

FORM
2

Rev
12/05

State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:

400283070

Date Received:

06/07/2012

APPLICATION FOR PERMIT TO:

1. Drill, Deepen, Re-enter, Recomplete and Operate

2. TYPE OF WELL

OIL GAS COALBED OTHER _____
SINGLE ZONE MULTIPLE COMMINGLE

Refiling

Sidetrack

PluggingBond SuretyID

20040060

3. Name of Operator: BARRETT CORPORATION* BILL

4. COGCC Operator Number: 10071

5. Address: 1099 18TH ST STE 2300

City: DENVER State: CO Zip: 80202

6. Contact Name: Megan Finnegan Phone: (303)299-9949 Fax: (303)291-0420

Email: mfinnegan@billbarretcorp.com

7. Well Name: Daves Well Number: 3N-11-39-18

8. Unit Name (if appl): _____ Unit Number: _____

9. Proposed Total Measured Depth: 12325

WELL LOCATION INFORMATION

10. QtrQtr: NENW Sec: 11 Twp: 39N Rng: 18W Meridian: N

Latitude: 37.659050 Longitude: -108.804070

Footage at Surface: 638 feet FNL 1808 feet FWL

11. Field Name: Wildcat Field Number: 99999

12. Ground Elevation: 6701 13. County: DOLORES

14. GPS Data:

Date of Measurement: 03/23/2010 PDOP Reading: 1.1 Instrument Operator's Name: T. Barbee

15. If well is Directional Horizontal (highly deviated) **submit deviated drilling plan.**

Footage at Top of Prod Zone: 162 FNL 1840 FWL Bottom Hole: 500 FNL 1980 FWL
Sec: 11 Twp: 39N Rng: 18W Sec: 2 Twp: 39W Rng: 18W

16. Is location in a high density area? (Rule 603b)? Yes No

17. Distance to the nearest building, public road, above ground utility or railroad: 607 ft

18. Distance to nearest property line: 635 ft 19. Distance to nearest well permitted/completed in the same formation(BHL): 1582 ft

20. LEASE, SPACING AND POOLING INFORMATION

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
Gothic	GOSH	389-5	1418	Sec 2 & 11

21. Mineral Ownership: Fee State Federal Indian Lease #: _____

22. Surface Ownership: Fee State Federal Indian

23. Is the Surface Owner also the Mineral Owner? Yes No Surface Surety ID#: _____

23a. If 23 is Yes: Is the Surface Owner(s) signature on the lease? Yes No

23b. If 23 is No: Surface Owners Agreement Attached or \$25,000 Blanket Surface Bond \$2,000 Surface Bond \$5,000 Surface Bond

24. Using standard QtrQtr, Sec, Twp, Rng format enter entire mineral lease description upon which this proposed wellsite is located (attach separate sheet/map if you prefer):

Section 2, T39N, 18W: Lots 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, S/2. Section 11, T39N, 18W: All. Total acres in lease below and distance to lease line are based on the spacing order boundary.

25. Distance to Nearest Mineral Lease Line: 500 ft 26. Total Acres in Lease: 1418

DRILLING PLANS AND PROCEDURES

27. Is H2S anticipated? Yes No If Yes, attach contingency plan.

28. Will salt sections be encountered during drilling? Yes No

29. Will salt (>15,000 ppm TDS CL) or oil based muds be used during drilling? Yes No

30. If questions 28 or 29 are yes, is this location in a sensitive area (Rule 901.e)? Yes No

31. Mud disposal: Offsite Onsite

If 28, 29, or 30 are "Yes" a pit permit may be required.

Method: Land Farming Land Spreading Disposal Facility Other: Evaporatin & Backfilling

Note: The use of an earthen pit for Recompletion fluids requires a pit permit (Rule 905b). If air/gas drilling, notify local fire officials.

Casing Type	Size of Hole	Size of Casing	Wt/Ft	Csg/Liner Top	Setting Depth	Sacks Cmt	Cmt Btm	Cmt Top
CONDUCTOR	26	16	65	0	80		80	0
SURF	12+1/4	9+5/8	36	0	2,000	760	2,000	0
1ST	6+1/8	4+1/2	11.6	0	12,325	1,430	12,325	1,800

32. BOP Equipment Type: Annular Preventer Double Ram Rotating Head None

33. Comments This APD is being submitted to request an extension to the permit that expires 6/29/2012. Nothing has been changed since last reviewed/approved. Rule 305/306 consultations were waived.

34. Location ID: 418075

35. Is this application in a Comprehensive Drilling Plan ? Yes No

36. Is this application part of submitted Oil and Gas Location Assessment ? Yes No

I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

Signed: _____ Print Name: Megan Finnegan

Title: Permit Analyst Date: 6/7/2012 Email: mfinnegan@billbarrettcorp.com

Operator must have a valid water right or permit allowing for industrial use or purchased water from a seller that has a valid water right or permit allowing for industrial use, otherwise an application for a change in type of use is required under Colorado law. Operator must also use the water in the location set forth in the water right decree or well permit, otherwise an application for a change in place of use is required under Colorado law. Section 37-92-103(5), C.R.S. (2011).

Based on the information provided herein, this Application for Permit-to-Drill complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved:  Director of COGCC Date: 7/26/2012

API NUMBER
05 033 06168 00

Permit Number: _____ Expiration Date: 7/25/2014

CONDITIONS OF APPROVAL, IF ANY:

All representations, stipulations and conditions of approval stated in the Form 2A for this location shall constitute representations, stipulations and conditions of approval for this Form 2 Permit-to-Drill and are enforceable to the same extent as all other representations, stipulations and conditions of approval stated in this Permit-to-Drill.

NOTICE TO OPERATOR

Hydrogen Sulfide Gas – Precautions to be taken

Prepared and authorized by.

Mark Weems, P.E.
Regional Engineer – SW Colorado
Colorado Oil and Gas Conservation Commission

50 Long Hollow Lane
Durango, Co 81301
(970) 259-4787
mark.weems@state.co.us

This notice applies to any drilling and completion activities by Bill Barrett Corporation (“BBC”) in the Gothic Shale, a member of the Hermosa Group, which have the potential to release Hydrogen Sulfide Gas (H₂S) to the atmosphere. The Conditions of Permit Approval (COA) applicable to this notice will apply to all wells laterally drilled and fracture stimulated. Colorado Oil and Gas Conservation Commission Rule 607 – Hydrogen Sulfide Gas is attached for your reference.

BBC has recently been active with its new gas discovery and development of its Gothic Shale play, located in Dolores and Montezuma counties. Because of a recent detection of H₂S in the Oliver 13H-21-38-16 well (see appendix below), the COGCC is requiring certain precautions for future drilling and completions. To date, there has only been a detection of H₂S in one of twelve wells drilled and fractured stimulated. The amount and concentration of H₂S found falls below the 50 foot radius of exposure which would trigger a comprehensive H₂S Public Safety Plan (United States Department of the Interior, Bureau of Land Management, Onshore Order No. 6, November 23, 1990 [incorporated by reference in COGCC Rule 607]). However, until the nature and extent of H₂S in this area is further evaluated, the COGCC is requiring added precautions.

BBC’s chief geologist for the Gothic Shale play has presented evidence indicating that the H₂S source is likely from the lower Barker Creek shale which is located in the lower portion of the Paradox member of the Hermosa formation or from the Mississippian at a depth of approximately 8000 feet to 9000 feet. The Gothic Shale is located at an approximate depth of 6000 feet. No H₂S gas has been encountered at shallower depths. BBC’s seismic data has shown a fault, which is present near the Oliver 13H-21-38-16 well at depths ranging from approximately 9000 feet to 6000 feet deep. H₂S gas was not encountered while drilling, but it was observed during one of the fracture stimulation jobs on the Oliver 13H-21-38-16 well. BBC contends that the fracture stimulation may have connected with the lower Barker Creek shale independently, through the fault, or through a combination of these processes. BBC does not have facilities capable of processing H₂S, and therefore, BBC has plugged back the Oliver 13H-21-38-16 well. BBC intends to use the well for salt water disposal in shallower zones, pending COGCC approval of an Underground Injection Control permit. COGCC understands that BBC intends to plug any other Gothic Shale wells near the Oliver 13H-21-38-16 well which encounters H₂S.

Revised 23 Feb 10 – MEW
Revised 15 Jun 12 – MEW

APPENDIX Example Calculation for Radius of Exposure

Oliver 13H-21-38-16
SWSW 21 38N 16W
05-083-06659-01

H₂S showing
400 ppm
320 MCFD

Radius of exposure calculation calculates to be 28 feet or less than the 50 feet when it is required for a Public Safety Plan

Radius of Exposure Calculation:

$X = ((1.589) \times (\text{H}_2\text{S concentration}) \times (Q))$ this product is then raised to the power of 0.6258

$X = ((1.589) \times (400\text{ppm}/1\text{EE}6) \times (325,000))$ to the power of 0.6258

X= 28.1 ft

- 1) Conditions stated in the NOTICE TO OPERATOR dated January 29, 2010 will apply (see attachment)
- 2) Minimal H2S operational procedures and equipment is required (see H2S Safety Plan – Low Risk Probability)
- 3) Spud Notice – Submit COGCC eform 42 providing seventy-two (72) hours notice prior to MIRU.
- 4) Frac Notice- Submit COGCC eform 42 providing seventy-two (72) hours notice prior to frac job(s)
- 5) It is the operator's responsibility to ensure that the well bore/perfs complies with setback requirements in Commission orders and/or rules prior to producing the well.
- 6) Run and submit directional survey(s) for the directional portion of the well
- 7) The deepest water well within a one (1) mile radius is 000 'deep
- 8) Conditions of Approval for Optional Casing Designs

Option A

7" intermediate casing cemented to surface

4 ½" production casing is not cemented and external swell packers in place

Run CBL on 7" casing (rule 317 o.)

Option B

7" intermediate casing cemented to surface

4 ½" production casing is cemented to surface or at least 200' above the surface casing shoe

Run temperature survey on the 7" intermediate casing after cementing (rule 207 a.)

Run CBL on 4 ½" production casing (rule 317 o.)

Option C

7" intermediate casing cemented to surface

4 ½" liner is cemented in place top to bottom

Run CBL on both 7" intermediate and 4 ½" casings (rule 317 o.)

(1) H2S monitoring equipment will be on site while drilling and completing. Submit plans for H2S monitoring via sundry notice.

(2) A map shall be posted at the well site showing all facilities within a half (1/2) mile radius where the public is likely to be present (applicable to both drilling and fracturing operations). Also, post names, addresses and as available, phone numbers of the public who normally live, work or congregate within a half (1/2) mile of the well site.

(3) 72 hours prior both to spud & fracturing operations, notify COGCC via eform 42

Provide the following information: Operator Name, Well Name and Number, API #, Spud Date, Contact Name, Contact Phone #, Email Address

(4) 72 hours prior to spud & fracturing operations, notify county dispatch & Local Governmental Designee of potential for H2S

(5) Have H2S scavenger on site at time of drilling out surface casing shoe

(6) If H2S is encountered, collect a sample that is representative of the reservoir conditions and have a lab determine the H2S concentration in ppm as soon as practicable. Measure or estimate absolute open flow potential of the well. Report the results and calculations to the COGCC verbally first and ASAP then by email and Sundry Notice.

(7) If H2S is encountered, shut in well and cease operations

(8) If H2S is encountered, notify county dispatch, COGCC, & local governmental designee of H2S presence

(8) If H2S is encountered and the radius of exposure equals or exceeds 50 feet, submit for COGCC approval PUBLIC H2S PROTECTION PLAN prior to resuming operations

(9) Submit H2S Operations Plan for approval & Implement prior to resuming operations

Attachment Check List

Att Doc Num	Name
1857260	H2S CONTINGENCY PLAN
1857261	CORRESPONDENCE
400283070	FORM 2 SUBMITTED

Total Attach: 3 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	If location not built by 2A expiration 6/29/2013, Refile Form 2A must be approved prior to construction. Final Review passed 7/16/2012 NKP	7/16/2012 3:24:22 PM

Total: 1 comment(s)

BMP

<u>Type</u>	<u>Comment</u>

Total: 0 comment(s)