

RCVD JUN 24 '08  
OIL CONS. DIV.  
DIST. 3

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MAY 27 2008

Form 3160-3  
(April 2004)

A COMPLETE C-144 MUST BE SUBMITTED TO AND  
APPROVED BY THE NMOCD FOR: A PIT, CLOSED  
LOOP SYSTEM, BELOW GRADE TANK, OR  
PROPOSED ALTERNATIVE METHOD, PURSUANT TO  
NMOCD PART 19.15.17, PRIOR TO THE USE OR  
CONSTRUCTION OF THE ABOVE APPLICATIONS.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
APPLICATION FOR PERMIT TO DRILL OR REENTER

Bureau of Land Management  
Farmington Field Office


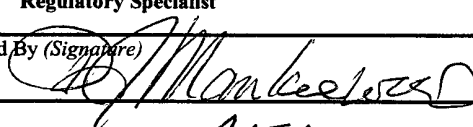
FORM APPROVED  
OMB NO. 1004-0137  
Expires: March 31, 2007

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. <b>MDA 701-098-00013 Tract 4</b>
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name <b>Jicarilla Apache</b>
2. Name of Operator <b>Black Hills Gas Resources</b> Contact person: <b>Lynn Benally</b>		7. If Unit or CA Agreement, Name and No.
3a. Address <b>P.O. Box 249 Bloomfield, NM 87413</b>		8. Lease Name and Well No. <b>Jicarilla 29-02-15 #24</b>
3b. Phone No. (include area code) <b>(505) 634-1111 Ext. 27</b>		9. API Well No. <b>30-039-30535</b>
4. Location of well (Report location clearly and in accordance with any State requirements. *) At surface <b>1,975' FNL 820' FEL SE/4 NE/4 Unit H</b> At proposed prod. zone		10. Field and Pool, or Exploratory <b>La Jara Canyon Tertiary</b>
11. Sec., T., R., M., or Blk. And Survey or Area <b>H Sec. 15 T29N R02W</b>		12. County or Parish <b>Rio Arriba</b>
14. Distance in miles and direction from the nearest town or post office* <b>20 miles southwest of Dulce, NM</b>		13. State <b>NM</b>
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any) <b>820 ft</b>	16. No. of acres in lease <b>9600 acres</b>	17. Spacing Unit dedicated to this well <b>NE/4 160 acres</b>
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth <b>2,080 TVD</b>	20. BLM/ BIA Bond No. on file <b>BIA - MMSP0267675</b>
21. Elevations (Show whether DF, RT, GR, etc.) <b>7,234' GR</b>	22. Approximate date work will start* <b>2-Jun-08</b>	23. Estimated duration <b>45 -60 Days Drill + Completion</b>

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1 shall be attached to this form:

- |   |   |
|---|---|
| 1. Well plat certified by a registered surveyor.  | 4. Bond to cover the operations unless covered by existing bond on file (see item 20 above).        |
| 2. A Drilling Plan.   | 5. Operator certification.  |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/ or plans as may be required by the authorized officer. |

25. Signature 	Name (Printed/ Typed) <b>Lynn Benally</b>	Date <b>May 23, 2008</b>
Title <b>Regulatory Specialist</b>		
Approved By (Signature) 	Name (Printed/ Typed) <b>[illegible]</b>	Date <b>6/23/08</b>
Title <b>AFM</b>		
Office <b>FFO</b>		

Application approval 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 operations thereon.

Conditions of approval, if any, are attached.

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)

This action is subject to technical and procedural review pursuant to 43 CFR 3165.4 and appeal pursuant to 43 CFR 3165.4

DRILLING OPERATIONS AUTHORIZED ARE  
SUBJECT TO COMPLIANCE WITH ATTACHED  
"GENERAL REQUIREMENTS".

NOTIFY AZTEC OCD 24 HRS.  
PRIOR TO CASING & CEMENT  
NMOCD

JUN 30 2008

BLM'S APPROVAL OR ACCEPTANCE OF THIS  
ACTION DOES NOT RELIEVE THE LESSEE AND  
OPERATOR FROM OBTAINING ANY OTHER  
AUTHORIZATION REQUIRED FOR OPERATIONS  
ON FEDERAL AND INDIAN LANDS

DISTRICT I  
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II  
1301 W. Grand Ave., Artesia, N.M. 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV  
1220 South St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30.039.30535	<sup>2</sup> Pool Code 97036	<sup>3</sup> Pool Name LA JARA CANYON TERTIARY
<sup>4</sup> Property Code 35198	<sup>5</sup> Property Name JICARILLA 29-02-15	<sup>6</sup> Well Number 24
<sup>7</sup> OGRID No. 013925	<sup>8</sup> Operator Name BLACK HILLS GAS RESOURCES	<sup>9</sup> Elevation 7234'

<sup>10</sup> Surface Location

UL or lot no. H	Section 15	Township 29-N	Range 2-W	Lot Idn	Feet from the 1975	North/South line NORTH	Feet from the 820	East/West line EAST	County RIO ARRIBA
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<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<sup>12</sup> Dedicated Acres NE/4 - 160			<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> Order No.		

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16	QTR. CORNER FD. PIN & CAP LS 8894	N 89-53-49 W 2657.66' (M)	SEC. CORNER SET PIN & CAP LS 8894 FROM BEAR. TREES	17	OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.  Signature: <i>[Signature]</i> Date: 5/23/2008 Printed Name: Lynn H. Bunell	
LAT. 36.72670° N (NAD 83) LONG. 107.02392° W (NAD 83)				820'		
15						
				N 0-00-08 W 5296.38' (M)	18	SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.  Date of Survey: OCTOBER 11 2005 Signature and Seal: <i>[Signature]</i> Professional Land Surveyor: 8894 Certificate Number: 27-06
SEC. CORNER FD. MKD. STONE W/ PIN & CAP LS 8894						



## Black Hills Gas Resources

### Jicarilla 29-02-15 #24

Surface Location: 1,975' FNL 820' FEL (SE/NE) Unit H  
 Sec.15 T29N R2W  
 Rio Arriba County, New Mexico  
 Lease: Contract MDA 701-98-0013, Tract 4

### DRILLING PROGRAM (Per Rule 320)

This Application for Permit to Drill (APD) was initiated under the NOS process as stated in Onshore Order No. 1 and supporting Bureau of Land Management (BLM) documents. This NOS process includes an onsite meeting which was held on June 7, 2007 as determined by Bureau of Indian Affairs (BIA) and Jicarilla Oil & Gas Administration (JOGA) and at which time the specific concerns of Black Hills Gas Resources (BHGR), BIA, and JOGA were discussed.

#### SURFACE FORMATION – San Jose

#### GROUND ELEVATION – 7234'

#### ESTIMATED FORMATION TOPS - (Water, oil, gas and/or other mineral-bearing formations)

San Jose	Surface	Sandstone, shales & siltstones
Nacimiento	1980'	Sandstone, shales & siltstones

**TOTAL DEPTH          2080'          TVD**

Estimated depths of anticipated fresh water, oil, or gas:

San Jose	Surface	Gas, water, sand
Nacimiento	1980'	Gas, water, sand

#### CASING PROGRAM

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0-250' TVD	12-1/4"	7"	J-55 23# ST&C New	To surface (± 245 sxs Class G) **
0' – 2080'	6-1/4"	4-1/2"	J-55 10.5# LT&C New	TD to surface (± 630 sxs lite or 65:35 poz and ± 270 sxs 50:50 poz) *

\* Actual cement volume to be determined by caliper log.

\*\* Cement will be circulated to surface

#### Yields:

Surface: Standard cement yield: = 1.18 ft<sup>3</sup>/sx (mixed at 15.60 lb/gal)  
 Production: Lite Standard Cement yield: 1.59 ft<sup>3</sup>/sx (mixed at 13.4 lb/gal)  
 50:50 poz yield = 1.27 ft<sup>3</sup>/sx (mixed at 14.15 lb/gal)

All fresh water and prospectively valuable minerals encountered during drilling will be recorded by depth and protected.

PRESSURE CONTROL

BOPs and choke manifold will be installed and pressure tested before drilling out under surface casing (subsequent pressure test will be performed whenever pressure seals are broken), and then will be checked daily as to mechanical operating condition. BOP's will be pressure tested at least once every 30 days. Ram type preventors and related pressure control equipment will be pressure tested to 1,000 psi. Annular type preventor will be pressure tested to 50% of the rated working pressure, not to exceed 1,000 psi. All casing strings will be pressure tested to 0.22 psi/ft. or 1,000 psi, whichever is greater, not to exceed 70% of internal yield.

BOP to be either double gate rams or an annular preventor as per Onshore Order No. 2.

Statement on Accumulator System and Location of Hydraulic Controls

The drilling rig has not yet been selected for this well. Selection will take place after approval of this application. Manual and/or hydraulic controls will be in compliance with Onshore Order No. 2 for 2M systems.

A remote accumulator will be used. Pressures, capacities, location of remote hydraulic and manual controls will be identified at the time of the BLM supervised BOP test.

MUD PROGRAM

0'	-	250'	Fresh water – M.W. 8.5 ppg, Vis 30-33
250'	-	2080'	Fresh water- Low solids non-dispersed M.W. 8.5 – 9.2 ppg Vis – 28 – 50 sec nW.L. 15cc or less

Sufficient mud materials to maintain mud properties, control lost circulation and to contain “kick” will be available at wellsite.

AUXILIARY EQUIPMENT

- A) A Kelly cock will be kept in the drill string at all times
- B) Inside BOP or stab-in valve (available on rig floor)
- C) Mud monitoring will be visually observed

LOGGING, CORING, TESTING PROGRAM

- A) Logging: GR/SP/CAL – Resistivity/Conductivity – Neutron/Density – Bulk Density/RWA  
From TD to SC
- B) Coring: None
- C) Testing: Possible DST – None anticipated. Drill stem tests may be run on shows of interest

ABNORMAL CONDITIONS

- A) Pressures: No abnormal conditions are anticipated  
Bottom hole pressure gradient – 0.31 psi/ft
- B) Temperatures: No abnormal conditions are anticipated
- C) H<sub>2</sub>S: See attached H<sub>2</sub>S plan in event H<sub>2</sub>S is encountered.
- D) Estimated bottomhole pressure: 645 psi

ANTICIPATED START DATE

June 2, 2008

COMPLETION

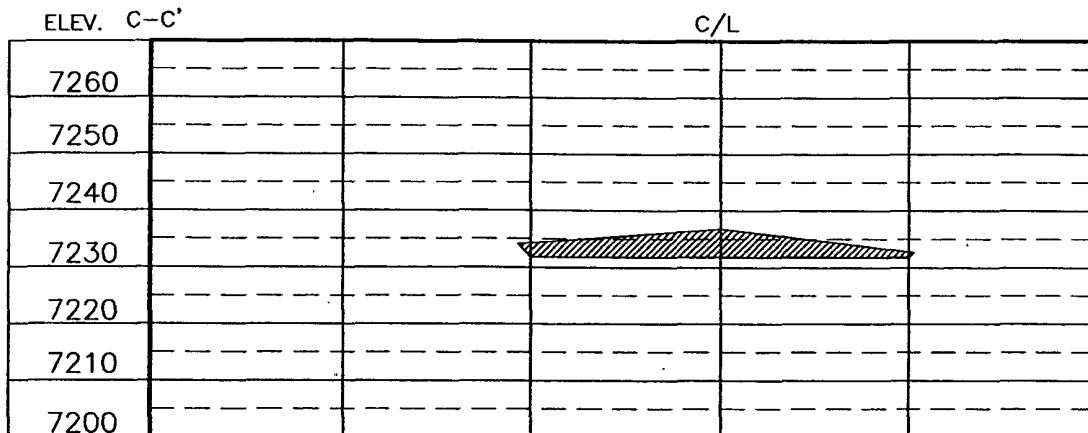
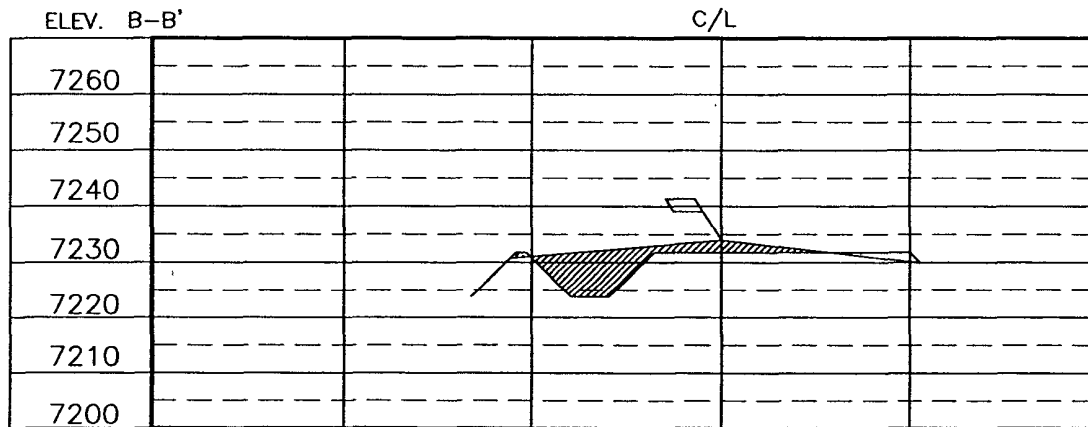
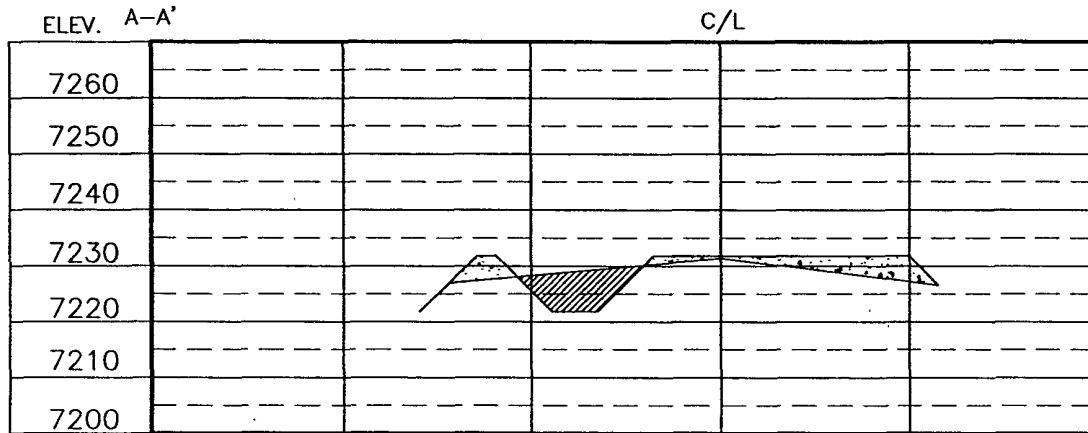
The location pad will be of sufficient size to accommodate all completion activities and equipment. The Tertiary will be perforated based on log results. An acid or frac stimulation may be performed if needed. A string of 2 3/8", 4.7#/ft, J-55 tubing will be run for a flowing string. A Sundry Notice will be submitted with a revised completion program if warranted.

# WELL PAD CROSS-SECTIONAL DIAGRAM

COMPANY: BLACK HILLS GAS RESOURCES  
 LEASE: JICARILLA 29-02-15 No. 24  
 FOOTAGE: 1975 FNL, 820 FEL  
 SEC.: 15, TWN: 29-N, RNG: 2-W, NMMP  
 ELEVATION: 7234'

## NOTE:

DAGGETT ENTERPRISES, INC. IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES. NEW MEXICO ONE CALL TO BE NOTIFIED 48 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION.



REF. DWG. MNS26PL8 WELL PAD DIAGRAM

REVISION:	DATE:	REVISED BY:

**Daggett Enterprises, Inc.**  
 Surveying and Oil Field Services  
 P. O. Box 15068 • Farmington, NM 87401  
 Phone (505) 328-1772 • Fax (505) 326-6019  
 NEW MEXICO L.S. 8894  
 CADDLE MNS26CF8  
 DATE 11/29/06

DRAWN BY: B.L.  
 ROW#: MNS26





## **Black Hills Gas Resources**

### **Hydrogen Sulfide Drilling Operations Plan**

#### **I. Hydrogen Sulfide Training**

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide ( $H_2S$ ).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of  $H_2S$  detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of  $H_2S$  on metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the  $H_2S$  Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable  $H_2S$  zone (within 3 days or 500 feet) and weekly  $H_2S$  and well control drills for all personnel in each crew. The initial training sessions shall include a review of the site specific  $H_2S$  Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

#### **II. $H_2S$ safety equipment and Systems**

Note: All  $H_2S$  safety equipment and systems (if necessary) will be installed, tested, and operational when drilling reaches a depth of 500 feet above the three days prior to penetrating the first zone containing or reasonably expected to contain  $H_2S$ .

##### **A. Well control equipment:**

1. Choke manifold with a minimum of one remote choke.
2. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

##### **B. Protective equipment for essential personnel**

1. Mark II Surniveair 30-minute units located in the doghouse and at briefing areas, as indicated on will site diagram.

C. H<sub>2</sub>S detection and monitoring equipment:

1. Two portable H<sub>2</sub>S monitors positioned on location for best coverage and response. These units have warning lights and aquilbesirens when H<sub>2</sub>S levels of 10ppm.

D. Visual warning systems:

1. Wind direction indicators as shown on well site diagram.
2. Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used when appropriate. See example attached.

E. Mud program:

1. The mud programs has been designed to minimize the volume of H<sub>2</sub>S circulated to the surface. Proper mud weight, safe drilling practices and the use of H<sub>2</sub>S scavengers will minimize hazards when penetrating H<sub>2</sub>S bearing zones.

F. Metallurgy:

1. All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H<sub>2</sub>S service.
2. All elastomers used for packing and seals shall be H<sub>2</sub>S trim.

G. Communication:

1. Cellular telephone communications in company vehicles.

H. Well testing:

1. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill stem testing operations conducted in an H<sub>2</sub>S environment will use the closed chamber method of testing.



## 2-M SYSTEM

Black Hills Gas Resources, Inc.

ANNULAR PREVENTOR MAY BE SUBSTITUTED FOR DOUBLE GATE PREVENTORS  
BOP PRESSURE TEST TO 1,000 PSI

