

FORM
2
Rev
12/20

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:
402795626
Date Received:
08/31/2021

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: SHAKE Well Number: 11-11HZ
Name of Operator: KERR MCGEE OIL & GAS ONSHORE LP COGCC 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: christina_hirtler@oxy.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20010124

WELL LOCATION INFORMATION

Surface Location

QtrQtr: SWNW Sec: 11 Twp: 4N Rng: 68W Meridian: 6
Footage at Surface: 1896 Feet FNL 839 Feet FWL
Latitude: 40.330318 Longitude: -104.976769
GPS Data: GPS Quality Value: 1.5 Type of GPS Quality Value: PDOP Date of Measurement: 01/30/2019
Ground Elevation: 4995
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: 10 Twp: 4N Rng: 68W Footage at TPZ: 945 FNL 75 FEL
Measured Depth of TPZ: 16969 True Vertical Depth of TPZ: 6680 FNL/FSL FEL/FWL

Base of Productive Zone (BPZ)
Sec: 9 Twp: 4N Rng: 68W Footage at BPZ: 942 FNL 475 FEL
Measured Depth of BPZ: 17436 True Vertical Depth of BPZ: 6583 FNL/FSL FEL/FWL

Bottom Hole Location (BHL)
Sec: 9 Twp: 4N Rng: 68W Footage at BHL: 942 FNL 475 FWL
FNL/FSL FEL/FWL

LOCAL GOVERNMENT PERMITTING INFORMATION

County: WELD

Municipality: Johnstown

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.? No

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? Yes No

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: In Process Date of Final Disposition: 08/26/2019

Comments:

The S&B 5-11HZ PAD is located within the Town of Johnstown. The Operator Agreement has been approved by the Johnstown Town Council on December 2, 2019. The Use by Special Review application is currently in process.
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SURFACE AND MINERAL OWNERSHIP AT WELL'S OIL & GAS LOCATION

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

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

Surface Owner Protection Financial Assurance (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):

- 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 4 North, Range 68 West, 6th P.M.
Section 11: NW/4
Weld County, Colorado

The completed portion of the wellbore does not penetrate the described lease, but the lease is within the unit.

Total Acres in Described Lease: 154 Described Mineral Lease is: Fee State Federal Indian

Federal or State Lease # _____

SAFETY SETBACK INFORMATION

Distance from Well to nearest:

INSTRUCTIONS:

Building: 894 Feet
 Building Unit: 979 Feet
 Public Road: 824 Feet
 Above Ground Utility: 790 Feet
 Railroad: 749 Feet
 Property Line: 508 Feet

- 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		720	GWA

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: 475 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: 291 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

Proposed Spacing Unit:
 04N68W SEC 09: N2;
 04N68W SEC 10: N2;
 04N68W SEC 11: W2NW
 Weld County, Colorad

DRILLING PROGRAMProposed Total Measured Depth: 17436 Feet TVD at Proposed Total Measured Depth 6583 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: 55 Feet No well belonging to another operator within 1,500 feetWill a closed-loop drilling system be used? YesIs 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? NoWill salt sections be encountered during drilling? NoWill salt based (>15,000 ppm Cl) drilling fluids be used? NoWill oil based drilling fluids be used? YesBOP Equipment Type: Annular Preventor Double Ram Rotating Head NoneBeneficial reuse or land application plan submitted? Yes

Reuse Facility ID: _____ or Document Number: _____

CASING PROGRAM

<u>Casing Type</u>	<u>Size of Hole</u>	<u>Size of Casing</u>	<u>Grade</u>	<u>Wt/Ft</u>	<u>Csg/Liner Top</u>	<u>Setting Depth</u>	<u>Sacks Cmt</u>	<u>Cmt Btm</u>	<u>Cmt Top</u>
CONDUCTOR	26	16	J-55	36.94	0	80	64	80	0
SURF	13+1/2	9+5/8	J-55	36	0	1903	590	1903	0
1ST	7+7/8	5+1/2	HPC110	17	0	17436	2066	17436	

 Conductor Casing is NOT planned**POTENTIAL FLOW AND CONFINING FORMATIONS**

<u>Zone Type</u>	<u>Formation /Hazard</u>	<u>Top M.D.</u>	<u>Top T.V.D.</u>	<u>Bottom M.D.</u>	<u>Bottom T.V.D.</u>	<u>TDS (mg/L)</u>	<u>Data Source</u>	<u>Comment</u>
Groundwater	Fox Hills and Shallower	0	0	580	580	0-500	Electric Log Calculation	Depths estimated from offset wells
Groundwater	Upper Pierre Aquifer	580	580	1084	1081	501-1000	Electric Log Calculation	Depths estimated from offset wells
Confining Layer	Pierre Shale	1084	1081	2229	2211			Top depths estimated from offset wells
Groundwater	Potential GW Zone	2229	2211	2488	2465	1001-10000	Electric Log Calculation	
Confining Layer	Pierre Shale	2488	2465	3472	3438			
Hydrocarbon	Parkman	3472	3438	3823	3785			
Confining Layer	Pierre Shale	3823	3785	3957	3917			
Hydrocarbon	Sussex	3957	3917	4194	4150			
Confining Layer	Pierre Shale	4194	4150	4505	4456			
Hydrocarbon	Shannon	4505	4456	4604	4555			
Confining Layer	Pierre Shale	4604	4555	7086	6815			
Hydrocarbon	Niobrara	7086	6815	7200	7015			Base of Nio not planned to be drilled on this well.

OPERATOR COMMENTS AND SUBMITTAL

Comments

Attached is the wellbore diagram for the openhole sidetrack.

Well name and API

- Shake 11-11HZ
- 05-123-51409

Explanation of situation and why we need to sidetrack

- Formation: Nio A
- Lateral Category: two section lateral
- While drilling ahead 10,147' MD we crossed a downthrown fault that resulted in 558' of Sharon Springs exposure. The plan is to pullback and sidetrack at a depth of 9470' MD to avoid the Sharon Springs and any associated operational issues as we continue to drill to TD.

Total MD Reached: (RKB of 20')

- 11945' MD
- 6859' TVD

Casing Sizes set at MD

- Conductor set at 80' MD (using GL)
- 9 5/8" Surface casing 1903' MD (using KB)

Measured Depth and TVD of open hole sidetrack point

- 9470' MD
- 6834' TVD

Proposed target formation of sidetrack hole if different than permitted

- Same target formation as permit wellplan

Bottom hole location of sidetrack hole

- Same BHL as permit wellplan

Wellbore diagram

- See attached

This application is in a Comprehensive Area Plan No CAP #: _____

Oil and Gas Development Plan Name _____ OGDID#: _____

Location ID: 474765

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: Regulatory Date: 8/31/2021 Email: christina_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 COGCC Rules, applicable orders, and SB 19-181 and is hereby approved.

COGCC Approved:  Director of COGCC Date: 9/1/2021

Expiration Date: 08/31/2024

API NUMBER

05 123 51409 01

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.

Condition of Approval

<u>COA Type</u>	<u>Description</u>
Drilling/Completion Operations	1) Comply with Rule 317.j. and provide cement coverage from TD to a minimum of 200' above Niobrara and from 200' below Sussex to 200' above Sussex. Verify coverage with cement bond log. 2) Oil-based drilling fluid is to be used only after all fresh water aquifers are covered.
Drilling/Completion Operations	Operator acknowledges the proximity of the listed wells. Operator agrees to: provide mitigation option 1 or 2 (per the DJ Basin Horizontal Offset Policy) 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. 123-34984 Lamb 41-15
Drilling/Completion Operations	Per COGCC 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, must contact COGCC engineer prior to stimulation. 2) If a delayed completion, 6 months after rig release and prior to stimulation. If any pressure greater than 200 psi, must contact COGCC engineer prior to stimulation. 3) A post-production test within 60 days after first sales, as reported on the Form 10, Certificate of Clearance.
3 COAs	

Best Management Practices

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	Drilling/Completion Operations	Kerr-McGee acknowledges and will comply with the COGCC Policy for Bradenhead Monitoring during Hydraulic Fracturing Treatments in the Greater Wattenberg Area dated May 29, 2012
2	Drilling/Completion Operations	Anti-Collision: Kerr-McGee will perform an anti-collision evaluation of all active (producing, shut in, or temporarily abandoned) offset wellbores that have the potential of being within one hundred fifty (150) feet of a proposed well prior to drilling operations for the proposed well. Notice shall be given to all offset operators within one hundred fifty (150) feet prior to drilling.
3	Drilling/Completion Operations	Alternative Logging Program: 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 state ³ Alternative Logging Program - No open-hole logs were run

Total: 3 comment(s)

Attachment List

Att Doc Num	Name
402795626	FORM 2 SUBMITTED
402796333	DIRECTIONAL DATA
402796338	DIRECTIONAL DATA
402796342	OTHER
402796391	WELLBORE DIAGRAM

Total Attach: 5 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Engineer	New well path as part of side tracking falls within previous pad bounds. As such the offset well review from the original APD remains valid.	09/01/2021
OGLA	The Oil and Gas Location, its associated Form 2A materials, and the Form 2 Application for Permit to Drill were fully reviewed 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.	09/01/2021
Permit	I have returned Doc # 402795626 to draft for the following: Missing plugging bond Subsurface Mineral setbacks incorrect. (WSU is a unit) Proposed Total Measured Depth does not match the Casing program.	08/31/2021

Total: 3 comment(s)