Form 3160-3
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

AUG 2006
RECEIVED
OIL CONS. DIV.
DIST. 3

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: ☒ DRILL ☐ REENTER	5. Lease Serial No. MDA 701-98-0013,
	6. If Indian, Allottee or Tribe Name JICARILLA APACHE NATION
	7. If Unit or CA Agreement, Name and No.
1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☒ Multiple Zone	8. Lease Name and Well No. JICARILLA 30-03-33 31
2. Name of Operator BLACK HILLS GAS RESOURCES, INC Contact: KATHY L SCHNEEBECK E-Mail: BPMIBlackHills@banko1.com	9. API Well No. 30-039-29446
3a. Address 350 INDIANA STREET, SUITE 400 GOLDEN, CO 80401	3b. Phone No. (include area code) Ph: 303.820.4480 Fx: 303.820.4124
	10. Field and Pool, or Exploratory E BLANCO/PICTURED CLIFFS
4. Location of Well *(Report location clearly and in accordance with any State requirements.*)* At surface NWSW 1851FSL 838FWL At proposed prod. zone NWSW 1851FSL 838FWL	11. Sec., T., R., M., or Blk. and Survey or Area Sec 33 T30N R3W Mer NMP L
14. Distance in miles and direction from nearest town or post office* 57 MILES FROM BLOOMFIELD, NEW MEXICO	12. County or Parish RIO ARRIBA / 13. State NM
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 838' FWL (LEASE LINE)	16. No. of Acres in Lease 9920.00 / 17. Spacing Unit dedicated to this well 160.00 SW/4
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 1,800' FROM JICARILLA 464-32 15	19. Proposed Depth 4000 MD / 20. BLM/BIA Bond No. on file NMB000230
21. Elevations (Show whether DF, KB, RT, GL, etc. 7075 GL	22. Approximate date work will start 03/09/2005 / 23. Estimated duration

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 (Electronic Submission)	Name (Printed/Typed) KATHY L SCHNEEBECK Ph: 303.820.4480	Date 03/03/2005
Title PERMIT AGENT FOR BLACK HILLS		
Approved by (Signature) /s/ Manuel D	Name (Printed/Typed)	Date 8/1/06
Title AFM	Office FFO	

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Application approval does not warrant or certify 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.

Additional Operator Remarks (see next page)

Electronic Submission #53761 verified by the BLM Well Information System
For BLACK HILLS GAS RESOURCES, INC, sent to the Rio Puerco

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

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

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

NMOCD

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	[2] Pool Code	[3] Pool Name
30-039-27446	72400	E. Blanco / Pictured Cliffs

[4] Property Code	[5] Property Name	[6] Well Number
~~24243~~ 24209	JICARILLA 30-03-33	31

[7] OGRID No.	[8] Operator Name	[9] Elevation
013925	BLACK HILLS GAS RESOURCES	7075'

[10] Surface Location

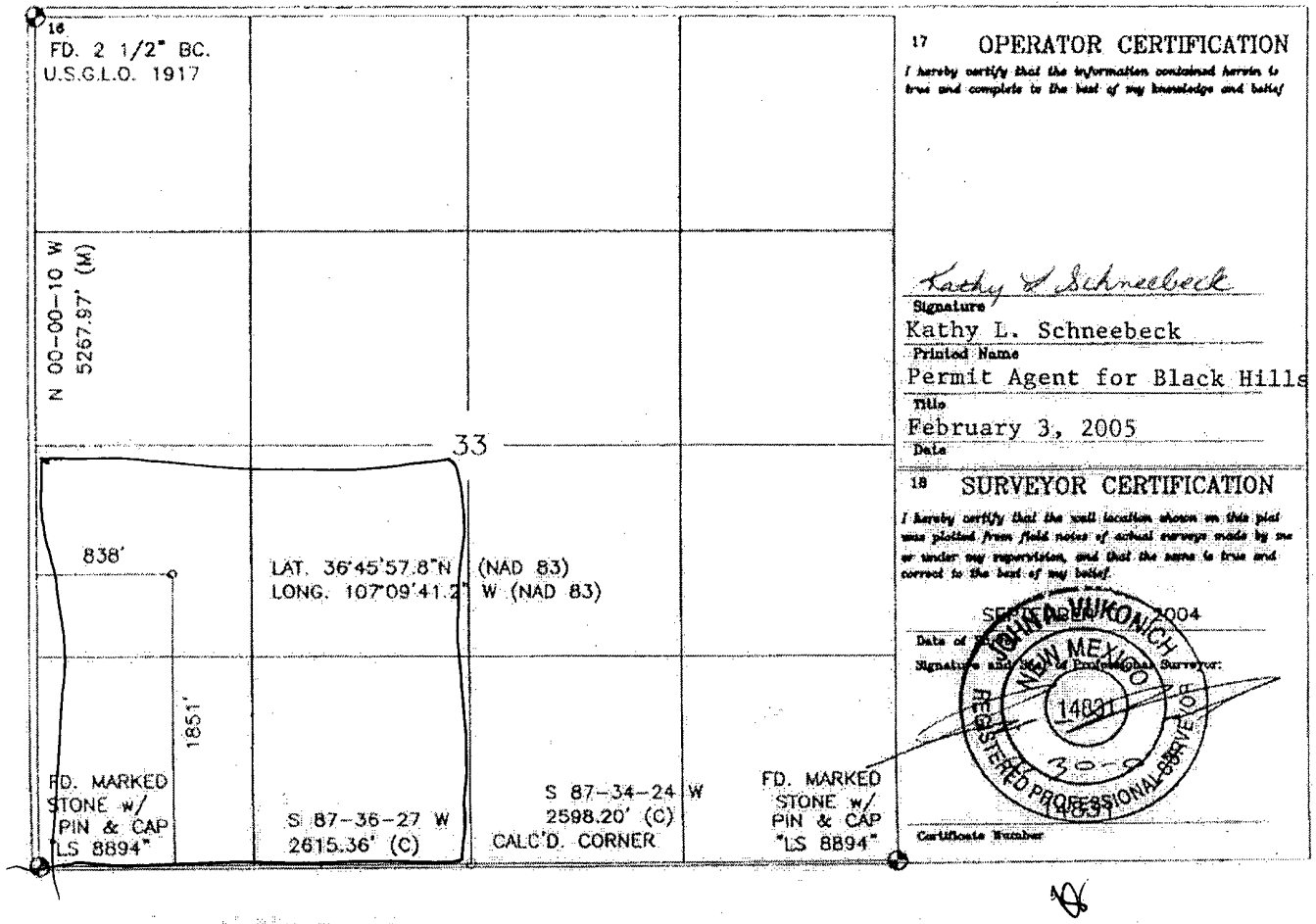
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	33	30-N	3-W		1851	SOUTH	838	WEST	RIO ARRIBA

[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	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
160 acres - SW/4			

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

Kathy L Schneebeck
Signature
Kathy L. Schneebeck
Printed Name
Permit Agent for Black Hills
Title
February 3, 2005
Date

[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.

SEPTEMBER 2004
Date of Survey
Signature and Seal of Professional Surveyor:

JOHN E. VUKONICH
NEW MEXICO
14831
REGISTERED PROFESSIONAL SURVEYOR

Certificate Number

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
June 1, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☒ No ☐
Type of action: Registration of a pit or below-grade tank ☒ Closure of a pit or below-grade tank ☐

Operator: Black Hills Gas Resources, Inc. Telephone: 720-210-1300 e-mail address: cmaybee@bhep.com
Address: 300 Indiana St, Suite 400, Golden, CO 80401 30-039-29446
Facility or well name: Jicarilla 30-03-33 31 API #: ~~Pending~~ U/L or Qtr/Qtr NW SW Sec 33 T 30N R 3W
County: Rio Arriba Latitude 36° 45' 57.8" Longitude 107° 09' 41.2" NAD: 1927 ☐ 1983 ☒ Surface Owner Federal ☐ State ☐ Private ☐ Indian ☒

Pit	**Below-grade tank**	
Type: Drilling ☒ Production ☐ Disposal ☐ Workover ☐ Emergency ☐ Lined ☒ Unlined Liner type: Synthetic ☒ Thickness 12 mil Clay Pit Volume ±17,811 bbl	Volume: ____ bbl Type of fluid: ____ Construction material: ____ Double-walled, with leak detection? Yes ☐ If not, explain why not.	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points)
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) ~~(0 points)~~
	Ranking Score (Total Points)	/ 0 points

If this is a pit closure: (1) attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if your are burying in place) onsite ☐ offsite ☐ If offsite, name of facility ____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface ____ ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments:

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.**
Date: 02/03/2005
Printed Name/Title Kathy L. Schneebeck / Permit Agent for Black Hills Gas Resources, Inc. Signature: Kathy L Schneebeck
Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:
Printed Name/Title DEPUTY OIL & GAS INSPECTOR, DIST. #3 Signature ____ Date: AUG 02 2006

WELL PAD DIAGRAM

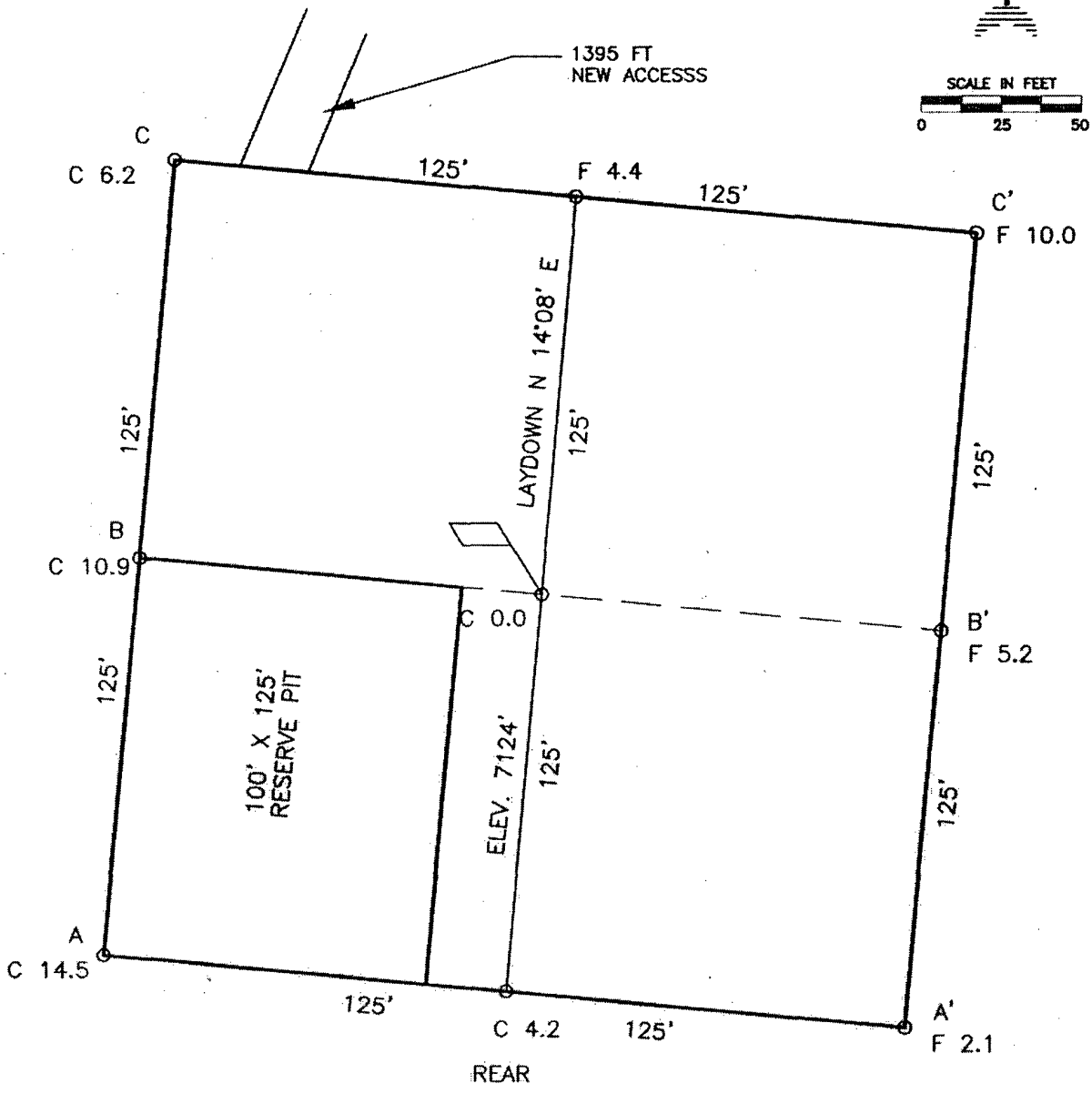
COMPANY: BLACK HILLS GAS RESOURCES

LEASE: JICARILLA 30-03-33 #31

FOOTAGE: 1851 FSL, 838 FWL

SEC.: 33 TWN: 30-N RNG: 3-W NMPM

ELEVATION: 7075'



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:

Daggett Enterprises, Inc.
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

DRAWN BY: B.L.	CADFILE: MN328PLB
JOB #: MN328	DATE: 08/25/04

WELL PAD CROSS-SECTIONAL DIAGRAM

COMPANY: BLACK HILLS GAS RESOURCES

LEASE: JICARILLA 30-03-33 #31

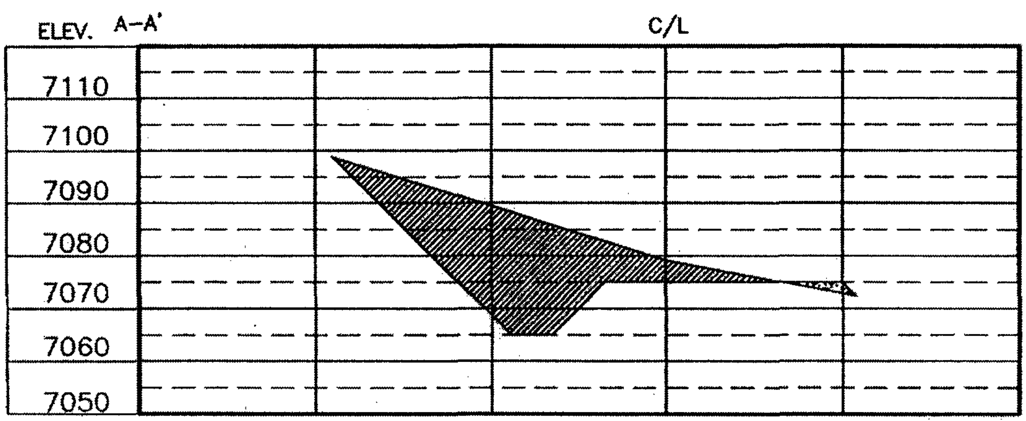
FOOTAGE: 1851 FSL, 838 FWL

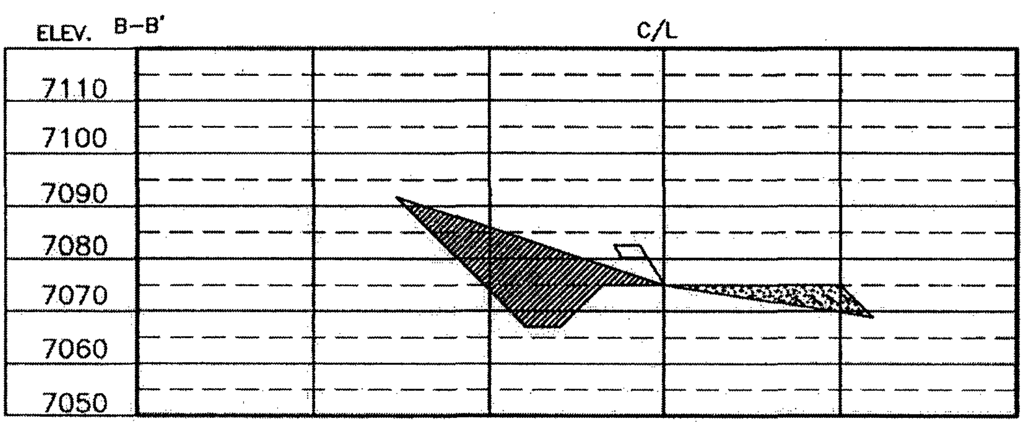
SEC.: 33, TWN: 30-N, RNG: 3-W, NMPM

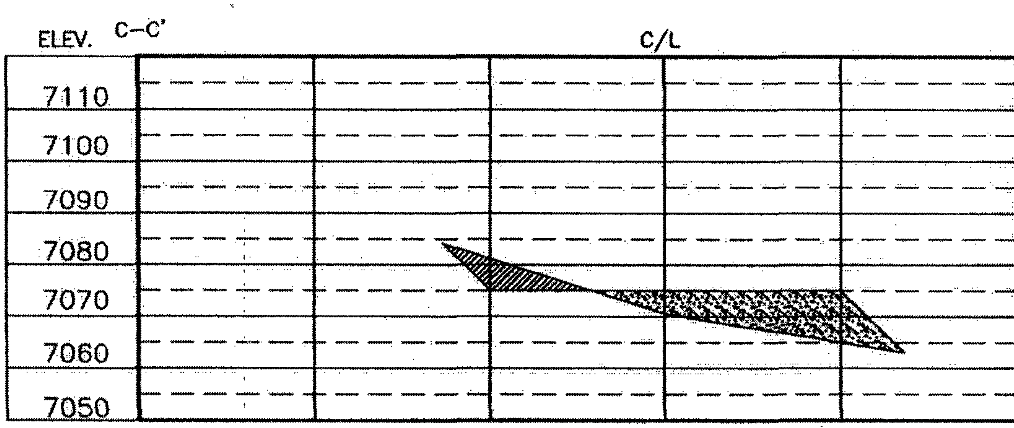
ELEVATION: 7075'

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.







REF. DWG. MN328PLS WELL PAD DIAGRAM

REVISIONS: | DATE: | REVISED BY:

Daggett Enterprises, Inc.
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

DRAWN BY: B.L. | CADFILE: MN328CF8
ROW#: MN328 | DATE: 08/25/04

Black Hills Gas Resources, Inc.
Jicarilla 30-03-33 31
1,851' FSL 838' FWL (NW/4 SW/4)
Sec. 33 T30N R3W
Rio Arriba County, New Mexico
Lease: MDA 701-98-0013, Tract 1

DRILLING PROGRAM

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 October 6, 2004, as determined by BLM, Bureau of Indian Affairs (BIA) and Jicarilla Oil & Gas Administration (JOGA), and at which time the specific concerns of Black Hills Gas Resources, Inc. (Black Hills), BLM, BIA and JOGA were discussed.

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

SURFACE FORMATION – San Jose

GROUND ELEVATION – 7,075'

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
Fruitland	3,611'	Sandstone, shales & siltstones
Pictured Cliffs	3,700'	Sandstone, shales & siltstones
Lewis	3,808'	Sandstone, shales & siltstones

TOTAL DEPTH 4,000'

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

Tertiary		
San Jose	surface	Gas
Nacimiento	1,977'	Gas
Ojo Alamo	3,185'	Gas
Fruitland	3,611'	Gas
Pictured Cliffs	3,700'	Gas

CASING PROGRAM

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0' – 250'	12-1/4"	8-5/8"	J-55 24# ST&C New	To surface (±175 sxs Class B)
0' – T.D.	7-7/8"	5-1/2"	J-55 15.5# LT&C New	TD to surface (±630 sxs lite or 65:35 poz and ±270 sxs 50:50 poz)*

* Actual cement volume to be determined by caliper log.

Yields: Class B yield = 1.18 ft^3/sx
65:35 Poz yield = 1.62 ft^3/sx
50:50 Poz yield = 1.26 ft^3/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'	TD	Fresh water - 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_2S:	See attached H_2S Plan in event H_2S is encountered
D)	Estimated bottomhole pressure: 1,240 psi	

ANTICIPATED START DATE

March 9, 2005

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 30-03-33 31
1,851' FSL 838' FWL (NW /4 SW /4)
Sec. 33 T 30N R 3W
Rio Arriba County, New Mexico
MDA 701-98-0013, Tract 1

SURFACE CASING AND CENTRALIZER DESIGN

Proposed Total Depth: 4,000 '
Proposed Depth of Surface Casing: 250 '
Estimated Pressure Gradient: 0.31 psi/ft
Bottom Hole Pressure at 4,000 '
0.31 psi/ft x 4,000 ' = 1,240 psi
Hydrostatic Head of gas/oil mud: 0.22 psi/ft
0.22 psi/ft x 4,000 ' = 880 psi

Maximum Design Surface Pressure

Bottom Hole Pressure	–	Hydrostatic Head	=
(0.31 psi/ft x 4,000 ')	–	(0.22 psi/ft x 4,000 ')	=
1,240 psi	–	880 psi	= 360 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 / 6,000 = 40.67 ok

Burst: Safety Factor = 2,950 psi / 360 psi = 8.19 ok

Collapse: Hydrostatic = 0.052 x 9.0 ppg x 250 ' = 117 psi
Safety Factor = 1,370 psi / 117 psi = 11.71 ok

Use 250 ' 8-5/8" J-55 24# ST&C

Use 2,000 psi minimum casinghead and BOP's

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

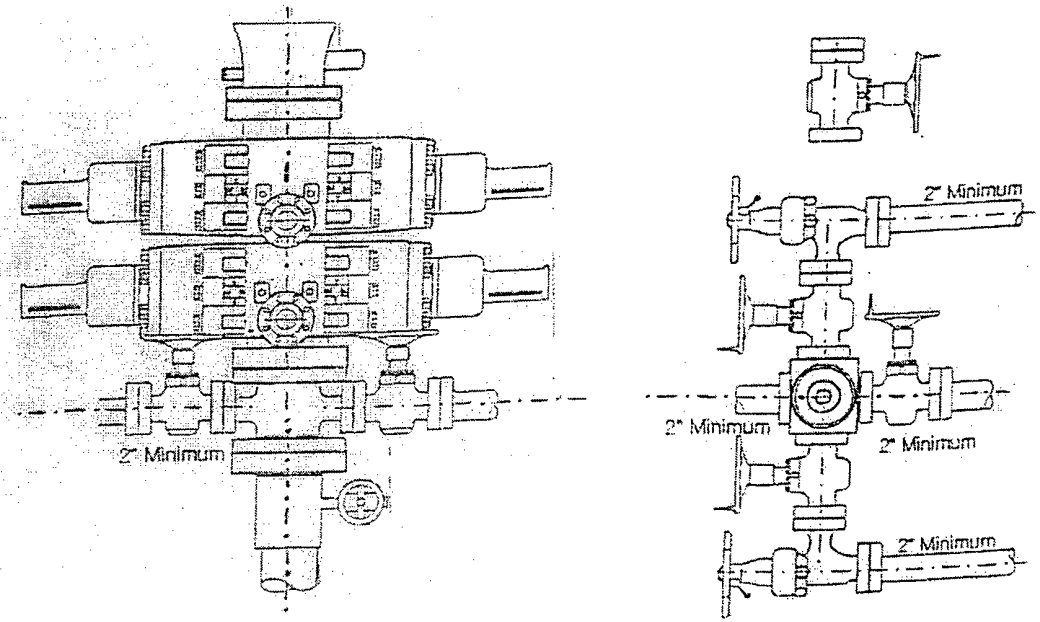
Total centralized ± 200 ' (50 ' – 250 ')

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

2-M SYSTEM

Black Hills Gas Resources, Inc.

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



BOP PLAT

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 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_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 session 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 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_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 Surviveair 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

C. H_2S detection and monitoring equipment:

1. Two portable H_2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H_2S 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_2S circulated to the surface. Proper mud weight, safe drilling practices, and the use of H_2S scavengers will minimize hazards when penetrating H_2S 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_2S service.

2. All elastomers used for packing and seals shall be H_2S 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_2S environment will use the closed chamber method of testing.