

Entek GRB LLC
Butter Lake Federal 32-10
2,482' FSL 1,738' FEL (NW/4 SE/4)
Sec. 32 T12N R88W
Routt County, Colorado
Surface: Fee
Federal Mineral Lease: COC59666

DRILLING PROGRAM
(All Drilling Procedures will be followed as Per Onshore Orders No. 1 and No. 2)

This Application for Permit to Drill (APD) is filed under the Notice of Staking (NOS) process as stated in Onshore Order No. 1 (OSO #1) and supporting Bureau of Land Management (BLM) documents. This NOS process included an onsite meeting between the BLM and New Frontier Energy, Inc. (NEW FRONTIER), at which time the specific concerns of both the BLM and NEW FRONTIER were discussed. The APD applicant, Entek GRB LLC (Entek), agrees to abide by all specific concerns of the BLM representatives voiced at the NEW FRONTIER onsite meeting and are addressed herein, as are specific stipulations from the BLM.

Please contact Mr. Michael Verm with Entek at 713-992-8115, if there are any questions or concerns regarding this Drilling Program.

SURFACE ELEVATION – 7,518' (Un-graded ground elevation)

SURFACE FORMATION – Lewis Shale – Fresh water possible

ESTIMATED FORMATION TOPS

Lewis Shale	Surface	Shale
Almond	1,137'	Sandstone, siltstone, shale & minor coal
Pioneer	1,551'	Coal seam
Darling	1,751'	Coal seam
Williams Fork	1,978'	Sandstone, shale & coal
Trout Creek	2,068'	Sandstone
Iles	2,170'	Sandstone, shale & minor coal
Iles Coal	3,218'	Coal
DFS	3,318'	Sandstone
Hatfield	3,453'	Sandstone
Cherokee Creek	3,546'	Sandstone
Deep Creek	4,176'	Sandstone
Cow Creek / MRPS	5,647'	Sandstone
Shannon	6,593'	Sandstone & siltstone
Niobrara	6,976'	Shale, sandstone & limestone
Carlile	7,900'	Shale
Frontier	8,336'	Sandstone
TOTAL DEPTH	8,700'	

ESTIMATED DEPTHS OF ANTICIPATED WATER, OIL, GAS, OR MINERAL BEARING FORMATIONS

Estimated depths at which water, oil, gas or other mineral-bearing formations are expected to be encountered:

Lewis Shale	Surface	Some water bearing
Almond	1,137'	Some water, oil, & gas bearing
Pioneer	1,551'	Some water & gas bearing
Darling	1,751'	Some water & gas bearing
Williams Fork	1,978'	Some water, oil, & gas bearing
Trout Creek	2,068'	Some water, oil, & gas bearing
Iles	3,218'	Some water, oil, & gas bearing
Iles Coal	3,218'	Some water & gas bearing
DFS	3,318'	Some water, oil, & gas bearing
Hatfield	3,453'	Some water, oil, & gas bearing
Cherokee Creek	3,546'	Some water, oil, & gas bearing
Deep Creek	4,176'	Some water, oil, & gas bearing
Cow Creek / MRPS	5,647'	Some water, oil, & gas bearing
Shannon	6,593'	Some oil & gas bearing
Niobrara	6,976'	Some oil & gas bearing
Carlile	7,900'	Some oil & gas bearing
Frontier	8,336'	Some water, oil, & gas bearing

All fresh water and prospectively valuable minerals encountered during drilling will be recorded by depth and protected.

CASING PROGRAM

Total Depth (TD)	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0 – 40'	18"	16"	Conductor Casing	Redi Mix to surface
0' – 1,350'	12-1/4"	9-5/8"	J-55 40# ST&C New	To surface (\pm 700 sxs Class G)*
0' – 6,950'	8-3/4"	7"	J-55 23# ST&C New	6,950' – 1,050' (\pm 800 sxs Class G) **
6,850' – TD	Open Hole	4-1/2"	10.5# Slotted Hanger Liner	None

* Cement volume calculated with 60% excess.

** Lead cement volume calculated with 10% excess. Tail cement volume calculated with 30% excess.

Statement of Accumulator System and Location of Hydraulic Controls

The drilling rig has not been selected for this well. Selection will take place after approval of this application is granted. Manual and/or hydraulic controls will be in compliance with OSO #2 for 3,000 psi system.

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'	-	40'	Water
40'	-	1,350'	Gel / Native Mud M.W.: 8.3 – 8.6 ppg Visc.: 40 – 50 PV: 10 – 20 YP: 10 – 15 pH: 8.5 – 9.0 WL: 9 - 10
1,350'	-	6,900'	N2 assisted KCL Polymer M.W.: 8.6 – 8.9 ppg Visc.: 38 – 45 PV: 6 – 16 YP: 6 – 12 pH: 10.8 – 11.0 WL: 9
6,900'	-	TD	Oil M.W.: 7.0 ppg

Sufficient mud materials to maintain mud properties, control lost circulation and to contain a “kick” will be available on location.

AUXILIARY EQUIPMENT

- A. Upper Kelly cock; lower Kelly cock will be installed while drilling and tested at the time of the BOP test.
- B. Inside BOP or stabbing valve with handle (available on rig floor).
- C. Safety valve(s) and subs to fit all string connections in use.
- D. Mud monitoring will be with a flow sensor, pit level indicator, and visually observation.

LOGGING, CORING TESTING PROGRAM

- A. Logging: Platform Express, Array Induction Lithodensity/Compressed Neutron, Density Neutron, Sonic and FML.
- B. Coring: None planned – Whole core or rotary sidewall cores as warranted.
- C. Testing: None planned – Drill Stem tests may be run on shows of interest.

ABNORMAL CONDITIONS

- A. Pressures: No abnormal conditions are anticipated.
Anticipated BHP gradient: 0.45 psi/ft
- B. Temperatures: No abnormal conditions are anticipated.
- C. H₂S: None Anticipated.
- D. Estimated bottom hole pressure: 3,915 psi

ANTICIPATED START DATE

May 25, 2010

COMPLETION

The location pad will be sufficient size to accommodate all completion equipment activities and equipment. A string of 2-3/8", 4.7#, N-80, EUE 8rnd will be run as production tubing. A Sundry Notice (SN) will be submitted with a revised completion program if warranted.

Butter Lake Federal 32-10
 2,482' FSL 1,738' FEL (NE /4 SE /4)
 Sec. 32 T 12N R 88W
 Routt County, Colorado
 Federal Mineral Lease: COC59666

SURFACE CASING AND CENTRALIZER DESIGN

Proposed Total Depth: 8,700 '
 Proposed Depth of Surface Casing: 1,350 '
 Estimated Pressure Gradient: 0.45 psi/ft
 Bottom Hole Pressure at 8,700 '
 0.45 psi/ft x 8,700 ' = 3,915 psi
 Hydrostatic Head of gas/oil mud: 0.22 psi/ft
 0.22 psi/ft x 8,700 ' = 1,914 psi

Maximum Design Surface Pressure

Bottom Hole Pressure - Hydrostatic Head =
 (0.45 psi/ft x 8,700 ') - (0.22 psi/ft x 8,700 ') =
 3,915 psi - 1,914 psi = 2,001 psi

Casing Strengths 9-5/8" J-55 40# ST&C

Wt.	Tension (lbs)	Burst (psi)	Collapse (psi)
40 #	452,000	3,850	2,570

Safety Factors

Tension (Dry):	1.8	Burst: 1.0	Collapse: 1.125	
Tension (Dry):	40 # / ft x 1,350 ' = 54,000 #			
Safety Factor =	$\frac{452,000}{54,000}$	= 8.37	ok	
Burst:	Safety Factor = $\frac{3,850 \text{ psi}}{2,001 \text{ psi}}$	= 1.92	ok	
Collapse:	Hydrostatic = 0.052 x 9.0 ppg x 1,350 ' = 632 psi			
Safety Factor =	$\frac{2,570 \text{ psi}}{632 \text{ psi}}$	= 4.07	ok	

Use 1,350 ' 9-5/8" J-55 40# ST&C

Use 3,000 psi minimum casinghead and BOP's

Centralizers

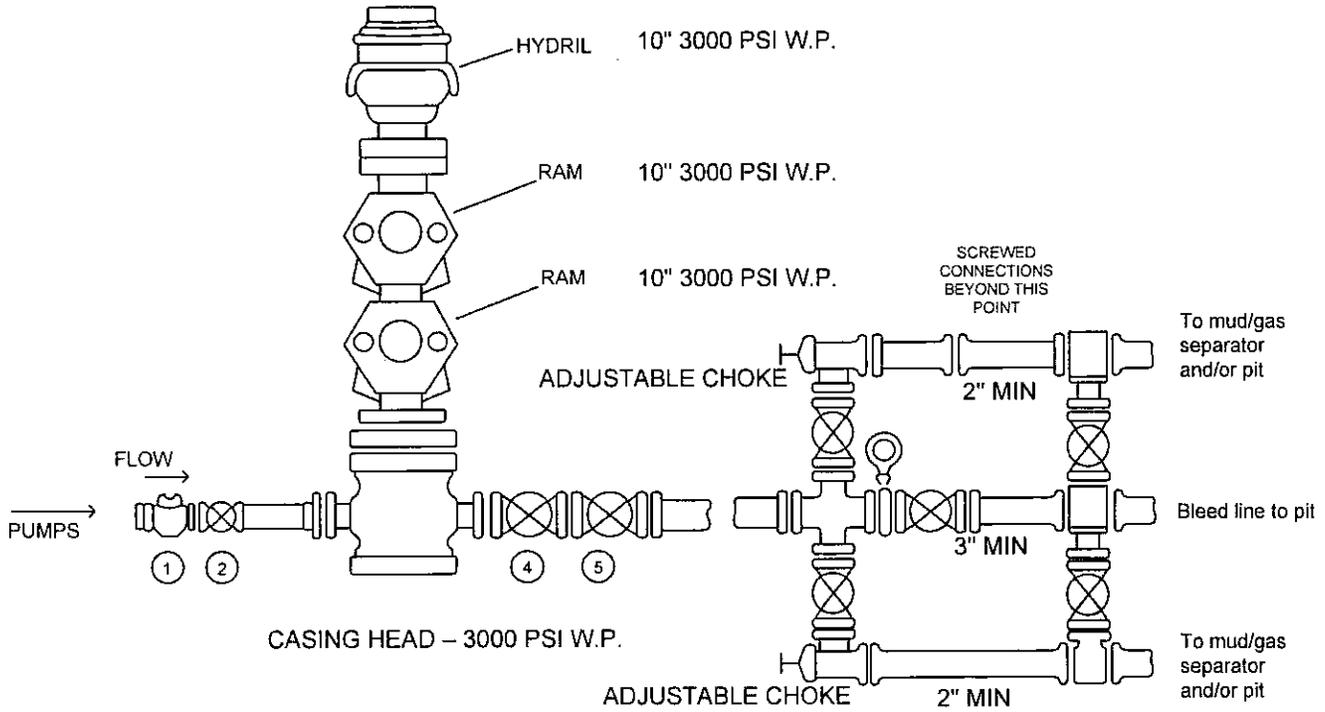
8 Total
 1 near surface at 160'
 3 -1 each at middle of bottom joint, second joint, third joint
 4 -1 each at every other joint ±80' spacing
 Total centralized ± 600 ' (750 ' - 1,350 ')

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

MINIMUM BOP Requirements

3000 PSI W.P.

FILL LINE ABOVE THE UPPERMOST PREVENTER



KILL LINE

- Valve #1 – Flanged check valve
Full working pressure of BOP
- Valve #2 – Flanged, minimum 2" bore
Full working pressure of BOP

CHOKE LINE

- Valves #4 & 5 – Flanged minimum 3" bore
Full working pressure of BOP
- (Note: An HCR can be used instead of Valve # 5)

GENERAL RULES AND RECOMMENDATIONS

All lines to manifold are to be at right angles (90 deg.). No 45 deg. angles are to be used.
Blind flanges are to be used for blanking.
All studs and nuts are to be installed on all flanges.