

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.

2007 JUL 30 AM 11 41

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: 1,640' FNL 545' FWL SW/NW Sec 27 T29N R2W Unit E

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 29-02-27 #21

9. API Well No.
30-039-29397

10. Field and Pool, or Exploratory Area
San Jose

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	<u>production hole</u>
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	<u>size</u>

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 30-039-29397. BHGR submitted this sundry to modify the casing program which was approved July 10, 2007. BHGR proposes changing the Drilling Hole diameter from 6 1/2 inch to 6 1/4 inch. Appended is an updaed drilling program showing the changes.

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

RCVD AUG2'07
OIL CONS. DIV.

DIST. 3

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

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

Lynn H. Benally

Title Regulatory Specialist

Signature

Date

July 30, 2007

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by (Signature)

J. J. 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

7/31/07

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

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations, and reports of such operations when completed, as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this

form and the number of copies to be submitted, particularly with regard to local area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

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

Item 13 - Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present

productive zones, or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to top of any left in the hole; method of closing top of well and date well site conditioned for final inspection looking to approval of the abandonment.

NOTICE

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

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

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3 and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c); and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.) requires us to inform you that:

This information is being collected to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT

Public reporting burden for this form is estimated to average 25 minutes per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0135), Bureau Clearance Officer, (WO-630), Mail Stop 401 LS, 1849 C St., N.W., Washington, D.C. 20240.

NOT CELESTIAL
INFORMATION



Black Hills Gas Resources

Jicarilla 29-02-27 #21

Surface: 1,640' FNL 545' FWL (SW/NW)

Unit E Sec.27 T29N R2W

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 – 7,218'

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

San Jose	Surface	Sandstone, shales & siltstones
Nacimiento	2,050'	Sandstone, shales & siltstones

TOTAL DEPTH	2,200'	TD ✓
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Estimated depths of anticipated fresh water, oil, or gas:

San Jose	250'	Fresh Water, gas
Nacimiento	2,050'	Gas

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)
250' - TD	<u>6-1/4"</u>	4-1/2"	J-55 10.5# ST&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'	Kleen Faze - 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 ₂ S: | See attached H ₂ S plan in event H ₂ S is encountered. |
| D) | Estimated bottomhole pressure: | 682 psi |

ANTICIPATED START DATE

August 3, 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 29-02-27 #21
 Surface: 1,640' FNL 545' FWL (SW/NW)
 Unit E Sec.27 T29N R2W
 Rio Arriba County, New Mexico
 Lease: MDA 701-98-0013, Tract 2

SURFACE CASING AND CENTRALIZER DESIGN

Proposed Total Depth: 2,200 '
 Proposed Depth of Surface Casing: 250 '
 Estimated Pressure Gradient: 0.31 psi/ft
 Bottom Hole Pressure at 682 '
 $0.31 \text{ psi/ft} \times 2,200' = 682 \text{ psi}$
 Hydrostatic Head of gas/oil mud: 0.22 psi/ft
 $0.22 \text{ psi/ft} \times 2,200' = 484 \text{ psi}$

Maximum Design Surface Pressure

Bottom Hole Pressure – Hydrostatic Head =
 $(0.31 \text{ psi/ft} \times 2,200') - (0.22 \text{ psi/ft} \times 2,200') =$
 $682 \text{ psi} - 484 \text{ psi} = 198 \text{ psi}$

Casing Strengths 7 & 4 1/2 J-55 20#/10.5 ST&C

	Wt.	Tension (lbs)	Burst (psi)	Collapse (psi)
7"	20 #	234,000	3,740	1,980
4 1/2"	41 # 10.5 lb/ft	101,000	4,380	3,310
		132,000	4,790	4,010

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 = $\frac{3,740 \text{ psi}}{198 \text{ psi}} = 18.89$ 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 20#/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.

DRILLING CONDITIONS OF APPROVAL

Operator: Black Hills Gas Resources
Lease No.: MDA-701-98-0013, Tract 2
Well Name: Jicarilla 29-02-27 #21
Well Location: Sec. 27, T29N, R02W; 1640' FNL & 545' FWL

- I. Centralizers to impart a swirling action around the casing (such as turbolators) are required just below and into the base of the lowest usable water zone.