

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. **ROVD DEC13706**
NMNM 18325
6. If Indian, Allottee or Tribe Name **None**
7. If Unit or CA/Agreement, Name and/or No.
8. Well Name and No. **Many Canyon 29-04-26 #33**
9. API Well No. **30-039-29988**
10. Field and Pool, or Exploratory Area **Choza Mesa/Pictured 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: NW/SE 1,960' FSL 1,915' FEL Bottom Hole: NE/SE 1,800' FSL 660' FEL
NW/SE 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

☒ 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 Convert Vertical
well to Horizontal well

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 (PC) well was approved on 8/15/06. The well was given API # 30-039-29988. 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 verical 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 comingle applications.

The surface location will remain the same but the new bottom hole is NE/SE 1800' FSL 660' FEL.

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 fomation. The laterals will have the same bottom hole location but will differ in elevation. One lateral will be drilled in the upper PCCFU (4139 bgs) and the second will be drilled in the lower PCCFL (4349 bgs).

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

HOLD C104 FOR directional
survey

CONDITIONS OF APPROVAL

Adhere to previously issued stipulations.

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

Lynn H. Benally

Title **Regulatory Specialist**

Signature

Date

12/10/2006

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

FFO

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)

NMOC

DISTRICT I
1826 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 30-039-29988	² Pool Code 7960	³ Pool Name Choz Mesa PITURED CLIFFS
⁴ Property Code 35952	⁵ Property Name MANY CANYONS 29-04-26	⁶ Well Number 33
⁷ GRID No. 013925	⁸ Operator Name BLACK HILLS GAS RESOURCES	⁹ Elevation 7396'

¹⁰ Surface Location

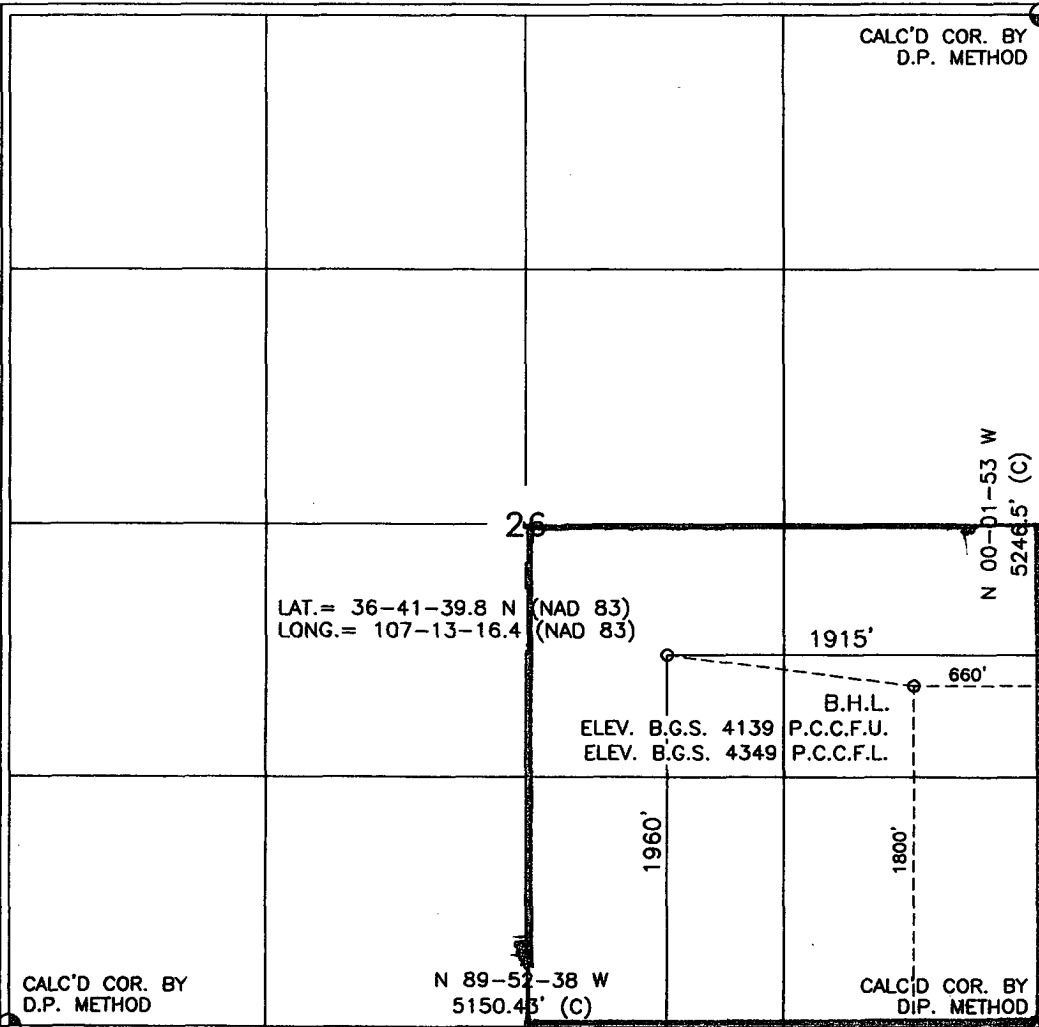
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	26	29-N	4-W		1960	SOUTH	1915	EAST	RIO ARRIBA

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
I	26	29-N	4-W		1800	SOUTH	660	EAST	RIO ARRIBA

¹² Dedicated Acres 160-S E 4	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ 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



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.

[Signature] 12/8/2006
Signature Date
Lynn H. 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.

JUNE 27, 2005

Date of Survey
Signature and Seal of Professional Surveyor:



Certificate Number

Many Canyons 29-04-26 #33
 1,960' FSL 1915' FEL (NW /4 SE /4) Surface Location
 1,800' FSL 660' FEL (NE /4 SE /4) Bottom Of Directional Bore
 Sec. 26 T 29 N R 4 W
 Rio Arriba County, New Mexico
 NMNM18325

SURFACE CASING AND CENTRALIZER DESIGN

Proposed Total Depth: 4,500 '
 Proposed Depth of Surface Casing: 250 '
 Estimated Pressure Gradient: 0.31 psi/ft
 Bottom Hole Pressure at 4,500 '
 0.31 psi/ft x 4,500 ' = 1,395 psi
 Hydrostatic Head of gas/oil mud: 0.22 psi/ft
 0.22 psi/ft x 4,500 ' = 990 psi

Maximum Design Surface Pressure

Bottom Hole Pressure – Hydrostatic Head =
 (0.31 psi/ft x 4,500 ') – (0.22 psi/ft x 4,500 ') =
 1,395 psi – 990 psi = 405 psi

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

Wt.	Tension (lbs)	Burst (psi)	Collapse (psi)
24 #	244,000	2,950	1,370
32 #	372,000	3,930	2,530

Safety Factors

Tension (Dry):	1.8	Burst:	1.0	Collapse:	1.125
Tension (Dry):	24 # / ft x 250 ' =			6,000 #	
	Safety Factor =	244,000	=	40.67	ok
		6,000			
Burst:	Safety Factor =	2,950 psi	=	7.28	ok
		405 psi			
Collapse:	Hydrostatic =	0.052 x 9.0 ppg x 250 ' =		117 psi	
	Safety Factor =	1,370 psi	=	11.71	ok
		117 psi			

Use 250 ' 8 5/8 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 ± 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.

Black Hills Gas Resources (BHGR)
Many Canyons 29-04-26 #33
 Surface Location: 1960' FSL 1915' FEL (NW/SE)
 Bottom Hole Location: 1800' FSL 660' FEL (NE/SE)
 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 – 7,396'

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

San Jose	Surface	Sandstone, shales & siltstones
Nacimientto	2,220'	Sandstone, shales & siltstones
Ojo Alamo	3,650'	Sandstone, shales & siltstones
Kirtland	3,800'	Sandstone, shales & siltstones
Fruitland Coal	3,970'	Sandstone, shales & siltstones
Pictured Cliffs	4,105'	Sandstone, shales & siltstones
Lewis	4,380'	Sandstone, shales & siltstones

TOTAL DEPTH	4,500'	TVD
	1,265'	Vertical Length of Bore

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

Tertiary		
San Jose	surface	Gas
Nacimientto	2,220'	Gas
Ojo Alamo	3,650'	Gas
Fruitland Coal	3,970'	Gas
Pictured Cliffs	4,105'	Gas

HORIZONTAL DRILLING PROGRAM

Kick Off Point is estimated to be $\pm 4115'$ 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 (± 175 sxs Standard cement containing 2% CaCl_2 and 0.25lb/sx LCM) **
0- 4000' 2500' TVD	7-7/8"	5 1/2"	J-55 15.5# LT&C New	TD to surface (Lead: ± 300 sxs lite standard cement. Tail: 400 sxs 50:50 poz containing 0.25 lb/sx LCM) * **
1265' 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) H₂S: See attached H₂S plan in event H₂S is encountered.
- D) Estimated bottomhole pressure: 1,395 psi

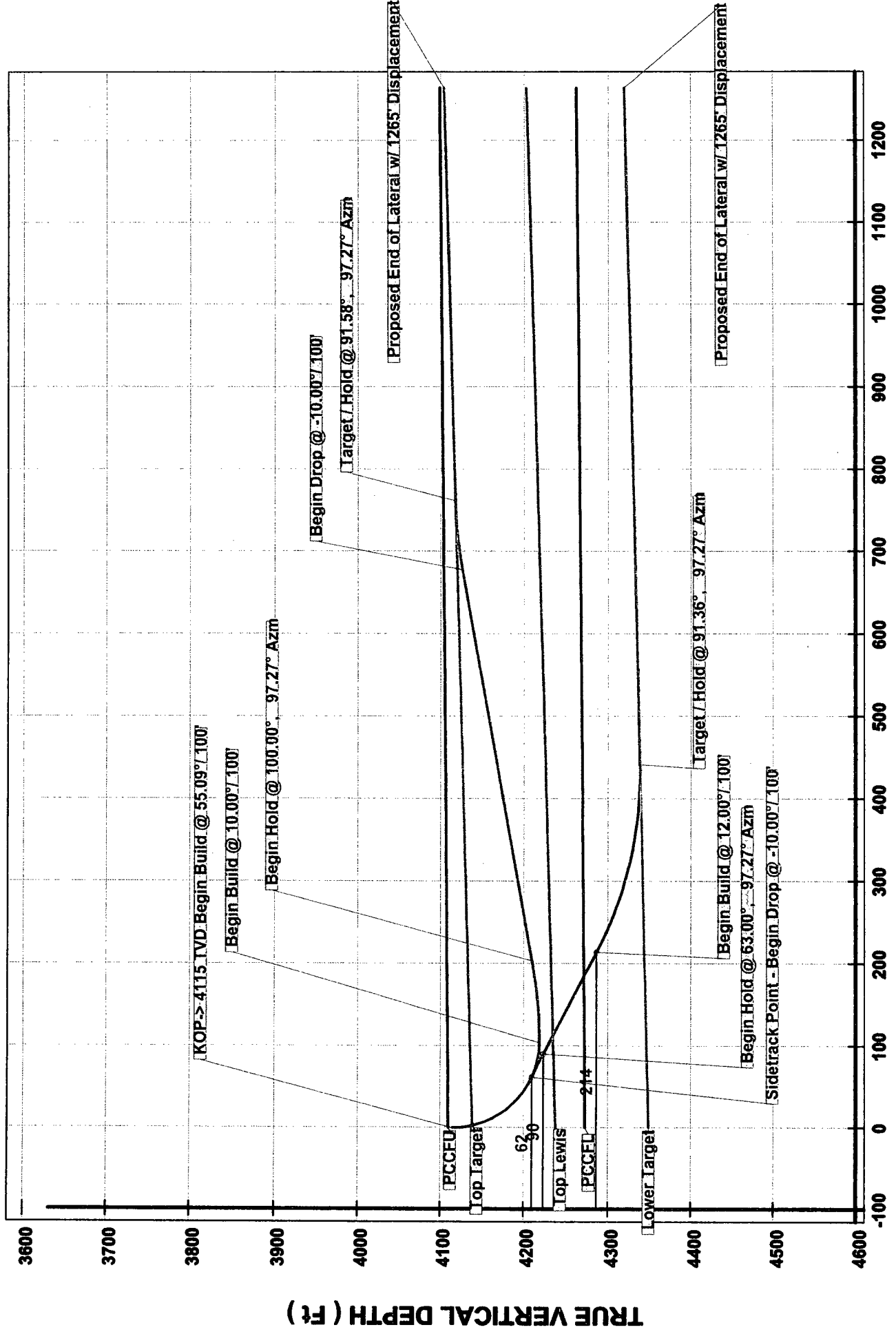
ANTICIPATED START DATE

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 #33



○ -- MC 29-04-26 #33 Upper △ -- MC 29-04-26 #33 Lower ▽ -- PCCFU ○ -- Top Target □ -- Top Lewis ○ -- PCCFL △ -- Lower Target