

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



Table with 4 columns: DE, ET, OE, ES

Document Number: 400159816

Oil and Gas Location Assessment

New Location Amend Existing Location Location#: 335539

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.

Location ID: 335539 Expiration Date: 05/30/2014

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: McPherson Number: A Pad County: GARFIELD Quarter: NENW Section: 16 Township: 6S Range: 92W Meridian: 6 Ground Elevation: 5448 Define a single point as a location reference for the facility location. Footage at surface: 1044 feet FNL, from North or South section line, and 1482 feet FWL, from East or West section line. Latitude: 39.531109 Longitude: -107.675985 PDOP Reading: 2.5 Date of Measurement: 03/18/2011 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: 0 Drilling Pits: 0 Wells: 11 Production Pits: 0 Dehydrator Units: 0 Condensate Tanks: 2 Water Tanks: 4 Separators: 3 Electric Motors: 0 Multi-Well Pits: 0 Gas or Diesel Motors: 0 Cavity Pumps: 0 LACT Unit: 0 Pump Jacks: 0 Pigging Station: 1 Electric Generators: 0 Gas Pipeline: 1 Oil Pipeline: 1 Water Pipeline: 1 Flare: 0 Gas Compressors: 0 VOC Combustor: 1 Oil Tanks: 0 Fuel Tanks: 0

Other: See attached list of facilities for details. Note: Gas, oil and water pipelines are constructed along access road.

6. Construction:

Date planned to commence construction: 08/01/2011 Size of disturbed area during construction in acres: 4.00
Estimated date that interim reclamation will begin: 08/01/2012 Size of location after interim reclamation in acres: 1.76
Estimated post-construction ground elevation: 5448 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: 03/29/2007
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: 700, public road: 1044, above ground utilit: 700
, railroad: 5280, property line: 166

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 used when segregating topsoil.

IMPORTANT: SOME DATA FIELDS HAVE BEEN MODIFIED.

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: 3: Arvada Loam, 1 to 6 percent slopes

NRCS Map Unit Name: 47: Nihill Channery Loam, 6 to 25 percent slopes

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: 12/08/2010

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: 400, water well: 566, depth to ground water: 15

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 Suppl 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 well (McPherson A10). Due to the new well location, 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. #4: The proposed McPherson A10 well was used as the reference point for well distance measurements. #6 Mud Disposal: Antero will bury onsite if disposal meets Table 910 and if there is a provision in SUA which allows for such operation. #14 Water Resources: The depth to groundwater was determined by using static water level data of nearest water well with water level data (Permit #51104-F). Our reference area is undisturbed ground immediately adjacent and to the North of our proposed well pad, as shown in the "Looking North" photo.

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

Signed: _____ Date: 04/28/2011 Email: hknopping@anteroresources.com

Print Name: Hannah Knopping Title: Permit Representative

IMPORTANT: SOME DATA FIELDS HAVE BEEN MODIFIED.

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: 5/31/2011

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 or buried pipelines.

Any pit constructed to hold fluids (reserve pit, production pit, frac pit; except for flare pit, if built) must be lined, or a closed loop system (as indicated by operator on the Form 2A) must be implemented .

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
2033827	CORRESPONDENCE
400159816	FORM 2A SUBMITTED
400160223	LOCATION PICTURES
400160224	LOCATION DRAWING
400160225	HYDROLOGY MAP
400160226	ACCESS ROAD MAP
400160228	NRCS MAP UNIT DESC
400160229	OTHER
400160231	CONST. LAYOUT DRAWINGS
400160243	MULTI-WELL PLAN
400160246	PROPOSED BMPs
400160247	EQUIPMENT LIST
400160248	SURFACE AGRMT/SURETY

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 05-10-11 by Dave Kubeczko; requested acknowledgement of fluid containment, spill/release BMPs, lined pits/closed loop, moisture content cuttings, flowback to tanks, and tank berming COAs from operator on 05-10-11; received acknowledgement of COAs from operator on 05-12-11; passed by CDOW on 04-29-11 with operator BMPs and WMP acceptable; passed OGLA Form 2A review on 05-20-11 by Dave Kubeczko; fluid containment, spill/release BMPs, lined pits/closed loop, moisture content cuttings, flowback to tanks, and tank berming COAs.	5/10/2011 12:01:13 PM
Permit	From Opr-Hannah Knopping: Can you make the following corrections to the pending/"in process" McPherson A Pad Form 2A and associated Form 2's described below concerning mineral ownership? I was originally told by the Land Department that the surface owners were also mineral owners but they just advised that they misspoke. Therefore that changes a couple things on both the Form 2A. Please uncheck the following boxes after it states "the surface owner is:" the mineral owner, is the executor of oil and gas lease, and committed to an oil and gas lease. *The surface owner really is not any of those things at this location. >Please check Surface Use Agreement for the "right to construct the location". sf	5/10/2011 8:34:09 AM
DOW	This amended well pad location is within the boundary of the Antero-CDOW Wildlife Mitigation Plan. The BMPs were developed and agreed upon in consultation of the Wildlife Mitigation Plan. The BMPs as submitted by the operator are the same as those agreed to in the mitigation plan. The BMPs and COAs are appropriate for the site and species effected. by Michael Warren on Friday, April 29, 2011 at 11:40 A.M.	4/29/2011 11:41:06 AM

Total: 3 comment(s)

BMP

<u>Type</u>	<u>Comment</u>
Wildlife	<p>Wildlife Mitigation Plan Supplemental Best Management Practices Antero Rifle-Silt (Gravel Trend) Leasehold – March 24, 2010</p> <p>1. Drilling and Production No reserve, drill cuttings or frac/flowback pits will be constructed</p> <p>Well pads will be constructed with perimeter berm on downslope area</p> <p>Well pads, access roads will be graveled to reduce fugitive dust, sediment run-off</p> <p>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.)</p> <p>Combustor controls will be used to mitigate odors from production tanks</p> <p>Well completions will utilize flowback completion technologies and/or flares to reduce odors from plug drillout, and venting of salable and non-salable gas</p> <p>High level alarms will be installed on production tanks</p> <p>Production tank containment area will be lined with plastic</p> <p>2. Invasive Non-Native Vegetation Control</p> <p>Weed management plan will be developed and implemented to monitor and control noxious and invasive weeds</p> <p>Noxious weed control includes three treatments per year</p>

Wildlife	<p>Existing weed infestations will be mapped prior to the development of each pad, access road and pipeline when practicable</p> <p>Reclamation/revegetation will be used as a weed management tool</p> <p>3.Planning Infrastructure and Development Activities</p> <p>Directional drilling will be implemented to minimize habitat loss and habitat fragmentation</p> <p>Remote monitoring using SCADA systems to reduce truck traffic, fugitive dust</p> <p>Water pipeline infrastructure will be installed concurrently with the gas pipeline infrastructure where possible.</p> <p>SPCC inspections will be conducted quarterly</p> <p>Water used for well completions will be recycled as practicable</p> <p>Baseline and post drilling/completion water well testing will be performed for permitted water wells within ½ mile of down-hole location</p> <p>Annual planning meeting to be conducted with Rifle-Silt-New Castle Community</p> <p>4.Stormwater Management</p> <p>Facilities will be operated with a Water Quality Control Division (WQCD) stormwater construction permit.</p> <p>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.</p> <p>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.</p> <p>5.Public Water System Protection Section 317B(d)</p> <p>Best management practices will be implemented to contain any unintentional releases of fluids for locations within 500 feet of surface water</p> <p>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</p> <p>6.Mitigation Plan Best Management Practices</p> <p>Mitigation Plan signed by Ron Velarde, CDOW NW Regional Manager and Kevin Kilstrom, Antero Resources VP Production, on March 24, 2010.</p> <p>Closed loop (pitless) drilling system.</p> <p>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.</p> <p>Buried water and gas pipelines as means to reduce truck traffic.</p> <p>Seasonal raptor RSOs for species not included in new COGCC rules will be considered where practicable.</p> <p>Avoidance/seclusion area in the northeast corner of the CDP (Burning Mountain) unless lease expiration warrants development.</p> <p>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).</p>
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Wildlife	<p>Maintaining a ¼ mile no surface occupancy buffer around active bald eagle nests.</p> <p>New pad construction not to exceed 3 acres.</p> <p>Pad density not to exceed 1 pad per 120 acres.</p> <p>Bury all gas and water pipelines adjacent to roads whenever possible.</p> <p>The mitigation opportunities/projects will be defined by the Mitigation Plan for each well pad.</p> <p>The mitigation opportunities/projects will be determined cooperatively with the CDOW during the annual Antero Mitigation Plan Review.</p> <p>CDOW Actions to Minimize Adverse Impacts to Wildlife Resources is attached to the March 22, 2010 Mitigation Plan</p>
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Total: 1 comment(s)