

COPY

FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
2006 JUN 23 11:05 AM

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM10431 & Fee	
1b. Type of Well <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name RCVD NOV 20 '07 OIL CONS. DIV.	
2. Name of Operator Black Hills Gas Resources, Inc.		7. If Unit or CA Agreement, Name and No. DIST. 3	
E-mail: lbenally@bhep.com Contact: Lynn Benally		8. Lease Name and Well No. Many Canyons 29-04-01 24H	
3a. Address P.O. Box 249 Bloomfield NM 87413		9. API Well No. 30-039-29975	
3b. Phone No. (include area code) 505-634-1111		10. Field and Pool, or Exploratory East Blanco / Pictured Cliffs	
4. Location of Well (Report location clearly and in accordance with any State Requirements.) At surface 1,935' FNL 795' FEL SE 1/4 NE 1/4 Lat: 36° 45' 20.0" Long: 107° 11' 59.2" At proposed production zone 1,935' FNL 660' FWL (SW/4 NW/4)		11. Sec., T., R., M., or Bk. and Survey or Area Sec. 1 T 29N R 4W New Mexico PM	
14. Distance in miles and direction from nearest town or post office. Well is approximately 52 miles east of Bloomfield, New Mexico.		12. County or parish Rio Arriba	
15. Distance from proposed location to nearest property or lease line, ft. (Also nearest Drig, unit line, if any) Unit= n/a Lease= ±142'		13. State New Mexico	
16. No. of acres in lease 883.50		17. Spacing Unit dedicated to this well 320 ±60 NW/4 320 N/2	
18. Distance from proposed location to nearest well, drilling, completed or applied for, on this lease, ft. Pre-Ongard ± 29' Well #001		20. BLM/BIA Bond No. on file NMB000230	
19. Proposed depth 4,000' TVD		21. Estimated duration 45-60 days drlg + completion	
22. Approximate date work will start July 24, 2006		23. Estimated duration 45-60 days drlg + completion	
24. Attachments			

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature 	Name (Printed/Typed) David F. Banko, 303-820-4480	Date June 22, 2006
Title Permit Agent for Black Hills Gas Resources, Inc.		
Approved by (Signature) 	Name (Printed/Typed) AFM	Date 11/19/07
Title Office FFO		

Application approval 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. Conditions of approval, if any, are attached.

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 page 2)

Obtain a pit permit from NMOCD  
prior to constructing location

NOTIFY AZTEC OCD 24 HRS.  
PRIOR TO CASING & CEMENT



H<sub>2</sub>S POTENTIAL EXIST

NMOCD

HOLD C104 FOR directional survey and  
as drilled C-102

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

DRILLING OPERATIONS AUTHORIZED ARE  
SUBJECT TO COMPLIANCE WITH ATTACHED  
"GENERAL REQUIREMENTS".

NOV 26 2007 AV

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 June 10, 2003

Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number <b>30-039-29975</b>		2 Pool Code		3 Pool Name Pictured Cliffs		
4 Property Code <b>36845</b>		5 Property Name MANY CANYONS 29-04-01			6 Well Number 24H	
7 OGRID No. 013925		8 Operator Name BLACK HILLS GAS RESOURCES			9 Elevation 6971	

10 Surface Location

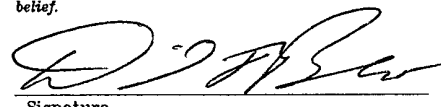
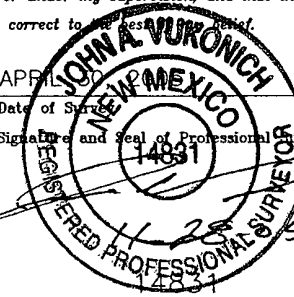
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	1	29-N	4-W		1935	NORTH	795	EAST	RIO ARRIBA

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
E	1	29-N	4-W		1935	NORTH	660	WEST	RIO ARRIBA

12 Dedicated Acres <b>160</b> 320 acres - <b>N/2</b>		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

16		CALC'D. POSITION		N 89-20-36 W 2464.09' (M)		FD 3 1/4" U.S.G.L.O. 1917 BC		17 OPERATOR CERTIFICATION	
LOT 4		N 89-20-28 W 92.40' (C)		LOT 3		LOT 6		I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.	
LOT 10		LOT 9		LOT 8		LOT 7		Signature 	
LOT 11		LOT 12		LOT 13		LOT 14		Printed Name David F. Banko	
LOT 15		LOT 16		LOT 17		LOT 18		Permit Agent for Black Hills Title	
LOT 19		LOT 20		LOT 21		LOT 22		Date June 22, 2006	
LOT 23		LOT 24		LOT 25		LOT 26		18 SURVEYOR CERTIFICATION	
LOT 27		LOT 28		LOT 29		LOT 30		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 knowledge and belief.	
LOT 31		LOT 32		LOT 33		LOT 34		APRIL 14 2006 Date of Survey	
LOT 35		LOT 36		LOT 37		LOT 38		Signature and Seal of Professional Surveyor: 	
LOT 39		LOT 40		LOT 41		LOT 42		Certificate Number	

Black Hills Gas Resources, Inc.  
**Many Canyons 29-04-01 24H**  
Surface: 1,935' FNL 795' FEL (SE/4 NE/4) – H.E.S. 281  
BHL: ±1,935' FNL ±660' FWL (SW/4 NW/4)  
Sec. 1 T29N R4W  
Rio Arriba County, New Mexico  
Surface Lease: Fee  
Mineral Lease: NMNM10431 & Fee

#### DRILLING PROGRAM

This APD is filed under the APD process as stated in Onshore Order No. 1 and supporting BLM documents. This APD process may include an on-site meeting as determined by BLM, at which time the specific concerns of Black Hills Gas Resources, Inc. (Black Hills) and BLM will be discussed. Best efforts will be made to address specific concerns of the BLM representatives.

Please contact Lynn Benally at 505-634-1111 (office) or 505-793-6336 (cell) to schedule an on-site meeting, if necessary.

**This is a new vertical and horizontal well to be drilled into the Pictured Cliffs formation. See also the attached Horizontal Drilling Program.**

SURFACE FORMATION – San Jose

GROUND ELEVATION – 6,971'

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

San Jose	Surface	Sandstone, shales & siltstones
Nacimiento	2,045'	Sandstone, shales & siltstones
Ojo Alamo	3,145'	Sandstone, shales & siltstones
Kirkland	3,360'	Sandstone, shales & siltstones
Fruitland Coal	3,530'	Sandstone, shales & siltstones
Pictured Cliffs	3,645'	Sandstone, shales & siltstones

TOTAL DEPTH	4,000'	TVD
	7,632.14'	MD (length of horizontal section)

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

Tertiary

San Jose	surface	Gas
Nacimiento	2,045'	Gas
Ojo Alamo	3,145'	Gas
Fruitland Coal	3,530'	Gas
Pictured Cliffs	3,645'	Gas

#### HORIZONTAL DRILLING PROGRAM

A) Kick Off Point is estimated to be at  $\pm 3,735'$  TVD.

*5 1/2" casing will be set to 4000'. Will move up hole to KOP & mill through casing for horizontal hole.*

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% CaCl <sub>2</sub> and 0.25 lb/sx LCM) **
0' - 4,000' 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) * **
3,735' 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 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' - 300' Fresh water - M.W. 8.5 ppg, Vis 30-33  
 250 300' - 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 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

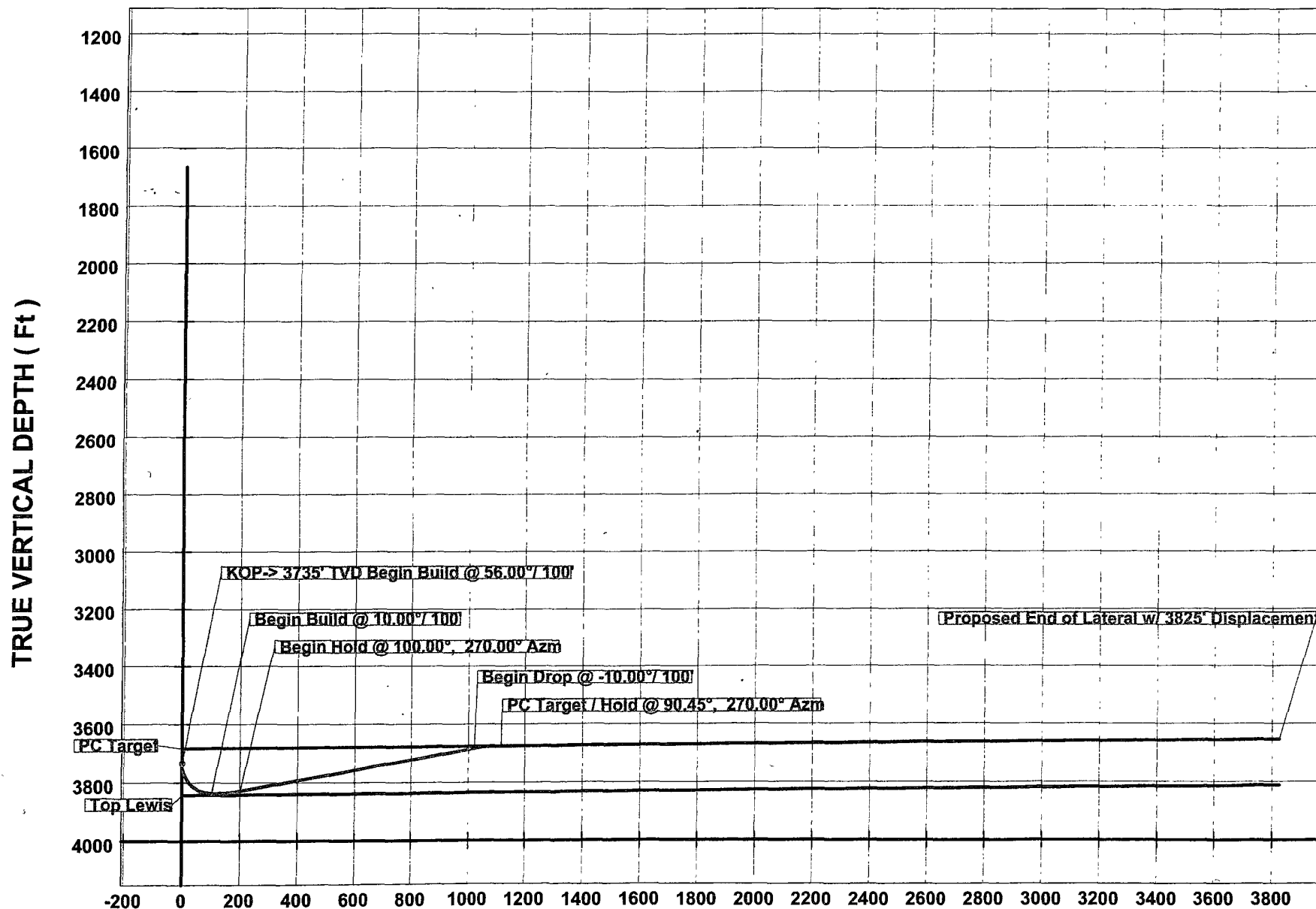
LOGGING, CORING, TESTING PROGRAM

- 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

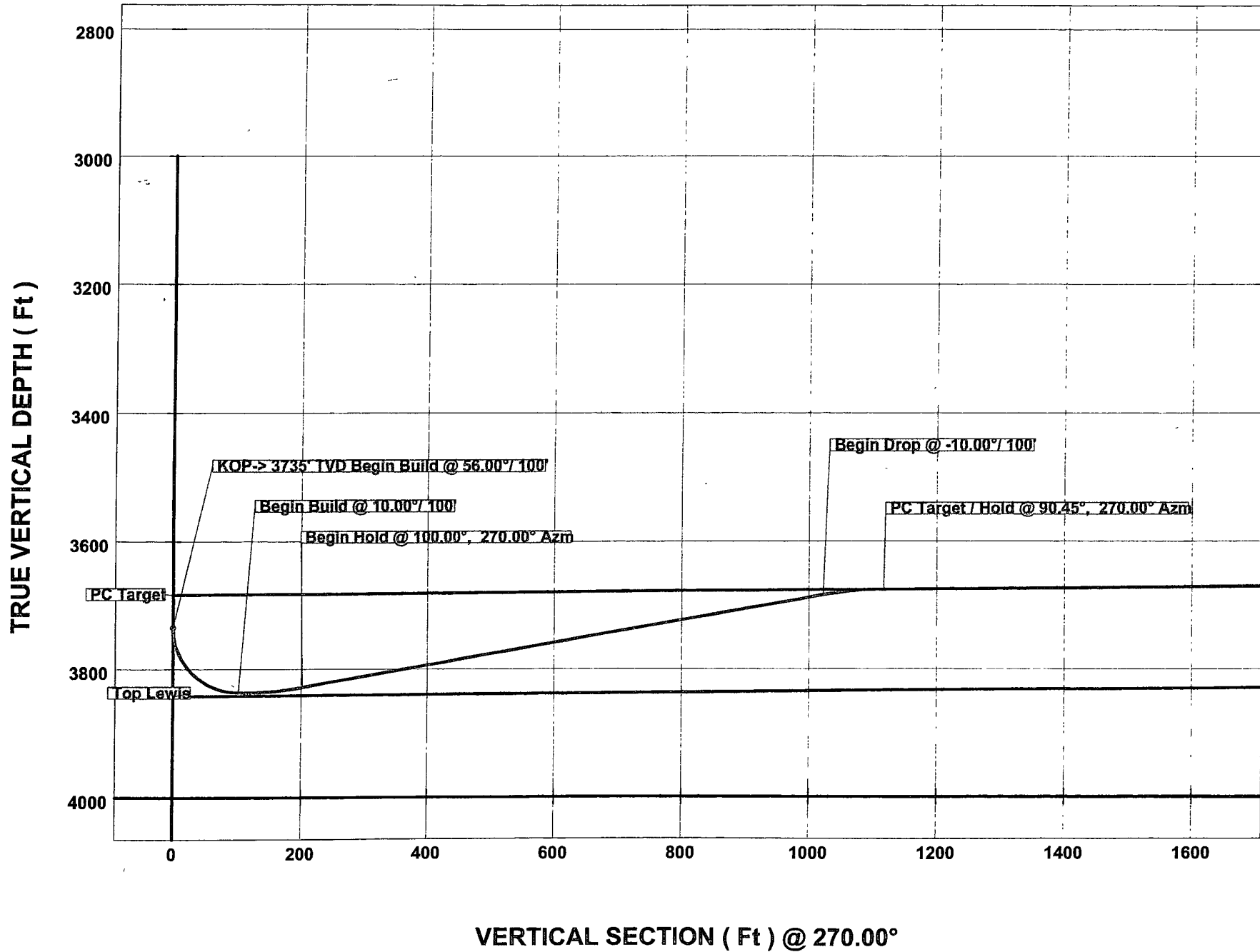
ABNORMAL CONDITIONS

- A) Pressures: No abnormal conditions are anticipated  
Bottom hole pressure gradient - 0.31 psi/ft
- B) Temperatures: No abnormal conditions are anticipated
- C) H<sub>2</sub>S: See H<sub>2</sub>S Plan if H<sub>2</sub>S is encountered.
- D) Estimated bottomhole pressure: 1,240 psi

Job Number: 61xxx  
Company: Black Hills E&P  
Lease/Well: Many Canyons 29-04-01 #24H  
Location: Rio Arriba Co., NM



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## **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<sub>2</sub>S).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H<sub>2</sub>S 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<sub>2</sub>S on metal components. If high tensile tubulars 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<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500 feet) and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H<sub>2</sub>S 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<sub>2</sub>S Safety Equipment and Systems**

Note: All H<sub>2</sub>S safety equipment and systems, if necessary, will be installed, tested, and operational when drilling reaches a depth of 500 feet above or three days prior to penetrating the first zone containing or reasonably expected to contain H<sub>2</sub>S.

#### **A. Well control equipment:**

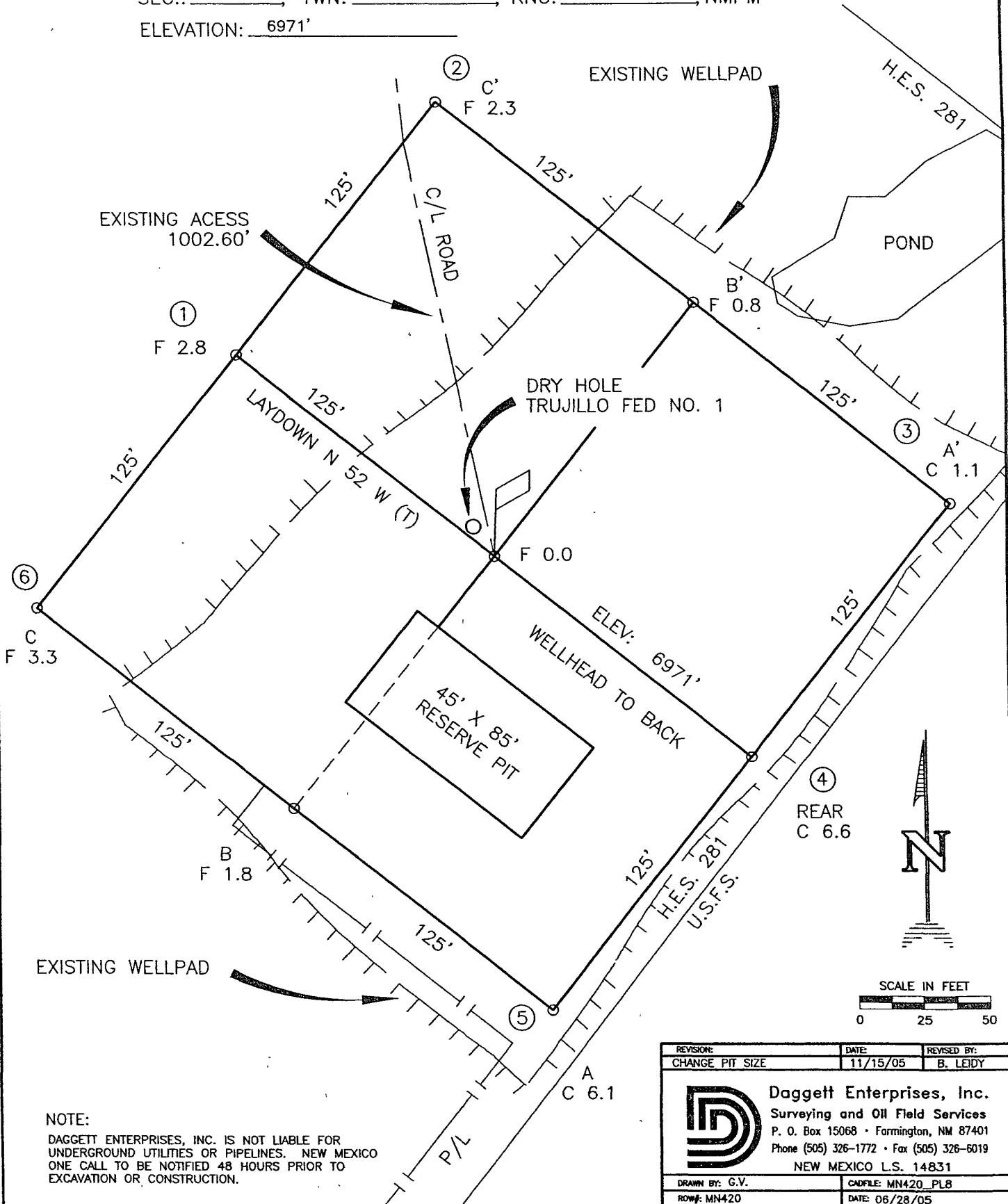
1. Choke manifold with a minimum of one remote choke.
2. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.



**Black Hills Gas Resources, Inc.**


- B. Protective equipment for essential personnel:
  - 1. Mark II Surviveair 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.
- C. H<sub>2</sub>S detection and monitoring equipment:
  - 1. Two portable H<sub>2</sub>S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H<sub>2</sub>S levels of 10 ppm are reached.
- 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 program has been designed to minimize the volume of H<sub>2</sub>S circulated to the surface. Proper mud weight, safe drilling practices, and the use of H<sub>2</sub>S scavengers will minimize hazards when penetrating H<sub>2</sub>S bearing zones.
- F. Metallurgy:
  - 1. All drill strings, casings, tubing, wellhead, blowout preventors, drilling spools, kill lines, choke manifold and lines, and valves shall be suitable for H<sub>2</sub>S service.
  - 2. All elastomers used for packing and seals shall be H<sub>2</sub>S 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 testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill stem testing operations conducted in an H<sub>2</sub>S environment will use the closed chamber method of testing.

COMPANY: BLACK HILLS GAS RESOURCES  
LEASE: MANY CANYONS 29-04-01 NO. 24H  
FOOTAGE: 1935 FNL, 795 FEL  
SEC.: 1, TWN: 29-N, RNG: 4-W, NMPM  
ELEVATION: 6971'



NOTE:

DAGGETT ENTERPRISES, INC. IS NOT LIABLE FOR  
UNDERGROUND UTILITIES OR PIPELINES. NEW MEXICO  
ONE CALL TO BE NOTIFIED 48 HOURS PRIOR TO  
EXCAVATION OR CONSTRUCTION.

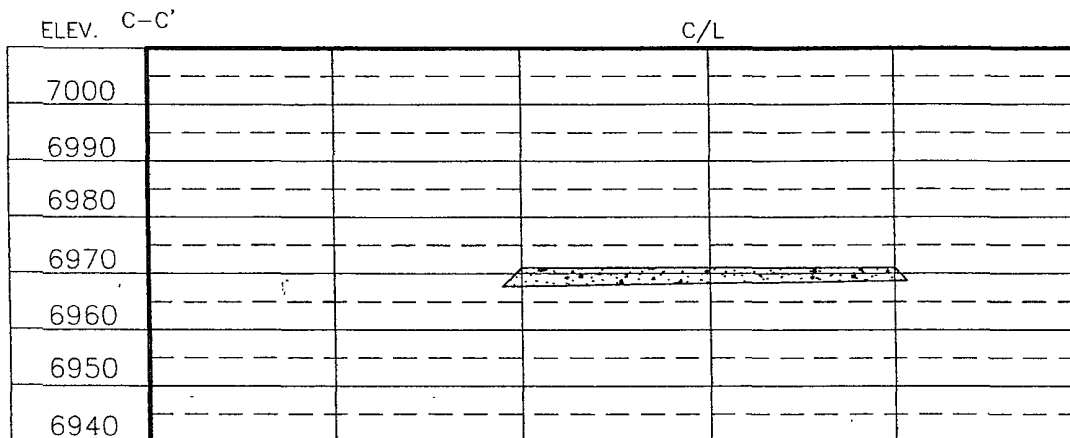
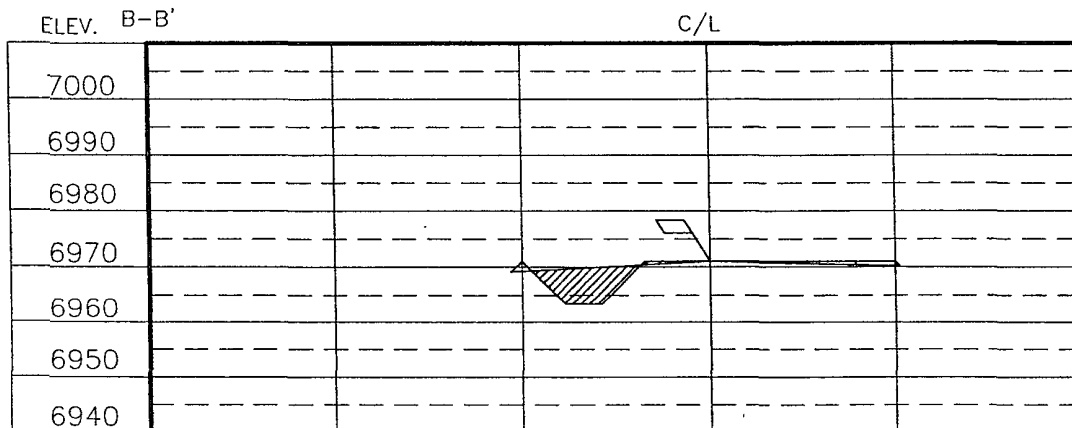
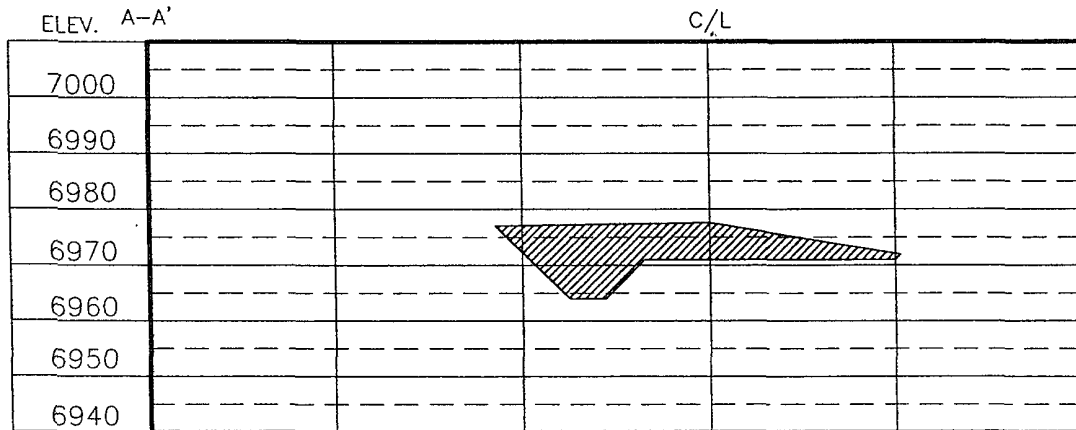
REVISION:	DATE:	REVISED BY:
CHANGE PIT SIZE	11/15/05	B. LEIDY
 <p><b>Daggett Enterprises, Inc.</b>          Surveying and Oil Field Services          P. O. Box 15068 • Farmington, NM 87401          Phone (505) 326-1772 • Fax (505) 326-6019          NEW MEXICO L.S. 14831</p>		
DRAWN BY: G.V.	CADFILE: MN420_PL8	
ROW#: MN420	DATE: 06/28/05	

# WELL PAD CROSS-SECTIONAL DIAGRAM

COMPANY: BLACK HILLS GAS RESOURCES  
 LEASE: MANY CANYONS 29-04-01 NO. 24H  
 FOOTAGE: 1935 FNL, 795 FEL  
 SEC.: 1, TWN: 29-N, RNG: 4-W, NMPM  
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REF. DWG. MN420\_PL8 WELL PAD DIAGRAM

REVISION: DATE: REVISED BY:

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 Surveying and Oil Field Services  
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 Phone (505) 326-1772 • Fax (505) 326-6019  
 NEW MEXICO L.S. 14831



DRAWN BY: G.V. DATE: 06/28/05  
 ROW#: MN420

## 2-M SYSTEM

Black Hills Gas Resources, Inc.

ANNULAR PREVENTOR MAY BE SUBSTITUTED FOR DOUBLE GATE PREVENTORS  
BOP PRESSURE TEST TO 1,000 PSI

