

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0135  
Expires: January 31, 2004

**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.**

7:07 PM -9 PM 7:59

**SUBMIT IN TRIPLICATE - Other instructions on reverse side**

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

Black Hills Gas Resources, Inc. Contact: Lynn H. Benally/Daniel Manus

3a. Address

3200 N 1st Street/PO Box 249 Bloomfield, NM 87413

3b. Phone No. (include area code)

505-634-1111 ext 27, ext 28

4. Location of Well (Footage, Sec., T, R., M., or Survey Description)

Surface: 760' FNL 1,415' FWL NE/NW Sec 3 T28N R2W Unit C

5. Lease Serial No.

MDA 701-98-0013, Tract 2

6. If Indian, Allottee or Tribe Name

Jicarilla Apache Tribe

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

8. Well Name and No.

Jicarilla 28-02-03 #12

9. API Well No.

30-039-29440

10. Field and Pool, or Exploratory Area

11. County or Parish, State

Rio Arriba, NM

**12. CHECK 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 <u>Change drill casing</u>
	<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	

3. 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 shall 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 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

The initial APD to drill a Picture Cliffs (PC) well was approved on October 24, 2005. The well was given API number 30-039-29440. After evaluation of drilling data in the imediate area, BHGR has determined that this well is best drilled using 4 1/2 inch drill casing instead of 5 1/2 and will be changing the TD from 3350 to 2400 ft bgs. BHGR is submitting an updated drilling plan and an updated surface casing design page.

Surface disturbance will not change from the initial APD, therefore the Surface Use Plan will not be updated or modified.

RCVD JUL 12'07  
OIL CONS. DIV.  
DIST. 3

14. I hereby certify that the foregoing is true and correct

Name (Printed/Typed)

Lynn H. Benally

Title Regulatory Specialist

Signature

Date

7/9/2007

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

Approved by (Signature)

Jy L Salys

Name

(Printed/Typed)

TL Salys

Title

PE

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

FFO

Date

7/10/2007

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.

(Continued on next page)

NMOC



## Black Hills Gas Resources

### Jicarilla 28-02-03 #12

Surface: 760' FNL 1,415' FWL NE/NW

Sec 3 T28N R2W Unit C

Rio Arriba County, New Mexico

Lease: MDA 701-98-0013, Tract 2

### DRILLING PROGRAM

(Per Rule 320)

The 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 APD process includes an onsite meeting which was held on August 26, 2004 as determined by Bureau of Land Management (BLM), Bureau of Indian Affairs (BIA) and Jicarilla Oil & Gas Administration (JOGA), and at which time the specific concerns of Black Hills Gas Resources (BHGR) were discussed.

The initial APD was permitted and approved on October 24, 2005. A sundry was submitted and approved on March 28, 2007 to change the un-drilled Pictured Cliffs well to a San Jose well. This new plan addresses changing the casing program of the un-drilled well and TD.

### SURFACE FORMATION – San Jose

### GROUND ELEVATION – 7,321'

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

San Jose	Surface	Sandstone, shales & siltstones
Nacimiento	2,270'	Sandstone, shales & siltstones

**TOTAL DEPTH**      **2,400'**      **TD**

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

Nacimiento	2,270'	Gas
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### CASING PROGRAM

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0-250' TVD	12-1/4"	7"	J-55 20# ST&C New	To surface (± 175 sxs ClassB) **
0' - TD	6-1/2"	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.

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'	-	TD'	Fresh water - Low solids non-dispersed
			M.W. 8.5 – 9.2 ppg
			Vis – 28 – 50 sec
			W.L. 15cc or less

Sufficient mud materials to maintain mud properties, control lost circulation and to contain "kick" will be available at well site.

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: DIL- CNL-FDC-GR - TD - BSC (GR to surface)  
Sonic (BSC to TD)
- 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: 744 psi

ANTICIPATED START DATE

April 23, 2007

COMPLETION

The location pad will be of sufficient size to accommodate all completion activities and equipment. A string of 2-3/8" J-55 4.7# tubing will be run for a flowing string. A Sundry Notice will be submitted with a revised completion program if warranted.

Jicarilla 28-02-03 #12  
 Surface: 760' FNL 1,415' FWL NE/NW  
 Sec 3 T28N R2W Unit C  
 Rio Arriba County, New Mexico  
 Lease: MDA 701-98-0013, Tract 2

### SURFACE CASING AND CENTRALIZER DESIGN

Proposed Total Depth: 2,400 '  
 Proposed Depth of Surface Casing: 250 '  
 Estimated Pressure Gradient: 0.31 psi/ft  
 Bottom Hole Pressure at 744 '  
 $0.31 \text{ psi/ft} \times 2,400' = 744 \text{ psi}$   
 Hydrostatic Head of gas/oil mud: 0.22 psi/ft  
 $0.22 \text{ psi/ft} \times 2,400' = 528 \text{ psi}$

#### Maximum Design Surface Pressure

Bottom Hole Pressure – Hydrostatic Head =  
 $(0.31 \text{ psi/ft} \times 2,400') - (0.22 \text{ psi/ft} \times 2,400') =$   
 $744 \text{ psi} - 528 \text{ psi} = 216 \text{ psi}$

#### Casing Strengths 7 & 4 1/2 J-55 22#/10.5 ST&C

	Wt.	Tension (lbs)	Burst (psi)	Collapse (psi)
7"	20 #	234,000	3,740	1,980
4 1/2"	11 #	101,000	4,380	3,310

#### Safety Factors

Tension (Dry): 1.8 Burst: 1.0 Collapse: 1.125

Tension (Dry): 20 # / ft x 250' = 5,000 #  
 Safety Factor =  $\frac{234,000}{5,000} = 46.80$  ok

Burst: Safety Factor =  $\frac{3,740 \text{ psi}}{216 \text{ psi}} = 17.31$  ok

Collapse: Hydrostatic =  $0.052 \times 9.0 \text{ ppg} \times 250' = 117 \text{ psi}$   
 Safety Factor =  $\frac{1,980 \text{ psi}}{117 \text{ psi}} = 16.92$  ok

Use 250' 7 & 4 1/2 J-55 22#/10.5 ST&C

Use 2,000 psi minimum casinghead and BOP's but will test to 1,000 psi

#### Centralizers

5 Total

1 near surface at 40'

2 -1 each at middle of bottom joint, second joint

2 -1 each at every other joint 40' spacing

Total centralized  $\pm 200' (50' - 250')$

Note that field experience indicates that additional centralizers greatly increase the chance of "sticking" the surface casing prior to reaching surface casing total depth.