Yes ☐ No

Within a 100-year floodplain.

- FEMA map

☐ Yes ☐ No

☐ Yes ☐ No

☐ Yes ☐ No

11.

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

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

12.

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

- ☐ Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9  
☐ Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC  
☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC  
☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC  
☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
- ☐ Previously Approved Design (attach copy of design)    API Number: \_\_\_\_\_
- ☐ Previously Approved Operating and Maintenance Plan    API Number: \_\_\_\_\_ (Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)

13.

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

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

14.

**Proposed Closure:** 19.15.17.13 NMAC

**Instructions:** Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

- Type: ☐ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Closed-loop System  
☐ Alternative
- Proposed Closure Method: ☐ Waste Excavation and Removal  
☐ Waste Removal (Closed-loop systems only)  
☐ On-site Closure Method (Only for temporary pits and closed-loop systems)  
☐ In-place Burial ☐ On-site Trench Burial  
☐ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

15.

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

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

16.

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

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

Disposal Facility Name: \_\_\_\_\_ Disposal Facility Permit Number: \_\_\_\_\_

Disposal Facility Name: \_\_\_\_\_ Disposal Facility Permit Number: \_\_\_\_\_

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

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

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

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

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

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

17.

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

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

Ground water is less than 50 feet below the bottom of the buried waste.

- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☐ Yes ☐ No  
☐ NA

Ground water is between 50 and 100 feet below the bottom of the buried waste

- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☐ Yes ☐ No  
☐ NA

Ground water is more than 100 feet below the bottom of the buried waste.

- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☐ Yes ☐ No  
☐ NA

Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☐ No

Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.

- NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.

- Written confirmation or verification from the municipality; Written approval obtained from the municipality

☐ Yes ☐ No

Within 500 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within the area overlying a subsurface mine.

- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

☐ Yes ☐ No

Within an unstable area.

- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map

☐ Yes ☐ No

Within a 100-year floodplain.

- FEMA map

☐ Yes ☐ No

18.

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

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

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

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

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

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

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

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

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

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

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

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

19.

**Operator Application Certification:**

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

Name (Print): \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

e-mail address: \_\_\_\_\_ Telephone: \_\_\_\_\_

20.

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

**OCD Representative Signature:** \_\_\_\_\_ **Approval Date:** \_\_\_\_\_

**Title:** \_\_\_\_\_ **OCD Permit Number:** \_\_\_\_\_

21.

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

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

☒ Closure Completion Date: 7/27/09

22.

**Closure Method:**

☒ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)  
☐ If different from approved plan, please explain.

23.

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

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

Disposal Facility Name: Envirotech Landfarm #2 Disposal Facility Permit Number: NM-01-0011

Disposal Facility Name: \_\_\_\_\_ Disposal Facility Permit Number: \_\_\_\_\_

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

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

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

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

24.

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

☒ Proof of Closure Notice (surface owner and division) **see attached**  
☐ Proof of Deed Notice (required for on-site closure)  
☐ Plot Plan (for on-site closures and temporary pits)  
☒ Confirmation Sampling Analytical Results (if applicable) **see attached**  
☐ Waste Material Sampling Analytical Results (required for on-site closure)  
☒ Disposal Facility Name and Permit Number **Envirotech Landfarm #2 NM-01-0011**  
☒ Soil Backfilling and Cover Installation **see attached**  
☒ Re-vegetation Application Rates and Seeding Technique **performed per BLM MOU**  
☒ Site Reclamation (Photo Documentation) **see attached**

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

25.

**Operator Closure Certification:**

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

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

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

e-mail address: amackey1@clmridge.net Telephone: (505) 632-3476 ext. 201

### **Earthen Pit Closure Checklist**

- 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.  
**Closure date for the earth pit located at Bisti Coal 18-1 well site is July 27, 2009.**
- 2) In accordance with 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.  
**None of the earthen pits to be closed by Elm Ridge Exploration are deemed an imminent risk to the environment, public health, or to fresh or public water.**
- 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 proximately to surface water sources and distance to groundwater.  
**None of the earthen pits to be closed by Elm Ridge Exploration are deemed an imminent risk to the environment, public health, or to fresh or public water.**
- 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 (New Mexico Oil Conservation Division) office as well as a schedule of on-site activities, as in accordance with 19.15.17.13 Subsection J Paragraph (3) NMAC.  
**Notification was provided to Mr. Brad Jones of the NMOCD Santa Fe Office on July 15, 2009 along with a schedule of on-site activities; see attached *Notification Letter*.**
- 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 closure activities.

**Notification was provided to the Bureau of Land Management on July 22, 2009; see attached *Sundry Notice and Return Receipt*.**

- 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 .

**On July 27, 2009, approximately one (1) cubic yard of production sludge was removed from the earthen pit and disposed of at Envirotech's NMOCD permitted soil remediation facility, Landfarm #2, Permit # NM-01-0011; see attached *Bill of Lading*.**

- 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.

**All on-site equipment will be used for the continued operation of the Bisti Coal 18-1 well site; see *Field Sheet and Site Photos*.**

- 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.

**A five (5)-point composite sample was collected from native soil beneath the earthen pit, after the production sludge was removed, and analyzed in the field for total petroleum hydrocarbons (TPH) via USEPA Method 418.1, and analyzed in the laboratory for benzene and BTEX via USEPA Method 8021B and for total chlorides via USEPA Method 4500B. The sample returned results below the 100 mg/kg TPH standard, the 0.2 mg/kg benzene standard, the 50 mg/kg BTEX standard, and the 250 mg/kg total chloride standard, confirming that a release did NOT occur.**

NAME	Benzene	BTEX	Chlorides	TPH
Pit Rule Standard	0.2 mg/kg	50 mg/kg	250 mg/kg	100 mg/kg
Earth Pit Comp 6" Deep	NS	NS	NS	212 mg/kg
Earth Pit Comp 1' Deep	< 0.0009 mg/kg	0.0151 mg/kg	110 mg/kg	< 5 mg/kg



9) Depending on soil sample results the area will be either backfilled or the area will be excavated.

1) 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.

**Completed Form C-141 is attached for your review.**

ii. Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge Exploration, will backfill the excavation or impacted area with non-waste containing, earthen material, in accordance with 19.15.17.13 Subsection E Paragraph (6) NMAC. A soil cover shall be installed for all backfilled excavations consisting of the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater in accordance with Subsections H of 19.15.17.13 NMAC. The operator shall construct the soil cover to the site's existing grade and prevent ponding of water and erosion of the cover material.

**Elm Ridge Exploration has backfilled the excavated area with non-waste containing earthen material, and installed a soil cover of at least one (1) foot thick of suitable material to establish vegetation at this site. The soil cover has been graded in such a way that it conforms to the grade of the natural surroundings, and will prevent ponding of water and erosion of the cover material; see *Site Photos*.**

iii. All areas of the well site that are no longer utilized on a day to day basis for the production of oil and/or gas, Elm Ridge Exploration, or a contractor acting on behalf of Elm Ridge Exploration, will substantially restore, 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 re-seed and when it has achieved successful re-vegetation.

**Elm Ridge Exploration has restored, recontoured and re-seeded the excavated area in accordance with BLM standards as outlined in the Memorandum of Understanding (MOU).**

2) 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.

**The five (5)-point composite sample of native soil beneath the earthen pit returned results below the 100 mg/kg TPH standard, the 0.2 mg/kg benzene standard, the 50 mg/kg BTEX standard and the 250 mg/kg total chloride standard, confirming that a release did NOT occur.**

- 10) 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.  
**See attached C-144 Closure Form and attached Form C-141 Release Notification Form. Closure report has been submitted prior to September 27, 2009.**

July 15, 2009

Project No. 03056-0241

Mr. Brad Jones  
New Mexico Oil Conservation Division  
1220 South St. Francis Street  
Santa Fe, New Mexico 87505

Phone (505) 476-3487

**RE: EARTH PIT CLOSURE NOTIFICATIONS AND PROPOSED CLOSURE SCHEDULE**

Dear Mr. Jones,

Envirotech, Inc., on the behalf of Elm Ridge Exploration, would like to submit this notification to begin closure activities at the below mentioned locations. Attached to this document is a proposed closure schedule for the months of July and August of 2009. Should this schedule be approved by your office, closure activities will begin as scheduled, with surface owner notifications being made at a minimum of 24 hours prior to the beginning of closure activities and a maximum of one (1) week prior to closure activities. Additional closure notifications and schedules will be made prior to beginning any closure activities. This letter will act as the closure notification for the following sites:

BISTI COAL 12 001	BISTI COAL 21 001	BISTI COAL 4 COM 002
BISTI COAL 16 001	BISTI COAL 21 COM 002	BISTI COAL 5 COM 001
BISTI COAL 16 002	BISTI COAL 22 002	BISTI COAL 5K COM 002
BISTI COAL 17 COM 001	BISTI COAL 28 001	BISTI COAL 6 001
BISTI COAL 18 001	BISTI COAL 29 001	BISTI COAL 6 002
BISTI COAL 18 002	BISTI COAL 29 002	BISTI COAL 7 001
BISTI COAL 19 001	BISTI COAL 30 COM 001	BISTI COAL 7 COM 002
BISTI COAL 2 001	BISTI COAL 31 001	BISTI COAL 8 COM 001
BISTI COAL 2 002	BISTI COAL 4 001 PIT 1	BISTI COAL 8L COM 002
BISTI COAL 20 001	BISTI COAL 4 001 PIT 2	BISTI COAL 9 001
BISTI COAL 20 002		

Elm Ridge Exploration is proposing to close the earthen pits at the above listed well locations based on the attached closure schedule.

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

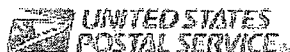
Respectfully Submitted,  
**ENVIROTECH, INC.**

**ELM RIDGE EXPLORATION**

James McDaniel  
Project Scientist  
[jmcdaniel@envirotech-inc.com](mailto:jmcdaniel@envirotech-inc.com)

Amy Mackey  
Administrative Manager  
[amackey1@elmridge.net](mailto:amackey1@elmridge.net)

Attachments: Closure Schedule


[Home](#) | [Help](#) | [Sign In](#)

Track &amp; Confirm

FAQs

## Track &amp; Confirm

## Search Results

Label/Receipt Number: 7007 1490 0000 5398 9244

Service(s): Certified Mail™

Status: Delivered

Track &amp; Confirm

Enter Label/Receipt Number.

Your item was delivered at 10:14 AM on July 22, 2009 in FARMINGTON,  
NM 87401.

Go &gt;

## Notification Options

Track &amp; Confirm by email

Get current event information or updates

[Site Map](#)[Customer Service](#)[Forms](#)[Gov't Service](#)

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No FEAR

U.S. Postal Service <b>CERTIFIED MAIL RECEIPT</b> (Domestic Mail Only, No Insurance Coverage Provided)	
For delivery information visit our website at <a href="http://www.usps.com">www.usps.com</a>	
<b>OFFICIAL USE</b>	
Postage	\$ <u>1.37</u>
Certified Fee	<u>0.80</u>
Return Receipt Fee (Endorsement Required)	<u>2.30</u>
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ <u>5.98</u>
Sent To: <u>BUREAU OF LAND MGMT</u>	
Street, Apt. No., or PO Box No. <u>1235 LAPLATA HWY, STE A</u>	
City, State, ZIP+4 <u>FARM</u>	
PS Form 3811, April 2006 See Reverse for Instructions	

03056 -  
0241

## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

## 1. Article Addressed to:

Mr. Mark Kelly  
BLM  
1235 LAPLATA HWY  
Suite A  
Farmington, NM  
87401

## 2. Article Number

(Transfer from service label)

7007 1490 0000 5398 9244

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

*[Signature]*

- ☐
- Agent
- 
- ☐
- Addressee

## B. Received by (Printed Name)

## C. Date of Delivery

## D. Is delivery address different from item 1?

If YES, enter delivery address below:

- ☐
- Yes
- 
- ☐
- No

## 3. Service Type

- ☐
- Certified Mail
- 
- ☐
- Registered
- 
- ☐
- Insured Mail
- 
- ☐
- Express Mail
- 
- ☐
- Return Receipt for Merchandise
- 
- ☐
- C.O.D.

## 4. Restricted Delivery? (Extra Fee)

- ☐
- Yes

Bisti Coal 12-1  
Bisti Coal 16-2  
Bisti Coal 16-1  
Bisti Coal 17 com  
Bisti Coal 18-1



July 20, 2009

Project No. 03056-0162

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

Phone: (505) 599-8900

**RE: BISTI COAL 18-1 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 18-1 well site, owned and operated by Elm Ridge Exploration. The Bisti Coal 18-1 well site is located in Unit G, Section 18, Township 25N, Range 12W, San Juan County, New Mexico. Closure activities are scheduled to begin on July 27, 2009 and continue through July 31, 2009.

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

Respectfully Submitted,  
ENVIROTECH, INC.

  
James McDaniel  
Project Scientist  
[jmcdaniel@envirotech-inc.com](mailto:jmcdaniel@envirotech-inc.com)

Enclosure: Sundry Notice

Cc: Client File No. 03056

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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

**SUNDRY NOTICES AND REPORTS ON WELLS**  
**Do not use this form for proposals to drill or to re-enter an**  
**abandoned well. Use Form 3160-3 (APD) for such proposals.**

5. Lease Serial No.  
NM-25446

6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE – Other instructions on page 2.**

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

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.  
Bisti Coal 18-1

2. Name of Operator  
Elm Ridge Exploration

9. API Well No.  
30-045-28140

3a. Address  
PO Box 156  
Bloomfield, NM 87413

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

10. Field and Pool or Exploratory Area

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
2510 FNL 1850 FEL, G-18-25N-12W, Lat. 36.40155 long. -108.15005

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

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

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

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

Elm Ridge Exploration plans to begin closure activities for an earthen pit located at the above mentioned site. All formal notifications have been made. Closure activities are scheduled to being on Monday, July 27, 2009 and last through July 31, 2009.

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

Title Administrative Manager

Signature

Date 07/20/2009

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by

Title

Date

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

Office

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

(Instructions on page 2)

## GENERAL INSTRUCTIONS

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

## SPECIFIC INSTRUCTIONS

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

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

## NOTICES

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

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

**PRINCIPAL PURPOSE:** The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval 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

**ELM RIDGE EXPLORATION  
BISTI COAL 18-1  
SEC. 18, TWN 25N, RGE 12W  
PROJECT NO. 03056-0162**



Photo 1: Bisti Coal 18-1 Well Site



Photo 2: Excavated Area After Backfilling and Recontouring





**EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS**

Client:	Elm Ridge Exploration	Project #:	03056-0162
Sample No.:	1	Date Reported:	8/13/2009
Sample ID:	Earth Pit Comp 6" deep	Date Sampled:	7/27/2009
Sample Matrix:	Soil	Date Analyzed:	7/27/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

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

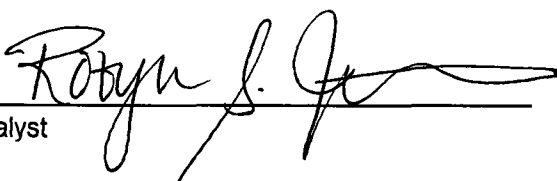
<b>Total Petroleum Hydrocarbons</b>	<b>212</b>	<b>5.0</b>
-------------------------------------	------------	------------

ND = Parameter not detected at the stated detection limit.

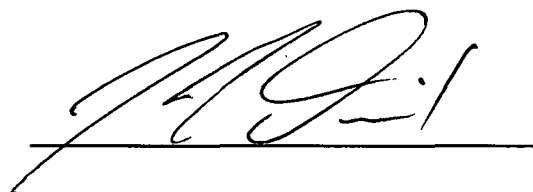
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **Bisti Coal 18-1**

Instrument calibrated to 200 ppm standard. Zeroed before each sample

  
\_\_\_\_\_  
Analyst

Robyn S. Jones  
Printed

  
\_\_\_\_\_  
Analyst

James McDaniel  
Printed



**EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS**

Client:	Elm Ridge Exploration	Project #:	03056-0162
Sample No.:	2	Date Reported:	8/13/2009
Sample ID:	Earth Pit Comp 1' deep	Date Sampled:	7/27/2009
Sample Matrix:	Soil	Date Analyzed:	7/27/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

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

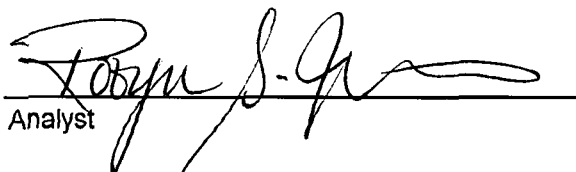
<b>Total Petroleum Hydrocarbons</b>	<b>ND</b>	<b>5.0</b>
-------------------------------------	-----------	------------

ND = Parameter not detected at the stated detection limit.

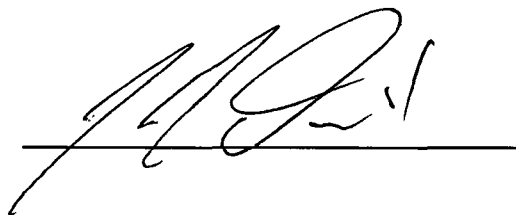
References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **Bisti Coal 18-1**

Instrument calibrated to 200 ppm standard. Zeroed before each sample

  
Analyst

**Robyn S. Jones**  
Printed



**James McDaniel**  
Printed

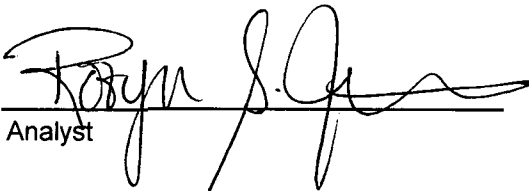


CONTINUOUS CALIBRATION  
EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Cal. Date: 27-Jul-09

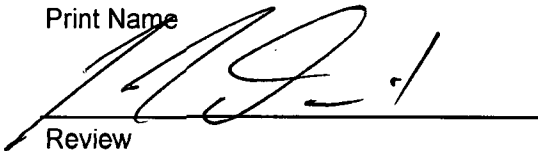
Parameter	Standard Concentration mg/L	Concentration Reading mg/L
TPH	100	214
	200	
	500	
	1000	

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

  
Analyst

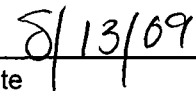
Robyn S. Jones

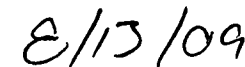
Print Name

  
Review

James McDaniel

Print Name

  
Date

  
Date

Client:	Elmridge	Project #:	03056-0162
Sample ID:	Pit - 1' FEW	Date Reported:	08-03-09
Laboratory Number:	51015	Date Sampled:	07-27-09
Chain of Custody:	7523	Date Received:	07-28-09
Sample Matrix:	Soil	Date Analyzed:	07-31-09
Preservative:	Cool	Date Extracted:	07-30-09
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	0.9
Toluene	5.2	1.0
Ethylbenzene	1.8	1.0
p,m-Xylene	4.5	1.2
o-Xylene	3.6	0.9
Total BTEX	15.1	

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 18-1**

Analyst

Review



# envirotech

Analytical Laboratory

## EPA METHOD 8021 AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	07-31-BT QA/QC	Date Reported:	08-03-09
Laboratory Number:	51004	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-31-09
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF	C-Cal RF	%Diff	Blank Conc	Detect Limit
		Accept. Range 0 - 15%			
Benzene	4.4517E+006	4.4606E+006	0.2%	ND	0.1
Toluene	4.1442E+006	4.1525E+006	0.2%	ND	0.1
Ethylbenzene	3.6898E+006	3.6972E+006	0.2%	ND	0.1
p,m-Xylene	9.5579E+006	9.5771E+006	0.2%	ND	0.1
o-Xylene	3.5394E+006	3.5465E+006	0.2%	ND	0.1

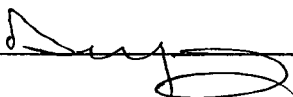
Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff	Accept Range	Detect Limit
Benzene	2.1	2.0	4.8%	0 - 30%	0.9
Toluene	6.3	6.6	4.8%	0 - 30%	1.0
Ethylbenzene	4.5	4.9	8.9%	0 - 30%	1.0
p,m-Xylene	13.9	14.1	1.4%	0 - 30%	1.2
o-Xylene	8.4	8.6	2.4%	0 - 30%	0.9

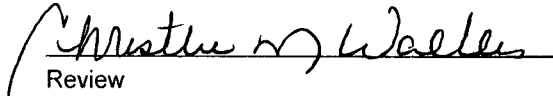
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	2.1	50.0	50.6	97.1%	39 - 150
Toluene	6.3	50.0	54.8	97.3%	46 - 148
Ethylbenzene	4.5	50.0	53.0	97.2%	32 - 160
p,m-Xylene	13.9	100	112	98.7%	46 - 148
o-Xylene	8.4	50.0	56.9	97.4%	46 - 148

ND - Parameter not detected at the stated detection limit.

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

Comments: QA/QC for Samples 51004 and 51013 - 51021.

Analyst 

Review 



Client:	Elmridge	Project #:	03056-0162
Sample ID:	Pit - 1' FEW	Date Reported:	08-03-09
Lab ID#:	51015	Date Sampled:	07-27-09
Sample Matrix:	Soil	Date Received:	07-28-09
Preservative:	Cool	Date Analyzed:	07-30-09
Condition:	Intact	Chain of Custody:	7523

**Parameter**

**Concentration (mg/Kg)**

**Total Chloride**

**110**


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: **Bisti Coal 18-1.**

Analyst

Review

7523



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FIELD REPORT: BGT / PIT CLOSURE VERIFICATION

LOCATION: NAME: Bisti Coal 18 WELL #: 1 TEMP PIT: PERMANENT PIT: X BGT:  
LEGAL ADD: UNIT: SEC: 18 TWP: 25N RNG: 12W PM:  
QTR/FOOTAGE: 2510' ENL 1850' FEL CNTY: San Juan ST: NM

EXCAVATION APPROX: 26 FT. X 10 FT. X 3-4 FT. DEEP CUBIC YARDAGE: 1  
DISPOSAL FACILITY: Envirotech Landfarm 2 REMEDIATION METHOD:  
LAND OWNER: API: 3004528140 BGT / PIT VOLUME:  
CONSTRUCTION MATERIAL: Earth DOUBLE-WALLED, WITH LEAK DETECTION:

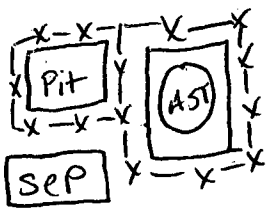
LOCATION APPROXIMATELY: FT. FROM WELLHEAD  
DEPTH TO GROUNDWATER:

- TEMPORARY PIT - GROUNDWATER 50-100 FEET DEEP  
BENZENE ≤ 0.2 mg/kg, BTEX ≤ 50 mg/kg, GRO & DRO FRACTION (8015) ≤ 500 mg/kg, TPH (418.1) ≤ 2500 mg/kg, CHLORIDES ≤ 500 mg/kg
- TEMPORARY PIT - GROUNDWATER ≥ 100 FEET DEEP  
BENZENE ≤ 0.2 mg/kg, BTEX ≤ 50 mg/kg, GRO & DRO FRACTION (8015) ≤ 500 mg/kg, TPH (418.1) ≤ 2500 mg/kg, CHLORIDES ≤ 1000 mg/kg
- X PERMANENT PIT OR BGT  
BENZENE ≤ 0.2 mg/kg, BTEX ≤ 50 mg/kg, TPH (418.1) ≤ 100 mg/kg, CHLORIDES ≤ 250 mg/kg

FIELD 418.1 ANALYSIS

TIME	SAMPLE I.D.	LAB NO.	WEIGHT (g)	mL FREON	DILUTION	READING	CALC. (mg/kg)
8:22	200 STD					214	
13:30	10" FEW	1	5	20	4	53	212
14:40	1' FEW	2	5	2	4		
		3					
		4					
		5					
		6					

PERIMETER



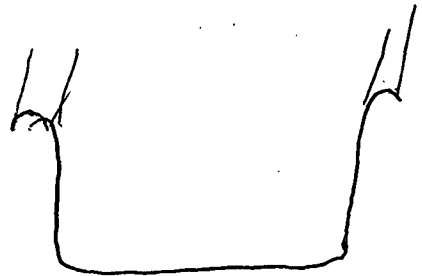
PS WH  
O

Entrance

SAMPLE ID	READING	CALC. (mg/kg)
10" FEW	7.2(14)	3985
1' FEW	4.4(2)	193

PID RESULTS

SAMPLE ID	RESULTS (ppm)
1' FEW	



Original: 25x10x3-4ft  
Excavation: 26x10x3-4ft





# Bill of Lading

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

MANIFEST # 33927 01162  
DATE 2-28-99 JOB# 03056-0259

[illegible]

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

NAME John McKimsey COMPANY Fair-Fair SIGNATURE J McKimsey  
COMPANY CONTACT MACK PHONE 327-2711 DATE 7-28-09

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

State of New Mexico  
Energy Minerals and Natural Resources

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

Form C-141  
Revised October 10, 2003

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

RECEIVED  
2009 MAY 18 PM 2:39

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Elm Ridge Exploration	Contact: Amy Mackey
Address: PO Box 156, Bloomfield, NM 87413	Telephone No.: (505) 632-3476 Ext 201
Facility Name: Bisti Coal 18-1	Facility Type: Gas Well

Surface Owner: Federal	Mineral Owner:	Lease No.: NM 25446
------------------------	----------------	---------------------

LOCATION OF RELEASE

Unit Letter G	Section 18	Township 25N	Range 12W	Feet from the 2510	North/South Line FNL	Feet from the 1850	East/West Line FEL	County San Juan
------------------	---------------	-----------------	--------------	-----------------------	-------------------------	-----------------------	-----------------------	--------------------

Latitude 36.401854 Longitude -108.150057

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: Unknown	Volume Recovered: Unknown
Source of Release: Earth Pit	Date and Hour of Occurrence: Historical	Date and Hour of Discovery: NA
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

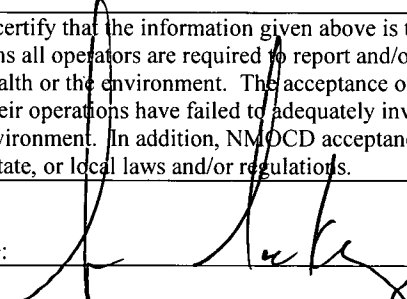
Describe Cause of Problem and Remedial Action Taken.\*

Produced Water from gas well at the mentioned location formerly discharged into an earthen pit on location. The well has been altered to no longer drain into an earthen pit, but instead into an AST.

Describe Area Affected and Cleanup Action Taken.\*

Earthen pit was in use on 10/29/08, and has not been discharged into since November 2008. A sample was collected from the earthen pit and the sample results are attached to this document for reference. The sample was analyzed in Envirotech's laboratory for benzene and total BTEX via USEPA Method 8021, and for total chlorides via USEPA Method 4500B. The sample returned results that were below the 0.2 ppm benzene and the 50 ppm BTEX standards, but above the 250 ppm total chloride standard, confirming that a release had occurred at this site. The site was then ranked pursuant to the NMOCD Guidelines for the Remediation of Leaks, Spills and Releases. The site was ranked a 10 due to groundwater being greater than 50 feet below ground surface, but less than 100 feet. This set the closure standards to 1000 ppm TPH, 10 ppm benzene and 50 ppm total BTEX. There is no closure standard for total chlorides per the NMOCD Guidelines for the Remediation of Leaks, Spills and Releases. On March 17, 2009 a sample was collected from the earthen pit to be analyzed in the field for TPH via USEPA Method 418.1 and in Envirotech's laboratory for TPH via USEPA Method 8015. The sample returned results that were above the 1000 ppm closure standard determined for this site via USEPA Method 418.1, but below the 1000 ppm TPH standard for TPH via USEPA Method 8015. All analytical results were below the closure standards determined for this site.

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

Signature: 		<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Ms. Amy Mackey		Approved by District Supervisor:	
Title: Administrative Manager		Approval Date:	Expiration Date:
E-mail Address: amackey1@elmridge.net		Conditions of Approval:	
Date:		Attached <input type="checkbox"/>	
Phone: 505-632-3476 Ext 201			

\* Attach Additional Sheets If Necessary

PAGE NO: <u>1</u> OF <u>1</u>	 <b>envirotech</b> (505) 632-0615 (800) 362-1879 5796 U.S. Hwy 64, Farmington, NM 87401	ENVIRONMENTAL SPECIALIST:
DATE STARTED: <u>3/17/09</u>		LAT: <u>36.461854</u>
DATE FINISHED: <u>3/17/09</u>		LONG: <u>-108.150057</u>

### FIELD REPORT: BGT / PIT CLOSURE VERIFICATION

LOCATION: NAME: <u>BIST COAL 18</u>	WELL #: <u>1</u>	TEMP PIT: <input checked="" type="checkbox"/>	PERMANENT PIT: <input type="checkbox"/>	BGT: <input type="checkbox"/>
LEGAL ADD: UNIT: <u>G</u>	SEC: <u>18</u>	TWP: <u>25N</u>	RNG: <u>12W</u>	PM: <u></u>
QTR/FOOTAGE: <u>2510' FNL X 1805' KSD FEL</u>	CNTY: <u>SJ</u>	ST: <u>NM</u>		

EXCAVATION APPROX: <u>      </u> FT. X <u>      </u> FT. X <u>      </u> FT. DEEP	CUBIC YARDAGE: <u>      </u>
DISPOSAL FACILITY: <u>      </u>	REMEDICATION METHOD: <u>      </u>
LAND OWNER: <u>Federal</u>	API: <u>NM 25440</u>
CONSTRUCTION MATERIAL: <u>Eternu</u>	DOUBLE-WALLED, WITH LEAK DETECTION: <u>NA</u>
BGT / PIT VOLUME: <u>28784 PIT</u>	

LOCATION APPROXIMATELY: <u>88'</u> FT. <u>10°</u>	FROM WELLHEAD
DEPTH TO GROUNDWATER: <u>750-100</u>	

- ☒ TEMPORARY PIT - GROUNDWATER 50-100 FEET DEEP  
 BENZENE ≤ 0.2 mg/kg, BTEX ≤ 50 mg/kg, GRO & DRO FRACTION (8015) ≤ 500 mg/kg, TPH (418.1) ≤ 2500 mg/kg, CHLORIDES ≤ 500 mg/kg
- ☒ TEMPORARY PIT - GROUNDWATER ≥ 100 FEET DEEP  
 BENZENE ≤ 0.2 mg/kg, BTEX ≤ 50 mg/kg, GRO & DRO FRACTION (8015) ≤ 500 mg/kg, TPH (418.1) ≤ 2500 mg/kg, CHLORIDES ≤ 1000 mg/kg
- ☐ PERMANENT PIT OR BGT  
 BENZENE ≤ 0.2 mg/kg, BTEX ≤ 50 mg/kg, TPH (418.1) ≤ 100 mg/kg, CHLORIDES ≤ 250 mg/kg

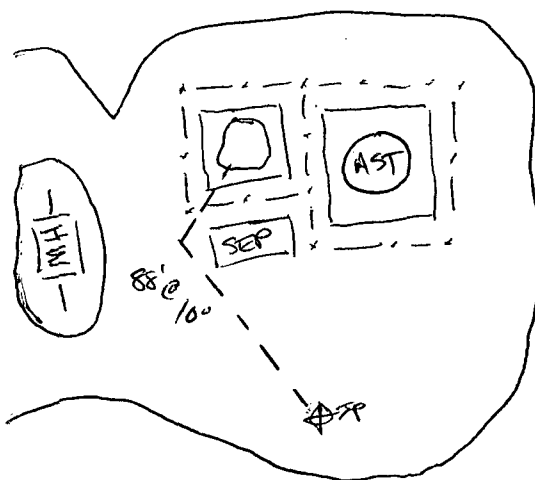
#### FIELD 418.1 ANALYSIS

TIME	SAMPLE I.D.	LAB NO.	WEIGHT (g)	mL FREON	DILUTION	READING	CALC. (mg/kg)
	200 STD					202	
1:15	<del>42-58</del> SPT	1	5	20	4	491	3,964
		2					
		3					
		4					
		5					
		6					

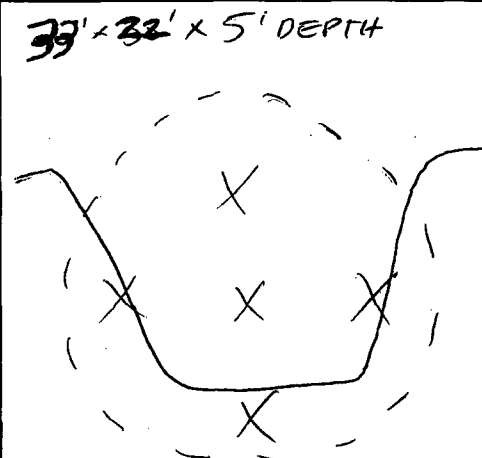
#### PERIMETER

#### FIELD CHLORIDES RESULTS

#### PROFILE



SAMPLE ID	READING	CALC. (mg/kg)



#### LAB SAMPLES

#### NOTES:

SAMPLE ID	ANALYSIS	RESULTS
	BENZENE	
	BTEX	
	GRO & DRO	
	CHLORIDES	

Ranking 10: Closure 1000 ppm TPH

WORKORDER #

WHO ORDERED



**EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS**

Client:	Elm Ridge Exploration	Project #:	03056-0162
Sample No.:	1	Date Reported:	3/24/2009
Sample ID:	5 Point Composite	Date Sampled:	3/17/2009
Sample Matrix:	Soil	Date Analyzed:	3/17/2009
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

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


<b>Total Petroleum Hydrocarbons</b>	<b>3,960</b>	<b>5.0</b>
-------------------------------------	--------------	------------

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 18-1 Earth Pit**

Instrument calibrated to 200 ppm standard. Zeroed before each sample

  
\_\_\_\_\_  
Analyst

**Roynell Benally**  
\_\_\_\_\_  
Printed

  
\_\_\_\_\_  
Review

**James McDaniel**  
\_\_\_\_\_  
Printed




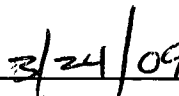
CONTINUOUS CALIBRATION  
EPA METHOD 418.1  
TOTAL PETROLEUM  
HYDROCARBONS

Cal. Date: 17-Mar-09

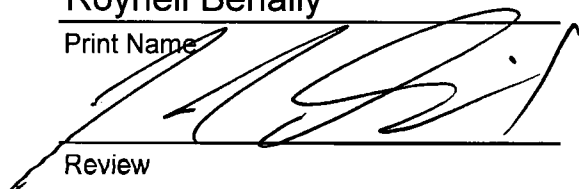
Parameter	Standard Concentration mg/L	Concentration Reading mg/L
TPH	100	202
	200	
	500	
	1000	

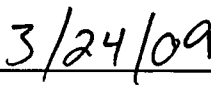
The accepted percent relative deviation (%RSD) of the calibration factor is less than 20% over the working range.

  
\_\_\_\_\_  
Analyst

  
\_\_\_\_\_  
Date

Roynell Benally  
\_\_\_\_\_  
Print Name

  
\_\_\_\_\_  
Review

  
\_\_\_\_\_  
Date

James McDaniel  
\_\_\_\_\_  
Print Name



**envirotech**  
Analytical Laboratory

**EPA METHOD 8015 Modified  
Nonhalogenated Volatile Organics  
Total Petroleum Hydrocarbons**

Client:	Elmridge	Project #:	03056-0162
Sample ID:	Earth Pit	Date Reported:	03-19-09
Laboratory Number:	49344	Date Sampled:	03-17-09
Chain of Custody No:	6534	Date Received:	03-17-09
Sample Matrix:	Soil	Date Extracted:	03-18-09
Preservative:	Cool	Date Analyzed:	03-18-09
Condition:	Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	7.5	0.2
Diesel Range (C10 - C28)	263	0.1
Total Petroleum Hydrocarbons	271	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 18 #1.**

  
Analyst

  
Review



# envirotech

Analytical Laboratory

EPA Method 8015 Modified  
Nonhalogenated Volatile Organics  
Total Petroleum Hydrocarbons

## Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	03-18-09 QA/QC	Date Reported:	03-19-09
Laboratory Number:	49330	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-18-09
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept Range
Gasoline Range C5 - C10	05-07-07	9.8014E+002	9.8053E+002	0.04%	0 - 15%
Diesel Range C10 - C28	05-07-07	9.9624E+002	9.9664E+002	0.04%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
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	0.3	0.3	0.0%	0 - 30%
Diesel Range C10 - C28	4.8	4.5	6.2%	0 - 30%

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept Range
Gasoline Range C5 - C10	0.3	250	248	99.2%	75 - 125%
Diesel Range C10 - C28	4.8	250	252	98.8%	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 49330 - 49332, 49334 - 49335, 49341 and 49344.

Analyst

Review

Client:	ElmRidge Res	Project #:	03056-0136
Sample ID:	Bisti Coal 18-1	Date Reported:	11-06-08
Laboratory Number:	47935	Date Sampled:	10-29-08
Chain of Custody:	5655	Date Received:	10-29-08
Sample Matrix:	Soil	Date Analyzed:	11-04-08
Preservative:	Cool	Date Extracted:	11-03-08
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	0.9
Toluene	8.1	1.0
Ethylbenzene	1.6	1.0
p,m-Xylene	15.9	1.2
o-Xylene	5.9	0.9
<b>Total BTEX</b>	<b>31.5</b>	

ND - Parameter not detected at the stated detection limit.

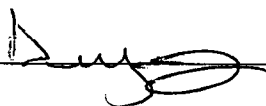
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	96.0 %
	1,4-difluorobenzene	96.0 %
	Bromochlorobenzene	96.0 %

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

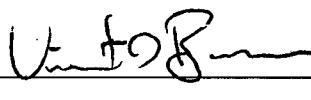
Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: Earth Pit Samples, 5pt Composite

Analyst



Review





Client:	N/A	Project #:	N/A
Sample ID:	11-04-BT QA/QC	Date Reported:	11-06-08
Laboratory Number:	47935	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	11-04-08
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF	C-Cal RF	%Diff.	Blank Conc	Detect Limit
		Accept. Range 0 - 15%			
Benzene	4.8429E+007	4.8526E+007	0.2%	ND	0.1
Toluene	3.7314E+007	3.7388E+007	0.2%	ND	0.1
Ethylbenzene	2.8263E+007	2.8320E+007	0.2%	ND	0.1
p,m-Xylene	6.0642E+007	6.0764E+007	0.2%	ND	0.1
o-Xylene	2.7882E+007	2.7938E+007	0.2%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect Limit
Benzene	ND	ND	0.0%	0 - 30%	0.9
Toluene	8.1	8.2	1.2%	0 - 30%	1.0
Ethylbenzene	1.6	1.5	6.3%	0 - 30%	1.0
p,m-Xylene	15.9	17.9	12.6%	0 - 30%	1.2
o-Xylene	5.9	5.7	3.4%	0 - 30%	0.9

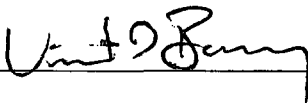
Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	ND	50.0	49.0	98.0%	39 - 150
Toluene	8.1	50.0	55.8	96.0%	46 - 148
Ethylbenzene	1.6	50.0	49.6	96.1%	32 - 160
p,m-Xylene	15.9	100	113	97.3%	46 - 148
o-Xylene	5.9	50.0	52.9	94.6%	46 - 148

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 47935 - 47937, 47939, 47944 - 47947, 47965, and 48000.

Analyst 


Review 

Client:	Elm Ridge Res	Project #:	03056-0136
Sample ID:	Bisti Coal 18-1	Date Reported:	11-07-08
Lab ID#:	47935	Date Sampled:	10-29-08
Sample Matrix:	Soil	Date Received:	10-29-08
Preservative:	Cool	Date Analyzed:	11-05-08
Condition:	Intact	Chain of Custody:	5655

**Parameter****Concentration (mg/Kg)****Total Chloride****1,020**

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

Comments: **Earth Pit Samples.**

  
Analyst  
Review

6534

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