

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:

401101898

Date Received:

08/31/2016

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:

**449274**

Expiration Date:

**02/15/2020**

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: Spence Laird

Phone: (405) 4296518

Fax: ( )

email: slaird@sandridgeenergy.com

RECLAMATION FINANCIAL ASSURANCE

- Plugging and Abandonment Bond Surety ID: 20160010     Gas Facility Surety ID: \_\_\_\_\_
- Waste Management Surety ID: \_\_\_\_\_

LOCATION IDENTIFICATION

Name: Rabbit Ears 0681    Number: 23

County: JACKSON

Quarter: SWNE    Section: 23    Township: 6N    Range: 81W    Meridian: 6    Ground Elevation: 8308

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: 1720 feet FNL from North or South section line

2246 feet FEL from East or West section line

Latitude: 40.476982    Longitude: -106.454006

PDOP Reading: 1.2    Date of Measurement: 03/20/2016

Instrument Operator's Name: ADL



## 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: VanValkenburg Cattle Co., Phone: 970-723-4518

Address: 12353 HWY 14 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: Surface Use Agreement

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): closed gravel pit; new gravel pit being mined

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): closed gravel pit; new gravel pit being mined

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:                         | 1737 Feet | 1585 Feet                |
| Building Unit:                    | 1737 Feet | 1585 Feet                |
| High Occupancy Building Unit:     | 5280 Feet | 5280 Feet                |
| Designated Outside Activity Area: | 5280 Feet | 5280 Feet                |
| Public Road:                      | 965 Feet  | 781 Feet                 |
| Above Ground Utility:             | 1136 Feet | 952 Feet                 |
| Railroad:                         | 5280 Feet | 5280 Feet                |
| Property Line:                    | 950 Feet  | 814 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: Bk - Blackwell loam.  
 NRCS Map Unit Name: CyF - Cryorthents, steep.  
 NRCS Map Unit Name: Ra - Randman sandy loam.

**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: This location is to be constructed in a predisturbed area that is a retired gravel pit and hay stacking lot. The noted species per NRCS are: Nebraska sedge, perennial forbs, perennial grasses, smallwing sedge, shrubs, weatgrass, hairgrass

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): Nebraska sedge, perennial forbs, perennial grasses, smallwing sedge, shrubs, weatgrass, hairgrass

**WATER RESOURCES**

Is this a sensitive area:  No  Yes

Distance to nearest

downgradient surface water feature: 460 Feet

water well: 1699 Feet

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

Basis for depth to groundwater and sensitive area determination:

Based on area water well information for three wells within 2800'.

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: No

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

**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

This location/well pad is located on private surface and the wellbore produces both fee/private minerals and BLM minerals. A BLM APD has been submitted to the BLM and an onsite visit has taken place with the BLM.

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

Signed: \_\_\_\_\_ Date: 08/31/2016 Email: slaird@sandridgeenergy.com

Print Name: Spence Laird Title: Regulatory Supervisor

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: Matthew Lee Director of COGCC Date: 2/16/2017

**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; 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.

Water Well Groundwater Testing: In addition to the three groundwater sampling events required in Rule 609. STATEWIDE GROUNDWATER BASELINE SAMPLING AND MONITORING (initial sampling conducted within 12 months prior to setting conductor pipe in a well or the first well on a multi-well site; the first subsequent sampling event conducted at the same locations between 6 and 12 months; with a second subsequent sampling event at the same locations conducted between 60 and 72 months following completion of the well or the last well on a multi-well site), operator shall conduct two additional groundwater sampling events; one during drilling of the well(s) and one within 3 months of completion of the well(s). The groundwater sampling events shall be conducted at the following three (3) stock/domestic/household water wells that are located within approximately one-half mile of the proposed oil and gas location: (1) Permit No. 91638-Van Valkenburg, William J; stock water well; TD - 100' bgs; SWL - 50' bgs; Pumping Rate - 5 gpm; located approximately 1699" to the E-SE (upgradient); (2) Permit No. 105771-Maxwell, Max R & Jean E; domestic water well; TD - 102' bgs; Screened/Perforated Interval - 80' to 102' bgs; SWL - 70' bgs; Pumping Rate - 15 gpm; located approximately 2428" to the S (upgradient); and (3) Permit No. 72176-Valkenburg, William J; household water well; TD - 60' bgs; Screened/Perforated Interval - 50' to 60' bgs; SWL - 12' bgs; Pumping Rate - 15 gpm; located approximately 2926" to the NW-W (downgradient).

The groundwater sample locations shall be surveyed in accordance with Rule 215. Sampling and analysis shall be conducted in conformance with Rule 609. STATEWIDE GROUNDWATER BASELINE SAMPLING AND MONITORING. Additional test(s) may be required if changes in water quality are identified during subsequent/follow-up testing. The Director may require further water well sampling at any time in response to complaints from water well owners. Copies of all test results described above shall be provided to the Director and the landowner where the water quality testing well is located within three (3) months of collecting the samples used for the test. The analytical data and surveyed well locations shall also be submitted to the Director in an electronic data deliverable format. Documented refusal to grant access by well owner or surface owner shall not constitute a violation of this COA.

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 (i.e., best management practices [BMPs] associated with fluid containment/control as well as stormwater management for the control of run-on and run-off) sufficiently protective of nearby surface water. Any berm constructed at the well pad location will be stabilized, inspected at regular intervals as required by CDPHE (at least every 14 days and after precipitation events), and maintained in good condition.

The design/build of any perimeter berm or fluid management structures shall be sized, constructed, and compacted sufficiently to contain and/or manage potential fluid releases during operations in a manner that prevents or controls potential sedimentation and scouring on adjacent lands and drainages. Such design/build of perimeter berms or fluid management structures may include, but are not limited to the following: on location berms; diversion ditches; enhanced vegetation; or other design features necessary to achieve the goal of protecting adjacent lands and drainages from potential sedimentation and scouring.

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.

Strategically apply fugitive dust control measures, including encouraging established speed limits on private roads, to reduce fugitive dust and coating of vegetation and deposition in water sources.

Berms or other containment devices shall be constructed to be sufficiently impervious (corrugated steel with poly liner) to contain any spilled or released material around permanent oil and/or produced water storage tanks.

If oil and produced water storage tanks are not 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.

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]).

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. After drilling and completion operations have been completed, any of the WBM drill cuttings that will remain on the well pad location (cuttings management area, the cut portion of the pad, cuttings trench, dry cuttings drilling pit), must meet the applicable standards of Table 910-1. No offsite disposal of cuttings to another oil and gas location shall occur without prior approval of a Waste Management Plan (submitted via a Form 4 Sundry Notice) specifying disposal location and waste characterization method. Operator has indicated that commercial disposal of cuttings will be the method of disposal for all drill cuttings.

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.

Potential odors associated with the completions process and/or with long term production operations must be controlled/mitigated.

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.

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

| No | BMP/COA Type                | Description  |
|----|-----------------------------|--|
| 1  | Planning                    | <p>604.c.(2).A. Noise - SandRidge constructs all production equipment /facilities to be no louder than 75 dbs off the pad. Lastly, Monthly AVO (Audio, Visual &amp; Olfactory) inspections will be implemented.</p> <p>604.c.(2).B. Closed Loop Drilling Systems - Pit Restrictions. - SandRidge always only uses Closed loop drilling systems with enclosed steel pits.</p> <p>604.c.(2).C. Green Completions - Emission Control Systems. - Flash gas and breathing losses from all production tanks are incinerated within an enclosed combustor rated to 95% or greater destruction efficiency.</p> <p>604.c.(2).F. Leak Detection Plan - SandRidge contracts a licensed and bonded Environmental company to conduct reoccurring leak detection and repair (LDAR) inspections at all applicable facilities using an infrared camera. Inspections are done on a regular basis as per the requirements and inspection schedule listed in Colorado Regulation 7 Section XVII.F. Individual facility emissions have been evaluated to determine the appropriate inspection frequency. In addition to the reoccurring infrared camera inspections, SandRidge conducts monthly audio, visual and olfactory (AVO) inspections at all facilities as per the requirements in Colorado Regulation 7 Section XVII.F.4.c Table 4. Lastly, Monthly AVO (Audio, Visual &amp; Olfactory) inspections will be implemented</p> <p>604.c.(2).G. Berm construction. SPCC. SandRidge contracts a licensed and bonded Environmental company to manage our Spill Prevention, Control &amp; Countermeasures (SPCC) plan. The plan is prepared in accordance with Code of Federal Regulations Chapter 40, Section 112.7 and 112.9 as applicable for onshore production facilities. All onshore production facilities that store 1,320 gallons of petroleum, oils, or lubricants on site in containers 55 gallons or greater are subject to these regulations. As part of the process, the SPCC plan is updated any time a new facility is built or any existing facility is modified (potential for discharge affected). SandRidge gathers this information by having personnel take measurements of the containment enclosing the stored media.</p> <p>604.c.(2).M. Fencing requirements. - Barbed-wire fences are installed around the property line along with cattle guards at each exposed entrances to prevent grazing cattle and other wildlife from entering location.</p> <p>604.c.(2).N. Control of fire hazards. - Tank battery equipment (vessels, tanks, heaters, etc.) is spaced with minimum distance requirements per 605(a) Series COGCC guidance. All instrumentation and electronics within enclosures is Class I/Div. I or intrinsically safe.</p> <p>604.c.(2).P. Removal of surface trash. - Caged trash trailers will be used on location for disposing of trash. Routine dumping of trailer will occur.</p> <p>604.c.(2).R. Tank specifications. - Production tanks are foam insulated steel and coated internally for produced water storage built to appropriate API and NFPA Code 30 standards. Tanks are grounded via steel lugs to a grounding grid to discharge static buildup. Thief hatches are weighted Enardo-type with oil catchpans ("slobber boxes") to alleviate dripping during tank gauging operations. Tanks are appropriately marked with NFPA chemical labels.</p> <p>604.c.(2).S. Access roads. - Posted speed limits (10 mph) on all lease roads and pads to reduce dust. Primary access roads are improved with road base per DOT technical specification standards to alleviate erosion/rutting during periods of wet weather.</p> <p>604.c.(2).W. Site-specific measures. - Pre-disturbed land (re-purposed gravel pit) was selected for pad construction to minimize surface disturbance impact to the area.</p> |
| 2  | Wildlife                    | SandRidge will utilize a high pressure combustor instead of open flaring.  |
| 3  | Storm Water/Erosion Control | Sandridge will implement erosion and storm water control measures to protect soils, ditches and nearby hay meadows.  |

Total: 3 comment(s)

## Attachment Check List

| <u>Att Doc Num</u> | <u>Name</u>                                  |
|--------------------|--|
| 2108042            | NRCS MAP UNIT DESC                           |
| 2108043            | MULTI-WELL PLAN                              |
| 2108044            | HYDROLOGY MAP                                |
| 2108045            | ACCESS ROAD MAP                              |
| 2108046            | SURVEYOR PACKAGE                             |
| 2108047            | WATER WELL INFORMATION                       |
| 2108054            | RIG LAYOUT DRAWING                           |
| 2108055            | APPROVED FEDERAL APD, RABBIT EARS 0681 1-23H |
| 2108056            | APPROVED FEDERAL APD, RABBIT EARS 0681 2-23H |
| 2108057            | APPROVED FEDERAL APD, RABBIT EARS 0681 3-23H |
| 2108058            | RULE 604.c.(2). MITIGATION MEASURE BMPs      |
| 2108059            | CORRESPONDENCE                               |
| 401101898          | FORM 2A SUBMITTED                            |
| 401102080          | FACILITY LAYOUT DRAWING                      |
| 401102082          | LOCATION DRAWING                             |
| 401102083          | LOCATION PICTURES                            |
| 401102088          | CONST. LAYOUT DRAWINGS                       |
| 401108295          | SURFACE AGRMT/SURETY                         |

Total Attach: 18 Files

### General Comments

| <u>User Group</u> | <u>Comment</u>         | <u>Comment Date</u> |
|-------------------|------------------------|---------------------|
| Permit            | Passes final review.   | 02/16/2017          |
| Permit            | Passes initial review. | 01/31/2017          |

|             |  |                   |
|-------------|--|-------------------|
| <p>OGLA</p> | <p>Initiated OGLA Form 2A review on 01-20-17 by Dave Kubeczko; Completed OGLA Form 2A review on 01-22-17 by Dave Kubeczko; requested acknowledgement of notification, fluid containment and spill/release BMPs, sediment and dust control access road, cuttings containment and management, odor control, tank berming, flowback to tanks only, adherence to flaring and venting policy, as-built drawing, additional groundwater sampling, and pipeline testing COAs from operator on 01-22-17; requested Rule 604.c.(2) nuisance mitigation measure BMPs from operator on 01-22-17; received concurrence of COAs from operator on 01-23-17; received Rule 604.c.(2) nuisance mitigation measure BMPs from operator on 01-25-17; received approved Federal APDs from operator on 01-25-17; revised Consultation Section to indicate that the location does not fall within any sensitive wildlife habitat (SWH) areas; the SWH boxed has been unmarked; revised: Date planned to commence construction: from 12/12/2016 to 01/30/2017, and then to 02/20/2017; corrected 'LOCATION IDENTIFICATION' Existing Ground Elevation from 8313' to 8308' based on survey data on the Construction Layout Drawings attachment; corrected distances from Wellhead to Building from 1738' to 1737'; from Wellhead to Building Unit from 1738' to 1737'; and Wellhead to Property Line from 996' to 950'; based on COGCC's review of the survey data on the Location Drawing attachment and review of COGCC's Online GIS Map, 2015 Aerial Photo layer; although location does not fall within any sensitive wildlife habitat (SWH) areas; the SWH box was marked by the operator and CPW was given a consultation task - passed by CPW on 09-29-16 with operator submitted wildlife BMPs acceptable - including enclosed combustor and no visible flaring - in addition, CPW did not recommend any additional wildlife BMPs since the location is within a previously disturbed site and is adjacent to an active gravel mining operation; public comment received via by COGCC via email on 09-28-16 has been addressed (after each individual comment) on 01-22-17 and placed as a separate comment (below) on the Form 2A; passed OGLA Form 2A review on 02-15-17 by Dave Kubeczko; notification, fluid containment and spill/release BMPs, sediment and dust control access road, cuttings containment and management, odor control, tank berming, flowback to tanks only, adherence to flaring and venting policy, as-built drawing, additional groundwater sampling, and pipeline testing COAs.</p> | <p>01/22/2017</p> |
| <p>OGLA</p> | <p>COGCC Response, dated 01-22-17, to Public Comment submitted on Form 2A #401101898 on 09-28-16 (posted to the Form 2A on 09-29-16)_ SandRidge Exploration &amp; Production LLC (SandRidge), Rabbit Ears 0681 23 Pad:</p> <p>Public comment sent to J. Noto via email because a system error prevented direct entry by the citizen -Comment received on 9/28/16 -</p> <p>Dear John,</p> <p>This is my comment for the well going into the Rabbit Ears Unit 068123:<br/> DOC. ID: 401101898<br/> OPERATOR: SANDRIDGE EXPLORATION<br/> USER: LAIRDS</p> <p>PUBLIC COMMENT 1a: We live near this proposed well and wish to make sure that it does not endanger our home. We have a very good water well and request that the state test our water at least every 6 months (or more often if an incident of concern should occur) for the life of the well(s). Our well was baseline tested in 2015 by the state and they have the report on file.</p> <p>COGCC RESPONSE TO PUBLIC COMMENT 1a: COGCC collected a groundwater sample from this water well on April 1, 2015 (04-01-2015) and analyzed for pH; alkalinity; specific conductance; dissolved gases (methane, ethane, propane), major cations/anions (chloride, fluoride, sulfate, sodium); total dissolved solids (TDS); benzene, toluene, ethylbenzene, total xylenes (BTEX); gasoline range organics (GRO); diesel range organics (DRO); total petroleum hydrocarbons (TPH); semi-volatile organic compounds (SVOCs), polyaromatic hydrocarbons (PAH's -including benzo(a)pyrene]); metals (arsenic, barium, calcium, chromium, iron, magnesium, selenium); and bacterial activity (iron-related bacteria [IRB], sulfate-reducing bacteria [SRB], and slime forming bacteria [SLYM]).</p> <p>COGCC sent the sampling and analytical results to the water well owner on May 15, 2015. There was no indication of any oil and gas related impacts to this water well. The water sample from the well did not contain dissolved gases, any volatile or semi-volatile organic compounds (no benzene, toluene, ethyl benzene, or total</p>  | <p>01/22/2017</p> |

|     |  |            |
|-----|--|------------|
|     | <p>xylenes were detected), which are often associated with contamination from petroleum hydrocarbons. TPH, another method used to indicate impacts from oil and gas, was not detected in the sample. The concentration of TDS (450 mg/l) was below the drinking water standards established by the Water Quality Control Commission of the CDPHE. No bacteria were present.</p> <p>COGCC's Rule 609. STATEWIDE GROUNDWATER BASELINE SAMPLING AND MONITORING - requires operators to collect samples from water wells within one-half mile of the proposed oil and gas location. The rule requires three sampling events ((initial sampling conducted within 12 months prior to setting conductor pipe in a well or the first well on a multi-well site; the first subsequent sampling event conducted at the same locations between 6 and 12 months; with a second subsequent sampling event at the same locations conducted between 60 and 72 months following completion of the well or the last well on a multi-well site). In addition, COGCC is requiring the operator to conduct two additional groundwater sampling events; one during drilling of the well(s) and one within 3 months of completion of the well(s). The groundwater sampling events shall be conducted at three (3) stock/domestic/household water wells (including your water well) that are located within approximately one-half mile of this proposed oil and gas location. COGCC will review all sample results. Additional test(s) may be required if changes in water quality are identified during subsequent/follow-up testing; and COGCC may require further water well sampling at any time in response to complaints from water well owners.</p> <p>PUBLIC COMMENT 1b: We have concerns about flaring, venting, dust, diesel fumes, noise, light and spills on and about the site. We request constant monitoring systems on the site so that any problems that occur are taken care of before they become a problem.</p> <p>COGCC RESPONSE TO PUBLIC COMMENT 1b: COGCC does not, and will not, require operators to conduct continuous air monitoring. Operators conduct daily visits/inspections at all producing well pads, and will be able to respond to any potential releases or impacts and are required to report releases and impacts to COGCC as outlined in the rules. COGCC requires all operators to review policies and rules concerning about venting and flaring (including the NOTICE TO OPERATORS, Rule 912. VENTING OR FLARING PRODUCED NATURAL GAS - STATEWIDE, January 12, 2016; and Rule 912. VENTING OR FLARING NATURAL GAS). COGCC has requested and received site-specific BMPs addressing nuisance issues listed in your comment (including dust, diesel fumes, noise, light and spills).</p> <p>PUBLIC COMMENT 1c: We're told that the flaring can be suppressed. The toxins put downhole in the fracking operations are bound to come back up in the gases being flared or vented and in the water being pumped. The monitors should be testing for all the toxic chemicals used in the fracking process, as well as the hydrogen sulfide, methane and other common toxic gases and chemicals involved in gas and oil operations.</p> <p>COGCC RESPONSE TO PUBLIC COMMENT 1c: The operator is required to use an enclosed VOC combustor that has greater than 98 percent destruction efficiency; no uncontrolled venting or visible flaring is allowed. As listed in the comment response above for groundwater testing, constituents (dissolved gases, VOCs, SVOCs, TPH, metals, and TDS) that are often associated with contamination from petroleum hydrocarbons will be analyzed for. No hydrogen sulfide (which is continuously monitored for by operators during drilling and completions) has been reported in oil wells in this area.</p> |            |
| DOW | <p>This permit is for a new pad location within greater sage-grouse production area sensitive wildlife habitat (SWH). CPW staff conducted an onsite visit with the operator on June 8, 2016. The location is within a previously disturbed site and will be adjacent to an active gravel mining operation. Due to the close proximity to Highway 14 and the existing disturbance at this site, CPW does not recommend any additional wildlife BMPs to what the operator has provided on their Form2A permit application.</p> <p>By: Taylor Elm, 9-29-2016, 12:09 p.m.</p>  | 09/29/2016 |

|        |  |            |
|--------|--|------------|
| Agency | <p>Public comment sent to J. Noto via email because a system error prevented direct entry by the citizen -Comment received on 9/28/16 -</p> <p>Dear John,</p> <p>This is my comment for the well going into the Rabbit Ears Unit 068123:<br/> DOC. ID: 401101898<br/> OPERATOR: SANDRIDGE EXPLORATION<br/> USER: LAIRDS</p> <p>We live near this proposed well and wish to make sure that it does not endanger our home. We have a very good water well and request that the state test our water at least every 6 months (or more often if an incident of concern should occur) for the life of the well(s). Our well was baseline tested in 2015 by the state and they have the report on file.</p> <p>We have concerns about flaring, venting, dust, diesel fumes, noise, light and spills on and about the site. We request constant monitoring systems on the site so that any problems that occur are taken care of before they become a problem.</p> <p>We're told that the flaring can be suppressed. The toxins put downhole in the fracking operations are bound to come back up in the gases being flared or vented and in the water being pumped. The monitors should be testing for all the toxic chemicals used in the fracking process, as well as the hydrogen sulfide, methane and other common toxic gases and chemicals involved in gas and oil operations.</p> | 09/29/2016 |
| Permit | Passes completeness.   | 09/22/2016 |
| Permit | Returned to draft.<br>1.) The Surface Use Agreement is not signed.<br>2.) The Hydrology Map is not named correctly.<br>3.) The Surface & Minerals tab does not match the related Form 2 permits.<br>Are the BMP's missing?   | 09/08/2016 |

Total: 8 comment(s)