

FORM
2

Rev
05/22

State of Colorado

Energy & Carbon Management Commission

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



Document Number:

403840876

Date Received:

06/30/2024

APPLICATION FOR PERMIT TO

Drill Deepen Re-enter Recomplete and Operate

Amend

TYPE OF WELL OIL GAS COALBED OTHER: _____

Refile

ZONE TYPE SINGLE ZONE MULTIPLE ZONES COMMINGLE ZONES

Sidetrack

Well Name: RADEMACHER SOUTH Well Number: 30-16HZ
Name of Operator: KERR MCGEE OIL & GAS ONSHORE LP ECMC Operator Number: 47120
Address: P O BOX 173779
City: DENVER State: CO Zip: 80217-3779
Contact Name: Christina Hirtler Phone: (720)929-6301 Fax: ()
Email: DJREGULATORY@OXY.COM

FINANCIAL ASSURANCE FOR PLUGGING, ABANDONMENT, AND RECLAMATION

ECMC Financial Assurance

The Operator has provided or will provide Financial Assurance to the ECMC for this Well.

Surety ID Number (if applicable): 20230087

Federal Financial Assurance

In checking this box, the Operator certifies that it has provided or will provide at least this amount of Financial Assurance to the federal government for this Well. (Per Rule702.a.)

Amount of Federal Financial Assurance \$ _____

WELL LOCATION INFORMATION

Surface Location

QtrQtr: SESW Sec: 30 Twp: 3N Rng: 67W Meridian: 6

Footage at Surface: 507 Feet FSL 2009 Feet FWL

Latitude: 40.191311 Longitude: -104.934577

GPS Data: GPS Quality Value: 1.4 Type of GPS Quality Value: PDOP Date of Measurement: 04/11/2023

Ground Elevation: 4821

Field Name: WATTENBERG Field Number: 90750

Well Plan: is Directional Horizontal (highly deviated) Vertical

If Well plan is Directional or Horizontal attach Deviated Drilling Plan and Directional Data.

Subsurface Locations

Top of Productive Zone (TPZ)

Sec: 31 Twp: 3N Rng: 67W Footage at TPZ: 1594 FNL 2156 FWL
Measured Depth of TPZ: 7725 True Vertical Depth of TPZ: 7112 FNL/FSL FEL/FWL

Base of Productive Zone (BPZ)

Sec: 18 Twp: 2N Rng: 67W Footage at BPZ: 1822 FNL 1697 FWL
Measured Depth of BPZ: 24067 True Vertical Depth of BPZ: 7236 FNL/FSL FEL/FWL

Bottom Hole Location (BHL)

Sec: 18 Twp: 2N Rng: 67W Footage at BHL: 1822 FNL 1697 FWL
FNL/FSL FEL/FWL

LOCAL GOVERNMENT PERMITTING INFORMATION

County: WELD Municipality: N/A

Is the Surface Location of this Well in an area designated as one of State interest and subject to the requirements of § 24-65.1-108 C.R.S.? Yes

Per § 34-60-106(1)(f)(I)(A) C.R.S., the following questions pertain to the Relevant Local Government approval of the siting of the proposed Oil and Gas Location.

SB 19-181 provides that when "applying for a permit to drill," operators must include proof that they sought a local government siting permit and the disposition of that permit application, or that the local government does not have siting regulations. § 34-60-106(1)(f)(I) (A) C.R.S.

Does the Relevant Local Government regulate the siting of Oil and Gas Locations, with respect to this Location? [X] Yes [] No

[X] If yes, in checking this box, I hereby certify that an application has been filed with the local government with jurisdiction to approve the siting of the proposed oil and gas location.

The disposition of the application filed with the Relevant Local Government is: Approved Date of Final Disposition: 11/18/2023

Comments: WOGLA#: 1041WOGLA23-0013

SURFACE AND MINERAL OWNERSHIP AT WELL'S OIL & GAS LOCATION

Surface Owner of the land at this Well's Oil and Gas Location: [X] Fee [] State [] Federal [] Indian

Mineral Owner beneath this Well's Oil and Gas Location: [X] Fee [] State [] Federal [] Indian

Surface Owner Protection Bond (if applicable): Surety ID Number (if applicable):

MINERALS DEVELOPED BY WELL

The ownership of all the minerals that will be developed by this Well is (check all that apply):

- [X] Fee
[] State
[] Federal
[] Indian
[] N/A

LEASE INFORMATION

Using standard QtrQtr, Section, Township, Range format describe one entire mineral lease as follows:

* If this Well is within a unit, describe a lease that will be developed by the Well.

* If this Well is not subject to a unit, describe the lease that will be produced by the Well.

(Attach a Lease Map or Lease Description or Lease if necessary.)

Township 3 North, Range 67 West, 6th P.M.
Section 31: NW
Weld County, Colorado

Total Acres in Described Lease: 160 Described Mineral Lease is: Fee State Federal Indian

Federal or State Lease # _____

SAFETY SETBACK INFORMATION

Distance from Well to nearest:

Building: 1317 Feet
Building Unit: 1408 Feet
Public Road: 1997 Feet
Above Ground Utility: 1934 Feet
Railroad: 5280 Feet
Property Line: 507 Feet

INSTRUCTIONS:

- Specify all distances per Rule 308.b.(1).
- 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 – as defined in 100 Series Rules.

OBJECTIVE FORMATIONS

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
NIOBRARA	NBRR	407-3582	1760	3N-67W-31: ALL; 2N-67W-6: ALL; 7: W2; 18: NW

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

SUBSURFACE MINERAL SETBACKS

Enter 5280 for distance greater than 1 mile.

Is this Well within a unit? Yes

If YES:

Enter the minimum distance from the Completed Zone of this Well to the Unit Boundary: 630 Feet

Enter the minimum distance from the Completed Zone of this Well to the Completed Zone of an offset Well within the same unit permitted or completed in the same formation: 496 Feet

If NO:

Enter the minimum distance from the Completed Zone of this Well to the Lease Line of the described lease: _____ Feet

Enter the minimum distance from the Completed Zone of this Well to the Completed Zone of an offset Well producing from the same lease and permitted or completed in the same formation: _____ Feet

Exception Location

If this Well requires the approval of a Rule 401.c Exception Location, enter the Rule or spacing order number and attach the Exception Location Request and Waivers. _____

SPACING & FORMATIONS COMMENTS

DRILLING PROGRAM

Proposed Total Measured Depth: 24067 Feet TVD at Proposed Total Measured Depth 7236 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: 53 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 Plan unless a plan was already submitted with the Form 2A per Rule 304.c.(10).

Will there be hydraulic fracture treatment at a depth less than 2,000 feet in this well? No

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? Yes

BOP Equipment Type: Annular Preventor Double Ram Rotating Head None

Beneficial reuse or land application plan submitted? Yes

Reuse Facility ID: _____ or Document Number: _____

CASING PROGRAM

Casing Type	Size of Hole	Size of Casing	Grade	Wt/Ft	Csg/Liner Top	Setting Depth	Sacks Cmt	Cmt Btm	Cmt Top
CONDUCTOR	26	16	ASTM A 53B	36.94	0	80	64	80	0
SURF	13+1/2	8+5/8	L80	36	0	1500	590	1500	0
1ST	7+7/8	5+1/2	HCP110	17	0	24067	2795	24067	

Conductor Casing is NOT planned

POTENTIAL FLOW AND CONFINING FORMATIONS

Zone Type	Formation /Hazard	Top M.D.	Top T.V.D.	Bottom M.D.	Bottom T.V.D.	TDS (mg/L)	Data Source	Comment
Groundwater	Fox Hills and Shallower	17	17	142	142	501-1000	USGS	Depth data from DWR
Confining Layer	Pierre Shale	143	143	381	391			
Groundwater	Upper Pierre Aquifer	382	382	1226	1220	501-1000	Electric Log Calculation	Controlled by samples
Confining Layer	Pierre Shale	1227	1221	4114	4067			
Hydrocarbon	Sussex	4115	4068	4306	4257			Productive
Confining Layer	Pierre Shale	4307	4258	4653	4599			
Hydrocarbon	Shannon	4654	4600	4703	4648			Non-productive
Confining Layer	Pierre Shale	4704	4649	7240	7000			
Hydrocarbon	Niobrara	7241	7001	24321	7191			*Niobrara base is 1' shallower than corresponding Codell top. We changed the numbers. Remove 0s and add the BTM of the well.

OPERATOR COMMENTS AND SUBMITTAL

Comments

Below is information requesting to sidetrack the Rademacher South 30-16HZ. If you have any questions or concerns, please let me know. If everything looks good, we request your approval to execute the sidetrack.

Well name and API #:
 o Rademacher South 30-16HZ
 o 05-123-52569

Explanation of the situation that has resulted in the need to sidetrack
 o After tripping out of the hole on the Rademacher South 30-16HZ at 8007' MD, attempts were made to get back to bottom to drill. The BHA could not get to bottom, and when attempting to wash through, pressures were higher than normal. Abnormally large sized cuttings were circulated to surface, indicating hole instability. Hole instability seems to be driven from a combination of Sharon Springs exposure and a fault present through the well's curve. Requesting permission to sidetrack and build a curve that lands away from the fault and reducing the amount of exposure to the Sharon Springs.

Total measured depth reached in the wellbore being plugged back
 o 8007' MD

Casing set – size(s) and measured depth(s)
 o 8.625" surface casing set at 1857' MD

Description of fish in the hole (if any) – including top and bottom measured depths
 o No fish left in the hole.

Description of proposed plugs: setting measured depths, heights, and cement volumes
 o Bottom of 15.8 ppg plug: 6575' MD
 o Top of 15.8 ppg plug: 5175' MD
 o 15.8 ppg plug total height: 1400'
 o 15.8 ppg plug total volume: 84.3 bbls
 o Bottom of 17 ppg plug: 5175' MD
 o Top of 17 ppg plug: 4475' MD
 o 17 ppg plug total height: 700'
 o 17 ppg plug total volume: 42.2 bbls

Type of cement to be used for all plugs, including slurry weight (ppg) and yield (cf/sk)
 o Bottom plug: Class G 15.8 ppg cement / 1.53 cf/sk
 2
 o Top plug: Class G 17 ppg cement / 1.00 cf/sk

Measured depth of proposed sidetrack kick-off point
 o 4516' MD

Proposed objective formation(s) for sidetrack hole – new or same as the wellbore being abandoned
 o Same as original, permitted wellbore – Niobrara B

BHL target for sidetrack hole – new or same as the wellbore being abandoned
 o Same as original, permitted wellbore

This application is in a Comprehensive Area Plan No CAP #: _____
 Oil and Gas Development Plan Name SPROUT OGDP ID#: 485787
 Location ID: 486288

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

Signed: _____ Print Name: Christina Hirtler

Title: Sr. Regulatory Date: 6/30/2024 Email: christian_hirtler@oxy.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 ECMC Rules, applicable orders, and SB 19-181 and is hereby approved.

ECMC Approved:  Director of ECMC Date: 7/1/2024

Expiration Date: 03/05/2027

API NUMBER
05 123 52569 01

CONDITIONS OF APPROVAL, IF ANY LIST

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.

<u>COA Type</u>	<u>Description</u>
Drilling/Completion Operations	Operator acknowledges the proximity of the listed wells. Operator assures that this offset list will be remediated per the Offset Well Evaluation and Hydraulic Fracturing Operator Guidance Document (option 4). Operator will submit a Form 42 ("OTHER- AS SPECIFIED BY PERMIT CONDITION") stating that appropriate mitigation will be completed, during the hydraulic stimulation of this well. This Form 42 shall be filed 48 hours prior to stimulation. Surface and production casing pressures of this offset well list will be actively monitored during stimulation of this well. If there is indication of communication between the stimulation treatment and an offset well, treatment will be stopped and ECMC Engineering notified. 05-123-32139 WANDELL #4-4-7 - CRESTONE PEAK RESOURCES OPERATING LLC 05-123-33698 STREAR V #06-63HN - KERR MCGEE OIL & GAS ONSHORE LP 05-123-37816 VOGL-GEIST #2B-5H-E267 - CRESTONE PEAK RESOURCES OPERATING LLC 05-123-49486 Kugel #1H-18H-H267 - CRESTONE PEAK RESOURCES OPERATING LLC
Drilling/Completion Operations	Operator acknowledges the proximity of the listed well. Operator agrees to: provide mitigation option 1 or 2 (per the Offset Well Evaluation and Hydraulic Fracturing Operator Guidance Document) to mitigate the situation, ensure all applicable documentation is submitted based on the selected mitigation option chosen, and submit a Form 42 ("OFFSET MITIGATION COMPLETED") stating that appropriate mitigation occurred and that it has been completed, prior to the hydraulic stimulation of this well. 05-123-31037 WANDELL #0-6-7 - CRESTONE PEAK RESOURCES OPERATING LLC
Drilling/Completion Operations	1) Submit Form 42 electronically to ECMC 2 business days prior to MIRU (spud notice) for the first well activity with a rig on the pad and provide 2 business day spud notice via Form 42 for all subsequent wells drilled on the pad. 2) Comply with Rule 408.j. and provide cement coverage from TD to a minimum of 500' above Niobrara and from 500' below Sussex to 500' above Sussex. Verify coverage with a cement bond log. 3) Oil based drilling fluid can only be used after all groundwater has been isolated.
Drilling/Completion Operations	Per Order 1-232, Bradenhead tests shall be performed according to the following schedule and Form 17 submitted within 10 days of each test: 1) Within 60 days of rig release, prior to stimulation. If any pressure greater than 200 psi is observed or if there is continuous flow, Operator must contact ECMC engineering for approval prior to stimulation. 2) If a delayed completion, a second test is required between 6-9 months after rig release and must be conducted prior to stimulation. If any pressure greater than 200 psi is observed or if there is continuous flow, Operator must contact ECMC engineering for approval prior to stimulation. 3) A post-production test within 60 days after first sales, as reported on the Form 10, Certificate of Clearance.
Planning	Pursuant to Rule 702.b.(2), the approval of this Application for Permit to Drill constitutes a "change in circumstance" to the approved Financial Assurance Plan. The Operator must file a revised Form 3, Financial Assurance Plan, within 10 days of this approval.

5 COAs

Best Management Practices

<u>No BMP/COA Type</u>	<u>Description</u>

ATTACHMENT LIST

Att Doc Num	Name
1517582	WELLBORE DIAGRAM
403840876	FORM 2 SUBMITTED
403840887	CORRESPONDENCE
403840940	DEVIATED DRILLING PLAN
403840988	DIRECTIONAL DATA

Total Attach: 5 Files

General Comments

User Group	Comment	Comment Date
Permit	Final Review Completed.	07/01/2024
Permit	Added BMP/COA to form. Emailed operator for full WBD - missing total measured depth visual/measurements Per operator uploaded updated WBD and deleted initial doc. Permitting review complete	07/01/2024
OGLA	This Location and its associated Form 2A materials, and the Form 2 Application for Permit to Drill were fully evaluated in accordance with current Rules and approved prior to the commencement of drilling operations for this well. Because this is an application for an unplanned sidetrack with drilling in progress, an Oil and Gas Location Assessment review is not applicable to this ongoing operation. OGLA Task passed.	07/01/2024

Total: 3 comment(s)