

FORM
2A

Rev
08/13

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:

401088795

Date Received:

02/16/2017

Oil and Gas Location Assessment

☒ New Location ☐ Refile ☐ Amend Existing Location Location#: _____

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:

452914

Expiration Date:

11/04/2020

☒ 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: 1801 BROADWAY #500
City: DENVER State: CO Zip: 80202

Contact Information

Name: Christi Ng
Phone: (303) 398-0394
Fax: ()
email: regulatorypermitting@gwogco.com

RECLAMATION FINANCIAL ASSURANCE

☒ Plugging and Abandonment Bond Surety ID: 20160041 ☐ Gas Facility Surety ID: _____
☐ Waste Management Surety ID: _____

LOCATION IDENTIFICATION

Name: B-Farm LD Pad Number: 19-381HNX
County: ADAMS
QuarterQuarter: NENW Section: 7 Township: 1S Range: 67W Meridian: 6 Ground Elevation: 5123
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: 864 feet FNL from North or South section line
1742 feet FWL from East or West section line
Latitude: 39.983983 Longitude: -104.934028
PDOP Reading: 1.8 Date of Measurement: 03/24/2016
Instrument Operator's Name: Dallas Nielsen

RELATED REMOTE LOCATIONS

(Enter as many Related Locations as necessary. Enter the Form 2A document # only if there is no established COGCC Location ID#)

This proposed Oil and Gas Location is:

LOCATION ID #

FORM 2A DOC #

FACILITIES

Indicate the number of each type of oil and gas facility planned on location

Wells	<u>36</u>	Oil Tanks*	<u>30</u>	Condensate Tanks*	<u> </u>	Water Tanks*	<u>6</u>	Buried Produced Water Vaults*	<u> </u>
Drilling Pits	<u> </u>	Production Pits*	<u> </u>	Special Purpose Pits	<u> </u>	Multi-Well Pits*	<u> </u>	Modular Large Volume Tanks	<u>2</u>
Pump Jacks	<u> </u>	Separators*	<u>36</u>	Injection Pumps*	<u> </u>	Cavity Pumps*	<u> </u>	Gas Compressors*	<u> </u>
Gas or Diesel Motors*	<u> </u>	Electric Motors	<u> </u>	Electric Generators*	<u> </u>	Fuel Tanks*	<u> </u>	LACT Unit*	<u> </u>
Dehydrator Units*	<u> </u>	Vapor Recovery Unit*	<u>2</u>	VOC Combustor*	<u> </u>	Flare*	<u> </u>	Pigging Station*	<u> </u>

OTHER FACILITIES*

Other Facility Type

Number

Gas Scrubber	<u>3</u>
Horizontal Treater	<u>6</u>
VRT	<u>3</u>
ECD	<u>12</u>
Sales Meter	<u>2</u>
Sales Compressor	<u>2</u>

Those facilities indicated by an asterisk () shall be used to determine the distance from the Production Facility to the nearest cultural feature on the Cultural Setbacks Tab.

Per Rule 303.b.(3)C, description of all oil, gas, and/or water pipelines:

36 – 2" flowlines – Steel
3 – 4" Oil Lines – Steel
1 – 6" water Lines – Poly
2 – 4" Vent Lines – Steel

CONSTRUCTION

Date planned to commence construction: 01/15/2018 Size of disturbed area during construction in acres: 13.99

Estimated date that interim reclamation will begin: 05/15/2018 Size of location after interim reclamation in acres: 5.85

Estimated post-construction ground elevation: 5128

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: Brighton Farm

Phone: _____

Address: 15600 Holly St

Fax: _____

Address: _____

Email: _____

City: Brighton State: CO Zip: 80602

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: Yes

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 07/27/2016

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:	702 Feet	567 Feet
Building Unit:	702 Feet	567 Feet
High Occupancy Building Unit:	2440 Feet	2575 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	823 Feet	1159 Feet
Above Ground Utility:	923 Feet	1260 Feet
Railroad:	1973 Feet	1898 Feet
Property Line:	585 Feet	421 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, and Designated Outside Activity Area - as defined in 100-Series Rules.
- For measurement purposes only, Production Facilities should only include those items with an asterisk(*) on the Facilities Tab.

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: 07/27/2016

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 (on 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.

See Submit Tab

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 be 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: Platner Loam 3 to 5 percent slopes PIC

NRCS Map Unit Name: Ulm Loam 3 to 5 percent slopes UIC

NRCS Map Unit Name: Platner Loam 0 to 3 percent Slopes PIB

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: _____ 24 Feet

water well: _____ 554 Feet

Estimated depth to ground water at Oil and Gas Location _____ 80 Feet

Basis for depth to groundwater and sensitive area determination:

Receipt:0547155 Permit #:67877

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: _____ Yes

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 COMMENTS AND SUBMITTAL

Comments

1. The manufacturer of the TLVST is Brewer Steel Company
2. The size of the TLVST is 40,000 BBLs
3. The anticipated time frame the TLVST will be onsite is two weeks.
4. A Construction Layout Drawing depicting the placement of the MLVT's has been attached.

Siting Rationale:

The location of this pad is consistent with the surface owner's preference and was agreed upon per the Surface Use Agreement. The surface owner has a irrigated crop circle in the NE quarter of this section therefore placement in the NW quarter of this section would be optimal to reduce the impacts to their farming operations. There is a ditch that runs along the North and East edges of this pads disturbance. The North-East corner of the pad has been chamfered to avoid disturbance of this ditch. In addition, there is an existing wetlands and FEMA 100 year floodplain to the NE, further restricting shifting this location to the North. The shifting of the MLVT tanks to the west side of the production equipment was discussed to allow the facilities to shift ~200' east of their current location, however Great Western has identified that the further east you go on this pad the larger the amount of fill needed to construct the pad. Great Western would like to set production facilities on as little fill as all possible especially at this location with its proximity to a commercial irrigation ditch, therefore the shifting of the production facilities east is not ideal.

The future location of Colorado Blvd is planned to be along the west side of Lot 1, just to the west of the surface owners irrigated crop circle and east of this proposed pad location. The nearest building unit is located 567' to the NW of the production facilities and 702' to the west of the nearest well. Great Western is constructing a berm along the west side of the pad to assist in visual, noise, order and dust mitigation for building unit owners to the west of the location.

Our surveyor did initially look at accessing the pad from the east, but there is a drainage that runs slanted north to south that we would end up being in or have to cross that runs into the flood plain area to the north. We purposefully placed the pad further south to avoid this flood plain area. And as you see on the drawing we also cut the north east corner of the pad to avoid this drainage. Additionally, as we planned the location, the drilling pad and the facility pad are about 3-4' difference in height. We planned 2 access points to avoid building a ramp of sorts to access between pads. If we tried to access both from the east we would potentially cross that drainage twice. By going to the west we only cross it once. If we only tried to plan 1 access point it would make it harder for both operations as we usually construct the facilities as we drill and complete and as planned we feel the facility pad would allow us access to the MLVTs.

SPCC and SWMP Plans

Spill Prevention Control and Countermeasures (SPCC) plans in place to address any possible spills associated with Oil and Gas operations throughout the state of Colorado in accordance with CFR 112.

Storm Water Management Plans (SWMP) are in place to address construction, drilling and operations associated with Oil and Gas development throughout the state of Colorado in accordance with Colorado Department of Public Health and Environment (CDPHE).

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

Signed: _____ Date: 02/16/2017 Email: regulatorypermitting@gwogco.com

Print Name: Christi Ng Title: Sr. Regulatory Analyst

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: 11/5/2017

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.

COA Type

Description

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Best Management Practices

No BMP/COA Type

Description

1 Community Outreach and Notification	Visual Mitigation BMP After discussions with homeowners within the Buffer Zone radius, it was mutually agreed upon that a berm would be constructed for visual mitigation. The earthen berm will be 12' in height, have 4:1 slopes and will be farmed by the surface owner initially. Upon additional planned improvement of the surrounding lands, landscaping will be installed. Future landscaping will include recommended trees, shrubs, landscaping rock and native grasses as outlined in the Adams County Development Standards and Regulations, Chapter 4-16. In addition, a chain-link fence with slat covering will be installed along the north edge of the pad to break the line of sight from HWY 7.
2 Noise mitigation	Noise Mitigation BMP Great Western will install an earthen berm on the west side of the pad to reduce noise impacts to the adjacent homeowners located to the west of the pad. In addition to the berm installation sound walls will be utilized on the north, west and east sides of the pad on an as needed basis based on the results of a baseline noise survey. An Ambient Sound Study will be conducted no sooner than (3) weeks prior to the construction of the location to account for any new sounds not associated with this oil and gas location in order to get the most accurate baseline noise survey and recommendations for noise mitigation.
3 Emissions mitigation	Dust Control GWOC will implement dust control measures during drilling, completion and production operations at the Location. Dust control measures may include surface stabilization, or dust control with appropriate chemical or water applications.
4 Odor mitigation	Removal of Surface Trash (Rule 604.c.(2)P All surface debris, trash, unusable scrap, or solid waste from the facility will be properly temporarily stored on location in a secure container and ultimately removed and disposed of in a legal manner.
5 Drilling/Completion Operations	Sound and Light Mitigation During the drilling and completions phase, Great Western plans to construct sound/visual walls that will be placed along the edges of the pad. This will also assist to block out any lighting from nearby occupied structures. This pad will be constructed in such a manner that noise mitigation may be installed and removed without disturbing the site or landscaping.

6	Drilling/Completion Operations	<p>LMLVT 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.</p>
7	Drilling/Completion Operations	<p>Berm Construction (Rule 604.c.(2)G.</p> <p>A minimum containment capacity of 150% of the single largest storage vessel inside the containment will be constructed around any liquids storage area within a designated setback zone. For this location, steel containment with sealed liners will be utilized at all storage facilities on this location.</p> <p>Tanks and all visible pipelines and valves etc. will be inspected informally on a daily basis by company lease operators. In addition, GWOC also conducts 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.</p>
8	Drilling/Completion Operations	<p>Wellbore Collision Prevention (Rule 317.r)</p> <p>Prior to drilling operations the operator will perform an anti-collision evaluation of all active (producing, shut in, or temporarily abandoned) offset wellbores that have the potential of being within 150 feet of a proposed well prior to drilling operations for the proposed well. Notice shall be given to all offset operators prior to drilling.</p>
9	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 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 clearly state "No open-hole logs were run" and shall clearly identify (by API#, well name & number) the well in which open-hole logs were run.</p>
10	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>
11	Drilling/Completion Operations	<p>Housekeeping</p> <p>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 cleanup will be implemented within 24-48 hours, as appropriate, 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.</p>
12	Drilling/Completion Operations	<p>Light Mitigation</p> <p>Light sources will be directed downwards, and away from occupied structures where possible. Once the drilling and completion rigs leave the site, there will be no permanently installed lighting on site.</p>

13	Drilling/Completion Operations	<p>Oil-Based Drilling Fluids and Drill Cuttings Waste Management</p> <p>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 the vendor who originally supplied the mud. Transportation will occur on a daily basis as required to facilitate ongoing drilling operations.</p> <p>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 is 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.</p>
14	Drilling/Completion Operations	<p>Odors 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. Sealed tanks with pressure relief valves and emissions controls will be utilized for the production phase.</p> <p>Great Western will be using a synthetic oil based drilling fluid called D822. Based upon laboratory analysis, the D822 contains lower levels of VOC and aromatics when compared to diesel. This will be used during the drilling phase in order to minimize any possible odors emitting from the site.</p>
15	Drilling/Completion Operations	<p>Material Handling and Spill Prevention</p> <p>In accordance with COGCC Rule 1002.f.(2)A. & B., shall provide a designated storage area for dry bulk chemicals and miscellaneous fluids. The dry chemicals in the storage area shall be adequately protected to prevent contact with precipitation, shall be elevated above storm- or standing water, and shall provide sufficient containment for liquid chemical storage to prevent release of spilled fluids from impacting soil, surface water or groundwater and will prevent the co-mingling of spilled fluids or chemicals with other E & P Waste.</p>
16	Drilling/Completion Operations	<p>Storm Water Management Plans (SWMP)</p> <p>Storm water controls will be constructed around the perimeter of the site prior to construction. Typically, GWOC utilizes a ditch and berm system of storm water control at its sites. BMP's used are determined just prior to construction by a third-party storm water contractor and may vary according to the location. Storm water controls will remain in place until the pad is stabilized or reaches final reclamation.</p>
17	Drilling/Completion Operations	<p>Identification of P&A wells (Rule 604.c.(2)U)</p> <p>GWOC shall identify the location of the P&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&A wellbores shall be cutoff well below ground surface in agricultural areas to provide for landowners to safely farm the reclaimed well area.</p> <p>Development from existing well pads (Rule 604.c.(2)V)</p> <p>Where possible, GWOC shall provide for the development of multiple reservoirs by drilling on existing pads. GWOC strives to utilize multi-well pads wherever technically and economically practicable to minimize potential impacts to neighbors and the environment. Multi-well pads are not always feasible due to numerous possible issues including but not limited to; landowner requirements, topographic constraints, well bore reaches, setback requirements, etc.</p>
18	Drilling/Completion Operations	<p>Identification of P&A wells (Rule 604.c.(2)U)</p> <p>GWOC shall identify the location of the P&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&A wellbores shall be cutoff well below ground surface in agricultural areas to provide for landowners to safely farm the reclaimed well area.</p>

19	Drilling/Completion Operations	Well site cleared (Rule 604.c.(2)T Within ninety (90) days after a well is plugged and abandoned, the well site shall be cleared of all non-essential equipment, trash, and debris.
20	Drilling/Completion Operations	Access Roads (Rule 604.c.(2)S All access roads are designed, constructed, and maintained such that heavy equipment, including emergency response vehicles, can readily access and exit the location. The pad has all weather access roads to allow for operator and emergency response. In addition, GWOC will implement manual mud mitigation measures (eg. tracking control rock aprons) at location exits onto paved roads as necessary and in conjunction with county requirements.
21	Drilling/Completion Operations	Tank specifications (Rule 604.c.(2)R All newly installed or replaced crude oil and condensate storage tanks shall be designed, constructed, and maintained in accordance with National Fire Protection Association (NFPA) Code 30 (2008 version). GWOC shall maintain written records verifying proper design, construction, and maintenance, and shall make these records available for inspection by the Director. Only the 2008 version of NFPA Code 30 applies to this rule.
22	Drilling/Completion Operations	Guy line anchors (Rule 604.c.(2)Q Guy line anchors left buried for future use shall be identified by a brightly colored marker at least 4-feet in height and within 1-foot to the east of the anchor.
23	Drilling/Completion Operations	Load lines (Rule 604.c.(2)O In any designated setback zone all load lines are capped or bull-plugged or locked shut to reduce the likelihood of a release occurring. In addition, GWOC places all load line receivers/valves inside secondary containment areas or in a proper load line containment device or both.
24	Drilling/Completion Operations	Control of Fire Hazards (Rule 604.c.(2)N GWOC constructs and operates our facilities to meet state and API codes, as appropriate, including API RP 500 electrical classifications inside bermed areas. Any unused potentially flammable materials are moved a minimum distance of 25 feet from wellhead, tanks, and separator areas. Any stored flammable liquids will be a minimum distance of 50 feet from the wellhead. In the case where terrain and location configuration does not permit maintaining the distance, equivalent safety measures will be taken. In addition, GWOC implements a Hot Work Permit Program for employees and contractors doing any defined 'Hot Work' activities on GWOC locations.
25	Drilling/Completion Operations	Fencing requirements (Rule 604.c.(2)M At a minimum GWOC installs appropriate fencing to restrict access by any unauthorized persons. This fencing may vary depending on site-specific situations, such as reasonable security, local government or surface owner concerns. Fencing will be properly noted on facility. Fencing will be properly noted on facility layout diagrams for both drilling/completion and the production phases of operations.
26	Drilling/Completion Operations	Drill stem tests (Rule 604.c.(2)L 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.
27	Drilling/Completion Operations	Pit level indicators (Rule 604.c.(2)K GWOC does not typically utilize pits in any of its operations. No pits will be used for this facility.

28	Drilling/Completion Operations	<p>BOPE for well servicing (Rule 604.c.(2)J)</p> <p>A BOPE with a minimum pressure rating of 3,000 psi will be utilized. At a minimum it will consist of 2 ram preventers and 1 annular preventer. The blind rams will be positioned below the pipe rams. A backup system of pressure control will be onsite consisting of at a minimum 1,000 psi accumulator (backup pressure). Accumulator is tested to 1,000 psi. Operator may use fixed sized pipe rams matching the tubular size. The annular preventer will be pressure tested to 250 psi low and 2,000 psi high for 10 minutes each. The ram preventers will be tested to 250 psi low and 2,500 psi high for 10 minutes each. All remaining well control equipment will be tested to 250 psi low and 2,500 psi high for 10 minutes each. The pressure tests will be conducted when the equipment is first installed and every 30 days thereafter. Pipe rams and blind rams will be function tested before every well service operation. Annual BOP inspections and pressure tests will be performed by the service company and will be charted & retained for 1 year. Backup stabbing valves shall be used on operations that require reverse circulation. Valves will be pressure tested before each well service operation in low pressure and high pressure range. The GWOC onsite representative will be certified in Well Control Operations by a Well-Cap certified training service.</p>
29	Drilling/Completion Operations	<p>Berm Construction (Rule 604.c.(2)G).</p> <p>A minimum containment capacity of 150% of the single largest storage vessel inside the containment will be constructed around any new liquids storage area within a designated setback zone. For this location, steel containment with sealed liners will be utilized at all storage facilities on this location. Tanks and all visible pipelines and valves etc. will be inspected informally on a daily basis by company lease operators. In addition, GWOC also conducts 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. Inspections will be recorded and made available to COGCC upon request.</p>
30	Drilling/Completion Operations	<p>Leak Detection Plan (Rule 604.c.(2)F).</p> <p>GWOC designs its new facilities to both avoid leaks or releases as well as to help detect them in a time-efficient manner to minimize potential impacts. Tanks and all visible pipelines and valves etc. are inspected informally on a daily basis by company lease operators. In addition, GWOC also conducts 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. In addition, our company lease operators and Production staff review production records, including volumes and pressures, looking for 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) are removed from service, isolated, and either pressure tested or visibly inspected for indications of a potential leak.</p>
31	Drilling/Completion Operations	<p>Multi-well Pads (Rule 604.c.(2)E).</p> <p>This is a multi-well pad. GWOC utilizes multi-well pads wherever technically and economically practicable to minimize potential impacts to neighbors and the environment. The pad has all weather access roads to allow for operator and emergency response.</p>
32	Drilling/Completion Operations	<p>Traffic Plan (Rule 604.c.(2)D).</p> <p>An access route from the highway or county road to the proposed oil and gas location has been prearranged. Required access road permits will be obtained before construction begins and any special requirements outlined by the municipality 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.</p>

33	Drilling/Completion Operations	<p>Green Completions (Rule 604.c.(2)C. 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"> • 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. • 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. • 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. • 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.
34	Drilling/Completion Operations	<p>Closed Loop Drilling Systems - Pit Restrictions (Rule 604.c.(2)B. GWOC is utilizing a Closed Loop Drilling System on the subject facility. No open pit storage of water will be used for this facility.</p>

Total: 34 comment(s)

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
1010277	CONST. LAYOUT DRAWINGS
1010278	HYDROLOGY MAP
1010279	LOCATION DRAWING
1010280	FACILITY LAYOUT DRAWING
1010283	306.e CERTIFICATION
1010293	ACCESS ROAD MAP
2473148	CORRESPONDENCE
401088795	FORM 2A SUBMITTED
401206553	NRCS MAP UNIT DESC
401206554	NRCS MAP UNIT DESC
401206555	NRCS MAP UNIT DESC
401206862	LOCATION PICTURES
401206863	MULTI-WELL PLAN
401206869	MINERAL LEASE MAP
401206870	SURFACE AGRMT/SURETY
401215117	WASTE MANAGEMENT PLAN
401215120	PRE-APPLICATION NOTIFICATION CERTIFICATION

Total Attach: 17 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final review complete.	11/02/2017
Permit	<p>Corrections made with Operator concurrence:</p> <ul style="list-style-type: none"> - unchecked boxes for "Surface Owner is Mineral Owner", "Surface Owner is committed", and "Surface Owner has signed". - changed Right to Construct from "Lease" to "SUA". - attached Correspondence regarding surface owner & right to construct changes. 	11/02/2017

OGLA	<p>Per Operator request, added the additional Siting Rationale.</p> <p>Our surveyor did initially look at accessing the pad from the east, but there is a drainage that runs slanted north to south that we would end up being in or have to cross that runs into the flood plain area to the north. We purposefully placed the pad further south to avoid this flood plain area. And as you see on the drawing we also cut the north east corner of the pad to avoid this drainage. Additionally, as we planned the location, the drilling pad and the facility pad are about 3-4' difference in height. We planned 2 access points to avoid building a ramp of sorts to access between pads. If we tried to access both from the east we would potentially cross that drainage twice. By going to the west we only cross it once. If we only tried to plan 1 access point it would make it harder for both operations as we usually construct the facilities as we drill and complete and as planned we feel the facility pad would allow us access to the MLVTs.</p>	10/30/2017
OGLA	<p>Waiting on modification to the Access Road Map and the Visual Mitigation BMP.</p> <ul style="list-style-type: none"> - Access Road Map received 10/10/2017 - Visual Mitigation BMP received 10/11/2017 	10/03/2017
OGLA	<p>Per Operator request, revised BMP for Control of Fire Hazards to state: GWOC constructs and operates our facilities to meet state and API codes, as appropriate, including API RP 500 electrical classifications inside bermed areas. Any unused potentially flammable materials are moved a minimum distance of 25 feet from wellhead, tanks, and separator areas. Any stored flammable liquids will be a minimum distance of 50 feet from the wellhead. In the case where terrain and location configuration does not permit maintaining the distance, equivalent safety measures will be taken. In addition, GWOC implements a Hot Work Permit Program for employees and contractors doing any defined 'Hot Work' activities on GWOC locations.</p>	10/02/2017
OGLA	<p>Received 09/20/2017 Operator revised Access Route. Uploaded Revised Access Road Map - Access Road changed. Received 10/02/2017 - Missing southern entry to pad Uploaded 306.e Certification. Added updated Noise BMP.</p>	09/29/2017
OGLA	<p>Changed Sensitive Area to YES as the Location lies within proximity to a Surface Water Feature.</p> <p>Per Operator, It is anticipated that a conventional rig will be used. Operator will using tank gauging in accordance wit Rule 328.d until tying into a pipeline. Operator anticipates that a pipeline will be available near the 1st of the upcoming year.</p>	09/27/2017
OGLA	<p>Per Operator Concurrence, removed the following BMP:</p> <p>Noise (Rule 604.c.(2)A. 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. Where possible, drilling rig and completion equipment engine exhaust will be directed away from occupied buildings to assist with noise mitigation. These practices will be implanted upon initiation of drilling and production.</p> <p>Per Operator request, changed the Dust DMP to the following: GWOC will implement duct control measures during drilling, completion and production operations at the Location. Dust control measures may include surface stabilization, or dust control with appropriate chemical or water applications.</p>	09/27/2017
Permit	Permitting review complete; pending OGLA review.	09/20/2017
Permit	Updated Operator Contact and Submitter info and corrected a Related Form doc name per Operator request.	09/14/2017

OGLA	<p>Operator is planning to construct a berm for visual mitigation. Operator is working with Adams County on additional visual mitigation and a landscape plan.</p> <ul style="list-style-type: none"> - Need Visual Mitigation BMP <p>Operator is moving the Access Road to accomodate the berm and will submitting a revised Accesss Road Map, Location Drawing and Facility Layout Drawing.</p> <ul style="list-style-type: none"> - Attachments received 07/13/2017 - Per Location Drawing, changed acreage of disturbance to 13.99 during construction and 5.85 after interim reclamation. - Access Road not to be changed 07/13/2017 - Facility has incorrect number of VRUs - Facility Layout Drawing still out of compliance - 08/03/2017 - Per Operator request, changed number of VRUs to 2 and added 3 VRTs to the the "OTHER FACILITIES" tab. - 08/03/2017 (corrections made 08/15/2017) <p>Moved the following language from the BMPs to the Submit Tab; Spill Prevention Control and Countermeasures (SPCC) plans in place to address any possible spills associated with Oil and Gas operations throughout the state of Colorado in accordance with CFR 112.</p> <p>Storm Water Management Plans (SWMP) are in place to address construction, drilling and operations associated with Oil and Gas development throughout the state of Colorado in accordance with Colorado Department of Public Health and Environment (CDPHE).</p>	05/31/2017
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OGLA	<p>Operator modified Siting Rationale received 04/06/2017</p> <ul style="list-style-type: none"> • The location of this pad is consistent with the surface owner's preference and was agreed upon per the Surface Use Agreement. The surface owner has an irrigated crop circle in the NE quarter of this section therefore placement in the NW quarter of this section would be optimal to reduce the impacts to their farming operations. • There is an irrigated ditch that runs along the North and East boundaries of the proposed pad location, along with an existing wetlands and FEMA 100 year floodplain to the NE, these factors act as restrictions to shifting this location to the North. • The future location of Colorado Blvd is planned to be along the west side of Lot 1, just to the west of the surface owners irrigated crop circle and east of this proposed pad location. • The nearest building unit is located 567' to the NW of the production facilities and 702' to the west of the nearest well. <p>05/08/2017 Per Operator request, updated Siting Rationale regarding a commercial ditch: The Great Western B-Farms Production Facilities have been placed at their current locale within a Buffer Zone due to the fact that there is a commercial ditch "German Ditch" owned by the German Ditch & Reservoir Company that runs along the North and East edges of this pads disturbance. The North-East corner of the pad has been chamfered to avoid disturbance of this ditch. The shifting of the MLVT tanks to the west side of the production equipment was discussed to allow the facilities to shift ~200' east of their current location, however Great Western has identified that the further east you go on this pad the larger the amount of fill needed to construct the pad. Great Western would like to set production facilities on as little fill as all possible especially at this location with its proximity to a commercial irrigation ditch, therefore the shifting of the production facilities east is not ideal.</p> <p>05/31/2017 Operator discussion regarding Siting Rationale. Operator does not want to place the MLVT on fill and will not switch MLVT and Production Pad. Working on additional information to add to the rationale.</p> <p>Added additional information. Request for Siting Rationale to be reviewed/modified for additional information. Sent to operator for review - 08/03/2017</p> <p>09/15/2017 - Per Operator - Irrigation Ditch belongs to the Surface Owner and is not commercial. Per Operator request, added updated Siting Rationale: The location of this pad is consistent with the surface owner's preference and was agreed upon per the Surface Use Agreement. The surface owner has a irrigated crop circle in the NE quarter of this section therefore placement in the NW quarter of this section would be optimal to reduce the impacts to their farming operations. There is a ditch that runs along the North and East edges of this pads disturbance. The North-East corner of the pad has been chamfered to avoid disturbance of this ditch. In addition, there is an existing wetlands and FEMA 100 year floodplain to the NE, further restricting shifting this location to the North. The shifting of the MLVT tanks to the west side of the production equipment was discussed to allow the facilities to shift ~200' east of their current location, however Great Western has identified that the further east you go on this pad the larger the amount of fill needed to construct the pad. Great Western would like to set production facilities on as little fill as all possible especially at this location with its proximity to a commercial irrigation ditch, therefore the shifting of the production facilities east is not ideal.</p> <p>The future location of Colorado Blvd is planned to be along the west side of Lot 1, just to the west of the surface owners irrigated crop circle and east of this proposed pad location. The nearest building unit is located 567' to the NW of the production facilities and 702' to the west of the nearest well. Great Western is constructing a berm along the west side of the pad to assist in visual, noise, order and dust mitigation for building unit owners to the west of the location.</p>	04/12/2017
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OGLA	<p>Facilities List missing 3 open slots. - Per Operator Concurrence, changed number of wells on the facilities list to 36. - 09/27/2017 Facility Layout Drawing is missing a VRU. Should be modified. Removed State from the Floodplains Section as the floodplain layer on the COGIS Map is the Federal FEMA maps. Changed estimated depth to water to 80 feet. Changed the Basis Statement to reflect DWR Permit #67877. Siting Rationale is insufficient. Original Siting Rationale: The location of this pad was the surface owner's preference and what was agreed upon in the SUA. The Surface owner has a center pivot in the Northeast quarter placing the pad in the Northwest has the least amount of impact to their farming operations. By placing the pad in the NorthWest quarter we have giving consideration to a future expansion of colorado Blvd. Overall this location has the least amount of impact on the surface owners future developement plans. The nearest building unit is located to the North of the highway using the highway as a barrier for those exisiting units.</p> <p>Need 306.e Certification - Operator unresponsive to this information request - 08/03/2017 - Still missing 306.e Certification 09/27/2017 - Per Operator request, uploaded 306.e Certification. - 09/29/2017 Noise BMP is not acceptable. - Per Operator request, updated Noise BMP - 09/29/2017</p>	03/17/2017
LGD	<p>1. Due to significant resident concerns, we recommend moving the location to the east by at least 800 feet so that there is a 1,500-foot buffer from the nearest residence. The pad location is currently 700 feet away from a residence, while the entire remainder of the property is vacant.</p> <p>2. If the pad location remains, we recommend the most stringent noise mitigation measures to protect that nearby resident.</p> <p>3.Adams County respectfully requests that the COGCC hold the permit until the operator has completed the local permit process.</p> <p>4.Ensure that the operator has sufficient storage for all of the produced hydrocarbons, or that there is a pipeline in place prior to permit approval.</p> <p>5.Attach all COAs from the local permit process to this permit.</p>	03/15/2017
Permit	Passed completeness.	02/23/2017
Permit	Returned to draft: --missing Waste Management Plan --facility layout drawing won't open --missing 305.a pre-app notification certification --correct typo in soil type: Platner, not Planter --check appropriate boxes for surface owner is mineral owner	02/20/2017
OGLA	Did not pass Buffer Zone completeness review. Missing 305.a pre-application notification certification, missing Waste Management Plan, Facility Layout Drawing has wrong format - will not open. Push to Draft	02/17/2017
Permit	Referred to OGLA Supervisor for Buffer Zone Review.	02/17/2017

Total: 18 comment(s)