

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

Form C-144  
June 24, 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

RCVD JUL 21 '08  
OIL CONS. DIV.

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

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: Black Hills Gas Resources OGRID #: 013925  
Address: P.O. Box 249 / 3200 North First Street Bloomfield, NM 87413  
Facility or well name: Jicarilla 464-31 #233  
API Number: 30-039-30195 OCD Permit Number: \_\_\_\_\_  
U/L or Qtr/Qtr Unit J / NW/SE Section 31 Township 30 North Range 3 West County: Rio Arriba  
Center of Proposed Design: Latitude 36° 45' 58.212" N Longitude 107° 11' 15.7554" W NAD: ☐ 1927 ☒ 1983  
Surface Owner: ☐ Federal ☐ State ☐ Private ☒ Tribal Trust or Indian Allotment

☒ **Pit:** Subsection F or G of 19.15.17.11 NMAC  
Temporary: ☒ Drilling ☐ Workover  
☐ Permanent ☐ Emergency ☐ Cavitation ☐ Steel Pit  
☒ Lined ☐ Unlined  
Liner type: Thickness 20 mil ☒ LLDPE ☐ HDPE ☐ PVC  
☐ Other \_\_\_\_\_ ☐ String-Reinforced  
Seams: ☐ Welded ☒ Factory ☐ Other \_\_\_\_\_  
Volume: 15,000 bbl Dimensions: L 90' x W 40' x D 10'

☐ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC  
☐ Drying Pad ☐ Tanks ☐ Haul-off Bins ☐ Other \_\_\_\_\_  
☐ Lined ☐ Unlined  
Liner type: Thickness \_\_\_\_\_ mil ☐ LLDPE ☐ HDPE ☐ PVC  
☐ Other \_\_\_\_\_  
Seams: ☐ Welded ☐ Factory ☐ Other \_\_\_\_\_  
Volume: \_\_\_\_\_ bbl \_\_\_\_\_ yd<sup>3</sup>  
Dimensions: Length \_\_\_\_\_ x Width \_\_\_\_\_

☐ **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 \_\_\_\_\_

☐ **Fencing:** Subsection D of 19.15.17.11 NMAC  
☐ Chain link, six feet in height, two strands of barbed wire at top  
☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet  
☐ **Netting:** Subsection E of 19.15.17.11 NMAC  
☐ Screen ☐ Netting ☐ Other \_\_\_\_\_  
☐ Monthly inspections  
☐ **Signs:** Subsection C of 19.15.17.11 NMAC  
☐ 12"x24", 2' lettering, providing Operator's name, site location, and emergency telephone numbers  
☒ Signed in compliance with 19.15.3.103 NMAC

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

**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.

|  |   |
|--|---|
| <p><b>Siting Criteria (regarding permitting):</b> 19.15.17.10 NMAC</p> <p><i>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.</i></p> |   |
| <p>Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.</p> <p>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells</p>  | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| <p>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).</p> <p>- Topographic map; Visual inspection (certification) of the proposed site</p>  | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| <p>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)</p> <p>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</p>  | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> NA |
| <p>Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to permanent pits)</p> <p>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</p>   | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> NA |
| <p>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.</p> <p>- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site</p>  | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| <p>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.</p> <p>- Written confirmation or verification from the municipality; Written approval obtained from the municipality</p>   | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| <p>Within 500 feet of a wetland.</p> <p>- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</p>   | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| <p>Within the area overlying a subsurface mine.</p> <p>- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division</p>   | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| <p>Within an unstable area.</p> <p>- Engineering measures incorporated into the design; NM Bureau of Geology &amp; Mineral Resources; USGS; NM Geological Society; Topographic map</p>   | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| <p>Within a 100-year floodplain.</p> <p>- FEMA map</p>   | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |

|   |  |
|---|--|
| <p><b>Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist:</b> Subsection B of 19.15.17.9 NMAC</p> <p><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></p> |  |
| <input type="checkbox"/> Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC   |  |
| <input type="checkbox"/> Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC  |  |
| <input type="checkbox"/> Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC  |  |
| <input type="checkbox"/> Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC  |  |
| <input type="checkbox"/> Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC   |  |
| <input type="checkbox"/> Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC   |  |
| <input type="checkbox"/> Previously Approved Design (attach copy of design)    API Number: _____ or Permit Number: _____  |  |

|   |  |
|---|--|
| <p><b>Closed-loop Systems Permit Application Attachment Checklist:</b> Subsection B of 19.15.17.9 NMAC</p> <p><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></p> |  |
| <input type="checkbox"/> Geologic and Hydrogeologic Data (required for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9 NMAC   |  |
| <input type="checkbox"/> Siting Criteria Compliance Demonstrations (required for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC   |  |
| <input type="checkbox"/> Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC  |  |
| <input type="checkbox"/> Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC   |  |
| <input type="checkbox"/> Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC   |  |
| <input type="checkbox"/> Previously Approved Design (attach copy of design)    API Number: _____  |  |

**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

**Proposed Closure:** 19.15.17.13 NMAC

Type: ☒ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ 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)

**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.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> NA |
| Ground water is between 50 and 100 feet below the bottom of the buried waste<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br><input type="checkbox"/> NA |
| Ground water is more than 100 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> 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).<br>- Topographic map; Visual inspection (certification) of the proposed site  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                |
| Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.<br>- NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.<br>- Written confirmation or verification from the municipality; Written approval obtained from the municipality   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                |
| Within 500 feet of a wetland.<br>- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                |
| Within the area overlying a subsurface mine.<br>- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                |
| Within an unstable area.<br>- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                |
| Within a 100-year floodplain.<br>- FEMA map   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                |

**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

**Waste Removal Closure For Closed-loop Systems That Utilize 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.*

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

**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 and Design of Burial Trench (if applicable) 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

**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): Lynn Benally Title: Regulatory Specialist

Signature: [Signature] Date: July 18, 2008

e-mail address: lbenally@bhcp.com Telephone: (505) 634-1111 ext. 27

**OCD Approval:** ☒ Permit Application (including closure plan) ☐ Closure Plan (only)

OCD Representative Signature: [Signature] Approval Date: 7-28-08

Title: Enviro Spec OCD Permit Number: \_\_\_\_\_

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

☐ Closure Completion Date: \_\_\_\_\_

**Closure Method:**

- ☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method
- ☐ If different from approved plan, please explain.

**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
- ☐ Proof of Deed Notice (if applicable)
- ☐ Plot Plan
- ☐ Confirmation Sampling Analytical Results
- ☐ Waste Material Sampling Analytical Results
- ☐ Disposal Facility Name and Permit Number
- ☐ Soil Backfilling and Cover Installation
- ☐ Re-vegetation Application Rates and Seeding Technique
- ☐ Site Reclamation (Photo Documentation)

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

**Operator Closure Certification:**

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

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

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

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



## **Black Hills Gas Resources**

### **Jicarilla 464-31 #233**

Surface Location: 1840' FSL 1725' FEL NW/SE Unit J

Sec. 31 T30N R3W

Bottom Hole Location:  $\pm 2400'$  FSL  $\pm 50'$  FEL NE/SE Unit I

Sec. 32 T30N R3W

Rio Arriba County, New Mexico Lease: Contract 464

### ***Pit closure plan for Jicarilla 464-31 #233***

In accordance with Rule 19.15.17.13 NMAC the pit was constructed prior to June 15, 2008 and will follow Rule 19.15.17.12 NMAC for closure. The drilling pit was constructed and completed on May 2, 2008. The following describes Black Hills Gas Resources (BHGR) standard procedures for temporary pit closures

BHGR closure activities will close temporary pits in place using the following methods;

- The preferred method of closure for all temporary pits will be on-site burial, assuming that all the criteria listed in sub-section (B) of 19.15.17.13 are met.
- BHGR will submit to NMOCD within 60 days of pit closure using C-144 a pit closure report to include;
  - Details on the soil cover and capping, where applicable
  - A plot plan
  - Inspection Reports
  - Sampling Results
  - C-105
  - A copy of Deed Notice, where applicable. Location is on Jicarilla Apache Tribal Lands.
- Any hydrocarbon products floating on top of the pit will be recovered and any free water or other liquids will be removed at the start of the pit closure process and disposed of in a division-approved facility or recycle, reuse or reclaim the liquids in a manner that the appropriate division district office approves, the pit must be completely dewatered before stirring or otherwise disturbing the bottom of the pit.
  - Excess water removed from the pit will be filtered and pumped out and taken either to BHGR SWD located approximately 3 miles west of the location, section 18 T30N R3W on the Jicarilla Apache Reservation, or used for the next drilling location.
  - Excess sludge's or other solid materials will not included in the in place burial will be transported to the TNT Evaporation Pond/Land-farm located in sections 5, 7 and 8 T25N R3W, HRC 74 Box 113, Lindrieth, NM 87029, NM1-8.
- Where applicable the surface owner shall be notified of BHGR proposed closure plan using a means that provides proof of notice (i.e. certified mail, return receipt requested, approved APD).
- Within 6 months of the Rig Off status occurring BHGR will ensure that temporary pits are closed, re-contoured, and reseeded.
- Notice of Closure will be given to the Aztec Division office between 72 hours and one week of closure via email, or verbally. The notification of closure will include the following:
  - Operator's name, Location by Unit Letter, Section, Township, and Range. Well name and API number.

- Pit contents will be sampled and analyzed for BTEX, DRO, GRO and Chloride to determine existing concentrations. Closure standards will be dependent upon vertical distance to groundwater from the bottom of the pit. A five point composite sample will be taken of the pit contents, samples will be tested per Subsection B of 19.15.17.13(B)(1)(b).
- Benzene analyzed using EPA SW-846 method 8021B/8260B, *with a detection limit of 0.2 mg/kg*
- BTEX analyzed using EPA SW-846 method 8021B/8260B, *with a detection limit of 50 mg/kg*
- TPH analyzed using EPA SW-846 method 418.1, *with a detection limit of 2500 mg/kg*
- GRO/DRO analyzed using EPA SW-846 method 8015M, *with a detection limit of 500 mg/kg*
- Chlorides analyzed using EPA 300.1, *with a detection limit of 500 mg/kg or 1000 mg/kg*

In the event that the criteria are not met, all contents will be handled per Subparagraph (a) of Paragraph (1) of Subsection B of 19.15.17.13 i.e., Dig and haul

- The remaining cuttings will be covered in place using native soils and the temporary berm material, the surface is graded to prevent water accumulation, for pit material with constituent concentrations slightly higher than those allowed for pit burial, the pit material may be blended with clean, local soil to dilute and reduce the high concentrations to acceptable levels before the waste/soil mix is buried. If pit material is above closure standard a secondary test will be taken to determine concentrations after soil blending. The mixing ratio shall not exceed 3 parts clean soil to 1 part pit contents
- The liner will be cut free from its anchor points and rolled into itself on all four sides. Removal of liner will consist of manually or mechanically cutting liner and removing all remaining liner. Care will be taken to remove "All" of the liner i.e., edges of liner entrenched or buried. All excessive liner will be disposed of at a licensed disposal facility
- A minimum of four feet of soil cover will be applied over the remaining pit contents and compacted. Stockpiled topsoil shall be applied last. The soil should be mounded and shaped to ensure runoff without erosion and diversion terraces constructed, if necessary. The cover shall include one foot of suitable material to establish vegetation at the site, or to the background thickness of topsoil, whichever is greater. Re-contouring of location will match fit, shape, line, form and texture of the surrounding area.
- The area is re-vegetated with native species to reduce the potential for erosion and promote full recovery of the area's ecosystem. BHGR shall seed the disturbed areas the first growing season after pit closure. Seeding will be accomplished using drilling on the contour whenever practical or by other division-approved methods, BIA stipulated seed mixes will be used. Vegetative cover will equal 70% of the native perennial vegetative cover (un-impacted) consisting of at least three native plant species, including at least one grass and maintain that cover through two successive growing seasons. Re-seeding or planting will be continued until successful vegetative growth occurs.
- The temporary pit will be located with a steel marker, no less than four inches in diameter, cemented in a hole three feet deep in the center. The marker will include welded or stamped, the Operator's Name, Lease Name, Well Name and number, Unit Number, Section, Township, Range and an Indicator that the marker is an onsite burial location.
  - During the production life of the well, a steel plate measuring no less than 12 inches by 12 inches will be used as a surface completion to indicate the pit location. The plate will include welded or stamped the date of closure and indicate an "in place burial" for the former pit.
- Attached is the Siting Criteria information
- Attached is the Black Hills Gas Resources Typical Drilling Pit Design
- Attached is a location map
- Attached is the BHGR pit closure diagram
- Attached is the Surface Owner Notification



## **Black Hills Gas Resources**

**Jicarilla 464-31 #233**

Surface Location: 1840' FSL 1725' FEL NW/SE Unit J

Sec. 31 T30N R3W

Bottom Hole Location:  $\pm$  2400' FSL  $\pm$  50' FEL NE/SE Unit I

Sec. 32 T30N R3W

Rio Arriba County, New Mexico Lease: Contract 464

### **Siting Criteria Compliance Demonstrations**

- **Depth to groundwater**

Jicarilla 464-31 #233

Section 31; Township 30 North; Range 3 West

Depth to nearest ground water over 390 feet below pit bottom.

Depth to nearest groundwater in the following Townships and Ranges (*Information provided by Jicarilla Apache Natural Resources Division, Department of Water Resources water well information*):

- Township 30 Range 3 West ranges from 402-600 feet below ground surface (bgs);
- Township 29 Range 2 West ranges from 235-475 feet bgs;
- North half of Township 29 Range 3 West ranges from 315-350 feet bgs;
- North half of Township 28 Range 2 West is 252 feet bgs.

- **Distance to water course**

- The pit is not located within 300 feet of a continuous watercourse, see attached topo map.
- The pit is located at a measured distance of 210 feet west of an un-named wash and over 1800 feet North of Burns Canyon, see attached one mile topo map provide by Daggett Enterprises, Inc.

- **Distance to permanent residence**

- The pit is not located within 300 feet of a permanent residence, school, hospital, or institution, see attached aerial image generated from the Natural Resources Conservation Service website,  
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx> .

- **Distance to water well/Within incorporated municipal boudrary**

- The pit is not located within 500 feet of a private domestic water source or 1000 feet from any other fresh water well or spring. There are no identified water wells or stock water wells within a radius of 500 feet.
- The pit is not located within any incorporated municipal water boundry; location is on the Jicarilla Apache Reservation with Dulce, NM being the closest city, which is over 18 miles northeast.



## **Black Hills Gas Resources**

- **Distance to wetland**
  - The pit is not within 500 feet of a wetland. The Environmental Assessment for the area did not identified wetlands within a 500-foot radius of the location. In addition, there is no digital information for this area from the US Fish and Wildlife resources, see attached map generated from the US Fish and Wildlife website. <http://wetlandsfws.er.usgs.gov/wtlnds/launch.html>
  -
- **Distance to subsurface mine**
  - The pit does not overlie any subsurface mine, see attached map generated by the Mines, Mills, and Quarries in New Mexico 2001.
- **Within an unstable area**
  - The pit is not located in an unstable area, see attached map generated by Decision-makers Field Guide 2002.
- **FEMA Map (100 Year Floodplain)**
  - The FEMA Map for the Jicarilla 464-31 #233 is unavailable due to its location on the Jicarilla Apache Reservation. FEMA does not provide information for Indian Reservations, Forest Service Lands, and Military Installations.



**Black Hills Exploration and Production**P.O. Box 249, 3200 N 1<sup>st</sup> St., Bloomfield, New Mexico 87413

PHONE: (505)-634-1111 ext 21

FAX: (505)-634-1116

**FACSIMILE COVER PAGE**RECEIVED  
BUREAU OF INDIAN AFFAIRS

JUL 14 2008

JICARILLA AGENCY  
BRANCH OF REAL PROPERTY

To:

Hawwa

Company:

BIA

FAX:

505 759-3986

Date:

7-10-08

Pages:

2

Ref:

Pit closure notification

Note:

From:

Lynn

Black Hills Gas Resources



UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF INDIAN AFFAIRS  
JICARILLA AGENCY



---

FACSIMILE TRANSMITTAL SHEET

---

DATE: 7/14/2008

TOTAL NUMBER OF PAGES (INCLUDING COVER SHEET): 2

PHONE: (505) 634-1111 FAX: (505) 634-1116

ATTENTION: Lynn Benally

COMPANY: Black Hills Gas Resources

REGARD(S): Signed Pit Closure Notification

REMARK(S): Also included is, ~~add~~ list of wells  
concerned to by the BIA. Oil & Gas Admin.

FROM:

George M. Loretto Sr.

BRANCH OF REAL PROPERTY MANAGEMENT

TRANSMITTED BY:

[Signature]  
BRANCH OF REAL PROPERTY MANAGEMENT  
PHONE: (505) 759-3978 FAX: (505) 759-3986

OFFICE OF THE SUPERINTENDENT  
PHONE: (505) 759-3951 FAX: (505) 759-3948

P.O. Box 167  
120 SENECA DRIVE  
DULCE, NEW MEXICO 87528

## Pit Closure Notification

In ordinance with 19.17.15.13 New Mexico Administrative Code (NMAC)

**Operator/Pit Information:**Operator: Black Hills Gas Resources Telephone: (505) 634-1111 ext 27 e-mail address: dmanus@bhgr.comAddress: 3200 N 1<sup>st</sup> Street PO Box 249 Bloomfield, NM 87413Facility or well name: Jicarilla 464-31 #233 API #: 30-039-30195 Lease Name: Contract 464**Footage:**U/L or Qtr/Qtr NW/SE Sec 31 T 30 N R 03 W County: Rio Arriba**Pit Coordinates:**Latitude 36° 45' 58.212"N Longitude 107° 11' 15.7554"W NAD: 1927 ☐ 1983 ☒**Pit**Type: Drilling ☒ Production ☐ Disposal ☐ Workover ☐ Emergency ☐Lined ☒ Unlined ☐Liner type: Synthetic ☒ Thickness 15 mil Clay ☐Pit Volume 15,000 bbl

Black Hills Gas Resources plans to close the drilling Pit after receiving approval from NMOC, see attached Site Map, BHGR typical pit design, and the BHGR Pit closure diagram. BHGR will notify BIA when pit is closed.

Date: 7/11/2008Printed Name/Title Lynn Benally / Regulatory SpecialistSignature [Signature]

Received by:

Printed Name/Title

George M. Lovette Sr. Realty Specialist

Signature

[Signature]

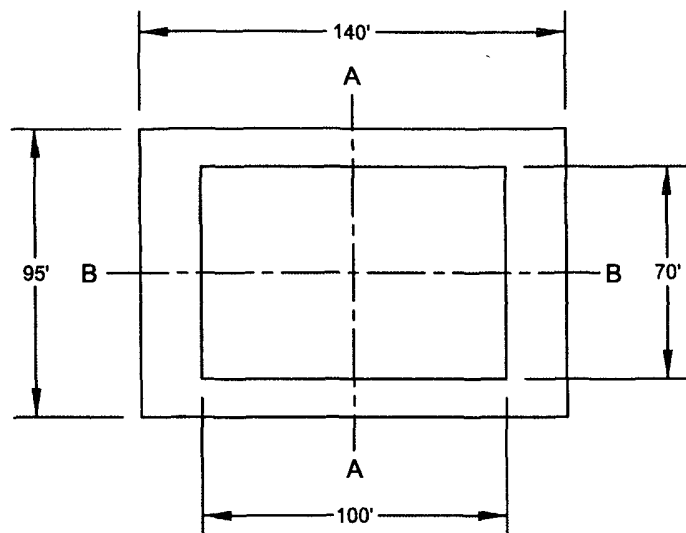
Date:

7/14/08RECEIVED  
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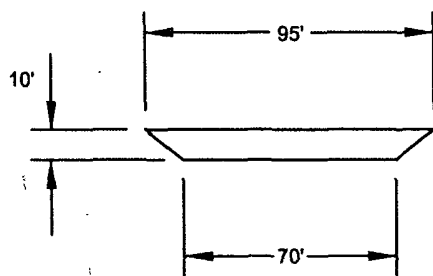
JUL 14 2008

JICARILLA AGENCY  
BRANCH OF REAL PROPERTY

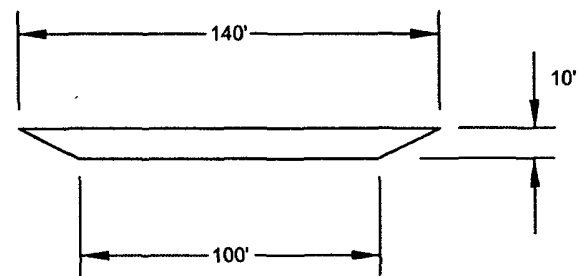
BLACK HILLS GAS RESOURCES  
TYPICAL DRILLING PIT



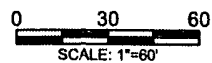
PLAN VIEW



VIEW A-A



VIEW B-B

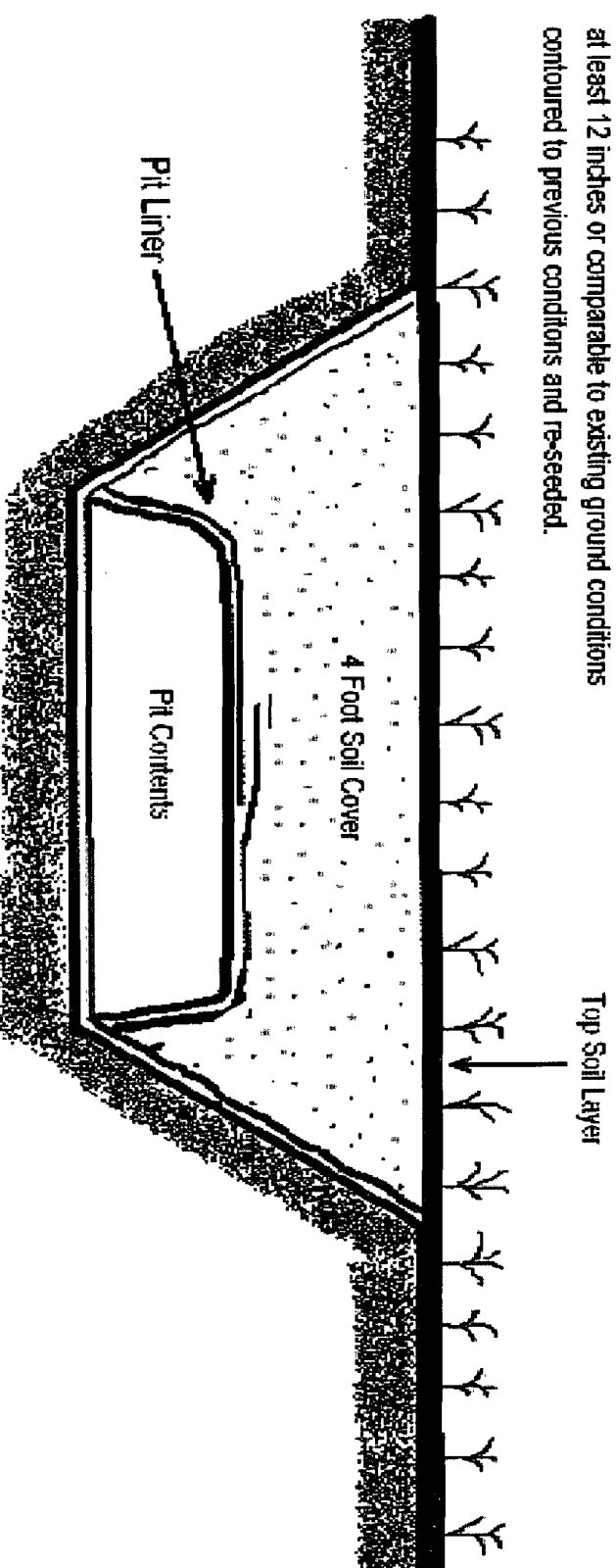


NOTE:

PIT VOLUME APPROXIMATELY 22,000 BARRELS  $\approx$  3.3. ACRE FEET OF WATER

## Black Hills Gas Resources Pit Closure Diagram

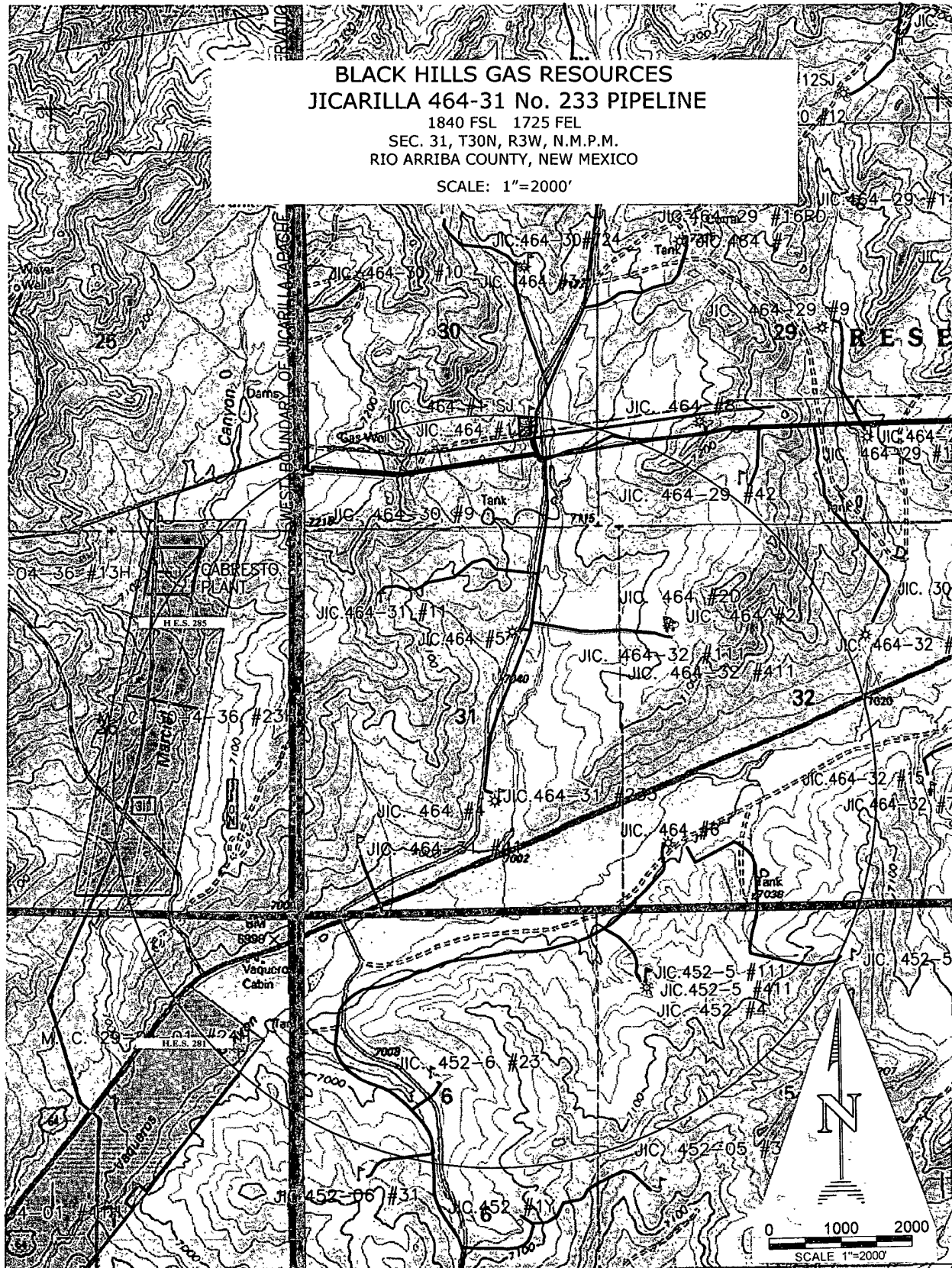
Minimum 4 foot soil cover compacted with a topsoil layer at least 12 inches or comparable to existing ground conditions contoured to previous conditions and re-seeded.



**BLACK HILLS GAS RESOURCES  
JICARILLA 464-31 No. 233 PIPELINE**

1840 FSL 1725 FEL  
SEC. 31, T30N, R3W, N.M.P.M.  
RIO ARriba COUNTY, NEW MEXICO

SCALE: 1"=2000'



Aerial Photo For Jicarilla 464-31 #233, taken from NRCS see attached page for referece.







[Contact Us](#) | [Download Soils Data](#) | [Archived Soil Surveys](#) | [Preferences](#) | [Logout](#) | [Help](#)

[A](#) | [A](#) | [A](#)

[Area of Interest \(AOI\)](#)

**[Soil Map](#)**

[Soil Data Explorer](#)

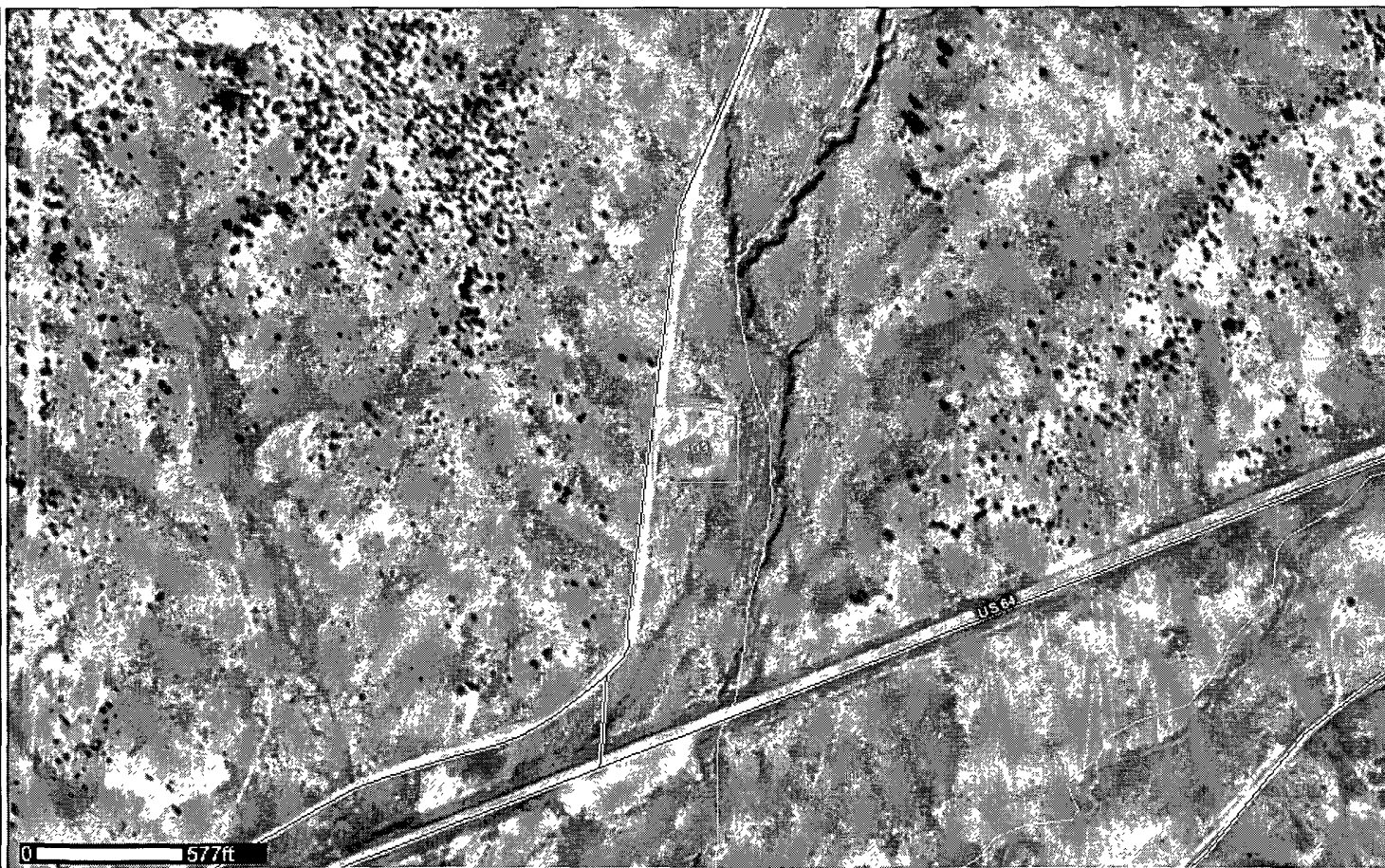
[Shopping Cart](#)

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### Soil Map

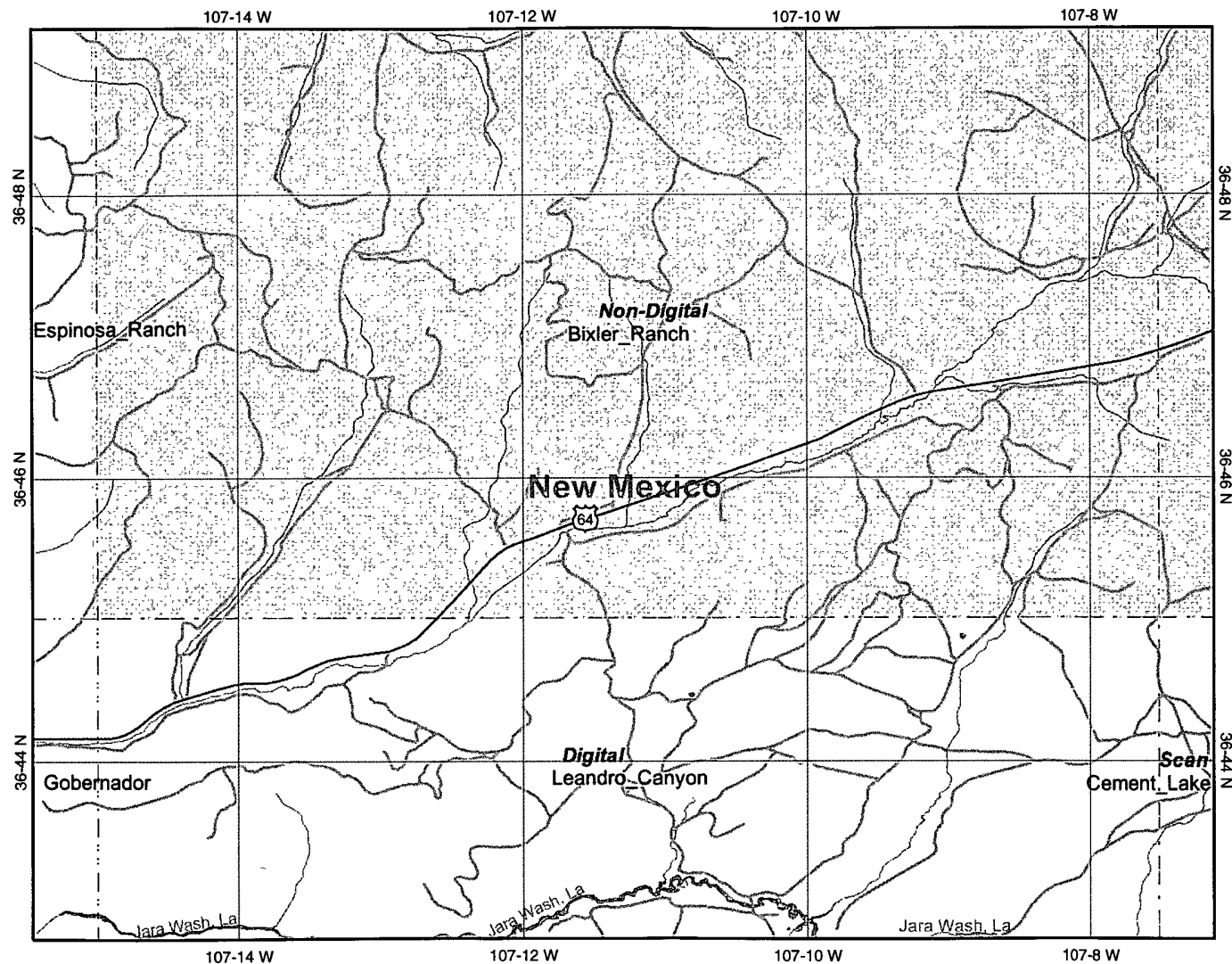
 **Scale** 1:4,850 ± 1 %



**Map Unit Legend**



# Jicarilla 464-31 #233



## Legend

- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- Cities
- USGS Quad Index 24K
- Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan
- NHD Streams
- Counties 100K
- Urban Areas 300K
- States 100K
- South America
- North America



Scale: 1:83,496

Map center: 36° 45' 57" N, 107° 11' 17" W

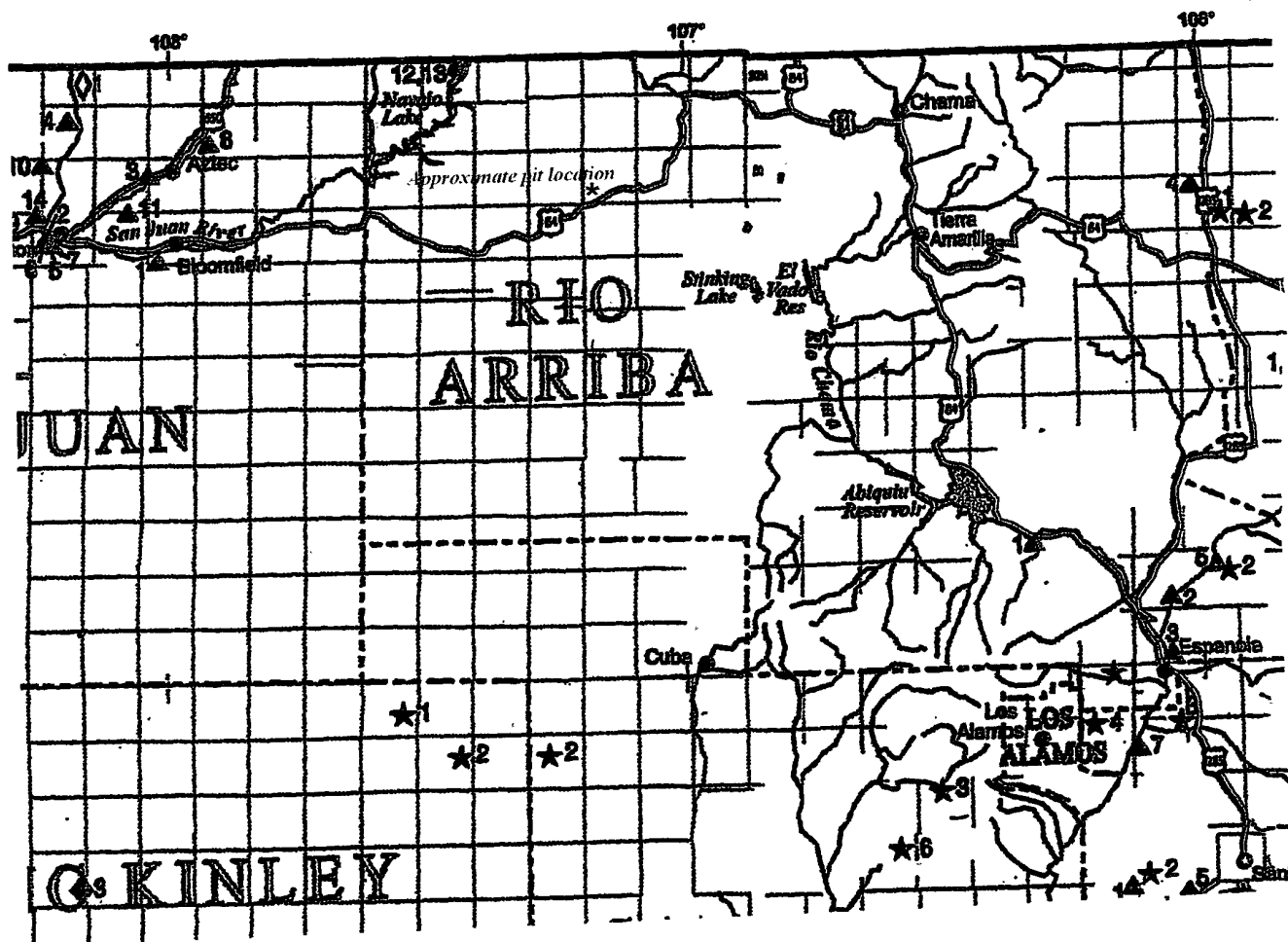
This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

# Mines, Mills, and Quarries in New Mexico

## Spring 2001

Mining and Minerals Division New Mexico Energy

Jicarilla 464-31 #233



PO Box 395, Logan, NM 88426  
Surface Estate: Same

**RICHARDSON PIT** ▲2  
**Aggregate/Sand & Gravel**

Corn Construction Co.  
PO Box 92797, Albuquerque, NM 87199  
(505) 822-1776  
Type of Operation: Surface Mine  
Status: Active Mining  
Location: Sec 12 T13N R36E  
USGS Quad: Martin Draw  
Mineral Estate: Private Land; Tom Mitchell c/o Jim Richardson; Rte. 1, Box 26, Bard, NM 88411  
Surface Estate: Same

**Rio Arriba County**

**ABIQUIU SAND & GRAVEL PIT** ▲1  
**Sand & Gravel**

Abiquiu Sand & Gravel  
PO Box 406, Abiquiu, NM 87510  
(505) 685-4666  
Type of Operation: Surface Mine  
Status: Under Development  
Location: Sec 19 T23N R6E  
USGS Quad: Abiquiu  
Mineral Estate: Private Land; Bob A. Trujillo; PO Box 406, Abiquiu, NM 87510  
Surface Estate: Same

**EL GUIQUE PIT** ▲2  
**Sand & Gravel**

Espanola Transit Mix Co.  
PO Box 38, Espanola, NM 87532  
(505) 753-2176  
Type of Operation: Surface Mine  
Status: Active Mining  
MSHA Number: 2901712  
Location: Sec 26 T22N R8E  
USGS Quad: San Juan Pueblo  
Mineral Estate: Private Land; Piedra Inc.; PO Box 38, Espanola, NM 87532  
Surface Estate: Same

**LOWDERMILK** ▲3  
**Sand & Gravel**

Espanola Transit Mix Co.  
PO Box 38, Espanola, NM 87532  
(505) 753-2176  
Type of Operation: Mill  
Status: Active Mining  
MSHA Number: 2901990  
Location: NW Sec 26 T21N R8E  
USGS Quad: San Juan Pueblo  
Mineral Estate: Indian Land; San Juan Pueblo  
Surface Estate: Espanola Transit Mix; PO Box 38, Espanola, NM 87532

**RED HILL MINE (PORTABLE CRUSHER NO. 1)**  
**Scoria** ▲4

Mountain West-Colorado Aggregate of NM  
2255 Lava Lane, Alamosa, CO 81101

(719) 589-4925  
Type of Operation: Surface Mine  
Status: Active Mining  
MSHA Number: 2902158  
Location: SW/SW Sec 5 T29N R9E  
USGS Quad: San Antonio Mountain  
Mineral Estate: Federal; BLM - Taos Resource Area; 224 Montevideo Plaza, Cruz Alts, Taos, NM 87571  
Surface Estate: Joseph Garcia; PO Box 127, El Rito, NM 87530

**VELARDE PIT** ▲5  
**Sand & Gravel**

Espanola Transit Mix Co.  
PO Box 38, Espanola, NM 87532  
(505) 753-2176  
Type of Operation: Surface Mine  
Status: Active Mining  
MSHA Number: 2901712  
Location: Sec 3 T22N R9E  
USGS Quad: Velarde  
Mineral Estate: Private Land; Cook Brothers; PO Box 38, Espanola, NM 87532  
Surface Estate: Same

**Roosevelt County**

**NUNN PIT** ▲1  
**Crushed Rock/Caliche/Base Course**

K. Barnett And Sons, Inc.  
PO Box 960, Clovis, NM 88102-0960  
(505) 762-4407  
Type of Operation: Surface Mine  
Status: Active Mining  
MSHA Number: 2901543  
Location: Sec 22 T2S R33E  
USGS Quad: Delphos  
Mineral Estate: Private Land; Mrs. Mary Lynch; South Floyd Hwy, Portales, NM 88130  
Surface Estate: Same

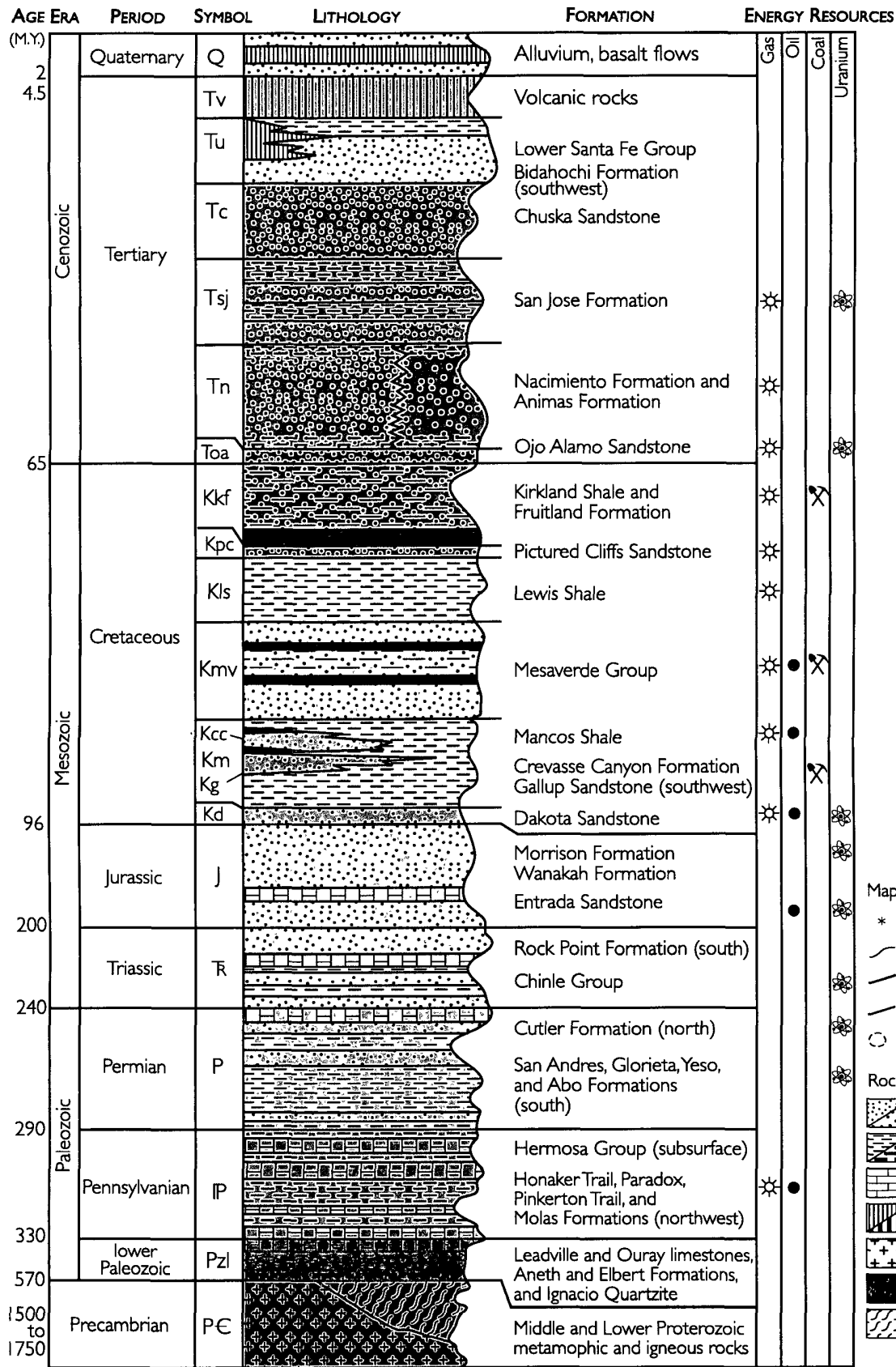
**VALLEY TOLAR PIT # 1** ▲2  
**Base Course/Fill Dirt/Sand & Gravel/Crushed Rock/Other**

Valley Inc.  
PO Box 344, Portales, NM 88130  
(505) 355-7587  
Type of Operation: Other  
Status: Active Mining  
MSHA Number: 2901797  
Location: NE Sec 13 T3N R29E  
USGS Quad: Krider  
Mineral Estate: Private Land; Forrest Atchley; PO Box 272, Clayton, NM 88415  
Surface Estate: Same

**San Juan County**

**3 HATS** ▲1  
**Sand & Gravel/Aggregate**








LaFarge/4 Corners Division  
PO Box 160, Aztec, NM 87410  
(505) 334-1400

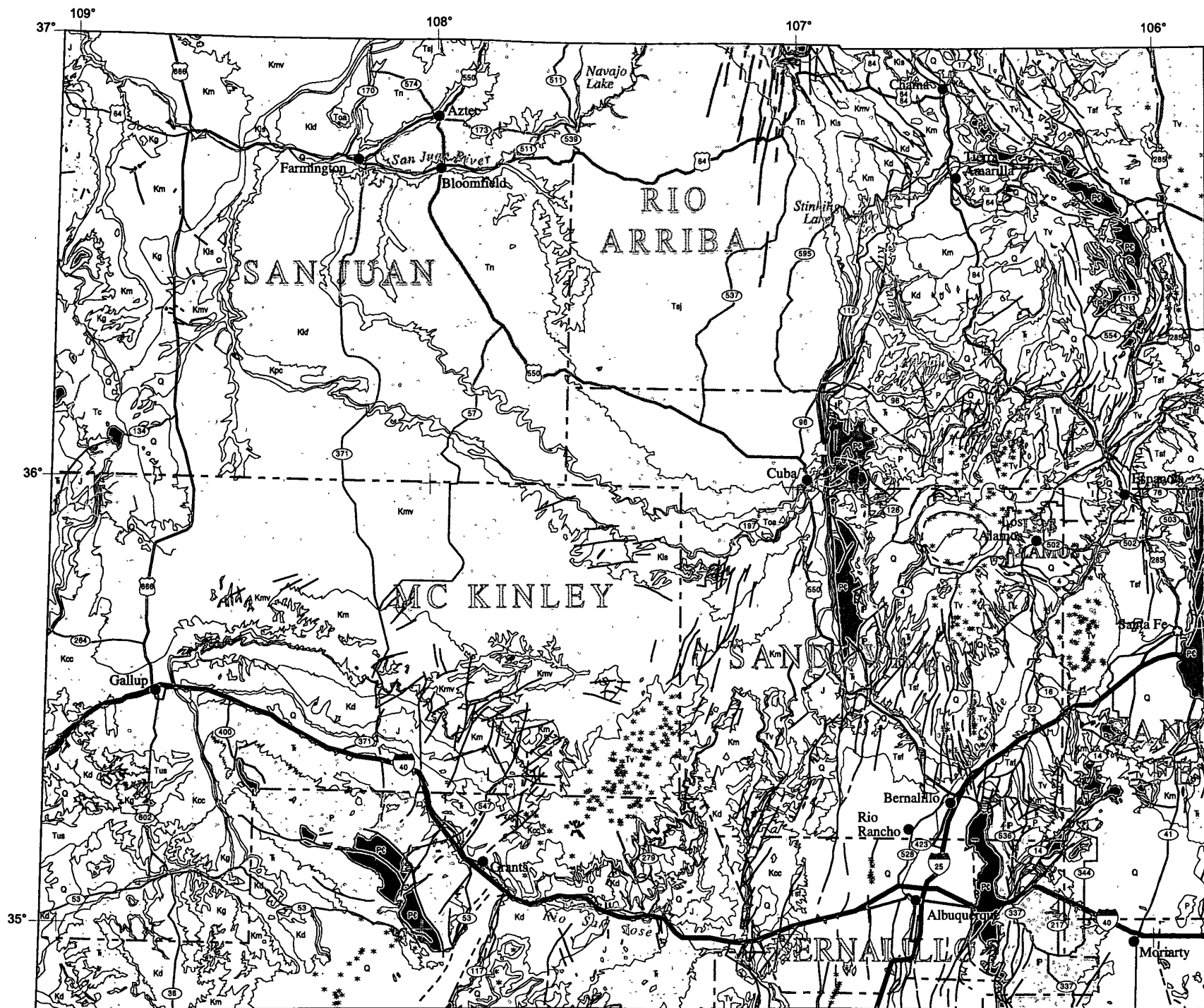


## Map Symbols

- \* Volcanic vent
- Geologic contact
- Dike
- Fault
- Caldera

## Rock Types

-  Sandstone
-  Shale
-  Limestone
-  Volcanic
-  Igneous
-  Coal
-  Metamorphic



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

Form C-144  
June 24, 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

**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: <b>Black Hills Gas Resources</b>   | OGRID #: <b>013925</b>            |
| Address: <b>P.O. Box 249 / 3200 North First Street Bloomfield, NM 87413</b>  | <b>RCVD JUL 16 '08</b>            |
| Facility or well name: <b>Jicarilla 464-31 #233</b>  | <b>OIL CONS. DIV.</b>             |
| API Number: <b>30-039-30195</b>  | OCD Permit Number: <b>DIST. 3</b> |
| U/L or Qtr/Qtr <b>Unit J / NW/SE</b> Section <b>31</b> Township <b>30 North</b> Range <b>3 West</b> County: <b>Rio Arriba</b>  |                                   |
| Center of Proposed Design: Latitude <b>36° 45' 58.212" N</b> Longitude <b>107° 11' 15.7554" W</b> NAD: <input type="checkbox"/> 1927 <input checked="" type="checkbox"/> 1983        |                                   |
| Surface Owner: <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Private <input checked="" type="checkbox"/> Tribal Trust or Indian Allotment |                                   |

|  |   |
|--|---|
| <input checked="" type="checkbox"/> <b>Pit:</b> Subsection F or G of 19.15.17.11 NMAC  | 17.11 NMAC  |
| Temporary: <input checked="" type="checkbox"/> Drilling <input type="checkbox"/> Workover  | Other _____   |
| <input type="checkbox"/> Permanent <input type="checkbox"/> Emergency <input type="checkbox"/> Cavitation <input type="checkbox"/> Steel Pit |   |
| <input checked="" type="checkbox"/> Lined <input type="checkbox"/> Unlined   | LDPE <input type="checkbox"/> HDPE <input type="checkbox"/> PVC |
| Liner type: Thickness <b>20</b> mil <input checked="" type="checkbox"/> LLDPE <input type="checkbox"/> HDPE <input type="checkbox"/> PVC     |   |
| <input type="checkbox"/> Other _____ <input type="checkbox"/> String-Reinforced  |   |
| Seams: <input type="checkbox"/> Welded <input checked="" type="checkbox"/> Factory <input type="checkbox"/> Other _____                      |   |
| Volume: <b>15,000</b> bbl Dimensions: L <b>90'</b> x W <b>40'</b> x D <b>10'</b>   | _____ yd <sup>3</sup>   |

|  |   |   |
|--|---|---|
| <input type="checkbox"/> <b>Below-grade tank:</b> Subsection I of 19.15.17.11 NMAC             | <b>First Attempt</b>  | d wire at top<br>y spaced between one and |
| Volume: _____ bbl  |   |   |
| Type of fluid: _____   |   |   |
| Tank Construction material: _____  |   |   |
| <input type="checkbox"/> Secondary containment with leak detection                             | <input type="checkbox"/> Monthly inspections  |   |
| <input type="checkbox"/> Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off | <b>Signs:</b> Subsection C of 19.15.17.11 NMAC  |   |
| <input type="checkbox"/> Visible sidewalls and liner   | <input type="checkbox"/> 12'x24', 2' lettering, providing Operator's name, site location, and emergency telephone numbers |   |
| <input type="checkbox"/> Visible sidewalls only  | <input checked="" type="checkbox"/> Signed in compliance with 19.15.3.103 NMAC  |   |
| <input type="checkbox"/> Other _____   |   |   |
| Liner type: Thickness _____ mil <input type="checkbox"/> HDPE <input type="checkbox"/> PVC     |   |   |
| <input type="checkbox"/> Other _____   |   |   |

|   |  |
|---|--|
| <input type="checkbox"/> <b>Alternative Method:</b><br>Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. | <b>Administrative Approvals and Exceptions:</b><br>Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.<br><b>Please check a box if one or more of the following is requested, if not leave blank:</b><br><input type="checkbox"/> Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval.<br><input type="checkbox"/> 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

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.

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

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

☐ 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.

- 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

**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 - 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: \_\_\_\_\_

**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 (required for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations (required 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 - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

NMAC

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

**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

**Proposed Closure:** 19.15.17.13 NMAC

Type: ☒ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ 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)

**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



**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

**Waste Removal Closure For Closed-loop Systems That Utilize 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.*

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

**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 and Design of Burial Trench (if applicable) 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

**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): Lynn Benally Title: Regulatory Specialist

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

e-mail address: lbenally@bhep.com Telephone: (505) 634-1111 ext. 27

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

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

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

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

☐ Closure Completion Date: \_\_\_\_\_

**Closure Method:**

- ☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method
- ☐ If different from approved plan, please explain.

**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
- ☐ Proof of Deed Notice (if applicable)
- ☐ Plot Plan
- ☐ Confirmation Sampling Analytical Results
- ☐ Waste Material Sampling Analytical Results
- ☐ Disposal Facility Name and Permit Number
- ☐ Soil Backfilling and Cover Installation
- ☐ Re-vegetation Application Rates and Seeding Technique
- ☐ Site Reclamation (Photo Documentation)

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

**Operator Closure Certification:**

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

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

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

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



## Black Hills Gas Resources

### Jicarilla 464-31 #233

Surface Location: 1840' FSL 1725' FEL NW/SE Unit J

Sec. 31 T30N R3W

Bottom Hole Location:  $\pm 2400'$  FSL  $\pm 50'$  FEL NE/SE Unit I

Sec. 32 T30N R3W

Rio Arriba County, New Mexico Lease: Contract 464

### *Pit closure plan for Jicarilla 464-31 #233*

In accordance with Rule 19.15.17.13 NMAC the pit was constructed prior to June 15, 2008 and will follow Rule 19.15.17.12 NMAC for closure. The drilling pit was constructed and completed on May 2, 2008. The following describes Black Hills Gas Resources (BHGR) standard procedures for temporary pit closures

BHGR closure activities will close temporary pits in place using the following methods;

- The preferred method of closure for all temporary pits will be on-site burial, assuming that all the criteria listed in sub-section (B) of 19.15.17.13 are met.
- BHGR will submit to NMOCD within 60 days of pit closure using C-144 a pit closure report to include;
  - Details on the soil cover and capping, where applicable
  - A plot plan
  - Inspection Reports
  - Sampling Results
  - C-105
  - A copy of Deed Notice, where applicable. Location is on Jicarilla Apache Tribal Lands.
- Any hydrocarbon products floating on top of the pit will be recovered and any free water or other liquids will be removed at the start of the pit closure process and disposed of in a division-approved facility or recycle, reuse or reclaim the liquids in a manner that the appropriate division district office approves, the pit must be completely dewatered before stirring or otherwise disturbing the bottom of the pit.
- Where applicable the surface owner shall be notified of BHGR proposed closure plan using a means that provides proof of notice (i.e. certified mail, return receipt requested, approved APD).
- Within 6 months of the Rig Off status occurring BHGR will ensure that temporary pits are closed, re-contoured, and reseeded.
- Notice of Closure will be given to the Aztec Division office between 72 hours and one week of closure via email, or verbally. The notification of closure will include the following:
  - Operator's name, Location by Unit Letter, Section, Township, and Range. Well name and API number.
- Pit contents will be sampled and analyzed for BTEX, DRO, GRO and Chloride to determine existing concentrations. Closure standards will be dependent upon vertical distance to groundwater from the bottom of the pit. A five point composite sample will be taken of the pit contents, samples will be tested per Subsection B of 19.15.17.13(B)(1)(b).
  - Benzene analyzed using EPA SW-846 method 8021 B or 8260B
  - BTEX analyzed using EPA SW-846 method 8021 B or 8260B
  - TPH analyzed using EPA SW-846 method 418.1
  - GRO/DRO analyzed using EPA SW-846 method 8015M (modified)
  - Chlorides analyzed using EPA 300.1

*Add limits*

In the event that the criteria are not met, all contents will be handled per Subparagraph (a) of Paragraph (1) of Subsection B of 19.15.17.13 i.e., Dig and haul

- The remaining cuttings will be covered in place using native soils and the temporary berm material, the surface is graded to prevent water accumulation, for pit material with constituent concentrations slightly higher than those allowed for pit burial, the pit material may be blended with clean, local soil to dilute and reduce the high concentrations to acceptable levels before the waste/soil mix is buried. If pit material is above closure standard a secondary test will be taken to determine concentrations after soil blending. The mixing ratio shall not exceed 3 parts clean soil to 1 part pit contents
- The liner will be cut free from its anchor points and rolled into itself on all four sides. Removal of liner will consist of manually or mechanically cutting liner and removing all remaining liner. Care will be taken to remove "All" of the liner i.e., edges of liner entrenched or buried. All excessive liner will be disposed of at a licensed disposal facility
- A minimum of four feet of soil cover will be applied over the remaining pit contents and compacted. Stockpiled topsoil shall be applied last. The soil should be mounded and shaped to ensure runoff without erosion and diversion terraces constructed, if necessary. The cover shall include one foot of suitable material to establish vegetation at the site, or to the background thickness of topsoil, whichever is greater. Re-contouring of location will match fit, shape, line, form and texture of the surrounding area.
- The area is re-vegetated with native species to reduce the potential for erosion and promote full recovery of the area's ecosystem. BHGR shall seed the disturbed areas the first growing season after pit closure. Seeding will be accomplished using drilling on the contour whenever practical or by other division-approved methods, BIA stipulated seed mixes will be used. Vegetative cover will equal 70% of the native perennial vegetative cover (un-impacted) consisting of at least three native plant species, including at least one grass and maintain that cover through two successive growing seasons. Re-seeding or planting will be continued until successful vegetative growth occurs.
- The temporary pit will be located with a steel marker, no less than four inches in diameter, cemented in a hole three feet deep in the center. The marker will include welded or stamped, the Operator's Name, Lease Name, Well Name and number, Unit Number, Section, Township, Range and an Indicator that the marker is an onsite burial location
- Attached is the Siting Criteria information
- Attached is the Black Hills Gas Resources Typical Drilling Pit Design
- Attached is a location map
- Attached is the BHGR pit closure diagram

