



## Black Hills Exploration and Production

### Ute 34-41

Surface Location: 1866' FSL 1438' FWL (NE/SW)  
 Bottom Hole Location: 710' FSL 710' FWL (SW/SW)  
 Sec.34 T33N R8W  
 La Plata County, Colorado  
 Lease: 14-20-151-49

### DRILLING PROGRAM (Per Rule 320)

The 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 December 7, 2006 as determined by the Southern Ute Indian Tribe, Department of Energy (SUIT), and at which time the specific concerns of Black Hills Exploration and Production (BHEP) and SUIT were discussed.

The initial on-site meeting for the original location was held during the summer of 2000, at this time the site was called the Ute #34-11, and the APD was approved October 24, 2000. BHEP is proposing to drill the Ute 34-41 as a twin directional well co-located on the existing Ute #34-11 location.

#### SURFACE FORMATION – San Jose

#### GROUND ELEVATION – 7,326'

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

<u>Formations</u>	<u>MD</u>	<u>VD</u>	<u>SSD</u>	
San Jose	Surface	Surface	Surface	Sandstone, shales & siltstones
Farmington Shale	3,226'	3,056'	4,283'	Sandstone, shales & siltstones
Fruitland	3,783'	3,564'	3,811'	Sandstone, shales & siltstones
Frtld Coal Zone	4,013'	3,774'	3,565'	Sandstone, shales & siltstones
Pictured Cliffs	4,361'	4,091'	3,248'	Sandstone, shales & siltstones

<b>TOTAL DEPTH</b>	<b>4,147'</b>	<b>TVD</b>
	<b>4,422'</b>	<b>Measured Depth (MD)</b>

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

Farmington	3,056' VD	Gas, water, sand, shale
Fruitland	3,564' VD	Gas, water, sand, shale
Fruitland Coal	3,774' VD	Gas, water, sand, shale
Pictured Cliffs	4,091' VD	Gas, water, sand, shale

#### HORIZONTAL DRILLING PROGRAM

Kick Off Point is estimated to be  $\pm 500'$  TVD

**CASING PROGRAM**

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0'-450'	12-1/4"	8-5/8"	J-55 24# ST&C	+/-250 sxs Premium Cement **
0'- TD	7-7/8"	5-1/2"	L-80 17# LT&C	+/- 450 sxs Light Premium and +/- 205 sxs 50:50 poz Premium*

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

\*\* Cement will be circulated to surface

**Yields:**

Surface: Premium cement yield: = 1.17 ft<sup>3</sup>/sx (mixed at 15.80 lb/gal)

Production: Light Premium Cement yield: 1.82 ft<sup>3</sup>/sx (mixed at 12.5 lb/gal)

50:50 poz Premium yield = 1.30 ft<sup>3</sup>/sx (mixed at 13.5 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 1,500 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'	-	450'	Fresh water – M.W. 8.5 ppg, Vis 30-33
450'	-	TD'	Fresh water- Low solids non-dispersed
			M.W. 8.5 – 9.2 ppg
			Vis – 28 – 50 sec
			W.L. 6 - 10cc 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: None anticipated but see attached H<sub>2</sub>S plan in event H<sub>2</sub>S is encountered.
- D) Estimated  
bottomhole pressure: 1,371 psi

ANTICIPATED START DATE

April 1, 2010

COMPLETION

The well 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.