

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.

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

3a. Address

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

3b. Phone No. (include area code)

505-634-1111 ext 27

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

Surface: SE/SE 905 FSL 350 FEL

SE SE Sec. 14, Township 30 North, Range 3 West

5. Lease Serial No.

Contract 461

6. If Indian, Allottee or Tribe Name

Jicarilla Apache

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

8. Well Name and No.

Jicarilla 461-14 #44

9. API Well No.

30-039-29307

10. Field and Pool, or Exploratory Area

Basin Dakota

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

☒ Notice of Intent

☐ Subsequent Report

☐ Final Abandonment Notice

☐ Acidize

☐ Alter Casing

☐ Casing Repair

☐ Change Plans

☐ Convert to Injection

☒ Deepen

☐ Fracture Treat

☐ New Construction

☐ Plug and Abandon

☐ Plug Back

☐ Production (Start/Resume)

☐ Reclamation

☐ Recomplete

☐ Temporarily Abandon

☐ Water Disposal

☐ Water Shut-Off

☐ Well Integrity

☐ Other

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 Pictured Cliff well was approved on January 23, 2006. The well was given API number 30-039-29307. After evaluation of data from recently drilled wells in the immediate area, it was determined that the Dakota formation is the target depth for this area. Black Hills Gas Resources is submitting an updated drilling plan, a new C-102, and a revised NM State Form C-101. Black Hills Gas Resources also request that if tests of the tertiary and PC formations are favorable that we will also complete these formations and submit comingle applications if needed.

The well will be deepened from the initial Pictured Cliff depth of 3700 ft(bgs) to the Dakota, at a depth of 8333 ft(bgs). Estimated TD depths will change from 4000 ft(bgs) to 8833 ft(bgs), for the deepening.

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

HOLD ON FOR NSL in Basin Dakota

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

Name (Printed/Typed)

Lynn H. Benally

Title Regulatory Compliance Coordinator

Signature

Date

7-27-06

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by (Signature)

Name

(Printed/Typed)

Title

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

Date

8/15/06

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 461-14 No. 44
905' FSL 350' FEL (SE/SE)
Sec.14 T30N R3W
Rio Arriba County, New Mexico
Lease: Contract 461

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 August 11, 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 Mallon Oil Company (Mallon) the predecessor of BHGR, included in the meeting were BLM, BIA and JOGA.

BHGR RESPECTFULLY REQUESTS THAT ALL INFORMATION REGARDING THIS WELL BE KEPT CONFIDENTIAL.

SURFACE FORMATION – San Jose

GROUND ELEVATION – 7,278'

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

San Jose	Surface	Sandstone, shales & siltstones
Nacimiento	1,977'	Sandstone, shales & siltstones
Ojo Alamo	3,185'	Sandstone, shales & siltstones
Pictured Cliffs	3,700'	Sandstone, shales & siltstones
Lewis	3,820'	Sandstone, shales & siltstones
Mesaverde	5,739'	Sandstone, shales & siltstones
Mancos	6,576'	Sandstone, shales & siltstones
Dakota	8,333'	Sandstone

TOTAL DEPTH **8,833'**

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

Ojo Alamo	3,185'	Gas, water, sand
Pictured Cliffs	3,700'	Gas, water, sand
Lewis	3,820'	Gas, water, sand, shale
Mesaverde	5,739'	Gas, water, sand, shale
Mancos	6,576'	Gas, water, sand, shale
Dakota	8,333'	Gas, water, sand, shale

CASING PROGRAM

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0-300'	12-1/4"	9 5/8"	J-55 36# ST&C	+/- 305 sxs Class B
0-3908	8-3/4"	7"	N_80 23# LT&C	+/- 792 sxs lite or 65:35 poz and +/- 166 sxs 50:50 poz
3908-TD	6-1/8"	4-1/2"	L-80 11.6# LT&C	+/- 656 sxs lite or 65:35 poz and +/- 206 sxs 50:50 poz

* Actual cement volume to be determined by caliper log.

Yields: Class B yield = 1.18 ft³/sx
 65:35 Poz yield = 1.62 ft³/sx
 50:50 Poz yield = 1.26 ft³/sx

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' -	3908'	Fresh water - Low solids non-dispersed M.W. 8.5 – 9.2 ppg Vis – 28 – 50 sec W.L. 15cc or less
3908' -	8833'	Air – Deliver ± 2400 SCFM (Air) @ 1700 psi & 35 gpm fluid.

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: 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) H₂S: See attached H₂S plan in event H₂S is encountered.
- D) Estimated bottomhole pressure: 2738 psi

ANTICIPATED START DATE

October 1, 2006

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#/ft tubing will be run for a flowing string. A Sundry Notice will be submitted with a revised completion program if warranted.

Jicarilla 461-14 #44
 905 FSL 350 FEL (SE /4 SE /4)
 Sec. 14 T 30N R 3W
 Rio Arriba County, New Mexico
 Contract 461

SURFACE CASING AND CENTRALIZER DESIGN

Proposed Total Depth: 8,833 '
 Proposed Depth of Surface Casing: 300 '
 Estimated Pressure Gradient: 0.31 psi/ft
 Bottom Hole Pressure at 8,833 '
 $0.31 \text{ psi/ft} \times 8,833' = 2,738 \text{ psi}$
 Hydrostatic Head of gas/oil mud: 0.22 psi/ft
 $0.22 \text{ psi/ft} \times 8,833' = 1,943 \text{ psi}$

Maximum Design Surface Pressure

Bottom Hole Pressure – Hydrostatic Head =
 $(0.31 \text{ psi/ft} \times 8,833') - (0.22 \text{ psi/ft} \times 8,833') =$
 $2,738 \text{ psi} - 1,943 \text{ psi} = 795 \text{ psi}$

Casing Strengths 9 5/8 J-55 24# ST&C

Wt.	Tension (lbs)	Burst (psi)	Collapse (psi)
36 #	394,000	3,520	2,020
40 #	452,000	2,950	2,570

Safety Factors

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

Tension (Dry): 36 # / ft x 300' = 10,800 #
 Safety Factor = $\frac{394,000}{10,800} = 36.48$ ok

Burst: Safety Factor = $\frac{3,520 \text{ psi}}{795 \text{ psi}} = 4.43$ ok

Collapse: Hydrostatic = $0.052 \times 9.0 \text{ ppg} \times 300' = 140 \text{ psi}$
 Safety Factor = $\frac{2,020 \text{ psi}}{140 \text{ psi}} = 14.39$ ok

Use 300' 9.625 J-55 24# 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 $\pm 200' (100' - 300')$

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

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

¹ API Number 30-039-29307	² Pool Code 71599	³ Pool Name BASIN DAKOTA
⁴ Property Code 24245	⁵ Property Name JICARILLA 461-14	⁶ Well Number 44
⁷ OGRID No. 013925	⁸ Operator Name BLACK HILLS GAS RESOURCES	⁹ Elevation 7278'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	14	30-N	3-W	4	905	SOUTH	350	EAST	RIO ARRIBA

¹¹ 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
¹² Dedicated Acres S/2 - 320					¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ 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			
FD. 2 1/2" BC. U.S.G.L.O. 1917			
14			
LAT. 36.80694 N (NAD 83) LONG. 107.11222 W (NAD 83)			
LOT 1 47.89	LOT 2 52.28	LOT 3 53.00	LOT 4 48.24
FD. 2 1/2" BC. U.S.G.L.O. 1917			
S. 83-03-56 W "LS 8894" 2605.50' (M)			

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.

Lynn Benally 7/24/06
Signature Date
Lynn Benally
Printed Name

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.

July 8, 2004
Date of Survey
Signature and Seal of Professional Surveyor:

JOHN A. VIKONIGHT
NEW MEXICO
REGISTERED PROFESSIONAL SURVEYOR
14831
Certificate Number



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 well site diagram.
- C. H₂S detection and monitoring equipment:
1. Two portable H₂S monitors positioned on location for best coverage and response. These units have warning lights and aquidilbesirens when H₂S 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 H₂S circulated to the surface. Proper mud weight, safe drilling practices and the use of H₂S scavengers will minimize hazards when penetrating H₂S 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 H₂S service.
 2. All elastomers used for packing and seals shall be H₂S 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 lesting will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill stem testing operations conducted in an H₂S environment will use the closed chamber method of testing.