

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.**

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

5. Lease Serial No.

NMNM 18325

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.

Many Canyon 29-04-26 #12

9. API Well No.

30-039-29986

10. Field and Type of Exploratory Area

T. H. Measured Cliffs

11. County or Parish, State

Rio Arriba, NM

**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: NE/NW 660' FNL 1,910' FWL Bottom Hole: NW/NW 900' FNL 660' FWL

NE/NW Sec. 26, Township 29 North, Range 4 West

## 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>Convert Vertical well to Horizontal well</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 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 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.)

The initial APD to drill a Pictured Cliff (PC) well was approved on 8/15/06. The well was given API # 30-039-29986. After evaluation of data from recently drilled wells, it has been determined that the PC formation is best developed, using Horizontal Drilling Technology. BHGR therefore is submitting an updated drilling plan and a new C-102, to change the well from a vertical to a horizontal drill. BHGR requests that if tests of the tertiary and PC formations are favorable that we will complete these formations and submit comingling applications.

The surface location will remain the same but the new bottom hole is NW/NW 900' FNL 660' FWL.

Geological data indicates that the PC formation is thick enough to support a dual PC lateral, therefore BHGR proposes to horizontally drill a dual lateral into the PC formation. The laterals will have the same bottom hole location but will differ in elevation. One lateral will be drilled in the upper PCCFU (4163 bgs) and the second will be drilled in the lower PCCFL (4400 bgs).

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

**CONDITIONS OF APPROVAL**  
Adhere to previously issued stipulations.HOLD C104 FOR directional survey  
BH survey

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

Name (Printed/Typed)

Lynn H. Benally

Title Regulatory Specialist

Signature

Date 12/8/2006

## THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by (Signature)

Name Wayne Townsend

Title P.C. Eng.

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

12/12/06

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)

NMOCB

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 30-039-29986	<sup>2</sup> Pool Code 74960	<sup>3</sup> Pool Name Chaco Mesa PICTURED CLIFFS
<sup>4</sup> Property Code 35952	<sup>5</sup> Property Name MANY CANYONS 29-04-26	<sup>6</sup> Well Number 12
<sup>7</sup> OGRID No. 013925	<sup>8</sup> Operator Name BLACK HILLS GAS RESOURCES	<sup>9</sup> Elevation 7420

<sup>10</sup> Surface Location

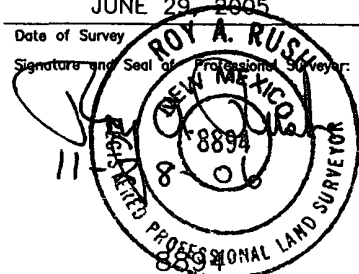
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	26	29-N	4-W		660	NORTH	1910	WEST	RIO ARRIBA

<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
D	26	29-N	4-W		900	NORTH	660	WEST	RIO ARRIBA

<sup>12</sup> Dedicated Acres 160-NW/4	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
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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

<sup>16</sup> CALC. CORNER BY DBL PROP. 900' 1910' 660' B.H.L. ELEV. B.G.S. 4163 P.C.C.F.U. ELEV. B.G.S. 4400 P.C.C.F.L. 5255.90' (C) S 00-03-23 W CALC. CORNER BY DBL. PROP.	<sup>17</sup> 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: <u>Lynn H. Benally</u> Date: <u>12/8/2006</u> Printed Name: _____
<sup>18</sup> 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.  JUNE 29, 2005 Date of Survey Signature and Seal of Professional Surveyor:  Certificate Number: _____	

Black Hills Gas Resources (BHGR)  
Many Canyons 29-04-26 #12  
Surface Location: 660' FNL 1910' FWL (NE/NW)  
Bottom Hole Location: 900' FNL 660' FWL (NW/NW)  
Sec.26 T29N R4W  
Rio Arriba County, New Mexico  
NMNM 18325

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 APD process includes an onsite meeting which was held on November 28, 2005 as determined by Bureau of Land Management (BLM) and Carson National Forest Service, at which time the specific concerns of Black Hills Gas Resources (BHGR) were discussed.

**This well was originally permitted and approved as a vertical PC well. This new drilling plan addresses changing the un-drilled well to a horizontal PC well.**

SURFACE FORMATION – San Jose

GROUND ELEVATION – 7,420'

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

San Jose	Surface	Sandstone, shales & siltstones
Nacimiento	2,200'	Sandstone, shales & siltstones
Ojo Alamo	3,680'	Sandstone, shales & siltstones
Kirtland	3,825'	Sandstone, shales & siltstones
Fruitland Coal	4,000'	Sandstone, shales & siltstones
Pictured Cliffs	4,130'	Sandstone, shales & siltstones
Lewis	4,400'	Sandstone, shales & siltstones

<b>TOTAL DEPTH</b>	<b>4,500'</b>	<b>TVD</b>
	<b>1,272'</b>	<b>Vertical Length of Bore</b>

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

Tertiary

San Jose	surface	Gas
Nacimiento	2,200'	Gas
Ojo Alamo	3,680'	Gas
Fruitland Coal	4,000'	Gas
Pictured Cliffs	4,130'	Gas

**HORIZONTAL DRILLING PROGRAM**

Kick Off Point is estimated to be  $\pm 4143'$  TVD

**CASING PROGRAM**

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0-250' TVD	12-1/4"	8 5/8"	J-55 24# ST&C New	To surface ( $\pm 175$ sxs Standard cement containing 2% $\text{CaCl}_2$ and 0.25lb/sx LCM) **
0-4000' <del>2500</del> TVD	7-7/8"	5 1/2"	J-55 15.5# LT&C New	TD to surface (Lead: $\pm 300$ sxs lite standard cement. Tail: 400 sxs 50:50 poz containing 0.25 lb/sx LCM) * **
1272' TVD (KOP) End of Lateral Bore	4-3/4"	2-7/8"	PH-6 Liner	None

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

\*\* Cement will be circulated to surface

**Yields:**

Surface: Standard cement yield =  $1.2 \text{ ft}^3/\text{sx}$  (mixed at 15.6 lb/gal)

Production: Lite Standard Cement yield: =  $1.59 \text{ ft}^3/\text{sx}$  (mixed at 13.4 lb/gal)  
50:50 poz yield =  $1.27 \text{ ft}^3/\text{sx}$  (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 conditions. 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'	-	300'	Fresh water – M.W. 8.5 ppg, Vis 30-33
300'	-	TD'	Clean 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<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: 1,395 psi

ANTICIPATED START DATE

March 1, 2007

COMPLETION

The location pad will be of sufficient size to accommodate all completion activities and equipment. A string of 2-7/8” PH-6 tubing will be run for a flowing string. A Sundry Notice will be submitted with a revised completion program if warranted.

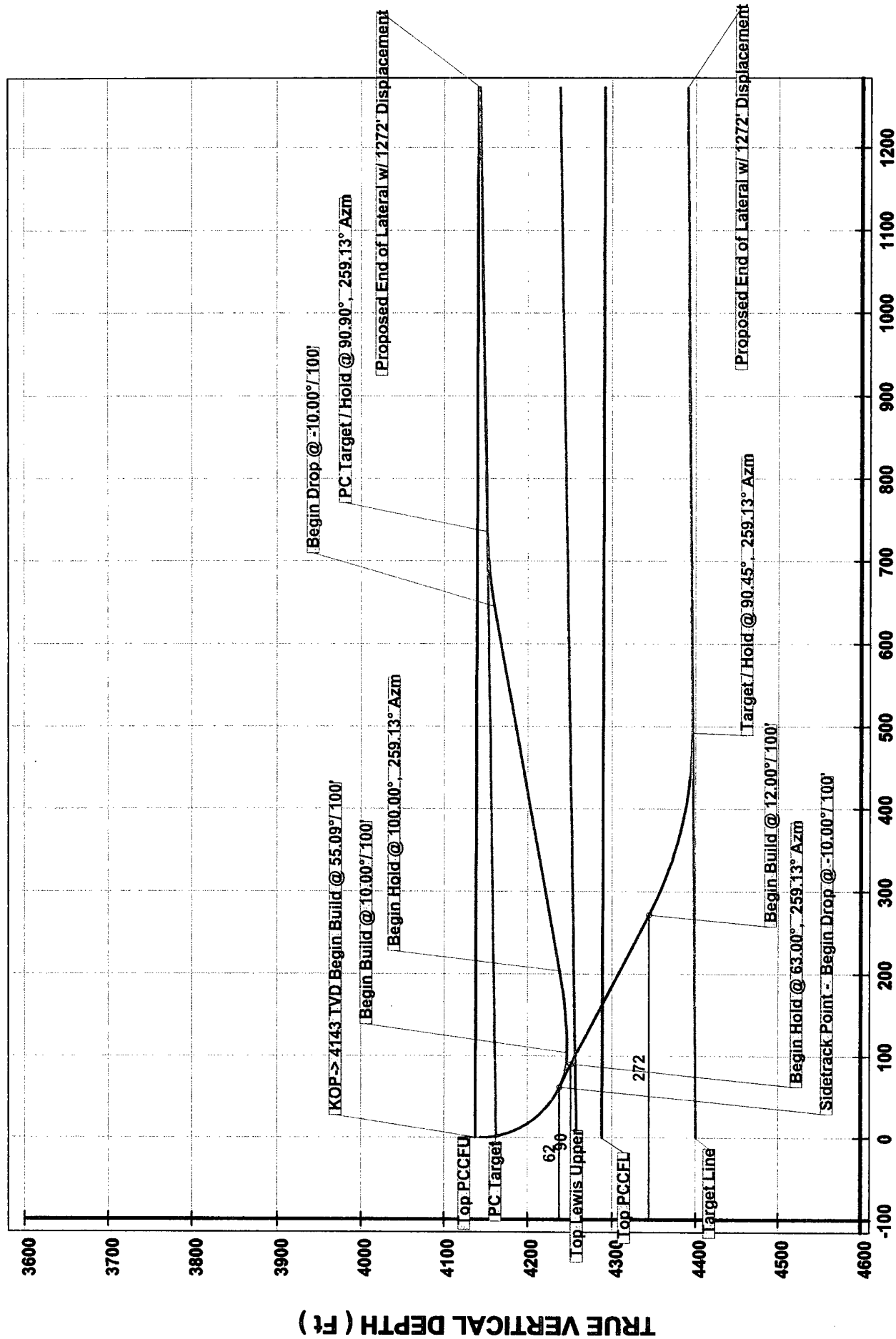
Job Number: 61xxx

Company: Black Hills Gas Resources

Lease/Well: Many Canyons 29-04-26 #12



2790-S Transwell Dr. Houston, TX 77068  
(713) 661-4000  
www.blackhillsenergy.com



○ -- MC 29-04-26 #12 Plan Lower  
△ -- MC 29-04-26 #12 Plan Upper  
▽ -- Top PCCFL  
○ -- PC Target  
□ -- Top Lewis Upper  
○ -- Lower Target Line

**VERTICAL SECTION ( Ft ) @ 259.13°**