

## Kubeczko, Dave

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**From:** Kubeczko, Dave  
**Sent:** Tuesday, October 19, 2010 10:05 AM  
**To:** Kubeczko, Dave  
**Subject:** FW: Antero Resources, McLin C Pad, NESE Sec 13 T6S R92W, Garfield County, Form 2A (#400077143) Review

Scan No 2033465      CORRESPONDENCE      2A#400077143

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**From:** Ashlie Mihalcin [mailto:amihalcin@anteroresources.com] **On Behalf Of** Hannah Knopping  
**Sent:** Thursday, October 07, 2010 2:41 PM  
**To:** Kubeczko, Dave  
**Subject:** RE: Antero Resources, McLin C Pad, NESE Sec 13 T6S R92W, Garfield County, Form 2A (#400077143) Review

Hi Dave,

Antero has reviewed the COA's listed below identified for the **McLin C Pad** and does concur with them.

Let me know if you need anything else. Thanks!

*Ashlie Mihalcin*

**Permit Representative**  
**Antero Resources Corporation**  
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Denver, CO 80202  
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**From:** Kubeczko, Dave [mailto:Dave.Kubeczko@state.co.us]  
**Sent:** Tuesday, October 05, 2010 3:26 PM  
**To:** Hannah Knopping  
**Subject:** Antero Resources, McLin C Pad, NESE Sec 13 T6S R92W, Garfield County, Form 2A (#400077143) Review

Hannah,

I have been reviewing the McLin C Pad **Form 2A** (#400077143). COGCC requests the following clarifications regarding the data Antero has submitted on or attached to the Form 2A prior to passing the Oil and Gas Location Assessment (OGLA) review.

1. **Water Resources (Section 14):** Form 2A indicates the distance to the nearest surface water is 250 feet. COGCC's rules state that the distance to the nearest surface water should reflect intermittent (this includes ephemeral streams, irrigation ditches, drainages, abandoned gravel pits), as well as, perennial streams. COGCC's review indicates there is also another perennial stream (Divide Creek) approximately 1463 feet of the proposed well pad. COGCC guidelines require designating all locations within close proximity to surface water a **sensitive area**. The following conditions of approval (COAs) will apply:  
**COA 4** - Location is in a sensitive area because of its proximity to surface water; therefore, operator must ensure 110 percent 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., BMPs associated with stormwater management) sufficiently protective of nearby surface water. If fluids are conveyed via pipeline, operator must implement best management practices to contain

any unintentional release of fluids.

**COA 5** - Operator must implement best management practices to contain any unintentional release of fluids.

2. **Water Resources (Section 14):** Form 2A indicates the depth to groundwater to be 45 feet bgs for a well located 493 feet from the proposed well pad. COGCC guidelines require designating all locations with close proximity of a domestic water well (1/8 mile or 660 feet) and shallow groundwater a **sensitive area** (which Antero has already indicated on the Form 2A). The following conditions of approval (COA) will apply:

**COA 7** - Location is in a sensitive area because of proximity to a domestic water well and potential for shallow groundwater; therefore either a lined drilling pit or closed loop system must be implemented.

**COA 8** - Location is in a sensitive area because of proximity to a domestic water well and potential for shallow groundwater; therefore production pits must be lined.

3. **General 317B:** The following conditions of approval (COAs) will also apply:

**COA 6** - Reserve pit (if constructed) must be lined or a closed loop system (which has already been indicated by Antero on the Form 2A) must be implemented during drilling; however, Antero will be using a closed loop drilling system, therefore, a reserve pit will not be constructed.

**COA 25** - Flowback to tanks only. Operator must submit a secondary and tertiary containment plan via sundry notice Form 4 for the tanks to Dave Kubeczko. Operator must obtain approval of the plan prior to fracing flowback operations.

**COA 38** - 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.

**COA 39** - No portion of any pit that will be used to hold liquids shall be constructed on fill material, unless the pit and fill slope are designed and certified by a professional engineer, subject to review and approval by the director prior to construction of the pit. The construction and lining of the pit shall be supervised by a professional engineer or their agent. The entire base of the pit must be in cut.

**COA 40** - The nearby hillside to the west must be monitored for any day-lighting of drilling fluids throughout the drilling of the surface casing interval.

**COA 44** - The access road will be constructed as to not allow any sediment to migrate from the access road to nearby surface water (McLin Ditch) or any drainages leading to other nearby surface waters (Ward-Reynolds Ditch).

**COA 46** - The location is in an area of high run off/run-on potential from the proposed pad area to the west and north; additionally, the surface soils and materials are very fine-grained; therefore the pad shall be constructed as quickly as possible and appropriate BMPs need to be in place both during, after well pad construction completion, as well as during all drilling and well completion operations. Standard stormwater BMPs must be implemented at this location to insure compliance with CDPHE and COGCC requirements and to prevent any stormwater run-on and /or stormwater runoff.

COGCC would appreciate your concurrence with attaching these COAs (items 1 and 2) to the Form 2A permit prior to passing the OGLA review. If you have any questions, please do not hesitate to call me at (970) 309-2514 (cell), or email. Thanks.

Dave

**David A. Kubeczko, PG**

**Oil and Gas Location Assessment Specialist**

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