

FORM
2

Rev
08/16

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:

401306795

APPLICATION FOR PERMIT TO:

☒ Drill ☐ Deepen ☐ Re-enter ☐ Recomplete and Operate

Date Received:

06/29/2017

TYPE OF WELL OIL ☐ GAS ☒ COALBED ☐ OTHER _____

Refilling ☐

ZONE TYPE SINGLE ZONE ☒ MULTIPLE ZONES ☐ COMMINGLE ZONES ☐

Sidetrack ☐

Well Name: SHUMAKER

Well Number: 8-17HZ

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: CRAIG RICHARDSON

Phone: (720)929-6092

Fax: (720)929-7093

Email: CRAIG.RICHARDSON@ANADARKO.COM

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20010124

WELL LOCATION INFORMATION

QtrQtr: SWSE Sec: 8 Twp: 1N Rng: 68W Meridian: 6

Latitude: 40.058907

Longitude: -105.026558

Footage at Surface: 232 Feet FNL/FSL FSL 2349 Feet FEL/FWL FEL

Field Name: WATTENBERG

Field Number: 90750

Ground Elevation: 5107

County: WELD

GPS Data:

Date of Measurement: 03/02/2017 PDOP Reading: 1.2 Instrument Operator's Name: ROB WILSON

If well is ☐ Directional ☒ Horizontal (highly deviated) submit deviated drilling plan.

Footage at Top of Prod Zone: FNL/FSL FSL 50 FSL 984 FEL FEL 51 FNL 1129 FEL
Sec: 8 Twp: 1N Rng: 68W Sec: 8 Twp: 1N Rng: 68W

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: Surface Use Agreement

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.)

Township 1 North, Range 68 West, 6th P.M.
Section 8: NW/4, SW/4NE/4, SE/4, And other lands.

Total Acres in Described Lease: 5844 Described Mineral Lease is: ☒ Fee ☐ State ☐ Federal ☐ Indian

Federal or State Lease # _____

Distance from Completed Portion of Wellbore to Nearest Lease Line of described lease: 0 Feet

CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 2453 Feet
Building Unit: 2453 Feet
High Occupancy Building Unit: 4536 Feet
Designated Outside Activity Area: 5280 Feet
Public Road: 215 Feet
Above Ground Utility: 331 Feet
Railroad: 1301 Feet
Property Line: 202 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: 98 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 984 Feet (Enter 5280 for distance greater than 1 mile.)

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

SPACING & FORMATIONS COMMENTS

Spacing Unit: 1N 68W Sec 5: S2SE; Sec. 8: E2; Sec.17: N2NE

OBJECTIVE FORMATIONS

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
CODELL	CODL		480	GWA

DRILLING PROGRAM

Proposed Total Measured Depth: 13726 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: 114 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? Yes

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 318A

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Methods: Commercial Disposal

Cuttings Disposal: OFFSITE Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

Please see Comments section. Disposal description will not fit in space provided.

Beneficial reuse or land application plan submitted? Yes

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	26	16	42.1	0	40	30	40	0
SURF	13+1/2	9+5/8	36	0	1500	590	1500	0
1ST	7+7/8	5+1/2	17	0	13716	1611	13716	

☐ 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

Please see the 318A.a. & 318.A.c. exception approval attached in the SUA memo on page 1, section 1; and Exhibit A. KMG has obtained a signed Surface Use Agreement from the surface owner that contains language specific to the location of the proposed well. The Memo of SUA includes evidence of this on Page 1, Section 1. Additionally, a site specific location map is part of the signed agreement and included as Exhibit A of the SUA Memo. Please consider the surface owner's project location map (location of proposed wells) as a waiver to these rules. Should you have any questions, please contact our office.

Flow Lines: 20 flow lines will flow to the production facility location. During production, flow direction in the flow lines is from the well head to the production facility. The size of flow lines is typically 2". Flow lines will be constructed from steel pipe, buried, and will equal the distance between the well heads and the tank battery, approximately 300'.

20 fuel gas supply lines will also be installed from the well head to the production facility. During operation flow direction in the supply lines will be from the production facility to the well head. The size of the supply lines is typically 1". Supply lines will be constructed from poly or steel pipe, buried, and will equal the distance between the well heads and the tank battery, approximately 300'.

Gas lift lines are also occasionally installed (one per well) from the well head to the production facility. During operation flow direction in the gas lift lines will be from the production facility to the well head. The size of the gas lift lines is typically 2". Gas lift lines will be constructed from steel pipe, buried, and will equal the distance between the well heads and the tank battery, approximately 300'.

The nearest building unit is located over 1000' away from this well, therefore it is not within a Designated Setback Location and is exempt from 604.c.

Drilling fluids disposal: KMG will reuse water-based drilling fluids to the maximum extent possible, at which point they will either be land applied or taken to a licensed, commercial disposal site; the decision will be based upon laboratory analysis of fluids. KMG will reuse oil-based drilling fluids to the maximum extent possible, at which point they will be returned to the fluids manufacturer for reconditioning or disposal at a licensed, commercial disposal site.

Cuttings disposal: Water-based cuttings will be disposed of using a Centralized E&P Waste Management facility or a private spread field, depending on what is feasible at the time of drilling. Oil-based cuttings will be disposed of offsite and at a licensed, commercial disposal site.

This proposed well will have a treated interval less than one hundred fifty (150) feet from the treated interval of another well and is subject to COGCC Rule 317.r.

The following well(s) are not within 150' of KMG's proposed well, however may appear to be less than 150' in 2D view:

TALLGRASS 1-8

TALLGRASS 8-8

WOOLEY 44-8

The following well(s) belong to another operator and will have treated intervals within one hundred fifty (150) feet of this proposed well:

1 WOOLLEY K UNIT

The following well(s) belong to Kerr-McGee and will have treated intervals within one hundred fifty (150) feet of this proposed well:

SHUMAKER 8-7HZ

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

Location ID: 452527

Is this application being submitted with an Oil and Gas Location Assessment application? _____ Yes _____

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

Signed: _____

Print Name: CRAIG RICHARDSON

Title: REGULATORY ANALYST II

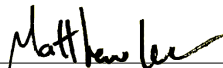
Date: 6/29/2017

Email: DJREGULATORY@ANDARKO

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: 11/29/2017

Expiration Date: 11/28/2019

API NUMBER

05 123 45954 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**

	Bradenhead tests shall be performed according to the following schedule and the Form 17 submitted within 10 days of each test: 1) Within 60 days of rig release and prior to stimulation and 2) If a delayed completion, 6 months after rig release and prior to stimulation. 3) Within 30 days after first production, as reported on Form 5A.
	1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU (spud notice) for the first well activity with a rig on the pad and provide 48 hour spud notice via Form 42 for all subsequent wells drilled on the pad. 2) Comply with Rule 317.j. and provide cement coverage from TD to a minimum of 200' above Niobrara and from 200' below Shannon to 200' above Sussex. Verify coverage with cement bond log. 3) Oil-based drilling fluid is to be used only after all fresh water aquifers are covered.

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	317.p Logging Program: One of the first wells drilled on the pad will be logged with Cased-hole Pulsed Neutron Log with Gamma Ray Log 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 in that well and have those logs attached. The Form 5 for each well shall clearly state "No open-hole logs were run" and shall reference the Rule 317.p Exception granted for the well.

Total: 3 comment(s)

Applicable Policies and Notices to Operators

Policy
Notice Concerning Operating Requirements for Wildlife Protection. http://cogcc.state.co.us/documents/reg/Policies/Wildlife_Notice.pdf
Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area. http://cogcc.state.co.us/documents/reg/Policies/PolicyGwaBradenheadMonitoringFinal.pdf

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
1696893	STIMULATION SETBACK CONSENT
401306795	FORM 2 SUBMITTED
401315317	DEVIATED DRILLING PLAN
401315318	WELL LOCATION PLAT
401318767	OffsetWellEvaluations Data
401318785	DIRECTIONAL DATA
401326671	PROPOSED SPACING UNIT
401341315	OPEN HOLE LOGGING EXCEPTION
401341317	SURFACE AGRMT/SURETY
401350308	EXCEPTION LOC REQUEST
401470224	OFFSET WELL EVALUATION

Total Attach: 11 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed.	11/17/2017
Engineer	Stimulation setback consent letter from Crestone attached. Removed comment about not needing consent for rule 317.r or 317.s.	11/17/2017
Engineer	Offset wells evaluated.	10/09/2017

Engineer	On hold- need stimulation setback consent. Comments on submit tab do not make sense.	10/09/2017
Permit	Operator requested Exception to Open Hole Logging Rule 317.p. See attached. The Surface Use Agreement has waivers for Rule 318A.a & 318A.c. See page 1, Section 1 & Exhibit A. With operator concurrence corrected Mineral lease and total acres. Permitting Review Complete.	10/02/2017
LGD	<p>1)Location of Proposed Oil and Gas Facilities. The minimum distance between the well production facilities on the Pad Site and the nearest exterior wall of an existing Erie Building Unit shall not be less than 1,000 feet.</p> <p>2)Noise mitigation. KMG shall comply with the following noise mitigation requirements on the Pad Site:</p> <p>a.For db(A) scale noise, KMG shall insure that the noise levels from operations (including the use of a drilling rig, completion rig, and/or stimulation) under COGCC Regulations 802.b and 604.c.(2)(A) are reduced at least five (5) db(A) below the maximum level permitted by those Regulations.</p> <p>b.For this purpose, the noise level shall be measured as set forth in COGCC Regulations 802.b c, except no measurements shall be taken when traffic is passing the sound level meter, KMG shall be present during all measurements.As set forth in COGCC Regulation 802.b, the noise levels shall be subject to increase for a period not to exceed fifteen (15) minutes in any one (1) hour period and reduction for periodic, impulsive or shrill noises.</p> <p>c.For db(C) scale noise, KMG shall comply with the requirements of COGCC Regulation 802, as such requirements may be amended.</p> <p>3)Oil Gathering System.KMG shall connect all wells and production facilities on the Pad Site to its oil gathering system.</p> <p>4)Well leak detection and repair.</p> <p>a.KMG shall perform audio, visual and olfactory inspections on a monthly basis at the Pad Site.KMG shall also inspect the Pad Site with an infra-red camera on a semi-annual basis.If KMG determines that any repairs are required based on these inspections, KMG shall promptly initiate these repairs.</p> <p>b.KMG shall report to Weld County on the inspection results on an annual basis in the same format that KMG uses for reporting to the Air Pollution Control Division under Regulation 7.Weld County shall make this information publicly available.</p> <p>c.This condition shall terminate one year from the filed production date of wells on the Pad Site, after which KMG shall continue to comply with the leak detection, repair, and reporting requirements of Regulation 7, as such requirements may be amended.</p> <p>5)Steel-rim berms. KMG shall use steel rim berms on the Pad Site or some other state of the art technology that will contain fluids and other material instead of sand or soil berms.</p> <p>6)Closed-loop systems. KMG shall use a closed-loop system for drilling and completion operations on the Pad Site.</p> <p>7)Lighting. KMG shall direct lighting downward and inward and shielded so as to avoid glare on public roads and Erie Building units within 1,000 feet of the Pad Site; provided, however, that KMG may still use lighting that is necessary for public and occupational safety and as required by the Federal Aviation Administration.</p> <p>8)Drilling and Hydraulic Fracturing Fluids. KMG shall not utilize any product containing diesel, 2-Butoxyethanol (2-BE) or benzene in drilling or hydraulic fracturing operations.</p>	08/15/2017

	<p>9)Reuse. KMG shall reuse water at the Pad Site and otherwise minimize waste water production to the extent that it determines such reuse, and waste water minimization is technically and economically feasible.</p> <p>10)KMG's Water on Demand System. KMG shall connect the Pad Site to KMG's comprehensive water on demand pipeline system which will deliver water to the Pad Site through a system of buried and above ground pipelines.</p> <p>11)Access/Traffic.</p> <p>a.Haul Route. The haul route to and from the Pad Site shall utilize the East I-25 Frontage Road to CR 10. In no event shall Erie Parkway (CR 8) be used west of I-25 to access the Pad Site.</p> <p>b.The access road into the Pad Site shall be improved from CR 10 a minimum distance of two hundred (200) feet on the access road in accordance with Title 10 of the Town of Erie Municipal Code.</p> <p>12)Road repairs. KMG recognizes that truck traffic accessing the Pad Site may cause damage to Erie roads and that road repairs may be needed to mitigate such damage.To this end, KMG shall arrange for a qualified outside consultant to perform a road impact study for all Erie roads that are used to access the Pad Site.The consultant shall conduct the first part of the study prior to KMG commencing operations at the Pad Site and the second part of the study after KMG completes all drilling and hydraulic fracturing at the Pad Site.KMG and Erie shall use these studies to determine the extent of any damage accruing to the road during the study period.KMG shall promptly pay Erie to repair such damage or else arrange and pay the cost of such repairs itself whichever Kerr-McGee prefers.</p> <p>13)Fencing.Oil and gas well facilities on the Pad Site shall be fenced in accordance with Title 10 of the Town of Erie Municipal Code.</p>		
Permit	Passed Completeness.	08/09/2017	
Permit	Returned to draft for: - "Surface and Minerals" tab: the Right to Construct is listed as "N/A"	07/28/2017	
Permit	Returned to draft for: -Exception Location Waiver Attachment edits. -"Submit" tab comments edit	07/20/2017	
Permit	Returned to draft for: -Open Hole Logging Exception Attachment is incomplete. -Exception Location Waiver Attachment is incomplete.	07/11/2017	

Total: 10 comment(s)