

APPLICATION FOR PERMIT TO:

Drill Deepen Re-enter Recomplete and Operate

TYPE OF WELL OIL <input type="checkbox"/> GAS <input checked="" type="checkbox"/> COALBED <input type="checkbox"/> OTHER _____ ZONE TYPE SINGLE ZONE <input type="checkbox"/> MULTIPLE ZONES <input checked="" type="checkbox"/> COMMINGLE ZONES <input checked="" type="checkbox"/>	Refiling <input checked="" type="checkbox"/> Sidetrack <input type="checkbox"/>
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Date Received: 03/21/2017

Well Name: CBC FEDERAL Well Number: 23A-22-692
 Name of Operator: VANGUARD OPERATING LLC COGCC Operator Number: 10531
 Address: 5847 SAN FELIPE #3000
 City: HOUSTON State: TX Zip: 77057
 Contact Name: Jack Desmond Phone: (303)456-9038 Fax: ()
 Email: jdesmond@progressivepcs.net

RECLAMATION FINANCIAL ASSURANCE
 Plugging and Abandonment Bond Surety ID: 20140092

WELL LOCATION INFORMATION
 QtrQtr: SESW Sec: 22 Twp: 6S Rng: 92W Meridian: 6
 Latitude: 39.508540 Longitude: -107.653433
 Footage at Surface: 1175 Feet FNL/FSL FSL 2499 Feet FEL/FWL FWL
 Field Name: MAMM CREEK Field Number: 52500
 Ground Elevation: 5777 County: GARFIELD
 GPS Data:
 Date of Measurement: 01/04/2012 PDOP Reading: 6.0 Instrument Operator's Name: JAMES KALMON
 If well is Directional Horizontal (highly deviated) **submit deviated drilling plan.**
 Footage at Top of Prod Zone: FNL/FSL FEL/FWL Bottom Hole: FNL/FSL FEL/FWL
 1356 FSL 1980 FWL 1356 FSL 1980 FWL
 Sec: 22 Twp: 6S Rng: 92W Sec: 22 Twp: 6S Rng: 92W

LOCATION SURFACE & MINERALS & RIGHT TO CONSTRUCT
 Surface Ownership: Fee State Federal Indian
 The Surface Owner is: is the mineral owner beneath the location.
 (check all that apply) is committed to an Oil and Gas Lease.
 has signed the Oil and Gas Lease.
 is the applicant.
 The Mineral Owner beneath this Oil and Gas Location is: Fee State Federal Indian
 The Minerals beneath this Oil and Gas Location will be developed by this Well: Yes
 The right to construct the Oil and Gas Location is granted by: applicant is owner
 Surface damage assurance if no agreement is in place: _____ Surface Surety ID: _____

LEASE INFORMATION

Using standard QtrQtr, Sec, Twp, Rng format, describe one entire mineral lease that will be produced by this well (Describe lease beneath surface location if produced. Attach separate description page or map if necessary.)

lease description has not changed from what was previously approved. Lease Boundary Map previously submitted.

Total Acres in Described Lease: 800 Described Mineral Lease is: Fee State Federal Indian

Federal or State Lease # COC15976

Distance from Completed Portion of Wellbore to Nearest Lease Line of described lease: 33 Feet

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 1040 Feet

Building Unit: 1040 Feet

High Occupancy Building Unit: 5280 Feet

Designated Outside Activity Area: 5280 Feet

Public Road: 237 Feet

Above Ground Utility: 845 Feet

Railroad: 5280 Feet

Property Line: 234 Feet

INSTRUCTIONS:

- All measurements shall be provided from center of the Proposed Well to nearest of each cultural feature as described in Rule 303.a.(5).

- Enter 5280 for distance greater than 1 mile.

- Building - nearest building of any type. If nearest Building is a Building Unit, enter same distance for both.

- Building Unit, High Occupancy Building Unit, and Designated Outside Activity Area - as defined in 100-Series Rules.

DESIGNATED SETBACK LOCATION INFORMATION

Check all that apply. This location is within a: Buffer Zone
 Exception Zone
 Urban Mitigation Area

- Buffer Zone – as described in Rule 604.a.(2), within 1,000' of a Building Unit

- Exception Zone - as described in Rule 604.a.(1), within 500' of a Building Unit.

- Urban Mitigation Area - as defined in 100-Series Rules.

Pre-application Notifications (required if location is within 1,000 feet of a building unit):

Date of Rule 305.a.(1) Urban Mitigation Area Notification to Local Government: _____

Date of Rule 305.a.(2) Buffer Zone Notification to Building Unit Owners: _____

SPACING and UNIT INFORMATION

Distance from completed portion of proposed wellbore to nearest completed portion of offset wellbore permitted or completed in the same formation: 368 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 1356 Feet (Enter 5280 for distance greater than 1 mile.)

Federal or State Unit Name (if appl): _____ Unit Number: _____

SPACING & FORMATIONS COMMENTS

OBJECTIVE FORMATIONS

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
ILES	ILES	191-10	640	Sec 22 ALL
WILLIAMS FORK	WMFK	191-8	640	Sec 22 ALL

DRILLING PROGRAM

Proposed Total Measured Depth: 7583 Feet

Distance from the proposed wellbore to nearest existing or proposed wellbore belonging to another operator, including plugged wells:

Enter distance if less than or equal to 1,500 feet: _____ Feet No well belonging to another operator within 1,500 feet

Will a closed-loop drilling system be used? Yes

Is H₂S gas reasonably expected to be encountered during drilling operations at concentrations greater than or equal to 100 ppm? No (If Yes, attach an H₂S Drilling Operations Plan)

Will salt sections be encountered during drilling? No

Will salt based (>15,000 ppm Cl) drilling fluids be used? No

Will oil based drilling fluids be used? No

BOP Equipment Type: Annular Preventor Double Ram Rotating Head None

GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 609

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Methods: Recycle/reuse

Cuttings Disposal: ONSITE Cuttings Disposal Method: Cuttings trench

Other Disposal Description:

Beneficial reuse or land application plan submitted? No

Reuse Facility ID: _____ or Document Number: _____

CASING PROGRAM

Casing Type	Size of Hole	Size of Casing	Wt/Ft	Csg/Liner Top	Setting Depth	Sacks Cmt	Cmt Btm	Cmt Top
CONDUCTOR	24	14	36	0	40	0	40	0
SURF	12+1/4	9+5/8	36	0	800	250	800	0
1ST	7+7/8	4+1/2	11.6	0	7583	948	7583	

Conductor Casing is NOT planned

DESIGNATED SETBACK LOCATION EXCEPTIONS

Check all that apply:

- Rule 604.a.(1)A. Exception Zone (within 500' of Building Unit)
- Rule 604.b.(1)A. Exception Location (existing or approved Oil & Gas Location now within a Designated Setback as a result of Rule 604.a.)
- Rule 604.b.(1)B. Exception Location (existing or approved Oil & Gas Location is within a Designated Setback due to Building Unit construction after Location approval)
- Rule 604.b.(2) Exception Location (SUA or site-specific development plan executed on or before August 1, 2013)
- Rule 604.b.(3) Exception Location (Building Units constructed after August 1, 2013 within setback per an SUA or site-specific development plan)

GREATER WATTENBERG AREA LOCATION EXCEPTIONS

Check all that apply:

- Rule 318A.a. Exception Location (GWA Windows).
- Rule 318A.c. Exception Location (GWA Twinning).

RULE 502.b VARIANCE REQUEST

Rule 502.b. Variance Request from COGCC Rule or Spacing Order Number _____

OTHER LOCATION EXCEPTIONS

Check all that apply:

Rule 318.c. Exception Location from Rule or Spacing Order Number _____

Rule 603.a.(2) Exception Location (Property Line Setback).

ALL exceptions and variances require attached Request Letter(s). Refer to applicable rule for additional required attachments (e.g. waivers, certifications, SUAs).

OPERATOR COMMENTS AND SUBMITTAL

Comments

Location has a valid 2A until 11/12/2018. Drilling & Waste Management Program changed with Form 2A resubmittal, see updated waste management plan. If the pad has not been built prior to the expiration a new 2A will be refiled prior to constructing the pad. Pad is located within a sensitive wildlife habitat area. Closed loop system will be used so no pit will be used. Vanguard Operating LLC is the surface owner.

This application is in a Comprehensive Drilling Plan No CDP #: _____

Location ID: 429267

Is this application being submitted with an Oil and Gas Location Assessment application? No

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

Signed: _____ Print Name: Jack Desmond

Title: Regulatory Analyst Date: 3/21/2017 Email: jdesmond@progressivepcs.net

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: *Matthew Lee* Director of COGCC Date: 6/16/2017

Expiration Date: 06/15/2019

API NUMBER

05 045 21505 00

Conditions Of Approval

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.

COA Type	Description
	<p>The moisture content of drill cuttings managed onsite shall be kept as low as practicable to prevent accumulation of liquids greater than de minimis amounts. Operator has indicated that drill cuttings will be disposed of "Onsite" in a "Cuttings Trench". After drilling and completion operations have been completed, the drill cuttings that will remain on the well pad location (cuttings management area, the cut portion of the pad, cuttings trench, dry cuttings drilling pit), must meet the applicable standards of Table 910-1. After the drill cuttings have been amended (if necessary) and placed on the well pad, sampling frequency of the drill cuttings (to be determined by the operator) shall be representative of the material left on location. No offsite disposal of cuttings to another oil and gas location shall occur without prior approval of a Waste Management Plan (submitted via a Form 4 Sundry Notice) specifying disposal location and waste characterization method. Commercial disposal of drill cuttings will only require notification to COGCC via a Form 4 Sundry Notice.</p>
	<p>If location is not built by 2A expiration, 11/13/2018, Operator must Refile Form 2A for approval prior to location construction.</p>
	<p>If conductors are preset, operator shall comply with Notice to Operators: Procedures for Preset Conductors (dated September 1, 2016, revised October 6, 2016).</p>

- 1) Operator shall comply with the most current revision of the Northwest Notification Policy.
- 2) Operator shall comply with the most current revision of the Garfield County Rulison Field Notice to Operators, with the following exception: All field notice requirements specified in that Notice to Operators are superseded by the requirements of the most current revision of the Northwest Colorado Notification Policy (see Condition of Approval #1).
- 3) Operator shall comply with the most current revision of the Mamm Creek Field Notice to Operators, with the following exception: All field notice requirements specified in that Notice to Operators are superseded by the requirements of the most current revision of the Northwest Colorado Notification Policy (see Condition of Approval #1). Operator shall submit the primary cement job Cement Bond Log (CBL) with either the Form 4 Sundry Notice - Request to Complete or the Form 5 Drilling Completion Report.
- 4) Operator shall comply with the Notice to Operators Drilling Wells in the Buzzard, Mamm Creek, and Rulison fields, Garfield County and Mesa County – Procedures and Submittal Requirements for Compliance with COGCC Order Nos. 1-107, 139-56, 191-22, and 369-2 (July 8, 2010).
- 5) Operator shall provide cement coverage from the production casing shoe (4+1/2" FIRST STRING) to a minimum of 500' above the Lower Wasatch (as defined by COGCC in the report "Casing and Cement Standards for Geologic Isolation Piceance Basin Bradenhead Monitoring Area and Nearby Fields," dated April 18, 2016, COGCC Document No. 2056199, Appendix A Field Scout Cards and Annotated Type Logs) to provide isolation of all Mesaverde Group and underlying formations, if penetrated, the Ohio Creek Formation, and the lower portion of the Wasatch Formation. Verify production casing cement coverage with a cement bond log. This requirement shall supersede the top of cement requirements in the Mamm Creek Field Notice to Operators.
- 6) Operator will perform an anti-collision evaluation of all active (producing, shut in, or temporarily abandoned) offset wellbores that have the potential of being within 150 feet of a proposed well prior to drilling operations for the proposed well.
- 7) The operator shall monitor the production, intermediate, and bradenhead pressures of offset well Friport 14-22 (045-06410) during completions. If bradenhead pressure exceeds 150 psi the operator shall cease the treatment and report the measurements to the COGCC. The operator shall install pressure gauges on the Friport 14-22 well and shut in the bradenhead at least 24 hours prior to the operator initiating a treatment on the proposed well. The operator shall monitor the gauges at least once an hour during the treatment and once at 24 hours after the treatment is completed and shall continue to do so until the pressure stabilizes with allowance for a ten percent daily fluctuation. The pressure gauges shall be capable of monitoring current pressure and also capable of recording the maximum pressure encountered in a 24 hour period. Such gauges shall be reset between each 24 hour period. The pressures shall be recorded and saved for a period of one year. Alternate electronic measurement may be used to record the prescribed pressures.

Best Management Practices

No	BMP/COA Type	Description
1	Drilling/Completion Operations	Rule 317.p - Requirement to Log Well: One of the first wells drilled on the pad will be logged with open hole Resistivity Log and Gamma Ray Log from the kick-off point into the surface casing. All wells on the pad will have a cement bond log with gamma-ray run on production casing (or on intermediate casing if production liner is run) into the surface casing. The horizontal portion of every well will be logged with a measured-while-drilling gamma-ray log. The Form 5, Completion Report, for each well on the pad will list all logs run and have those logs attached. The Form 5 for a well without open-hole logs shall clearly state "No open-hole logs were run" and shall clearly identify (by API#, well name & number) the well in which open hole logs were run.

Total: 1 comment(s)

Applicable Policies and Notices to Operators

Policy
Mamm Creek Field Area Notice to Operators. http://cogcc.state.co.us/documents/reg/Policies/Mamm%20Creek%20Drilling.pdf
Piceance Rulison Field - Notice to Operators. http://cogcc.state.co.us/documents/reg/Policies/NoticeToOp-20060623-2.pdf
NW Colorado Notification Policy. http://cogcc.state.co.us/documents/reg/Policies/nw_notification_procedures.pdf
Bradenhead Pressure Reporting-Garfield County (Mamm Creek & Rulison Fields) Mesa County (Buzzard Field). http://cogcc.state.co.us/documents/reg/Policies/NTO_07082010.pdf
Notice Concerning Operating Requirements for Wildlife Protection. http://cogcc.state.co.us/documents/reg/Policies/Wildlife_Notice.pdf

Attachment Check List

Att Doc Num	Name
401194994	FORM 2 SUBMITTED

Total Attach: 1 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Added Sec 22 to unit description and notified operator. Final review complete. Corrected "NO" to "YES" for "Will minerals beneath this location be developed by this well".	06/15/2017
Permit	Corrected drilling and waste management program to agree with the currently approved 2A as directed by operator. Preliminary review complete.	04/13/2017
Engineer	Offset water well check: COGCC evaluated offset water wells within one mile of this proposed well's surface hole location. This information was used in addition to locally-available geophysical logs and hydrogeologic information was used to evaluate the adequacy of the operator's proposed surface casing setting depth. The deepest water well within one mile is 600 feet. Offset Well Evaluation: Evaluated existing offset wells within 1,500 feet of this wellbore. CBL's are not available for the Friport 14-22 (045-06410) and the completed interval is located about 110' from this wellbores bottom hole location. COGCC records show the Friport 14-22 was constructed with an intermediate casing set to 5423'. See Condition of Approval #7. Removed operator's proposed first string cement top. Operator's proposed first string cement top is not adequate to satisfy COGCC's new cement coverage requirements, effective April 18, 2016. Increase cement coverage accordingly, as specified in Condition of Approval #5. Wellbore passes about 70 feet from existing well Friport #14-22 API # 045-06410 operated by Vanguard. See Condition of Approval #6.	03/27/2017
LGD	Pass, KHW	03/24/2017
Permit	Passed Completeness	03/22/2017

Total: 5 comment(s)