

FORM
2A

Rev
04/18

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:

401919870

Date Received:

02/04/2019

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:

463987

Expiration Date:

04/15/2022

☒ 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: 10598

Name: SANDRIDGE EXPLORATION & PRODUCTION LLC

Address: 123 ROBERT S KERR AVE

City: OKLAHOMA CITY State: OK Zip: 73102

Contact Information

Name: Diane Overbey

Phone: (405) 429-5828

Fax: ()

email: doverbey@sandridgeenergy.com

FINANCIAL ASSURANCE

☒ Plugging and Abandonment Bond Surety ID (Rule 706): 20170015 ☐ Gas Facility Surety ID (Rule 711): _____

☐ Waste Management Surety ID (Rule 704): _____

LOCATION IDENTIFICATION

Name: PRU Alcorn Number: 0880 S10 Pad

County: JACKSON

QuarterQuarter: NWNE Section: 10 Township: 8N Range: 80W Meridian: 6 Ground Elevation: 8122

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: 625 feet FNL from North or South section line

2104 feet FEL from East or West section line

Latitude: 40.685589 Longitude: -106.357169

PDOP Reading: 1.4 Date of Measurement: 09/14/2017

Instrument Operator's Name: Greg Weimer

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>1</u>	Oil Tanks*	<u>3</u>	Condensate Tanks*	<u> </u>	Water Tanks*	<u>1</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>1</u>	Separators*	<u>1</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>1</u>	Flare*	<u>1</u>	Pigging Station*	<u> </u>

OTHER FACILITIES*

Other Facility Type

Number

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:

All offsite take away pipelines will be 8" or smaller and be made of composite pipe and will meet API standards. All location flowlines connected to the takeaway lines will be 4" or smaller and be at least schedule 40 steel lines and will meet API standards. All pipelines will be buried to a minimum of 4' below grade.

CONSTRUCTION

Date planned to commence construction: 05/01/2019

Size of disturbed area during construction in acres: 4.99

Estimated date that interim reclamation will begin: 11/01/2019

Size of location after interim reclamation in acres: 1.79

Estimated post-construction ground elevation: 8122

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?

Reuse Facility ID: or Document Number:

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

SURFACE & MINERALS & RIGHT TO CONSTRUCT

Name: Marvin Alcorn

Phone: _____

Address: PO Box 1165

Fax: _____

Address: _____

Email: _____

City: Walden State: CO Zip: 80480

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: oil and gas lease

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

Date of Rule 306 surface owner consultation _____

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:	1580 Feet	1486 Feet
Building Unit:	1719 Feet	1585 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	879 Feet	636 Feet
Above Ground Utility:	595 Feet	332 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	625 Feet	355 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

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: _____

- 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.

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 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: Sp - Spicerton sandy loam

NRCS Map Unit Name: _____

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: 09/14/2017

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: 183 Feet

water well: 1555 Feet

Estimated depth to ground water at Oil and Gas Location 32 Feet

Basis for depth to groundwater and sensitive area determination:

Location is sensitive due to distance to stream located to the north.
Depth to groundwater taken from permit #161500 located to the south of the location.

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 _____

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

Natural Gas Production and Management

- Sandridge flares (enclosed combustor) each well's produced gas in our acreage in Jackson County. As per COGCC rule allows, SandRidge flares its produced gas during drilling, completions, and flowback operations of an oil and gas well. During flowback SandRidge captures a gas sample, submits that lab data as an attachment to a Form 4 request for continued flaring (enclosed combustor) during production of the well into permanent facilities until SandRidge can construct a pipeline to market or another process to sell produced gas. These Form 4's are approved by engineering staff / supervisors with the COGCC. SandRidge also permits these gas emissions with the CDPHE. Our CDPHE permits note a required 98% destruction efficiency for our enclosed combustors. Our combustors are tested yearly by a third party and verified by CDPHE to run at a destruction rate over the required 98%.
- SandRidge is working with a third party (Advantage Midstream) who is constructing two different gas processing equipment (GTL and MRU) to buy and sell produced gas from our wells instead of flaring / combusting. The first two units are currently being constructed south of the Bighorn CTB and should be operational by January 2019. These two units should greatly reduce emissions from wells that produce into the Bighorn CTB.
- SandRidge is also working to find a feasible pipeline route out of our acreage in Jackson County to market. This action is a multi-year process to identify, buy ROW, permit ROW, construct and then begin operations.

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

Signed: _____ Date: 02/04/2019 Email: regulatory@ascentgeomatics.com

Print Name: Ann Feldman Title: Regulatory Manager

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: 4/16/2019

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.

COA Type	Description
	<p>Planning: The following condition of approval (COA) will apply:</p> <ul style="list-style-type: none"> •Provide Notices as described in the most current version of the Northwest Notification Policy.
	<p>Drilling/Completions: The following conditions of approval (COAs) will apply:</p> <ul style="list-style-type: none"> •A closed loop system must be implemented during drilling (as indicated on the Form 2 and Form 2A). •The moisture content of all drill cuttings managed onsite shall be kept as low as practicable to prevent accumulation of liquids greater than de minimis amounts. •All Oil Based Mud (OBM)-generated cuttings must be segregated from Water/Bentonite Based Mud (WBM)-generated cuttings and managed separately on the well pad. All OBM-generated drill cuttings must be kept in tanks or containers, or placed on a lined and bermed portion of the well pad prior to disposition. •The trucks used for offsite disposal of OBM-generated drill cuttings must have a liner and the operator must implement measures (covers, misting, etc.) to reduce dust and PM emissions during transport from the well site to the commercial disposal facility. •Flowback and stimulation fluids must be sent to enclosed tanks, separators, or other containment or filtering equipment before the fluids can be placed into any pipeline, storage vessel, or into tanker trucks for offsite disposal. No open top tanks can be used for initial flowback fluids containment. Secondary containment for flowback storage tanks shall meet the requirements of Rule 906.d.(1).

Best Management Practices

No	BMP/COA Type	Description
1	General Housekeeping	Keep well site location, road and pipeline easement free of noxious weeds, litter and debris.
2	Wildlife	The operator agrees to use hospital-grade mufflers on production equipment including: compressors, pump jacks, or other motors necessary to run operations at the site. Mufflers will be pointed upward to dissipate potential vibration .(Not applicable for any equipment that will be enclosed to mitigate noise.)
3	Wildlife	The operator agrees to utilize combustion chambers or enclosed flaring devices to eliminate open flares at this location.
4	Material Handling and Spill Prevention	All cuttings generated during drilling with oil based mud (OBM) must be kept in tanks or containers or placed on a lined and bermed portion of the well pad prior to disposition. The moisture content of all cuttings managed onsite or transported offsite shall be kept as low as practicable to prevent accumulation of liquids greater than the minimum amounts. Flowback and stimulation fluids must be sent to enclosed tanks, separators, or other containment or 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. Secondary containment for flowback storage tanks shall meet the requirements of Rule 906.d.(1).
5	Construction	No construction or routine maintenance activities will be performed during periods when the soil is too wet to adequately support construction equipment.
6	Construction	Light sources will be directed downwards and away from occupied structures.
7	Emissions mitigation	Operator shall comply with COGCC's current NOTICE TO OPERATORS: Rule 912. VENTING OR FLARING PRODUCED NATURAL GAS – STATEWIDE.
8	CPW-Wildlife - Minimization-GREATER SAGE-GROUSE	The operator agrees to utilize combustion chambers or enclosed flaring devices to eliminate open flares at this location.
9	CPW-Wildlife - Minimization-GREATER SAGE-GROUSE	The operator agrees to use hospital-grade mufflers on production equipment including: compressors, pump jacks, or other motors necessary to run operations at the site. Mufflers will be pointed upward to dissipate potential vibration. (Not applicable for any equipment that will be enclosed to mitigate noise.)
10	CPW-Wildlife - Minimization-GREATER SAGE-GROUSE	If oil and gas operations must occur (with documented justification) within CPW-identified greater sage grouse winter habitat, the operator agrees to conduct construction, drilling and completion activities outside the period between December 1 and March 15

Total: 10 comment(s)

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
401919870	FORM 2A SUBMITTED
401920264	NRCS MAP UNIT DESC
401920283	LOCATION DRAWING
401920284	ACCESS ROAD MAP
401920287	CONST. LAYOUT DRAWINGS
401920293	HYDROLOGY MAP
401920305	LOCATION PICTURES
401920309	FACILITY LAYOUT DRAWING
401920312	REFERENCE AREA MAP
401920313	REFERENCE AREA PICTURES
401920316	DRILLING PLAN

Total Attach: 11 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
OGLA	<p>02/19/2019 - location falls within mapped 'Sensitive Wildlife Habitat' area (greater sage grouse production, pronghorn winter concentration, and a greater sage grouse LEK approximately 3940' to the east-southeast [0.75 miles from the center]), therefore a CPW wildlife consultation is required; passed by CPW with two (2) operator submitted best management practices (placed on the wildlife BMP tab by CPW), and due to concerns associated with impacts to nearby wintering areas for greater sage-grouse and big game, a third BMP for winter timing restriction (construction, drilling and completion activities outside the period between December 1 and March 15) was added to the wildlife tab by CPW;</p> <p>03/06/2019 - initiated / completed OGLA Form 2A review by Dave Kubeczko; placed the following COAs on the Form 2A - Northwest Notification Policy notification, cuttings disposal management, and flowback to tanks; added information concerning proposed management of gas at this and other locations to the 'Operator Comments and Submittal' section of the Form 2A;</p> <p>03/21/2019 - onsite by COGCC and operator;</p> <p>03/22/2019 - passed OGLA Form 2A review by Dave Kubeczko; with Northwest Notification Policy notification, cuttings disposal management, and flowback to tanks COAs.</p>	03/01/2019
DOW	<p>This Form 2A application is for a new pad located within greater sage-grouse production and winter range habitats, and pronghorn antelope winter range SWH. The operator supplied two best management practices which have been transferred to the wildlife BMP tab by CPW. Additionally, due to concerns associated with impacts to nearby wintering areas for greater sage-grouse and big game, CPW has asked the operator for concurrence on a winter timing restriction BMP. The operator has agreed by email (supplied to COGCC OGLA on 2/19/2019) to the following additional BMP, which has been added to the wildlife tab by CPW.</p> <p>1. If oil and gas operations must occur (with documented justification) within CPW-identified greater sage grouse winter habitat, the operator agrees to conduct construction, drilling and completion activities outside the period between December 1 and March 15.</p> <p>Taylor Elm, February 19, 2019, 11:39 a.m.</p>	02/19/2019
Permit	Passed completeness.	02/08/2019

Total: 3 comment(s)