

APPLICATION FOR PERMIT TO:

Drill Deepen Re-enter Recomplete and Operate

Date Received: 07/06/2015

TYPE OF WELL OIL GAS COALBED OTHER _____ Refilling

ZONE TYPE SINGLE ZONE MULTIPLE ZONES COMMINGLE ZONES Sidetrack

Well Name: Kortum LD Well Number: 21-363HN

Name of Operator: GREAT WESTERN OPERATING COMPANY LLC COGCC Operator Number: 10110

Address: 1801 BROADWAY #500

City: DENVER State: CO Zip: 80202

Contact Name: Allison Linz Phone: (303)398-0355 Fax: ()

Email: regulatorypermitting@gwogco.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20090080

WELL LOCATION INFORMATION

QtrQtr: NWNE Sec: 21 Twp: 1S Rng: 67W Meridian: 6

Latitude: 39.956661 Longitude: -104.890977

Footage at Surface: 344 feet FNL/FSL FNL 1866 feet FEL/FWL FEL

Field Name: WATTENBERG Field Number: 90750

Ground Elevation: 5193 County: ADAMS

GPS Data:

Date of Measurement: 11/19/2014 PDOP Reading: 1.2 Instrument Operator's Name: Dana L Sperling

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

460 FNL 660 FEL 470 FSL 660 FEL

 Sec: 21 Twp: 1S Rng: 67W Sec: 21 Twp: 1S Rng: 67W

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: No

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.)

Irregular lease description please see attached map

Total Acres in Described Lease: 327 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: 1028 Feet

Building Unit: 1028 Feet

High Occupancy Building Unit: 5280 Feet

Designated Outside Activity Area: 5280 Feet

Public Road: 507 Feet

Above Ground Utility: 5280 Feet

Railroad: 5280 Feet

Property Line: 344 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 Wellbore to Nearest Wellbore Permitted or Completed in the same formation: 330 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 460 Feet (Enter 5280 for distance greater than 1 mile.)

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

SPACING & FORMATIONS COMMENTS

The Spacing unit consists of the E2/E2 of Section 21.

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		160	GWA

DRILLING PROGRAM

Proposed Total Measured Depth: 12818 Feet

Distance to nearest permitted or existing wellbore penetrating objective formation: 554 Feet (Including plugged wells)

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:

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	16	42	0	80	121	80	0
SURF	13+1/2	9+5/8	36	0	1700	825	1700	0
1ST	7+7/8	5+1/2	17	0	12818	1163	12818	0

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 refer to language is SUA regarding Twinning and Windows waivers.

Kortum 1 is a Great Western well so it does not require a Stimulation Setback Waiver.
Kortum 1 is the nearest penetrating well.
Kortum LD 21-362HN is the nearest well completed in the same formation.

This application is in a Comprehensive Drilling Plan _____ CDP #: _____

Location ID: 443415

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: Allison Linz

Title: Regulatory Tech Date: 7/6/2015 Email: regulatorypermitting@gwogco.c

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: 11/1/2015

Expiration Date: 10/31/2017

API NUMBER

05 001 09890 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

	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. TSUZUKI #1 001-06713
	1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU 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 Sussex to 200' above Sussex. Verify coverage with cement bond log.

Best Management Practices

No	BMP/COA Type	Description
1	General Housekeeping	General housekeeping will consist of neat and orderly storage of materials and fluids. Wastes will be temporarily stored in sealed containers and regularly collected and disposed of at offsite, suitable facilities. If spills occur prompt cleanup is required to minimize any commingling of waste materials with storm water runoff. Routine maintenance will be limited to fueling and lubrication of equipment. Drip pans will be used during routine fueling and maintenance to contain spills or leaks. Any waste product from maintenance will be containerized and transported offsite for disposal or recycling. There will be no major equipment overhauls conducted onsite. Equipment will be transported offsite for major overhauls. Cleanup will consist of patrolling the roadways, access areas, and other work areas to pick up trash, scrap debris, other discarded materials, and any contaminated soil. These materials will be disposed of properly and promptly.
2	Drilling/Completion Operations	Prior to drilling operations, Operator will perform an anti-collision scan of existing offset wells that have the potential of being within close proximity of the proposed well. This anti-collision scan will include definitive MWD or gyro surveys of the offset wells with included error of uncertainty per survey instrument, and compared against the proposed well path with its respective error of uncertainty. If current surveys do not exist for the offset wells, Operator may have gyro surveys conducted to verify bottom hole location. The proposed well will only be drilled if the anti-collision scan results indicate that there is not a risk for collision, or harm to people or the environment.
3	Drilling/Completion Operations	GWOC will comply with the "COGCC Policy for Bradenhead Monitoring during Hydraulic Fracturing Treatments in the Greater Wattenberg Area", dated May 29, 2012
4	Drilling/Completion Operations	One of the first wells drilled on the pad will be logged with open-hole Resistivity 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 id production liner is run) into the surface casing. The horizontal portion of every well will be logging with a measure-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 and number) the well in which open-hole logs were run.

Total: 4 comment(s)

Applicable Policies and Notices to Operators

Notice Concerning Operating Requirements for Wildlife Protection.

Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area.

Attachment Check List

Att Doc Num	Name
400782187	FORM 2 SUBMITTED
400785126	SURFACE AGRMT/SURETY
400785127	MINERAL LEASE MAP
400802586	DIRECTIONAL DATA
400820774	OffsetWellEvaluations Data
400821675	WELL LOCATION PLAT
400821676	DEVIATED DRILLING PLAN
400821677	PROPOSED SPACING UNIT
400869951	EXCEPTION LOC REQUEST

Total Attach: 9 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Removed related form 2A. Added location ID # 443415. Final Review Completed. No LGD or public comment received.	10/30/2015 3:06:53 PM
Engineer	001-06713 - Jsand only, short Nio coverage and no CBL on uphole cement - ~1200' off toe	10/29/2015 5:50:35 PM
Engineer	changed distance to closest wellbore penetrating formation	10/29/2015 5:50:26 PM
Permit	Per operator changed distance to nearest building from 1208' to 1028'. Moved Spacing Unit to Formations tab. Moved nearest well comment to submit tab. Permitting Review Complete.	3/6/2015 2:19:22 PM
Permit	Surface Use Agreement has waivers for Rule 318A.a & 318A.c.	3/6/2015 2:19:22 PM
Permit	Open Hole Logging BMP submitted by operator.	3/6/2015 2:19:20 PM
Permit	Passed completeness.	7/20/2015 8:37:17 AM
Permit	Exception location request does not meet COGCC requirements. Comment states spacing is for section 20, probable typo. Return to draft.	7/10/2015 1:25:01 PM

Total: 8 comment(s)