

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
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

5. LEASE SERIAL NO.

MDA 701-98-0013, Tract 2

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

Jicarilla

7. IF UNIT OR CA, AGREEMENT DESIGNATION

8. WELL NAME AND NO.

Jicarilla 28-02-08 44

9. API WELL NO.

Pending 3003929320

10. FIELD AND POOL, OR EXPLORATORY AREA

East Blanco Pictured Cliffs

11. COUNTY OR PARISH, STATE

Rio Arriba New Mexico

1. TYPE OF WELL

Oil Well ☐

Gas Well ☒

Other: _____

2. NAME OF OPERATOR

Black Hills Gas Resources, Inc.

3. ADDRESS AND TELEPHONE NO.

350 Indiana St., Suite 400
Golden CO 80401

CONTACT: Chuck Maybee

PHONE: 720.210.1300

Fax: 720.210.1301

4. LOCATION OF WELL (Footage, T, R, M, or Survey Description)

605' FSL

425' FEL

Sec. 8

T 28N

R 2W

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION



Notice of Intent



Subsequent Report



Final Abandonment Notice

TYPE OF ACTION



Acidize



Alter Casing



Casing Repair



Change Plans



Convert to Injection



Deepen



Reclamation



New Construction



Plug and Abandon



Plug Back



Production (start/resume)



Reclamation



Recomplete



Temporarily Abandon



Water Disposal



Water Shut-Off



Well Integrity



Other

13. 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 recomplete 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 the 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 recompletion 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.)

Black Hills Gas Resources, Inc. proposes to amend the Drilling Plan as approved under the Application for Permit to Drill to drill horizontally to a bottomhole location at 1,980' FSL, 660' FWL (NW/4 SW/4) Sec. 8 T28N R2W. Please see the attached Drilling Plan and horizontal drilling information. Contact Chuck Maybee at 720.210.1310 if there are any questions regarding this proposal.

Directional survey
NO RECORD FOR

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

Name (Printed/Typed)

David F. Banko

Title: Permit Agent for Black Hills Gas Resources, Inc.

Signature

Date: December 23, 2004

Approved by

THIS SPACE FOR FEDERAL OR STATE OFFICE USE.

Title

Date

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

NMOC

Black Hills Gas Resources, Inc.
Jicarilla 28-02- 08 #44
API # Assignment pending
Surface: 605' FSL 425' FEL (SE/4 SE/4)
End of Horizontal Hole: 1,980' FSL 660' FWL (NW/4 SW/4)
Sec. 8 T28N R2W
Rio Arriba County, New Mexico
Lease: MDA 701-98-0013 Tract 2

CONFIDENTIAL
DRILLING PROGRAM
(Per Rule 320)

This Sundry Notice is submitted per CFR 3162.3-2. The well pad and reserve pit will be per the Approval to Drill.

This is an amendment to the original drilling Program for horizontal entry into and a deepening horizontally of the recently approved well Jicarilla 28-02-08 #44 into the Pictured Cliffs Formation. See also the attached Horizontal Drilling Plan.

Vertical well will be drilled into the Pictured Cliffs per the approved APD. The well will be logged and a cement plug set to 3,300' The plug will be dressed down to the KOP and the well will be drilled horizontally to the target depth in the Pictured Cliffs. Casing will be set and cemented and the lateral will be continued using 4 3/4" bit and completed open hole.

Please contact Chuck Maybee at BHGR, 720.210.1310 if there are any questions regarding this program.

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

SURFACE FORMATION – San Jose

Surface water protection plan: Surface casing to be cemented to surface.

GROUND ELEVATION – 7,272' GL

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

All Depths are True Vertical Depth (TVD)

San Jose	Surface	Sandstone, shales and siltstones
Nacimiento	1,977'	Sandstone, shales and siltstones
Ojo Alamo	3,185'	Sandstone, shales and siltstones
Fruitland	3,611'	Sandstone, shales and siltstones
Pictured Cliffs	3,700'	Sandstone, shales and siltstones
Lewis	3,808	Sandstone, shales and siltstones

TOTAL DEPTH	3,800' TVD (end of horizontal hole)	4,414.6' (anticipated horizontal section)
	7,984.00' MD	

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

Tertiary		
Pictured Cliffs	3,700'	Gas

HORIZONTAL DRILLING PROGRAM

- A) A 2,000-psi WP double-gated BOP will be in place with blind rams on bottom and pipe rams on top controlled by an accumulator placed within easy access to drill and other crew members.
- B) No annular preventor with a 2,000-psi WP will be placed above BOP stack.
- C) Retrievable whipstock to be set at $\pm 3,570'$.

Vertical well will be drilled into the Pictured Cliffs per the approved APD. The well will be logged and a cement plug set to 3,300'. The plug will be dressed down to the KOP and the well will be drilled horizontally to the target depth in the Pictured Cliffs. Casing will be set and cemented and the lateral will be continued using 4 3/4" bit and completed open hole.

CASING PROGRAM

True Vertical Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0' - 250'	12-1/4"	8-5/8"	K-55 24# ST&C Approved *	To surface (175 sxs Class B)
0' - 4,500'	7-7/8"	5-1/2"	J-55 17# LT&C See attached **	To surface (630 sxs lite or "65:35 Poz and 270 sxs 50:50 poz)
4,500' - 7,984' (MD)	4-3/4"	Open hole	None	None

* Recently approved APD

** See attached horizontal drilling data page.

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

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

3,570' - 7,984' MD 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 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: None
- B) Coring: None
- C) Testing: None anticipated.

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: None anticipated.
- D) Estimated bottomhole pressure: 1,240 psi

ANTICIPATED START DATE

December 30, 2004

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.

Black Hills Exploration & Production

Jicarilla 28-02-08 #44

API No. Unassigned

605 FSL & 425 FEL

Section 8 T28N - R02W

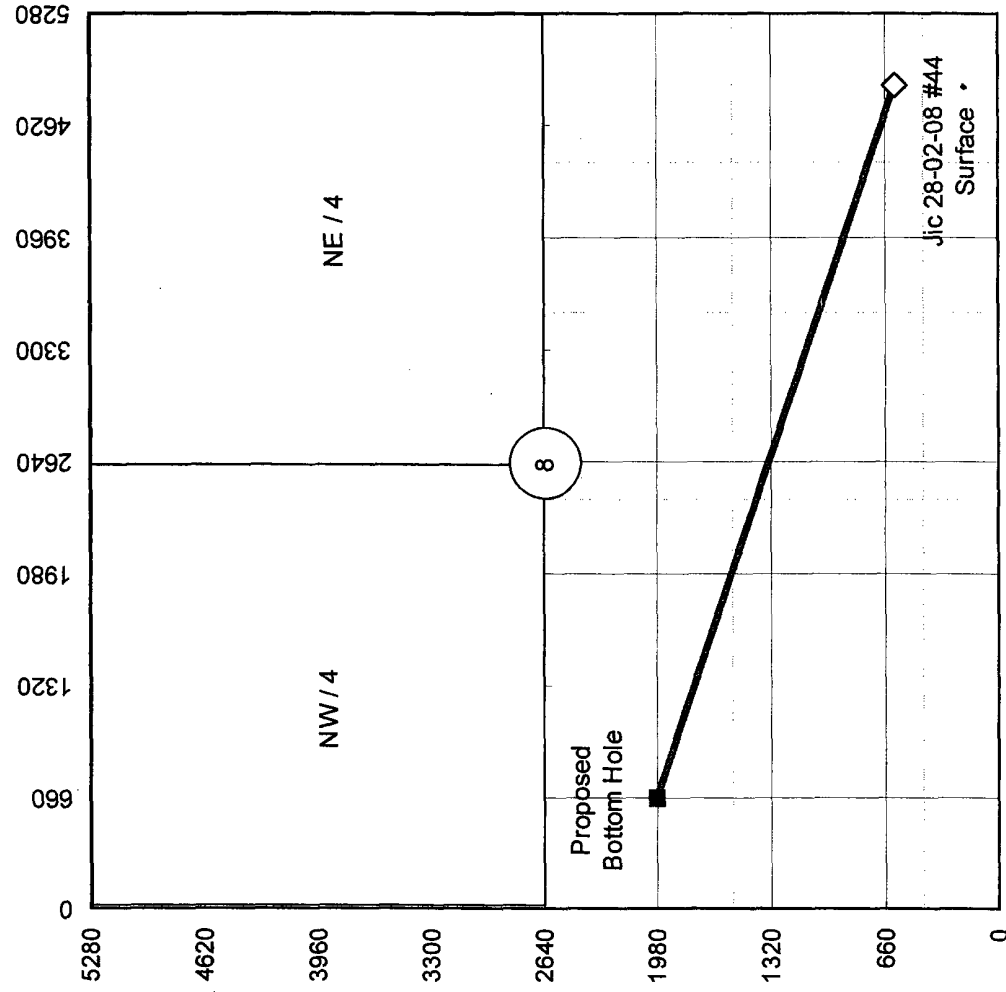
East Blanco Field, Rio Arriba County, New Mexico

Top of Coal:	NA
Bottom of Coal:	NA
KOP: (Estimated)	3570'
At Well -	
Top of PC Target	
Bottom of PC Target	
Bottom of PC:	
Top of Lewis:	
At BHL -	
Proposed BHL:	1980 FSL & 660 FWL
Azimuth	288
Top of PC Target	
Bottom of PC Target	

Ground Elevation:	7272'
KB Elevation:	7285' (13' KB)
Production Casing:	5-1/2" 17# J-55 LT&C @ 3500' @ 0 deg
(Proposed)	5-1/2" 17# J-55 BUTT @ 4500' @ 90 deg
Plugback TD:	
Perfs:	San Jose:
Perfs:	Nacimiento:
Perfs:	Ojo Alamo:
Perfs:	Pictured Cliffs:
Completion:	New well

Note: Vertical pilot well will be drilled into the Pictured Cliffs. The well will be logged and a cement plug set to 3300'. The plug will be dressed down to KOP and the well will be drilled horizontal to the target depth in the Pictured Cliffs. Casing will be set and cemented and the lateral will be continued using 4-3/4" bit and completed open hole.

Black Hills Exploration & Production



Horizontal Well Plan
Jicarilla 28-02-08 #44H
API: Unassigned

Surface Location
605 FSL & 425 FEL Sec. 8 T28N - R02W
East Blanco Field, Pictured Cliffs Pool
Rio Arriba County, New Mexico

Proposed Bottom Hole Location
1980 FSL & 660 FWL Sec. 8 T28N - R02W
Azimuth = 288 deg
Inclination = 90.5 deg
Vertical Section = 4415'

Lease
MDA 701-98-0013 TR 4
Jicarilla Apache Nation

Prognosis
Vertical Pilot to be Drilled to Pictured Cliffs
Cement Plug to be Placed
Plug will be Dressed to KOP
Build Radius to 90 deg in Pictured Cliffs
Set & Cement 5-1/2" Casing
Drill 4-3/4" Open Hole Lateral

Jicarilla 28-02-08 #44

Directional Orientation Design Calculations

Distance From West Section Line = X
Distance From South Section Line = Y

	X	Y
Surface	4855	605
Bottom	660	1980

X Distance = $\text{Absolute}(\text{Surface X} - \text{Bottom X})$

Y Distance = $\text{Absolute}(\text{Surface Y} - \text{Bottom Y})$

X Dist = 4195.0

Y Dist = 1375.0

Vertical Section = $\text{Square Root}(X \text{ Dist}^2 + Y \text{ Dist}^2)$

Vertical Section = 4414.6

Angle A = $180^\circ * \text{Arcsin}(Y \text{ Dist} / X \text{ Dist}) / \pi$

Angle A = 18.15

Quadrant

Surface X < Bottom X and Surface Y < Bottom Y = Quad 1
Surface X < Bottom X and Surface Y > Bottom Y = Quad 2
Surface X > Bottom X and Surface Y > Bottom Y = Quad 3
Surface X > Bottom X and Surface Y < Bottom Y = Quad 4

Quadrant

1 = 0 degrees
2 = 90 degrees
3 = 180 degrees
4 = 270 degrees

Azimuth = Quadrant + Angle A

Quadrant = 270

Azimuth = 288.15

