

FORM  
2A

Rev  
04/01

State of Colorado  
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80205 Phone: (303) 894-2100 Fax: (303) 894-2109



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Document Number:

400130207

**Oil and Gas Location Assessment**

☐ New Location ☒ Amend Existing Location Location#: 335540

Submit original plus one copy. This form is to be submitted to the COGCC prior to any ground disturbance activity associated with oil and gas development operations. This Assessment may be approved as a standalone application or submitted as an informational report accompanying an Application for Permit-To-Drill, Form 2. Approval of this 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. This form may serve as notice to land owners and other interested parties, please see the COGCC web site at <http://colorado.gov/cogcc/> for all accompanying information pertinent to this Oil and Gas Location Assessment.

Location ID:

**335540**

Expiration Date:

**03/15/2014**

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

**1. 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.

**2. Operator**

Operator Number: 10079

Name: ANTERO RESOURCES PICEANCE CORPORATION

Address: 1625 17TH ST STE 300

City: DENVER State: CO Zip: 80202

**3. Contact Information**

Name: Hannah Knopping

Phone: (303) 357-6412

Fax: (303) 357-7315

email: hknopping@anteroresources.com

**4. Location Identification:**

Name: Burckle Number: A Pad

County: GARFIELD

QuarterQuarter: NWSE Section: 16 Township: 6S Range: 92W Meridian: 6 Ground Elevation: 5560

Define a single point as a location reference for the facility location. This point should be used as the point of measurement in the drawings to be submitted with this application. When the location is to be used as a well site then the point shall be a well location.

Footage at surface: 2047 feet FSL, from North or South section line, and 2163 feet FEL, from East or West section line.

Latitude: 39.525250 Longitude: -107.670145 PDOP Reading: 2.6 Date of Measurement: 01/04/2011

Instrument Operator's Name: Scott E. Aibner

**5. Facilities (Indicate the number of each type of oil and gas facility planned on location):**

Special Purpose Pits: <input type="text"/>	Drilling Pits: <input type="text"/>	Wells: <input type="text" value="14"/>	Production Pits: <input type="text"/>	Dehydrator Units: <input type="text"/>
Condensate Tanks: <input type="text" value="4"/>	Water Tanks: <input type="text" value="4"/>	Separators: <input type="text" value="4"/>	Electric Motors: <input type="text"/>	Multi-Well Pits: <input type="text"/>
Gas or Diesel Motors: <input type="text"/>	Cavity Pumps: <input type="text"/>	LACT Unit: <input type="text"/>	Pump Jacks: <input type="text"/>	Pigging Station: <input type="text" value="1"/>
Electric Generators: <input type="text"/>	Gas Pipeline: <input type="text" value="1"/>	Oil Pipeline: <input type="text" value="1"/>	Water Pipeline: <input type="text" value="1"/>	Flare: <input type="text"/>
Gas Compressors: <input type="text"/>	VOC Combustor: <input type="text" value="1"/>	Oil Tanks: <input type="text"/>	Fuel Tanks: <input type="text"/>	

Other: See attached list for details. Note: Gas, oil and water pipelines are planned to be constructed along the access road.

6. Construction:

Date planned to commence construction: 03/15/2011 Size of disturbed area during construction in acres: 2.50  
Estimated date that interim reclamation will begin: 01/01/2012 Size of location after interim reclamation in acres: 1.00  
Estimated post-construction ground elevation: 5560 Will a closed loop system be used for drilling fluids: Yes ☒  
Will salt sections be encountered during drilling: Yes ☐ No ☒ Is H2S anticipated? Yes ☐ No ☒  
Will salt (>15,000 ppm TDS Cl) or oil based muds be used: Yes ☐ No ☒  
Mud disposal: Offsite ☒ Onsite ☐ Method: Land Farming ☐ Land Spreading ☐ Disposal Facility ☒  
Other: Onsite, if app(See  
Comments)

7. Surface Owner:

Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
Address: \_\_\_\_\_ Fax: \_\_\_\_\_  
Address: \_\_\_\_\_ Email: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ Date of Rule 306 surface owner consultation: 11/11/2006  
Surface Owner: ☒ Fee ☐ State ☐ Federal ☐ Indian  
Mineral Owner: ☒ Fee ☐ State ☐ Federal ☐ Indian  
The surface owner is: ☐ the mineral owner ☐ committed to an oil and gas lease  
☐ is the executer of the oil and gas lease ☐ the applicant  
The right to construct the location is granted by: ☐ oil and gas lease ☒ Surface Use Agreement ☐ Right of Way  
☐ applicant is owner  
Surface damage assurance if no agreement is in place: ☐ \$2000 ☐ \$5000 ☐ Blanket Surety ID \_\_\_\_\_

8. Reclamation Financial Assurance:

☒ Well Surety ID: 20040071 ☐ Gas Facility Surety ID: \_\_\_\_\_ ☐ Waste Mgnt. Surety ID: \_\_\_\_\_

9. Cultural:

Is the location in a high density area (Rule 603.b.): Yes ☐ No ☒  
Distance, in feet, to nearest building: 625, public road: 2075, above ground utilit: 2075  
, railroad: 5280, property line: 478

10. 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

11. 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

12. Soils:

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.gov/> 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: 51: Olney Loam, 6 to 12 percent slopes

NRCS Map Unit Name: 66: Torriorthents-Camborthids, rock outcrop complex, steep

NRCS Map Unit Name: \_\_\_\_\_

### 13. 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: 12/15/2010

List individual species: Sage brush and grasses. See attached NRCS Plant Composition Report.

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): \_\_\_\_\_

### 14. Water Resources:

Rule 901.e. may require a sensitive area determination be performed. If this determination is performed the data is to be submitted with the Form 2A.

Is this a sensitive area: ☐ No ☒ Yes Was a Rule 901.e. Sensitive Areas Determination performed: ☒ No ☐ Yes

Distance (in feet) to nearest surface water: 190, water well: 100, depth to ground water: 110

Is the location in a riparian area: ☒ No ☐ Yes Was an Army Corps of Engineers Section 404 permit filed ☒ No ☐ Yes

Is the location within a Rule 317B Surface Water Supply Area buffer zone:

☒ No ☐ 0-300 ft. zone ☐ 301-500 ft. zone ☐ 501-2640 ft. 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 ☐ Yes

### 15. Comments:

This pad is built, however we are modifying it by adding an additional 2 well locations. Due to the new well locations, we have submitted the Form 2A as required by Rule 303.d.(1). #1 Consultation: Antero's Wildlife Mitigation Plan is applicable to this pad (see attached summary of Mitigation Plan included in Proposed BMP's. #2: Mud Disposal: Antero will bury onsite if disposal meets Table 910 and if there is a provision in SUA which allows for such operation. #4: The Burckle A2 well was used as the reference point for well distance measurements. #14 Water Resources: The depth to groundwater was determined by using static water level data of nearest water well (Permit #31354-MH). Our reference area is undisturbed ground immediately adjacent and to the South of our proposed well pad, as shown in the "Looking South" photo.

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

Signed: \_\_\_\_\_ Date: 02/11/2011 Email: hknopping@anteroresources.com

Print Name: Hannah Knopping Title: Permit Representative

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: \_\_\_\_\_

*David S. Neslin*

Director of COGCC

Date: 3/16/2011

**CONDITIONS OF APPROVAL, IF ANY:**

**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.**

**GENERAL SITE COAs:**

Operator must implement best management practices to contain any unintentional release of fluids, including any fluids conveyed via temporary surface pipelines.

Operator must ensure secondary containment for any volume of fluids contained at 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 stormwater management) sufficiently protective of nearby surface water. Any berm constructed at the well pad location will be stabilized, inspected at regular intervals (at least every 14 days), and maintained in good condition.

The moisture content of any drill cuttings in a cuttings pit, trench, or pile shall be as low as practicable to prevent accumulation of liquids greater than de minimis amounts. At the time of closure, the drill cuttings must also meet the applicable standards of table 910-1.

Flowback and stimulation fluids must be sent to tanks to allow the sand to settle out before the fluids can be placed into any pipeline or pit located on the well pad. The flowback and stimulation fluid tanks must be placed on the well pad in an area with additional downgradient perimeter berming. The area where flowback fluids will be stored/reused must be constructed to be sufficiently impervious to contain any spilled or released material (per Rule 604.a.(4)).

Berms or other containment devices shall be constructed in compliance with Rule 604.a.(4) around crude oil, condensate, and produced water storage tanks.

**Attachment Check List**

Att Doc Num	Name
2033643	CORRESPONDENCE
400130207	FORM 2A SUBMITTED
400130898	LOCATION DRAWING
400130899	LOCATION PICTURES
400130970	HYDROLOGY MAP
400130972	ACCESS ROAD MAP
400130973	NRCS MAP UNIT DESC
400130974	NRCS MAP UNIT DESC
400130975	CONST. LAYOUT DRAWINGS
400130977	MULTI-WELL PLAN
400130978	PROPOSED BMPs
400130985	SURFACE AGRMT/SURETY
400130986	EQUIPMENT LIST

Total Attach: 13 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
OGLA	Initiated/Completed OGLA Form 2A review on 03-07-11 by Dave Kubeczko; requested acknowledgement of fluid containment, spill/release BMPs, flowback to tanks, tank berming, no pit in fill, and cuttings low moisture content COAs from operator on 02-07-11; received acknowledgement of COAs from operator on 03-?-10; passed by CDOW on 02-16-11 with operator submitted BMPs (with permit application) and WMP acceptable; passed OGLA Form 2A review on 03-15-11 by Dave Kubeczko; fluid containment, spill/release BMPs, flowback to tanks, tank berming, no pit in fill, and cuttings low moisture content COAs.	3/7/2011 9:09:55 AM
DOW	This well pad is located within the boundary of the approved, signed Antero-CDOW Gravel Trend Wildlife Mitigation Plan. The BMPs were developed and agreed upon in consultation and development of the Wildlife Mitigation Plan. The BMPs as submitted are appropriate for the site and species affected.  by Michael Warren on Wednesday, February 16, 2011 at 4:10 P.M.	2/16/2011 4:10:20 PM

Total: 2 comment(s)

### BMP

<u>Type</u>	<u>Comment</u>
Planning	<ul style="list-style-type: none"> <li>•Directional drilling will be implemented to minimize habitat loss and habitat fragmentation</li> <li>•Remote monitoring using SCADA systems to reduce truck traffic, fugitive dust</li> <li>•Water pipeline infrastructure will be installed concurrently with the gas pipeline infrastructure where possible.</li> <li>•SPCC inspections will be conducted quarterly</li> <li>•Water used for well completions will be recycled as practicable</li> <li>•Baseline and post drilling/completion water well testing will be performed for permitted water wells within ½ mile of down-hole location</li> <li>•Annual planning meeting to be conducted with Rifle-Silt-New Castle Community</li> </ul>
General Housekeeping	Invasive Non-Native Vegetation Control <ul style="list-style-type: none"> <li>•Weed management plan will be developed and implemented to monitor and control noxious and invasive weeds</li> <li>•Noxious weed control includes three treatments per year</li> <li>•Existing weed infestations will be mapped prior to the development of each pad, access road and pipeline when practicable</li> <li>•Reclamation/revegetation will be used as a weed management tool</li> </ul>
Storm Water/Erosion Control	<ul style="list-style-type: none"> <li>•Facilities will be operated with a Water Quality Control Division (WQCD) stormwater construction permit.</li> <li>•Stormwater BMPs in accordance with the Stormwater Management Plan will be implemented in a manner that minimizes erosion, transport of sediment offsite, and site degradation.</li> <li>•Inspections will be conducted every two weeks or monthly and in accordance with WQCD General Permit to confirm that applicable BMPs are in place, maintained and functioning properly.</li> </ul>
Material Handling and Spill Prevention	<ul style="list-style-type: none"> <li>•Best management practices will be implemented to contain any unintentional releases of fluids for locations within 500 feet of surface water</li> <li>•Locations within 500 feet of surface water will ensure 110 percent secondary containment for any volume of fluids contained at a well site during drilling and completion operations</li> </ul>

Drilling/Completion Operations	<ul style="list-style-type: none"> <li>•No reserve, drill cuttings or frac/flowback pits will be constructed</li> <li>•Well pads will be constructed with perimeter berm on downslope area</li> <li>•Well pads, access roads will be graveled to reduce fugitive dust, sediment run-off</li> <li>•Above-ground facilities will be located to minimize visual effects (e.g. production tanks will be low profile tanks and painted to mitigate visual impacts.)</li> <li>•Combustor controls will be used to mitigate odors from production tanks</li> <li>•Well completions will utilize flowback completion technologies and/or flares to reduce odors from plug drillout, and venting of salable and non-salable gas</li> <li>•High level alarms will be installed on production tanks</li> <li>•Production tank containment area will be lined with plastic</li> </ul>
Wildlife	<ul style="list-style-type: none"> <li>•Mitigation Plan signed by Ron Velarde, CDOW NW Regional Manager and Kevin Kilstrom, Antero Resources VP Production, on March 24, 2010.</li> <li>•Closed loop (pitless) drilling system.</li> <li>•Participation in raptor and other birds (great blue heron) monitoring and surveying with protocol to be developed by CDOW and implemented by Antero when practicable.</li> <li>•Buried water and gas pipelines as means to reduce truck traffic.</li> <li>•Seasonal raptor RSOs for species not included in new COGCC rules will be considered where practicable.</li> <li>•Avoidance/seclusion area in the northeast corner of the CDP (Burning Mountain) unless lease expiration warrants development.</li> <li>•Restricted rig operation to less than 2 per section within the big game seclusion areas during the winter (to be determined in consultation with CDOW).</li> <li>•Maintaining a ¼ mile no surface occupancy buffer around active bald eagle nests.</li> <li>•New pad construction not to exceed 3 acres.</li> <li>•Pad density not to exceed 1 pad per 120 acres.</li> <li>•Bury all gas and water pipelines adjacent to roads whenever possible.</li> <li>•The mitigation opportunities/projects will be defined by the Mitigation Plan for each well pad.</li> <li>•The mitigation opportunities/projects will be determined cooperatively with the CDOW during the annual Antero Mitigation Plan Review.</li> <li>•CDOW Actions to Minimize Adverse Impacts to Wildlife Resources is attached to the March 22, 2010 Mitigation Plan</li> </ul>

Total: 6 comment(s)