

FORM
2A

Rev
08/19

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:

401919890

Date Received:

01/31/2019

Oil and Gas Location Assessment

New Location Refile Amend Existing Location Location#: 459907

This Oil and Gas Location Assessment is to be submitted to the COGCC for approval prior to any ground disturbance activity associated with oil and gas operations. Approval of this Oil and Gas Location Assessment will allow for the construction of the below specified Location; however, it does not supersede any land use rules applied by the local land use authority. Please see the COGCC website at <http://cogcc.state.co.us/> for all accompanying information pertinent this Oil and Gas Location Assessment.

Location ID:

459907

Expiration Date:

09/13/2022

This location assessment is included as part of a permit application.

CONSULTATION

- This location is included in a Comprehensive Drilling Plan. CDP # _____
- This location is in a sensitive wildlife habitat area.
- This location is in a wildlife restricted surface occupancy area.
- This location includes a Rule 306.d.(1)A.ii. variance request.

Operator

Operator Number: 10110
 Name: GREAT WESTERN OPERATING COMPANY LLC
 Address: 1001 17TH STREET #2000
 City: DENVER State: CO Zip: 80202

Contact Information

Name: Eileen Roberts
 Phone: (720) 595-2115
 Fax: ()
 email: eroberts@gwogco.com

FINANCIAL ASSURANCE

- Plugging and Abandonment Bond Surety ID (Rule 706): 20160041 Gas Facility Surety ID (Rule 711): _____
- Waste Management Surety ID (Rule 704): _____

LOCATION IDENTIFICATION

Name: TOWER LD PAD Number: _____
 County: ADAMS
 QuarterQuarter: SWNW Section: 21 Township: 1S Range: 67W Meridian: 6 Ground Elevation: 5230

Define a single point as a location reference for the facility location. When the location is to be used as a well site then the point shall be a well location.

Footage at surface: 1536 feet FNL from North or South section line
 351 feet FWL from East or West section line
 Latitude: 39.953355 Longitude: -104.901918

PDOP Reading: 1.2 Date of Measurement: 06/13/2018

Instrument Operator's Name: GREG WEIMER

LOCAL GOVERNMENT INFORMATION

County: ADAMS Municipality: N/A

CONSTRUCTION

Date planned to commence construction: 09/01/2019 Size of disturbed area during construction in acres: 20.34
Estimated date that interim reclamation will begin: 05/01/2022 Size of location after interim reclamation in acres: 6.20
Estimated post-construction ground elevation: 5240

DRILLING PROGRAM

Will a closed loop system be used for drilling fluids: Yes

Is H₂S anticipated? No

Will salt sections be encountered during drilling: No

Will salt based mud (>15,000 ppm Cl) be used? No

Will oil based drilling fluids be used? Yes

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Method: Commercial Disposal

Cutting Disposal: OFFSITE Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

Beneficial reuse or land application plan submitted? No

Reuse Facility ID: _____ or Document Number: _____

Centralized E&P Waste Management Facility ID, if applicable: _____

SURFACE & MINERALS & RIGHT TO CONSTRUCT

Name: Patricia Castrodale

Phone: _____

Address: 4 Sears Ct

Fax: _____

Address: _____

Email: _____

City: Keokuk State: IA Zip: 52632

Surface Owner: Fee State Federal Indian

Check all that apply. The Surface Owner: is the mineral owner

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 from or produced to this Oil and Gas Location: No

The right to construct this Oil and Gas Location is granted by: Surface Use Agreement

Surface damage assurance if no agreement is in place: _____ Surface Surety ID: _____

Date of Rule 306 surface owner consultation 02/10/2017

If this Form 2A is associated with Drilling and Spacing Unit applications, list docket number(s): _____

CURRENT AND FUTURE LAND USE

Current Land Use (Check all that apply):

Crop Land: Irrigated Dry land Improved Pasture Hay Meadow CRP

Non-Crop Land: Rangeland Timber Recreational Other (describe): _____

Subdivided: Industrial Commercial Residential

Future Land Use (Check all that apply):

- Crop Land: Irrigated Dry land Improved Pasture Hay Meadow CRP
- Non-Crop Land: Rangeland Timber Recreational Other (describe): _____
- Subdivided: Industrial Commercial Residential

CULTURAL DISTANCE INFORMATION

Provide the distance to the nearest cultural feature as measured from Wells or Production Facilities onsite.

	From WELL	From PRODUCTION FACILITY
Building:	1008 Feet	1184 Feet
Building Unit:	1270 Feet	1258 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	338 Feet	665 Feet
Above Ground Utility:	321 Feet	662 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	320 Feet	693 Feet
School Facility::	5280 Feet	5280 Feet
School Property Line:	5280 Feet	5280 Feet
Child Care Center:	3040 Feet	3007 Feet

INSTRUCTIONS:

- All measurements shall be provided from center of nearest Well or edge of nearest Production Facility to nearest of each cultural feature as described in Rule 303.b.(3)A.
- 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, Designated Outside Activity Area, School Facility, and Child Care Center – as defined in 100 Series Rules.
- For measurement purposes only, Production Facilities should only include those items with an asterisk(*) on the Facilities Tab.

SCHOOL SETBACK INFORMATION

Was Notice required under Rule 305.a.(4)? Yes No

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.
- Large UMA Facility – 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: _____

FOR MULTI-WELL PADS AND PRODUCTION FACILITIES WITHIN DESIGNATED SETBACK LOCATIONS ONLY:

- Check this box if this Oil and Gas Location has or will have Production Facilities that serve multiple wells (onl or offsite) and the Production Facilities are proposed to be located less than 1,000 feet from a Building Unit. *(Pursuant to Rule 604.c.(2)E.i., the operator must evaluate alternative locations for the Production Facilities that are farther from the Building Unit, and determine whether those alternative locations were technically feasible and economically practicable for the same proposed development.)*
- By checking this box, I certify that no alternative placements for the Production Facilities, farther from the nearest Building Unit, were available based on the analysis conducted pursuant to Rule 604.c.(2)E.i.

In the space below, explain rationale for siting the multi-well Production Facility(ies) that supports your Rule 604.c.(2)E.i determination. Attach documentation that supports your determination to this Form 2A.

SOIL

List all soil map units that occur within the proposed location. attach the National Resource Conservation Service (NRCS) report showing the "Map Unit Description" report listing the soil typical vertical profile. This data is to used when segregating topsoil.

The required information can be obtained from the NRCS web site at <http://soildatamart.nrcs.usda.org/> or from the COGCC web site GIS Online map page found at <http://colorado.gov/cogcc>. Instructions are provided within the COGCC web site help section.

NRCS Map Unit Name: UIC - Ulm loam, 3 to 5 percent slopes

NRCS Map Unit Name: ReD - Renohill loam, 3 - 9 percent slopes

NRCS Map Unit Name: Gr - Gravelly Land-Shale outcrop complex

PLANT COMMUNITY:

Complete this section only if any portion of the disturbed area of the location's current land use is on non-crop land.

Are noxious weeds present: Yes No

Plant species from: NRCS or, field observation Date of observation: _____

List individual species:

Check all plant communities that exist in the disturbed area.

- Disturbed Grassland (Cactus, Yucca, Cheatgrass, Rye)
- Native Grassland (Bluestem, Grama, Wheatgrass, Buffalograss, Fescue, Oatgrass, Brome)
- Shrub Land (Mahogany, Oak, Sage, Serviceberry, Chokecherry)
- Plains Riparian (Cottonwood, Willow, Aspen, Maple, Poplar, Russian Olive, Tamarisk)
- Mountain Riparian (Cottonwood, Willow, Blue Spruce)
- Forest Land (Spruce, Fir, Ponderosa Pine, Lodgepole Pine, Juniper, Pinyon, Aspen)
- Wetlands Aquatic (Bullrush, Sedge, Cattail, Arrowhead)
- Alpine (above timberline)
- Other (describe): _____

WATER RESOURCES

Is this a sensitive area: No Yes

Distance to nearest

downgradient surface water feature: 0 Feet

water well: 782 Feet

Estimated depth to ground water at Oil and Gas Location 125 Feet

Basis for depth to groundwater and sensitive area determination:

Basis for depth of groundwater is DWR well Permit# 57278. Located roughly 1,547' SW From Pad.

Is the location in a riparian area: No Yes

Was an Army Corps of Engineers Section 404 permit filed No Yes If yes attach permit.

Is the location within a Rule 317B Surface Water Supply Area buffer No zone:

If the location is within a Rule 317B Surface Water Supply Area buffer have all public water supply systems within 15 miles been notified: _____

Is the Location within a Floodplain? No Yes Floodplain Data Sources Reviewed (check all that apply)

Federal (FEMA)

State

County

Local

Other _____

GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 318A

WILDLIFE

This location is included in a Wildlife Mitigation Plan

This location was subject to a pre-consultation meeting with CPW held on _____

DESIGNATED SETBACK LOCATION EXCEPTIONS

Check all that apply:

Rule 604.a.(1)A. Exception Zone (within 500' of a Building Unit) and is in an Urban Mitigation Area

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)

RULE 502.b VARIANCE REQUEST

Rule 502.b. Variance Request from COGCC Rule or Spacing Order Number _____

ALL exceptions and variances require attached Request Letter(s). Refer to applicable rule for additional required attachments (e.g. waivers, certifications, SUAs).

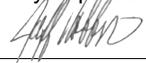
OPERATOR	<p>COMMENTS AND SUBMITTALS</p> <p>1. The operator is Brewer Steel Company.</p> <p>2. The size of the TLVST is 60,000 BBLs.</p> <p>3. The anticipated time frame the TLVST will be onsite is three weeks per occupation.</p> <p>4. A construction Layout Drawing depicting the placement of the MLVT's has been attached.</p> <p>SUA Parcel Map Attached as Other.</p> <p>Form 2A is being amended to increase the size of the Location approximately 7.18 acres.</p> <p>Brantner Elementary School is the closest school and over 1 mile away.</p>
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I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: _____ Date: 01/31/2019 Email: regulatorypermitting@gwogco.com

Print Name: Eileen Roberts Title: Regulatory Analyst

Based on the information provided herein, this Oil and Gas Location Assessment complies with COGCC Rules, applicable orders, and SB 19-181 and is hereby approved.

COGCC Approved:  Director of COGCC Date: 9/14/2019

Conditions Of Approval

All representations, stipulations and conditions of approval stated in this Form 2A for this location shall constitute representations, stipulations and conditions of approval for any and all subsequent operations on the location unless this Form 2A is modified by Sundry Notice, Form 4 or an Amended Form 2A.

<u>COA Type</u>	<u>Description</u>
Noise mitigation	Due to the proximity to populated areas, the operator will be required to conform to the noise standards of Rule 604c.(2)A.
Construction	Prior to filling MLVT, located on the fill portion of the pad, operator shall provide site specific engineering details documenting items 3 and 4 of the Design Criteria stated in the COGCC MLVT Policy via Form 4 sundry Notice. Operator shall confirm that installation conforms with engineered site design and engineered MLVT design.
Construction	Within 90 days of location construction, operator shall submit a Form 4 Sundry Notice with the latitude and longitude of the southeast corner of the constructed tank battery so that COGCC can create and map a tank battery facility ID.
Storm Water/Erosion Control	Location lies within proximity to a surface water feature. Operator shall construct the Location in a manner that does not impede the natural flow of water and use engineering controls constructed in accordance with good engineering practices to prevent offsite sediment/contaminant migration.
Planning	Operator shall post an approved copy of the Amended Form 2A Oil & Gas Location Assessment on location during all construction, drilling, and completion activities.

Best Management Practices

<u>No BMP/COA Type</u>	<u>Description</u>
1 Planning	To mitigate long-range noise and visual impacts, GWOC will install vegetative landscaping around the perimeter of the Location for the lifetime of the wells.
2 Traffic control	An access route from the highway or county road to the proposed oil and gas location has been prearranged. All required access road permits shall be obtained prior to construction and any special requirements outlined by the local government will be followed. Emergency routes will be chosen prior to the commencement of operations and will be clearly marked and maintained throughout drilling, completion and production activities.

3	Material Handling and Spill Prevention	Company lease operators and Production staff will review production records, including volumes and pressures, to identify irregularities that may indicate a problem with a tank or pipeline. If an irregularity is detected that may indicate a potential release, the suspect tank and/or pipeline(s) will be removed from service, isolated, and either pressure tested or visibly inspected for indications of a potential leak.
4	Material Handling and Spill Prevention	To prevent leaks or releases, GWOC will conduct daily inspections of all tanks, visible pipelines and valves. Furthermore, GWOC will conduct and document formal annual SPCC inspections, and formal site specific and random audits, by third-party consultants to inspect for general site conditions as well as condition of tanks, pipelines, and containment structures. All documented inspection records will be provided to the COGCC, within 30 days, upon request.
5	Material Handling and Spill Prevention	Operator shall line the production facilities, using steel berm construction with an engineered liner, shall program the Location with remote shut in capabilities, shall install leak detection and conduct and pressure testing of pipelines.
6	Dust control	Dust control measures will be implemented to prevent generation of visible dust. Control measures will be applied and may include surface stabilization, or dust control with appropriate chemical or water applications.
7	Construction	Access roads will be designed, constructed, and maintained such that heavy equipment, including emergency response vehicles, can readily access and exit the location. The pad will be designed to have all weather access roads to allow for operator and emergency response. In addition, GWOC will install manual mud mitigation measures (eg. tracking control rock aprons) at location exits onto paved roads as necessary and in conjunction with county requirements.
8	Noise mitigation	Great Western Operating Company, L.L.C. (GWOC) will operate in accordance with permissible noise levels per COGCC Rule 604.c.(2)A. and 802, as applicable. During the drilling and completions phase, Great Western will construct sound/visual walls that will be placed around the perimeter of the pad. Access to the pad will enter from the north and east of the pad to reduce noise impacts from truck traffic to the occupied structures located to the south of the pad and ingress and egress from the pad will be located away from the occupied buildings located to the southeast, south and southwest of the pad. Drilling rig and completion equipment engine exhaust will be directed away from the closest occupied buildings to assist with noise mitigation. These practices will be implemented upon initiation and remain in place throughout the drilling and completions phases of operations. This pad will be constructed in such a manner that noise mitigation may be installed and removed without disturbing the site or landscaping.
9	Emissions mitigation	Great Western shall conduct monitoring during drilling and completions and shall perform inspections during production (AVO and LDAR) and maintain compliance with the permit and control provisions of the Colorado Air Quality Control Program, Title 25, Article 7, C.R.S.
10	Odor mitigation	Drilling rig and completion equipment engine exhaust shall be directed away from the occupied buildings located to the southeast, south and southwest of the Location to mitigate odor emissions from the Location. Great Western will be using a synthetic oil based drilling fluid. Based upon laboratory analysis, the drilling fluid contains lower levels of VOC and aromatics when compared to diesel. This will be used during throughout the drilling phase to mitigate odors emitting from the site. Sealed tanks with pressure relief valves and emissions control devices shall be utilized throughout the production phase of the Location.
11	Drilling/Completion Operations	*MLVT Certification Statement: Great Western Operating Company certifies that the MLVTs on this location will be designed and implemented consistent with the COGCC Policy on the use of MLVTs in the state of Colorado.

12	Drilling/Completion Operations	Green Completions – Emissions Control System Green Completions -Test separators and associated flow lines, sand traps and emission control systems shall be installed on-site to accommodate green completions techniques. When commercial quantities of salable quality gas are achieved at each well, the gas shall be immediately directed to a sales line or shut in and conserved. If a sales line is unavailable or other conditions prevent placing the gas into a sales line, the operator shall not produce the wells without an approved variance per Rule 805.b.(3)C.
13	Drilling/Completion Operations	Oil-based drilling fluids (OBDF) will be separated from the cuttings at surface. At the end of its use on a particular well, the liquid oil-based mud will be reused for additional drilling operations or it will be returned to then vendor who originally supplied the mud. Transportation will occur on a daily basis as required to facilitate on ongoing drilling operations. Oil-based drill cuttings (OBDC) will be separated from liquid mud onsite and the cuttings will be temporarily stored onsite in steel bins. Accumulated cuttings will be transported for permanent disposal to a licensed solid waste disposal facility. The actual solid waste disposal facility that will be used will depend on geographic proximity to the well being drilled. Transportation will occur on a daily basis as required to facilitate ongoing drilling operations.
14	Drilling/Completion Operations	Light sources will be directed downwards, and away from occupied structures. Once the drilling and completion rigs leave the site, there will be no permanently installed lighting on site.

Total: 14 comment(s)

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
1010658	CORRESPONDENCE
1010659	NEIGHBORHOOD MEETING SUMMARY
1010713	UMA DETERMINATION DRAWING
1010714	ALTERNATIVE LOCATION ANALYSIS
1010726	LOCATION DRAWING
1010728	OBJECTIVE CRITERIA REVIEW MEMO
401919890	FORM 2A SUBMITTED
401922692	NRCS MAP UNIT DESC
401922695	NRCS MAP UNIT DESC
401922696	NRCS MAP UNIT DESC
401922699	WASTE MANAGEMENT PLAN
401922745	ACCESS ROAD MAP
401922748	CONST. LAYOUT DRAWINGS
401922757	FACILITY LAYOUT DRAWING
401922760	MULTI-WELL PLAN
401922763	LOCATION PICTURES
401924995	SURFACE AGRMT/SURETY
401925029	OTHER
401925043	HYDROLOGY MAP

Total Attach: 19 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
OGLA	Modified BMPs with concurrence of the Operator.	09/13/2019
OGLA	Staff performed a technical reviewed the Form 2A taking into account all Building Units located within 1,500 feet of the Location. Best Management Practices were placed on the Form 2A that are intended to mitigate potential impacts resulting from noise, odors, dust, light and visual aesthetics. During the final review, it was determined that the Location would have the lowest magnitude of potential impacts compared to the other potential alternatives.	09/13/2019
OGLA	Per Operator request, changed the distance to the nearest child care facility to 3040 feet from the nearest well and 3007 feet from the nearest production facility. Per Operator request, added the following statement to the Submit Tab: "Brantner Elementary School is the closest school and over 1 mile away." Working with the Operator on BMPS.	08/30/2019
Permit	<ul style="list-style-type: none"> •With concurrence from the operator, updated the "Date planned to commence construction". •Final permitting review complete. Sent to Final Approval. 	08/26/2019
OGLA-181	COGCC staff reviewed and considered all public comments received for this Form 2A.	08/15/2019
OGLA-181	The Objective Criteria Review Memo (Doc# 1010723) is attached to this Form 2A. Following additional analysis arising out of the Objective Criteria, the Director determined that this application meets the standard for the protection of public health, safety, welfare, the environment and wildlife resources set by SB 19-181.	08/15/2019
OGLA-181	COGCC staff conducted its technical review of this Form 2A Oil and Gas Location Assessment within the context of SB 19-181 and the required Objective Criteria. This Form 2A met Objective Criteria #1, 3 and 5.c.	08/15/2019
Permit	•Added the local government siting permit information and the school and childcare distances provided by the operator.	06/18/2019
Permit	•Sundaries submitted to move the surface hole location on 25 APDs 4/12/19.	04/30/2019
OGLA	Missing the reason for amendment. - Amended to increase the size of the Location during construction and after interim reclamation MLVTs need to be shown on the Location Drawing. - Received Previous 2A reports the Building and Building Unit closer than the amended 2A. Please verify the distances. - Verified by Operator. Changed the distance from the well to the Building to 1008 feet based on the updated survey information submitted by the Operator. Wells to be sundried. Changed the distance to the nearest surface water feature to 0 feet based on the drainage that transects the Location as shown on the Hydrology Map. Drainage is not mapped on the USGS Topographic Map. Based on the review of the topography, the drainage appears to consist of an upland swale that may provide hydraulic connectivity to the northern mapped drainage and floodplain. With operator concurrence, adding a COA to prevent impact to the northern drainage and floodplain. Removed the superfluous BMPs. - Modified BMP Language per Operator Meeting - 08/01/2019	04/01/2019
Permit	•Initial permitting review complete and task passed.	03/15/2019
Permit	Passed completeness.	02/04/2019

Total: 12 comment(s)