

Entek GRB LLC
FRU Federal 4-14
614' FSL 1,735' FWL (SE/4 SW/4)
Sec. 4 T11N R88W
Routt County, Colorado
Surface: Federal
Federal Mineral Lease: COC59491
Focus Ranch Unit: COC63212X

DRILLING PROGRAM
Revised January 7, 2013

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

Entek GRB LLC respectfully requests that all information regarding this well be kept confidential.

This Application for Permit to Drill (APD) was initially 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. The process was changed to the "APD" process per Onshore Order No. 1. This document was prepared using language and requirements consistent with those previously approved by BLM.

Please contact Ms. Kristen Stocks, with Entek at (307) 200-1930, if there are any questions or concerns regarding this Drilling Program.

SURFACE ELEVATION – 7,982' (Un-graded ground elevation)

SURFACE FORMATION – Lewis Shale – Freshwater possible

| Formation | MD | Geology |
|------------------|-----------|---|
| Lewis | Surface | Shale |
| Trout Creek | 408' | Sandstone |
| Iles Coal | 1,590' | Sandstone, shale & minor coal |
| DFS | 1,690' | Sandstone |
| Hatfield | 1,825' | Sandstone |
| Cherokee Creek | 2,136' | Sandstone |
| Deep Creek | 2,548' | Sandstone (Target Formation) |
| Marapos | 3,153' | Sandstone (Target Formation) |
| Mancos Lower | 3,758' | Sandstone & siltstone |
| Niobrara | 5,448' | Shale, sandstone & limestone (Target Formation) |
| Carlile | 6,388' | Shale |
| Frontier | 6,648' | Sandstone (Target Formation) |

| | | |
|-------------|---------------|-------------------|
| Bent | 6,788' | Shale & Sandstone |
| TOTAL DEPTH | 9,150' | |

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:

| Formation | MD | Lithology |
|----------------|---------|--------------------------------|
| Lewis | Surface | Some water bearing |
| Trout Creek | 408' | Some water, oil, & gas bearing |
| Iles Coal | 1,590' | Some water, oil, & gas bearing |
| DFS | 1,690' | Some water, oil, & gas bearing |
| Hatfield | 1,825' | Some water, oil, & gas bearing |
| Cherokee Creek | 2,136' | Some water, oil, & gas bearing |
| Deep Creek | 2,548' | Some water, oil, & gas bearing |
| Marapos | 3,153' | Some water, oil, & gas bearing |
| Mancos Lower | 3,758' | Some oil & gas bearing |
| Niobrara | 5,448' | Some oil & gas bearing |
| Carlile | 6,388' | Some oil & gas bearing |
| Frontier | 6,648' | Some water, oil & gas bearing |
| Bent | 6,788' | Some water, oil & gas bearing |

CASING PROGRAM

| Total Depth (TD) | Hole Diameter | Casing Diameter | Casing Weight and Grade | Cement |
|------------------|---------------|-----------------|-------------------------|---|
| 0' – 60' | 20" | 16" | Conductor Casing | Redi Mix to surface |
| 0' – 2,500' | 12-1/4" | 9-5/8" | 36# J-55 ST&C New | To surface (Lead: ±142 sxs Varicem (TM) System; Tail: ± 426 sxs Varicem (TM) System) * |
| 0' – 9,150' | 8-3/4" | 7" | 23# P-110 LT&C New | Stage 1: 9,150' to 7,695' (200' above DV) (±205 sxs Econocem (TM) System) ** A DV tool will be set at ±7,895'. Stage 2: 7,895' to 1,200' (Lead: ±535 sxs HES Light Standard; Tail: ±80 sxs Econocem (TM) System) ** |

- * *Cement volume calculated with 50% excess.*
 ** *Cement volume calculated with 15% excess.*
Actual volumes to be calculated based on log depths.

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

| | | | | |
|---------|-------------|-------------------|-----------------------|---|
| Yields: | Surface: | Lead: | Varicem (TM) System= | 2.97 ft ³ /sx (11.5ppg) 17.82gps |
| | | Tail: | Varicem (TM) System= | 1.81 ft ³ /sx(13.5 ppg) 9.17 gps |
| | Production: | Stage 1: | Econocem (TM) System= | 1.26 ft ³ /sx (14.2 ppg) 5.55 gps |
| | | Stage 2: Lead: | HES Light Standard= | 2.0 ft ³ /sx (12.5 ppg) 10.75 gps |
| | | Tail: | Econocem (TM) System= | 1.26 ft ³ /sx (14.2 ppg) 5.55 gps |

Surface casing top 100' will use 1" tubing, with Class "G" cement with 2% CaCl₂ if necessary.

Cement additives – (Note: Some additives are Halliburton proprietary products. If another cement contractor is used, these blends and products may vary slightly).

Cement additives:

| | | | | |
|--|-------------|----------|-------|---|
| | Surface: | | Lead: | Varicem (TM) Cement 3 lb/sx Pheno Seal Medium |
| | | | Tail: | Varicem (TM) Cement 3 lb/sx Pheno Seal Medium |
| | Production: | Stage 1: | | Econocem (TM) System 0.25% HR-5 (Retarder) 0.15% Econolite 3 lb/sx Silicate |
| | | Stage 2 | Lead: | HES Lite Standard 0.2% Haldad HR-5 6 lbs/sk Silicate 0.5% D-Air 3000 0.35% HR-7 (Retarder) |

| | | | | |
|--|--|--|-------|---|
| | | | Tail: | Econocem (TM) System 0.15% HR-5 (Retarder) 0.15% Econolite 3 lb/sx Silicate |
|--|--|--|-------|---|

PRESSURE CONTROL

- See attached blowout preventer diagram.

BOPs and choke manifold will be installed and pressure tested before drilling out of surface casing (subsequent pressure test will be performed whenever pressure seals are broken), and then will be checked daily as to mechanical operating condition. BOPs will be pressure tested at least once every 30 days. Ram type preventers and related pressure control equipment will be pressure tested to related working pressure of the stack assembly if a test plug is used. If a plug is not used, the stack assembly will be tested to the rated working pressure of the stack assembly or 70% of the minimum internal yield of the casing, whichever is less. Annular type preventers will be pressure tested to 50% of their working pressure. All casing strings will be pressure tested to 0.22 psi/ft or 1,500 psi, whichever is greater, not to exceed 70% of the internal yield. If a 5M system or greater is used, the casing shoe will be tested by drilling 5-20' out from under the shoe and pressure tested to a maximum expected mud weight equivalent as shown in the mud program listed below.

A manual locking device (i.e. hand wheels) or automatic locking devices shall be installed on the BOP stack. Remote controls capable of both opening and closing all preventers shall be readily accessible to the driller.

The choke manifold and accumulator will meet or exceed Onshore Order No. 2 (OSO #2) standards. The BOP equipment will be tested after any repairs to the equipment. Pipe rams, blind rams and annular preventer will be activated on each trip and weekly BOP drills will be conducted with each crew. All tests, maintenance, and BOP drills will be documented on rig "tower sheets".

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' | - | 60' | Water |
| 60' | - | 2,500' | Natural Gel |
| | | | M.W.: 8.5 ppg - 9 ppg |
| | | | Visc.: 40 – 50 |
| | | | PV: 10 – 20 |
| | | | YP: 10 – 15 |
| | | | pH: 8.5 – 9.0 |
| | | | WL: 9 - 10 |

2,500' - TD' Flexdrill-flexfirm potassium silicate
M.W.: 8.5 – 9.0 ppg
Visc.: 38 – 45
PV: 8 – 16
YP: 10 – 12
pH: 10.5 – 11.0
WL: 9 - 12

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

Entek will utilize a closed loop drilling system and will dry the cuttings and bury them in an approved pit. The rest will be disposed of at an approved offsite facility.

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 Lithio density/ Compensated Nuutron.
- 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: 4,118 psi

ANTICIPATED START DATE

March 1, 2013

COMPLETION

The location pad will be sufficient size to accommodate all completion equipment activities and equipment. A string of 2-7/8” 6.5#, N-80 8rd EUE will be run as production tubing. A Sundry Notice (SN) will be submitted with a revised completion program if warranted.

Historically there had not been enough gas to flare while drilling and completing. Due to the high BTU nature of natural gas in this area, a sales line is not currently available. Entek plans to flare any gas in excess of lease fuel demands, until such time that additional rich gas is developed in the area making it economically justifiable to install gas treating facilities that will ensure the gas can meet interstate transmission quality specifications.

It is intended that the maximum daily flare for this well will not exceed 30 MCF per day average for the year and will be permitted accordingly with the Air Quality Division for any flared gas emissions.

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SURFACE and PRODUCTION CASING DESIGN

| | | | | | |
|----------------------------------|-------|---|----------------------------------|-------|----------------------------|
| Proposed Total Depth | 9,150 | TVD | BHP at Producing Depth | 4,118 | Producing TD x Gradient |
| Proposed Depth of Surface Casing | 2,500 | Feet | Hydrostatic Head of Gas/Oil/Mud: | 2,013 | Producing TD x 0.22 psi/ft |
| Proposed Depth of Production Csg | 9,150 | Feet | Mud Weight - Production | 10.00 | #/gal |
| Formation Gradient | 0.450 | Psi/ft | Mud Weight - Surface | 8.80 | #/gal |
| Assume | 0% | full of water on opposite side of pipe for Burst calculations | | | |

SURFACE CASING

MAXIMUM DESIGN SURFACE PRESSURE

| | | | | |
|-------|----------------------|-------|---------------------|-----------------|
| 0.450 | Bottom Hole Pressure | minus | 0% Hydrostatic Head | |
| | PSI/FT x | minus | PSI/FT x | |
| | 1125 | psi | 0 | 2500 |
| | | | | psi |
| | | | | 1125 psi |

CASING STRENGTH

| Weight / Type | Collapse (psi) | Burst (psi) | Tension (lbs) |
|--------------------|----------------|-------------|---------------|
| 9 5/8" 36# J55 STC | 36.00 | 2020 | 3520 |
| 9 5/8" 36# H40 | 36.00 | 1740 | 2560 |

DESIGN FACTORS

SAFETY FACTORS

| | | | | |
|----------------------|--------------------|---------------|---------------|------------------------------|
| Tension (dry) | 9 5/8" 36# J55 STC | 90,000 | lbs | #/ft x TVD |
| | 9 5/8" 36# J55 STC | Safety Factor | design/actual | 4.38 Tension OK 1.600 |
| | 9 5/8" 36# H40 | Safety Factor | design/actual | 3.27 Tension OK 1.600 |

Burst

Assume 0% water column on Pipe/Hole annulus

| | | | | | |
|--------------------|---------------|---------------|-------------|----------|-------|
| 9 5/8" 36# J55 STC | Safety Factor | design/actual | 3.13 | Burst OK | 1.000 |
| 9 5/8" 36# H40 | Safety Factor | design/actual | 2.28 | Burst OK | 1.000 |

Collapse

| | | | | |
|--------------------|-----------------|-------------------------|-------------|--------------------------------|
| | Hydrostatic = | 0.052 x MW Surf x depth | 1144 | Against Atmosphere Inside Pipe |
| 9 5/8" 36# J55 STC | Safety Factor = | design/actual | 1.77 | Collapse OK 1.125 |
| 9 5/8" 36# H40 | Safety Factor = | design/actual | 1.52 | Collapse OK 1.125 |

Production Casing

MAXIMUM DESIGN PRODUCING PRESSURE

| | | | | |
|-------|----------------------|-------|---------------------|-----------------|
| 0.450 | Bottom Hole Pressure | minus | 0% Hydrostatic Head | |
| | PSI/FT x | minus | PSI/FT x | |
| | 4118 | psi | 0 | 9150 |
| | | | | psi |
| | | | | 4118 psi |

CASING STRENGTH

| Weight / Type | Collapse (psi) | Burst (psi) | Tension (lbs) |
|--------------------|----------------|-------------|---------------|
| 7" 23# HCP 110 LTC | 23.00 | 5650 | 8720 |
| 7" 26# J55 STC | 26.00 | 4320 | 4980 |

DESIGN FACTORS

SAFETY FACTORS

| | | | | | | |
|----------------------|---------------|---------------|--------------|---------------|-------|----|
| Tension (dry) | #/ft x TVD | 210,450 | lbs | 23.00 | 9,150 | ft |
| | #/ft x TVD | 237,900 | lbs | 26.00 | 9,150 | ft |
| 7" 23# HCP 110 LTC | Safety Factor | design/actual | 2.804 | Tension OK | 1.600 | |
| 7" 26# J55 STC | Safety Factor | design/actual | 1.404 | Design Failed | 1.600 | |

Burst

Assume 0% water column on Pipe/Hole annulus

| | | | | | |
|--------------------|---------------|---------------|--------------|----------|-------|
| 7" 23# HCP 110 LTC | Safety Factor | design/actual | 2.118 | Burst OK | 1.000 |
| 7" 26# J55 STC | Safety Factor | design/actual | 1.209 | Burst OK | 1.000 |

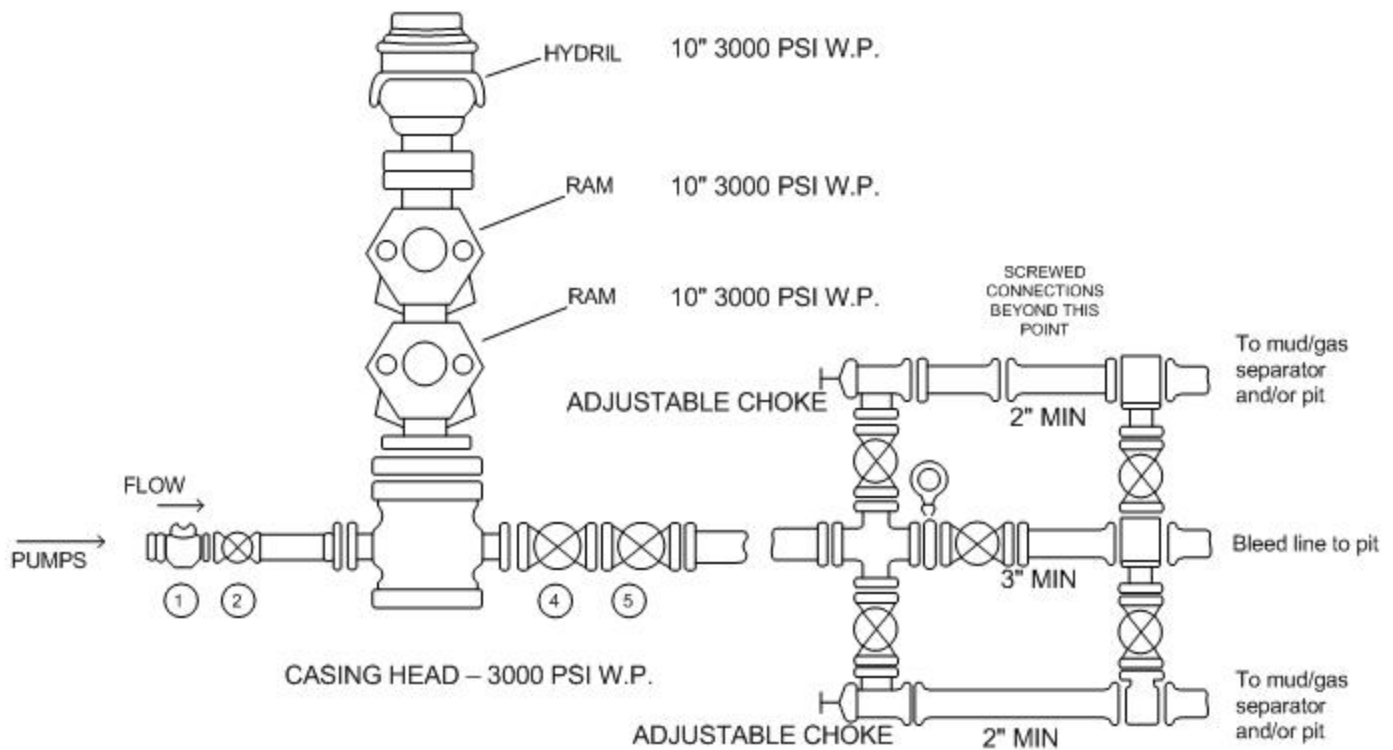
Collapse

| | | | | |
|--------------------|-----------------|------------------------|--------------|---------------------|
| | Hydrostatic = | 0.052 x mud wt x depth | 4758 | |
| 7" 23# HCP 110 LTC | Safety Factor = | design/actual | 1.187 | Collapse OK 1.125 |
| 7" 26# J55 STC | Safety Factor = | design/actual | 0.908 | Design Failed 1.125 |

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.