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Entek GRB LLC, FRU Federal 28-2 Pad, NWNE Sec 28 T12N R88W, Routt County, Form 2A#400363799 and Form 2#400353681; COGCC Response to Routt County LGD's Comments of 01-25-13

Kubeczko - DNR, Dave <dave.kubeczko@state.co.us>
To: Dave Kubeczko - DNR <dave.kubeczko@state.co.us>

Thu, Mar 28, 2013 at 12:08 PM

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2#400353681

LGD COMMENT RESPONSE CORRESPONDENCE

2A#400363799

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From: Kubeczko - DNR, Dave <dave.kubeczko@state.co.us>

Date: Thu, Mar 28, 2013 at 12:05 PM

Subject: Entek GRB LLC, FRU Federal 28-2 Pad, NWNE Sec 28 T12N R88W, Routt County, Form 2A#400363799 and Form 2#400353681; COGCC Response to Routt County LGD's Comments of 01-25-13

To: Chris Brookshire <cbrookshire@co.routt.co.us>

Chris,

COGCC appreciates Routt County's participation in the LGD comment portion of the Form 2A and Form 2 permitting process. Below are COGCC's Responses to Routt County's comments (submitted on January 25, 2013) for the Entek GRB LLC, FRU Federal 28-2 Pad, NWNE Sec 28 T12N R88W, Routt County, Form 2A#400363799 and Form 2#400353681. These responses will become an attachment to the Form 2A and Form 2. COGCC's review process is complete and the Form 2A and Form 2 permits will be approved soon. If you have any other questions, please do not hesitate to call me at (970) 309-2514 (cell), or email; or Greg Deranleau at (303) 894-2100 x5153. Thanks.

Dave

David A. Kubeczko, PG

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Routt County LGD Comments

Regulatory Form 2A#400363799 and Form 2#400353681

Entek GRB LLC, FRU Federal 28-2 Pad; NWNE Sec 28 T12N R88W, Routt County

Comments submitted on January 25, 2013: COGCC Response to Comments sent to Routt County LGD (Chris Brookshire) on March 28, 2013:

LGD Comments

Entek GRB LLC

Well: Stull Federal 28-2 (formerly 28-1)

WN4NE4 28-12-88

PP2012-013

Surface Owner: Private

Mineral owner: BLM

1. Routt County has a permitting process for all oil/gas operations. The consultant for this application has been contacted and is aware that the applicant must make application for a Special Use Permit.
2. The access road travels through land mapped for geologic concerns for Slope Failure Complex (SFC). The amended application has placed the well pad outside of mapped areas for geologic concerns.
3. This site is mapped for wildlife concerns which include Elk Severe Winter Range; Mule Deer Concentration Area, Winter Concentration Area and Severe Winter Area. The site is also located near two Sharp-tailed Grouse lek sites and one Greater Sage Grouse Lek site. The amended site has placed the well pad outside of the restricted surface area for Sage Grouse, but it is still within mapped areas for wildlife concerns for Sharp-tailed Grouse. The amended site has helped to mitigate grouse concerns, but measures should be taken to mitigate noise and vibration from the site. Drilling should not occur March 15-July 30 for Sharp-tailed Grouse. Winter drilling should not occur from December 1 through April 15th to avoid wildlife concerns for Elk and Mule Deer.
4. Best Management Practices must be adhered to to prevent any contamination of waterbodies. Any access road and well pad must have a comprehensive BMP and SWAMP plan and continually monitored for protection of these water sources from erosion and contaminants. This well is sited north in areas of intermittent drainages and surface water. Cantling Creek and Butter Lake are located within 1 (one) mile.
5. A GE permit must be obtained from Routt County for the access road on private property.
6. Routt County requests information from the COGCC after drilling operations are complete for the location of

aquifers and showing that casing was completed per minimum requirements of the COGCC regulations to protect all aquifers.

7. Routt County requests that the operator be required, at a minimum, to comply with COGA Voluntary Baseline Groundwater Quality Sampling Program.

8. Continued best management practices should be used to test or monitor air quality. The COGCC should work with the CDPHE to develop monitoring system requirements and schedules for all operators. New technology should be used to prohibit emissions from tanks, equipment and flares at the onset of production.

9. The operator must contact Moffat County Road and Bridge Department or the Moffat County LGD to obtain permits for hauling on Moffat County roads.

10. Due to limited emergency resources in this area, it is recommended that the operator work with the Baggs, Wyoming Fire Department and Routt County for an emergency response plan. The operator should also be involved in the coordination of ambulance response from Moffat County or Baggs, Wyoming into Routt County.

11. Routt County did not attend the site visit for the amended site and was not aware that this visit had been scheduled. There may be concerns voiced or determined during the Special Use Permit review which might require additional mitigation measures. Routt County does appreciate Entek's consideration for moving this site to a new location due to concerns expressed at the initial visit by Routt County, BLM, CDPW and the property owner.

Comment No. 1 - ROUTT COUNTY SPECIAL USE PERMIT.

Routt County has a permitting process for all oil/gas operations. All operators must contact Routt County and comply with the Special Use Permit process before operations may proceed.

COGCC Response to Comment No. 1 - ROUTT COUNTY SPECIAL USE PERMIT.

No COGCC response necessary.

Comment No. 2 - GEOLOGIC HAZARDS CONCERNS.

The access road travels through land mapped for geologic concerns for Slope Failure Complex (SFC). The amended application has placed the well pad outside of mapped areas for geologic concerns.

COGCC Response to Comment No. 2 - GEOLOGIC HAZARDS CONCERNS.

The Surface Plan attachment (a requirement of the Federal APD process) describes the access road route and indicates that most of the road is existing 2-track/jeep trail with approximately 0.3 mile of new road. Entek has an engineering firm looking at this and will locate the access road and construct to BLM standards, including protection of any nearby/adjacent intermittent streams or drainages. It would not be in Entek's best interest to construct any road that would not last for the production life of the proposed well pad (20 to 30 years).

In addition, COGCC has placed the following COA on the Form 2A:

COA 71 - Operator shall design and construct the access road utilizing all available soils, geologic, landslide, and hydrogeologic information. The road should also follow any applicable BLM construction standards. Operator shall notify the COGCC and the Routt County LGD 48 hours prior to start of access road and pad construction using Form 42 (the appropriate COGCC individuals will automatically be email notified, Entek will need to notify the Routt County LGD for road and pad construction, cbrookshire@co.routt.co.us).

Comment No. 3 - WILDLIFE CONCERNS.

This site is mapped for wildlife concerns which include Elk Severe Winter Range; Mule Deer Concentration Area, Winter Concentration Area and Severe Winter Area. The site is also located near two Sharp-tailed Grouse lek sites and one Greater Sage Grouse Lek site. The amended site has placed the well pad outside of the restricted

surface area for Sage Grouse, but it is still within mapped areas for wildlife concerns for Sharp-tailed Grouse. The amended site has helped to mitigate grouse concerns, but measures should be taken to mitigate noise and vibration from the site. Drilling should not occur March 15-July 30 for Sharp-tailed Grouse. Winter drilling should not occur from December 1 through April 15th to avoid wildlife concerns for Elk and Mule Deer.

COGCC Response to Comment No. 3 - WILDLIFE CONCERNS.

Colorado Parks and Wildlife (CPW) and the Bureau of Land Management (BLM – responsible for both the surface and subsurface) have had consultations with Entek GRB concerning wildlife issues at this location, as well as the other proposed locations in the area for this upcoming year. CPW has deferred wildlife issues to the BLM.

Comment No. 4 - NEARBY SURFACE WATER AND STORMWATER MANAGEMENT CONCERNS.

Best Management Practices must be adhered to to prevent any contamination of waterbodies. Any access road and well pad must have a comprehensive BMP and SWAMP plan and continually monitored for protection of these water sources from erosion and contaminants. This well is sited north in areas of intermittent drainages and surface water. Cantling Creek and Butter Lake are located within 1 (one) mile.

COGCC Response to Comment No. 4 - NEARBY SURFACE WATER AND STORMWATER MANAGEMENT CONCERNS.

Entek has a SWPPP in place and will be maintained to CDPHE standard, this should be adequate. In addition, COGCC has placed the following COA on the Form 2A:

COA 44 - The access road will be constructed to prevent sediment migration from the access road to nearby surface water or any drainages leading to other nearby surface waters.

Comment No. 5 - ROUTT COUNTY GE PERMIT.

A GE permit must be obtained from Routt County for the access road on private property.

COGCC Response to Comment No. 5 - ROUTT COUNTY GE PERMIT.

No COGCC response necessary.

Comment No. 6 - SURFACE CASING PLACEMENT CONCERNS AND CONFIDENTIALITY.

Routt County requests information from the COGCC after drilling operations are complete for the location of aquifers and showing that casing was completed per minimum requirements of the COGCC regulations to protect all aquifers.

COGCC Response to Comment No. 6 - SURFACE CASING PLACEMENT CONCERNS AND CONFIDENTIALITY.

Form 5's are reviewed after-the-fact to verify compliance with the drilling and cementing rules. The county can review forms and logs on their own after approval, and if the operator does not submit data and forms per Rule 308A in a timely manner, then the county can file a complaint. In addition, Rule 317.i. applies if unanticipated aquifers are encountered while drilling the production hole:

317. GENERAL DRILLING RULES; i. Production casing cementing. The operator shall ensure that all cement required under this rule placed behind production casing shall be of adequate quality to achieve a minimum compressive strength of at least three hundred (300) psi after twenty-four (24) hours and eight hundred (800) psi after seventy-two (72) hours measured at ninety-five degrees Fahrenheit (95 °F) and at eight hundred (800) psi. After thorough circulation of a wellbore, cement shall be pumped behind the production casing (200) feet above the top of the shallowest known producing horizon. All fresh water aquifers which are exposed below the surface casing shall be cemented behind the production casing. All such cementing around an aquifer shall consist of a continuous cement column extending from at least fifty (50) feet below the bottom of the fresh water aquifer which is being protected to at least fifty (50) feet above

the top of said fresh water aquifer. Cement placed behind the production casing shall be allowed to set seventy-two (72) hours, or until eight hundred (800) psi calculated compressive strength is developed, whichever occurs first, prior to the undertaking of any completion operation.

Comment No. 7 - GROUNDWATER MONITORING CONCERNS.

Routt County requests that the operator be required, at a minimum, to comply with COGA Voluntary Baseline Groundwater Quality Sampling Program.

COGCC Response to Comment No. 7 - GROUNDWATER MONITORING CONCERNS.

Entek has agreed to sample nearby domestic water wells, other water wells, springs, or surface water prior to drilling and completion of this well. COGCC has placed the following COA on the Form 2A:

COA 9 - Baseline Water Testing: Prior to drilling, operator shall sample at a minimum two (2) domestic water wells, springs, or surface water features within a one (1) mile radius of the proposed oil and gas location. Testing preference shall be given to domestic water wells and springs over surface water. Testing of surface water features shall only be conducted if two (2) water wells or springs do not exist within a one (1) mile radius of the selected oil and gas location. Based on BLM and/or surface owner information, the location of springs shall be provided to Entek. If possible, the water wells or springs selected should be on opposite sides of the oil and gas location not exceeding a one (1) mile radius. If water wells or springs on opposite sides of the oil and gas location cannot be identified, then the two (2) closest wells or springs within a one (1) mile radius of the oil and gas location shall be sampled. The sample location shall be surveyed in accordance with Rule 215. Sampling and analysis shall be conducted in conformance with an accepted industry standard as described in Rule 910.b.(2).

Initial baseline testing shall include: pH, specific conductance, total dissolved solids (TDS), dissolved gases (methane, ethane, propane), alkalinity (total bicarbonate and carbonate as CaCO₃), major anions (bromide, chloride, fluoride, sulfate, nitrate and nitrite as N, phosphorus), major cations (calcium, iron, magnesium, manganese, potassium, sodium), other elements (barium, boron, selenium and strontium), presence of bacteria (iron related, sulfate reducing, slime and coliform), total petroleum hydrocarbons (TPH) and BTEX compounds (benzene, toluene, ethylbenzene and xylenes). Hydrogen sulfide shall also be measured using a field test method. Field observations such as pH, temperature, specific conductance, odor, water color, sediment, bubbles, and effervescence shall also be included. COGCC recommends that the latest version of EPA SW 846 analytical methods be used where possible and that analyses of samples be performed by laboratories that maintain state or national accreditation programs.

If free gas or a dissolved methane concentration greater than 1.0 milligram per liter (mg/l) is detected in a water well, gas compositional analysis and stable isotope analysis of the methane (carbon and hydrogen – 12C, 13C, 1H and 2H) shall be performed to determine gas type. If test results indicated thermogenic or a mixture of thermogenic and biogenic gas. If the methane concentration increases by more than 5.0 mg/l between sampling periods, or increases to more than 10. mg/l, the operator shall notify the Director and the owner of the water well immediately.

After 90 days, but less than 180 days of completion of the first proposed well a “post-completion” test shall be performed for the same analytical parameters listed above and repeated one (1), three (3) and six (6) years thereafter. If the well is a non-producing well, then the one (1), three (3) and six (6) year samples will not be required. If no significant changes from the baseline have been identified after the third test (i.e. the six-year test), no further testing shall be required. Additional “post-completion” test(s) may be required if changes in water quality are identified during follow-up testing. The Director may require further water well sampling at any time in response to complaints from water well owners.

Copies of all test results described above shall be provided to the Director and the landowner where the water quality testing well is located within three (3) months of collecting the samples used for the test. The analytical data and surveyed well locations shall also be submitted to the Director in an electronic data deliverable format.

Documented refusal to grant access by well owner or surface owner (for surface water and spring sampling) shall not constitute a violation of this COA.

Comment No. 8 - AIR QUALITY MONITORING CONCERNS.

Continued best management practices should be used to test or monitor air quality. The COGCC should work with the CDPHE to develop monitoring system requirements and schedules for all operators. New technology should be used to prohibit emissions from tanks, equipment and flares at the onset of production.

COGCC Response to Comment No. 8 - AIR QUALITY MONITORING CONCERNS.

Garfield County, in conjunction with Colorado State University and Oil and Gas Operators has initiated a long-term air quality monitoring program that will be conducted from Fall 2012 through Fall 2015. The initial criteria presented by Garfield County at the Northwest Forum meeting of September 6, 2012 should be more than sufficient to evaluate the need for air monitoring requirements at future well pad locations. Currently, air monitoring is regulated by the Colorado Department of Public Health and Environment.

COGCC cannot "prohibit" emissions or flares. Operators are required to comply with CDPHE rules incorporated by reference in COGCC Rule 805.b.(1) regarding odor emissions. Operators are required to comply with statewide green completion requirements identified in Rule 805.b.(3). Operators are required to seek approval for long-term production venting or flaring on a Sundry Notice, per Rule 912.b. COGCC will approve production flaring (production venting is not encouraged) if costs for pipeline construction are prohibitive based on an economic analysis submitted with the Sundry Notice. Flaring is required if hydrogen sulfide is present in the gas. Flared or vented gas must be reported monthly on Form 7, per Rule 912.c. Flared gas subject to Rule 912.b. approval must be directed to a controlled device operated efficiently to provide maximum reduction of air contaminants where practicable and without endangering the safety of the well site personnel and the public, per Rule 912.d. Operators shall notify the local emergency dispatch or the local governmental designee of any natural gas flaring with reasonable notice timeframes specified in Rule 912.e.

When production flaring is approved per Rule 912.b., COGCC requires annual updates (requests to flare) on Sundry Notices, which discuss whether or not any new gathering systems or increased development of the field have changed pipeline economics such that installation of a new pipeline would be an economically viable option in lieu of continued flaring. COGCC encourages operators to use a portion of the gas flow for lease operations, if possible. COGCC also encourages other innovative approaches, in lieu of flaring (e.g., on-site gas turbine electric generation or re-injection into offset wells for pressure maintenance [UIC approval would be required for gas injection]).

Comment No. 9 - MOFFAT COUNTY ROAD USE PERMIT.

The operator must contact Moffat County Road and Bridge Department or the Moffat County LGD to obtain permits for hauling on Moffat County roads.

COGCC Response to Comment No. 9 - MOFFAT COUNTY ROAD USE PERMIT.

No COGCC response necessary.

Comment No. 10 - EMERGENCY RESPONSE PLAN.

Due to limited emergency resources in this area, is it recommended that the operator work with the Baggs, Wyoming Fire Department and Routt County for an emergency response plan. The operator should also be involved in the coordination of ambulance response from Moffat County or Baggs, Wyoming into Routt County.

COGCC Response to Comment No. 10 - EMERGENCY RESPONSE PLAN.

No COGCC response necessary. Operator's Health and Safety plan should cover these requirements.

Comment No. 11 - AMENDED LOCATION.

Routt County did not attend the site visit for the amended site and was not aware that this visit had been scheduled. There may be concerns voiced or determined during the Special Use Permit review which might require additional mitigation measures. Routt County does appreciate Entek's consideration for moving this site to a new location due to concerns expressed at the initial visit by Routt County, BLM, CDPW and the property

owner.

COGCC Response to Comment No. 11 - AMENDED LOCATION.

No COGCC response necessary.