

**APPLICATION FOR PERMIT TO:**

**Drill**       Deepen       Re-enter       Recomplete and Operate

Date Received: 05/09/2016

TYPE OF WELL    OIL     GAS     COALBED     OTHER \_\_\_\_\_    Refiling

ZONE TYPE    SINGLE ZONE     MULTIPLE ZONES     COMMINGLE ZONES     Sidetrack

Well Name: Dittmer KE      Well Number: 20-022HC

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: 20160041

**WELL LOCATION INFORMATION**

QtrQtr: NENW    Sec: 32    Twp: 1N    Rng: 66W    Meridian: 6

Latitude: 40.011917      Longitude: -104.803097

Footage at Surface:      1103    feet      FNL/FSL      FNL      2039    feet      FEL/FWL      FWL

Field Name: WATTENBERG      Field Number: 90750

Ground Elevation: 4965.8      County: WELD

GPS Data:  
Date of Measurement: 04/03/2015    PDOP Reading: 1.5    Instrument Operator's Name: Dallas Nielsen

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    FSL      470    FWL      470    FNL      470    FWL

   Sec: 29    Twp: 1N    Rng: 66W      Sec: 20    Twp: 1N    Rng: 66W

**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.)

N/2NW sec 20

Total Acres in Described Lease: 80 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: 934 Feet  
 Building Unit: 934 Feet  
 High Occupancy Building Unit: 3032 Feet  
 Designated Outside Activity Area: 5280 Feet  
 Public Road: 1092 Feet  
 Above Ground Utility: 950 Feet  
 Railroad: 2428 Feet  
 Property Line: 220 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: 08/21/2015

**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: 161 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**

Proposed Spacing Unit : Sec 20: W2 ; Sec 29: W2

**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		640	GWA

**DRILLING PROGRAM**

Proposed Total Measured Depth: 17965 Feet

Distance from proposed wellbore to nearest existing or permitted wellbore belonging to another operator:

571 Feet (Including plugged wells)

Will a closed-loop drilling system be used? Yes

Is H<sub>2</sub>S gas reasonably expected to be encountered during drilling operations at concentrations greater than or equal to 100 ppm? No (If Yes, attach an H<sub>2</sub>S 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	1900	790	1900	0
1ST	8+1/2	5+1/2	17	0	17965	2277	17965	

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

Surface Use Agreement has waivers for Rule 318A.a.

The SRC Phelps synergy wells appear closer then 150'. Attached is an anti collision report ( labeled as other ) showing the 3D view of seperation.

This application is in a Comprehensive Drilling Plan \_\_\_\_\_ CDP #: \_\_\_\_\_

Location ID: \_\_\_\_\_

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: Allison Linz

Title: Regulatory Date: 5/9/2016 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:  Director of COGCC Date: 7/28/2016

Expiration Date: 07/27/2018

### API NUMBER

05 123 43451 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.

<u>COA Type</u>	<u>Description</u>
	<p>Bradenhead tests shall be performed and reported according to the following schedule and Form 17 submitted within 10 days of each test.</p> <ol style="list-style-type: none"> <li>1) Within 60 days of rig release, prior to stimulation.</li> <li>2) 6 months after rig release, prior to stimulation.</li> <li>3) Within 30 days of first production, as reported on Form 5A.</li> </ol>
	<ol style="list-style-type: none"> <li>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.</li> <li>2) Comply with Rule 317.j. and provide cement coverage from TD to a minimum of 200' above Niobrara. Verify coverage with cement bond log.</li> </ol>
	<p>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.</p> <p>Edith H. Whiteside 1 (API 05-123-09790)</p> <p>Operator acknowledges the proximity of the non-operated listed well. 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.</p> <p>John Dittirro JR Gas Unit 1 (API 05-123-08319) Russell Rosales Gas Unit 1 (API 05-123-08368)</p>

## Best Management Practices

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	General Housekeeping	<p>Traffic Plan (Rule 604.c.(2)D).</p> <p>GWOC works closely with all municipalities as appropriate to develop a mutually acceptable road traffic access plan addressing site specific traffic-related issues. These plans may address issues such as; routes, construction specification of access roads, maintenance, dust control, jake brake limits, traffic controls, enforcement, emergency response, etc. GWOC will work with municipalities, the County's Planning Department and/or Road Department to address complaints related to traffic or dust issues as appropriate. Dust control measures may include surface stabilization, or dust control with appropriate chemical or water applications.</p>
2	Drilling/Completion Operations	<p>Bradenhead Monitoring</p> <p>GWOC will comply with the "COGCC Policy for Bradenhead Monitoring during Hydraulic Fracturing Treatments in the Greater Wattenberg Area", dated May 29, 2012</p>

3	Drilling/Completion Operations	<p>Multi Well Open Hole Logging</p> <p>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 if 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.</p>
4	Drilling/Completion Operations	<p>Stimulation Setback (Rule 317.r and 317.s)</p> <p>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 wellpath with its respective error of uncertainty. If current surveys do not exist for the offset wells, Operator may have gyro surveys conducted to verify bottomhole 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.</p>
5	Drilling/Completion Operations	<p>Odors and Light Pollution Mitigation</p> <p>During the drilling phase, Great Western plans to construct sound/visual walls that will be placed along the North, East, and South edges of the pad. This will also assist to block out any lighting from nearby occupied structures. Where possible, drilling rig and completion equipment engine exhaust will be directed away from occupied buildings. Sealed tanks with pressure relief valves and emissions controls will also be utilized during the production phase.</p>
6	Drilling/Completion Operations	<p>Identification of P&amp;A wells (Rule 604.c.(2)U)</p> <p>GWOC shall identify the location of the P&amp;A wellbore with a permanent monument as specified in Rule 319.a.(5). The operator shall also inscribe or imbed the well number and date of plugging upon the permanent monument. P&amp;A wellbores shall be cutoff well below ground surface in agricultural areas to provide for landowners to safely farm the reclaimed well area.</p>
7	Drilling/Completion Operations	<p>Identification of P&amp;A wells (Rule 604.c.(2)U)</p> <p>GWOC shall identify the location of the P&amp;A wellbore with a permanent monument as specified in Rule 319.a.(5). The operator shall also inscribe or imbed the well number and date of plugging upon the permanent monument. P&amp;A wellbores shall be cutoff well below ground surface in agricultural areas to provide for landowners to safely farm the reclaimed well area.</p>
8	Drilling/Completion Operations	<p>Odors and Light Pollution Mitigation</p> <p>Where possible, drilling rig and completion equipment engine exhaust will be directed away from occupied buildings to assist in mitigating potential odors. Light sources will be directed downwards, and away from occupied structures where possible. While GWOC does not anticipate any mitigation measures will be necessary for odors, sealed tanks with pressure relief valves and emissions controls will be utilized for the production phase. Once the drilling and completion rigs leave the site, there will be no permanently installed lighting on site.</p>

9	Drilling/Completion Operations	<p>Drill stem tests (Rule 604.c.(2)L</p> <p>Conventional drill stem tests will not be conducted on DJ Basin horizontal wells currently being executed or planned by GWOC. If plans change in the future a well specific drill stem testing plan will be prepared for that particular well. Note that GWOC may elect to use one of several available wireline deployed tools for the purpose of measuring downhole formation pressures and/or collecting downhole fluid samples from the target formation(s) of a particular well.</p>
10	Drilling/Completion Operations	<p>Green Completions (Rule 604.c.(2)C.</p> <p>As applicable, per COGCC Rule 805, GWOC will utilize all reasonable and cost-efficient best practices, including but not limited to those listed in Rule 805, to maximize resource recovery and mitigate releases to the environment.</p> <ul style="list-style-type: none"> <li>• Initial frac and drill out effluent is routed through a sand catcher/trap and a junk/sand tank to remove sand and well frac debris.</li> <li>• Once any hydrocarbons are detected but prior to encountering salable quality combustible gas or significant volumes of liquid hydrocarbons (condensate or oil) (greater than 10 barrels per day average) the effluent is routed through a high-pressure separator and closed-top tanks to minimize emissions to the environment. Hydrocarbon liquids, produced water, and sand are separated utilizing the high-pressure separator.</li> <li>• The quality (combustibility) of the gas is typically monitored directly at the high-pressure separator. When salable (combustible) quality gas is measured/detected the gas stream is immediately diverted to the sales pipeline or the well is shut in or a form 42 for flaring will be submitted for approval.</li> <li>• The separated produced water and hydrocarbon liquids (condensate/oil) are directed to specific tanks for storage until being unloaded and hauled to disposal or sales as appropriate.</li> </ul>

Total: 10 comment(s)

### **Applicable Policies and Notices to Operators**

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

### **Attachment Check List**

<b>Att Doc Num</b>	<b>Name</b>
1352326	SURFACE CASING CHECK
400889914	FORM 2 RESUBMITTED
401028107	FORM 2 SUBMITTED
401028108	FORM 2 REJECTED
401042114	WELL LOCATION PLAT
401042115	PROPOSED SPACING UNIT
401042124	EXCEPTION LOC REQUEST
401042300	DEVIATED DRILLING PLAN
401042305	DIRECTIONAL DATA
401043244	OffsetWellEvaluations Data
401043251	FORM 2 SUBMITTED
401053177	FORM 2 RESUBMITTED
401058675	FORM 2 RESUBMITTED
401060140	OTHER
401060141	SURFACE AGRMT/SURETY

Total Attach: 16 Files

**General Comments**

<b><u>User Group</u></b>	<b><u>Comment</u></b>	<b><u>Comment Date</u></b>
Permit	Final Review Completed.	7/25/2016 1:18:49 PM
Permit	Per operator changed Distance from completed portion of proposed wellbore to nearest completed portion of offset wellbore permitted or completed in the same formation. Distances measured by 2D. Permitting Review Complete.	7/22/2016 3:07:50 PM
Permit	ON HOLD: requesting confirmation of well measured to for distance to nearest well in same formation and/or how measured.	7/20/2016 8:58:58 AM
Permit	Surface Use Agreement has waivers for Rule 318A.a.	7/20/2016 8:48:41 AM
Permit	Open Hole Logging BMP submitted by operator.	7/20/2016 8:48:39 AM
Permit	Passed completeness.	6/14/2016 11:57:55 AM
Permit	Returned to draft: SUA needs map attached.	5/8/2016 3:22:23 PM
Permit	Returned to draft per operator request.	5/24/2016 11:24:37 AM
Permit	REJECTION COMMENT: Operator requested rejection to make a significant change to SHL which requires revised well location plats, directional template, and deviated drilling plan, and revisions to data fields. COGCC staff have been consulted.	4/14/2016 1:06:06 PM
Permit	Attached missing Proposed Spacing Unit. Permitting Review Complete. ON HOLD: w/o form 2A.	2/24/2016 9:25:43 AM
Permit	Per operator changed mineral description for Section 29 to 114 acres. Removed check for twinning and made correction to typo in Open Hole Logging BMP. ON HOLD: requesting PSU.	2/17/2016 11:25:48 AM
Permit	ON HOLD: requesting corrected mineral description and acreage. Removal of check for twinning and correction of typo in Open Hole Logging BMP. requesting PSU.	2/17/2016 10:00:21 AM
Permit	Open Hole Logging BMP submitted by operator.	2/17/2016 10:00:19 AM
Permit	Passed completeness.	12/10/2015 8:28:05 AM

Total: 14 comment(s)