

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:

401330286

Date Received:

07/05/2017

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:

**451938**

Expiration Date:

**08/29/2020**

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: 10598

Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Address: 123 ROBERT S KERR AVE

City: OKLAHOMA CITY State: OK Zip: 73102

Contact Information

Name: Kim Rodell

Phone: (303) 942-0506

Fax: ( )

email: krodell@upstreampm.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20170015     Gas Facility Surety ID: \_\_\_\_\_

Waste Management Surety ID: \_\_\_\_\_

LOCATION IDENTIFICATION

Name: Beaver Creek Number: 0881 S10

County: JACKSON

Quarter: NWNE Section: 10 Township: 7N Range: 81W Meridian: 6 Ground Elevation: 8251

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: 388 feet FNL from North or South section line

2524 feet FEL from East or West section line

Latitude: 40.598636 Longitude: -106.472430

PDOP Reading: 1.4 Date of Measurement: 09/15/2016

Instrument Operator's Name: Randall Miller

## 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 #

Well Site is served by Production Facilities

401330543

## FACILITIES

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

Wells	<u>3</u>	Oil Tanks*	<u>    </u>	Condensate Tanks*	<u>1</u>	Water Tanks*	<u>    </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>    </u>
Pump Jacks	<u>3</u>	Separators*	<u>2</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>    </u>	VOC Combustor*	<u>2</u>	Flare*	<u>    </u>	Pigging Station*	<u>    </u>

## OTHER FACILITIES\*

Other Facility Type

Number

Gas Meter	<u>1</u>
Allocation Vessel	<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:

Production facilities such as oil, water, and condensate tanks for this location are to be located on the Shiras central tank battery. All offsite take away pipelines will be 8" or smaller and be at least schedule 40 steel lines and will meet APD standards. The offsite take away lines will follow the access road. All location flowlines connected to the takeaway lines will be 4" or smaller and be at least schedule 40 steel lines and will meet APD standards. All pipelines will be buried to a minimum of 4' below grade.

## CONSTRUCTION

Date planned to commence construction: 09/04/2017 Size of disturbed area during construction in acres: 7.25

Estimated date that interim reclamation will begin: 03/04/2018 Size of location after interim reclamation in acres: 4.82

Estimated post-construction ground elevation: 8247

## DRILLING PROGRAM

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

Is H<sub>2</sub>S 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: Grizzly Land, LLC

Phone: 303-796-1108

Address: 5299 DTC Boulevard

Fax: \_\_\_\_\_

Address: \_\_\_\_\_

Email: \_\_\_\_\_

City: Greenwood Village State: CO Zip: 80111

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 04/04/2016

## 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:	4728 Feet	4281 Feet
Building Unit:	5280 Feet	5280 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	5280 Feet	5280 Feet
Above Ground Utility:	5280 Feet	5280 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	137 Feet	164 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: \_\_\_\_\_

## 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.

## 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: Ab-Aaberg-Barishman association  
 NRCS Map Unit Name: Fo-Forelle loam  
 NRCS Map Unit Name: \_\_\_\_\_

**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: Early sagebrush, Western wheatgrass, Bluebunch wheatgrass, Bottlebrush squirreltail, Big sagebrush, Streambank wheatgrass, Sheep fescue, Yellow rabbitbrush, Pine needlegrass, Muttongrass, Prairie junegrass, Buckwheat, and Spiny phlox

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: 36 Feet

water well: 5280 Feet

Estimated depth to ground water at Oil and Gas Location 40 Feet

Basis for depth to groundwater and sensitive area determination:

The area was marked sensitive due to the proximity of the intermittent ditch (approximately 36' from the edge of disturbance). The depth to groundwater was taken from previous experience drilling in the North Park Basin. There are not water wells within a 1-mile radius.

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 609

## WILDLIFE

- This location is included in a Wildlife Mitigation Plan
- This location was subject to a pre-consultation meeting with CPW held on 10/25/2016

## 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

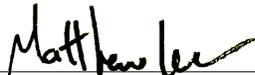
Comments: The two Triplex Jet Pump Power Fluid Vessels are temporary and will not be constructed as permanent facilities.

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

Signed: \_\_\_\_\_ Date: 07/05/2017 Email: krodell@upstreampm.com

Print Name: Kim Rodell Title: Permit Agent

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: 8/30/2017

## 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

	In addition to the notifications required by COGCC listed in the Northwest Notification Policy (Notice of Intent to construct a new location) and Rule 316C. COGCC Form 42. FIELD OPERATIONS NOTICE (c. Notice of Construction or Major Change); operator shall notify the COGCC 48 hours prior to pipeline testing (flowlines from wellheads to separators to tanks; take away flowlines to the nearby central tank battery; and/or any lines associated with truck loading operations) using the Form 42 (as described in Rule 316C.m. Notice of Completion of Form 2/2A Permit Conditions). The appropriate COGCC individuals will automatically be email notified.
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	<p>Operator must ensure secondary containment for any volume of fluids contained at the well site during drilling and completion operations; including, but not limited to, construction of a berm or diversion dike, diversion/collection trenches within and/or outside of berms/dikes, site grading, or other comparable measures, as well as stormwater management for the control of run-on and run-off to be sufficiently protective of nearby surface water.</p> <p>The access road will be constructed and maintained as to not allow sediment to migrate from the access road to nearby surface water or any drainages leading to surface water.</p> <p>Strategically apply fugitive dust control measures to reduce fugitive dust and coating of vegetation and deposition in water sources.</p> <p>Since oil and produced water storage tanks are not planned to be constructed on location, operator shall submit a scaled as-built drawing (plan view with distances) of this oil and gas location (showing wellheads, pumping jacks, onsite flowlines, offsite pipelines, and production facilities [separators, etc.]) and the nearby production facility location to which the oil and produced water will be sent to via underground pipelines (showing wellheads, onsite flowlines, offsite pipelines, pumping jacks, oil and produced water storage tanks, and other production facilities) within 30 calendar days of construction of the production equipment on either or both locations.</p>
	<p>A closed loop system must be implemented during drilling (as indicated on the Form 2 and Form 2A). All cuttings generated during drilling with oil based mud (OBM) must be segregated from water/bentonite based mud-(WBM-) generated drill cuttings and placed separately on the well pad. All OBM-generated drill cuttings must be kept in tanks/containers, or placed on a lined/bermed portion of the well pad; prior to disposition. The moisture content of any OBM-generated drill cuttings in a tank, cuttings containment area, or pile shall be as low as practicable to prevent accumulation of liquids greater than de minimis amounts. The operator has indicated that 'Cuttings Disposal' will be "OFFSITE" and that the 'Cuttings Disposal Method' will be "COMMERCIAL DISPOSAL" (as shown in the 'DRILLING WASTE MANAGEMENT PROGRAM SECTION' of the Form 2A). All liners associated with oil-based drilling mud and OBM-generated drill cuttings must be disposed of offsite per CDPHE rules and regulations. Any changes to drill cuttings management and disposal at this location will require submittal (via a Form 4 Sundry Notice) and approval of a Waste Management Plan detailing the changes (specifying cuttings characterization methods, cuttings management, amendment, and onsite disposal location[s]).</p> <p>The moisture content of water/bentonite-based mud (WBM) generated cuttings during drilling of the surface casing intervals, that will be managed onsite, shall be kept as low as practicable to prevent accumulation of liquids greater than de minimis amounts.</p> <p>Flowback and stimulation fluids must be sent to enclosed tanks, separators, or other containment/filtering equipment before the fluids can be placed into any pipeline storage vessel, or other open top containment located on the well pad; or into tanker trucks for offsite disposal. No open top tanks can be used for initial flowback fluids containment. The flowback and stimulation fluid tanks, separators, or other containment/filtering equipment must be placed on the well pad in an area constructed to be sufficiently impervious to contain any spilled or released material. No additional downgradient berming is required if operator constructs a sufficiently sized perimeter berm.</p> <p>Potential odors associated with the completions process and/or with long term production operations must be controlled/mitigated.</p> <p>Operator shall follow all requirements of COGCC's current policy - NOTICE TO OPERATORS, Rule 912. VENTING OR FLARING PRODUCED NATURAL GAS – STATEWIDE, dated January 12, 2016; and to Rule 912. VENTING OR FLARING NATURAL GAS. a. thru e. in regards to venting and flaring.</p>

Operator shall pressure test pipelines (flowlines from wellheads to separators to tanks; pipelines from onsite separators to offsite storage tanks, and any temporary surface lines used for hydraulic stimulation and/or flowback operations) in accordance with Rule 1101.e.(1) prior to putting into initial service any temporary surface or permanent buried pipelines and following any reconfiguration of the pipeline network, and tested annually, unless agreed to by both parties that the flowlines can be managed under an approved COGCC variance.

### **Best Management Practices**

<b>No</b>	<b>BMP/COA Type</b>	<b>Description</b>
1	Planning	Remove only the minimum amount of vegetation necessary for the construction of roads and facilities. Conserve topsoil during excavation and reuse as cover on disturbed areas to facilitate regrowth of vegetation. No construction or routine maintenance activities will be performed during periods when the soil is too wet to adequately support construction equipment.
2	General Housekeeping	Keep well site location, road and pipeline easement free of noxious weeds, litter and debris. Spray for noxious weeds and implement dust control, as needed. Operator will not permit the release or discharge of any toxic or hazardous chemicals or wastes on owner's land.
3	Wildlife	<p>1. The operator and its contractors agree to restrict production-phase well site visitations to portions of the day between 9:00 a.m. and 4:00 p.m. during the leking, nesting and early brood rearing seasons (March 1 to June 30) within 4.0 miles of a lek.</p> <p>2. The operator agrees to make use of tanks and other facilities designed such that they do not provide perches or nest substrates for raptors, crows and ravens.</p> <p>3. The operator agrees to reclaim/restore greater sage-grouse habitats with native shrubs, grasses and forbs identified by CPW that contribute to optimal greater sage-grouse habitat and other wildlife appropriate to the ecological site.</p> <p>4. The operator agrees to preclude the use of aggressive non-native grasses in greater sage-grouse habitat reclamation.</p>
4	Storm Water/Erosion Control	Implement and maintain BMPs to control stormwater runoff in a manner that minimizes erosion, transport or sediment offsite, and site degradation.
5	Drilling/Completion Operations	A closed-loop drilling mud system will be used to preclude the use of an earthen reserve pit when available. Light sources will likewise be directed downwards and away from occupied structures, where possible.

Total: 5 comment(s)

### **Attachment Check List**

<b>Att Doc Num</b>	<b>Name</b>
2108195	CPW CORRESPONDENCE and BMPs
2108196	CORRESPONDENCE
2168275	MULTI-WELL PLAN
401330286	FORM 2A SUBMITTED
401330318	ACCESS ROAD MAP
401330319	CONST. LAYOUT DRAWINGS
401330320	HYDROLOGY MAP
401330322	LOCATION DRAWING
401330324	REFERENCE AREA MAP
401330539	REFERENCE AREA PICTURES
401330541	LOCATION PICTURES
401330861	SURFACE AGRMT/SURETY
401332198	NRCS MAP UNIT DESC

Total Attach: 13 Files

## General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final review complete.	08/30/2017
OGLA	<p>04/03/17 - onsite by COGCC, BLM, CPW;</p> <p>08/02/17 - passed by CPW with operator submitted and operator agreed to (07-31-17) wildlife BMPs acceptable;</p> <p>08/29/17 - Initiated / Completed OGLA Form 2A review by Dave Kubeczko;</p> <p>08/29/17 - sent email to operator indicating that the following COAs will be placed on the Form 2A - notification, fluid containment and spill/release BMPs, sediment and dust control access road, cuttings containment and management, odor control, flowback to tanks only, adherence to flaring and venting policy, as-built drawing, and pipeline testing;</p> <p>revised: Date planned to commence construction: from 08/01/2017 to 09/04/2017 and Estimated date that interim reclamation will begin: from 02/01/2018 to 03/04/2018;</p> <p>corrected 'LOCATION IDENTIFICATION' Existing Ground Elevation from 8250' to 8251' based on survey data on the Multi-Well Plan attachment;</p> <p>08/29/17 - passed OGLA Form 2A review by Dave Kubeczko with notification, fluid containment and spill/release BMPs, sediment and dust control access road, cuttings containment and management, odor control, flowback to tanks only, adherence to flaring and venting policy, as-built drawing, and pipeline testing COAs.</p>	08/29/2017
Permit	Replaced multi-well plan as per operator.	08/23/2017
Permit	Preliminary review complete.	08/10/2017
DOW	<p>The operator has agreed to implement the following BMPs by email on July 31, 2017. They have also been entered into the wildlife BMP tab.</p> <ol style="list-style-type: none"> <li>1. The operator and its contractors agree to restrict production-phase well site visitations to portions of the day between 9:00 a.m. and 4:00 p.m. during the leking, nesting and early brood rearing seasons (March 1 to June 30) within 4.0 miles of a lek.</li> <li>2. The operator agrees to make use of tanks and other facilities designed such that they do not provide perches or nest substrates for raptors, crows and ravens.</li> <li>3. The operator agrees to reclaim/restore greater sage-grouse habitats with native shrubs, grasses and forbs identified by CPW that contribute to optimal greater sage-grouse habitat and other wildlife appropriate to the ecological site.</li> <li>4. The operator agrees to preclude the use of aggressive non-native grasses in greater sage-grouse habitat reclamation.</li> </ol> <p>By: Taylor Elm, Aug. 8, 2017, 16:40</p>	08/02/2017
Permit	Passed Completeness.	07/13/2017

Total: 6 comment(s)