

December 8, 2008

Mr. Jerry Alberts
Environmental & Regulatory Manager
Antero Resources
1625 17th Street, Suite 300
Denver, CO 80202

via e-mail: jalberts@anteroresources.com

RE: Wetland Evaluation for the proposed Lungren Pond expansion and access road

Dear Mr. Alberts:

This letter is in response to a request for WestWater to perform a wetland evaluation for the proposed expansion of the Lungren Pond and a new access road alignment on Graham Mesa near Rifle, CO. WestWater biologists conducted a thorough investigation of the site November 11, 2008.

Potential wetlands areas were surveyed utilizing the three parameter method (vegetation, soils, and hydrologic indicators) in accordance with the Interim Arid West Regional Supplement to the Corps of Engineers Wetland Delineation Manual, December 2006.

Wetland areas in this letter are referred to by WestWater as “potential wetlands”. Only the Army Corps of Engineers (COE) can confirm wetland areas and boundary lines based on a complete wetland delineation and submittal of a request for Jurisdictional Determination to COE by the project proponent.

Wetland Evaluation Findings:

- Graham Mesa is supplied with water from Rifle Gap Reservoir via the Davie Irrigation Ditch. Numerous irrigation ditches distribute water from the Davie Ditch across the top of the mesa (Figure 1). It appears that a small ditch runs around the mesa just beyond the footprint of the agricultural field collecting irrigation return flow. No other water source was observed and no surface water connectivity to a Water of the US (WOUS) was found.
- Potential wetlands within the evaluation area totaled approximately 1 acre. Wetland polygons totaled 0.89 acres and linear wetlands totaled 0.1 acres or 2300 lineal feet by 2 feet wide (Figure 2).
- Soils on the mesa are identified as Potts-IIdefoso complex. These soils exist on convex topography and are well drained. The depths to a restrictive layer or the water table are in excess of 80 inches (NRCS 2008).

Interpretation:

- Typically, the COE does not take jurisdiction over wetlands that are created by irrigation water; however, if the irrigation ditches capture and transport natural runoff into a traditionally navigable water (TNW), the ditch is considered jurisdictional and so are any adjacent or abutting wetlands (COE 2007).

Recommendations:

- Submit a request for upland verification and request a letter of confirmation with the COE. Confirmation from the COE would mean COE permitting would not be necessary.
- If the COE determines the wetlands are jurisdictional Antero Resources can utilize and improve the old road, depicted in Figure 2, with some additional permitting requirements:
 - A wetland delineation and pre-construction notification (PCN) would need to be submitted to the COE.
 - For wetland areas that cannot be avoided, Nation Wide Permit (NWP) #14, Linear Transportation Projects, is likely to apply. The set of established NWPs are rights granted to everyone as long as the action stays strictly within the conditional requirements outlined in the permit description. Table 1, attached to the end of this letter, provides a brief explanation of NWP #14 and other commonly used NWPs in Oil and Gas development projects.
 - Wetlands that are impacted could potentially require mitigation and monitoring per COE requirements.

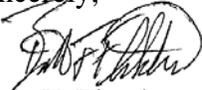
References:

COE. 2007. U.S. Army Corps of Engineers, Regulatory Guidance Letter 07-02. Subject: Exemptions for Construction or Maintenance of Irrigation Ditches and Maintenance of Drainage Ditches under Section 404 of the Clean Water Act.

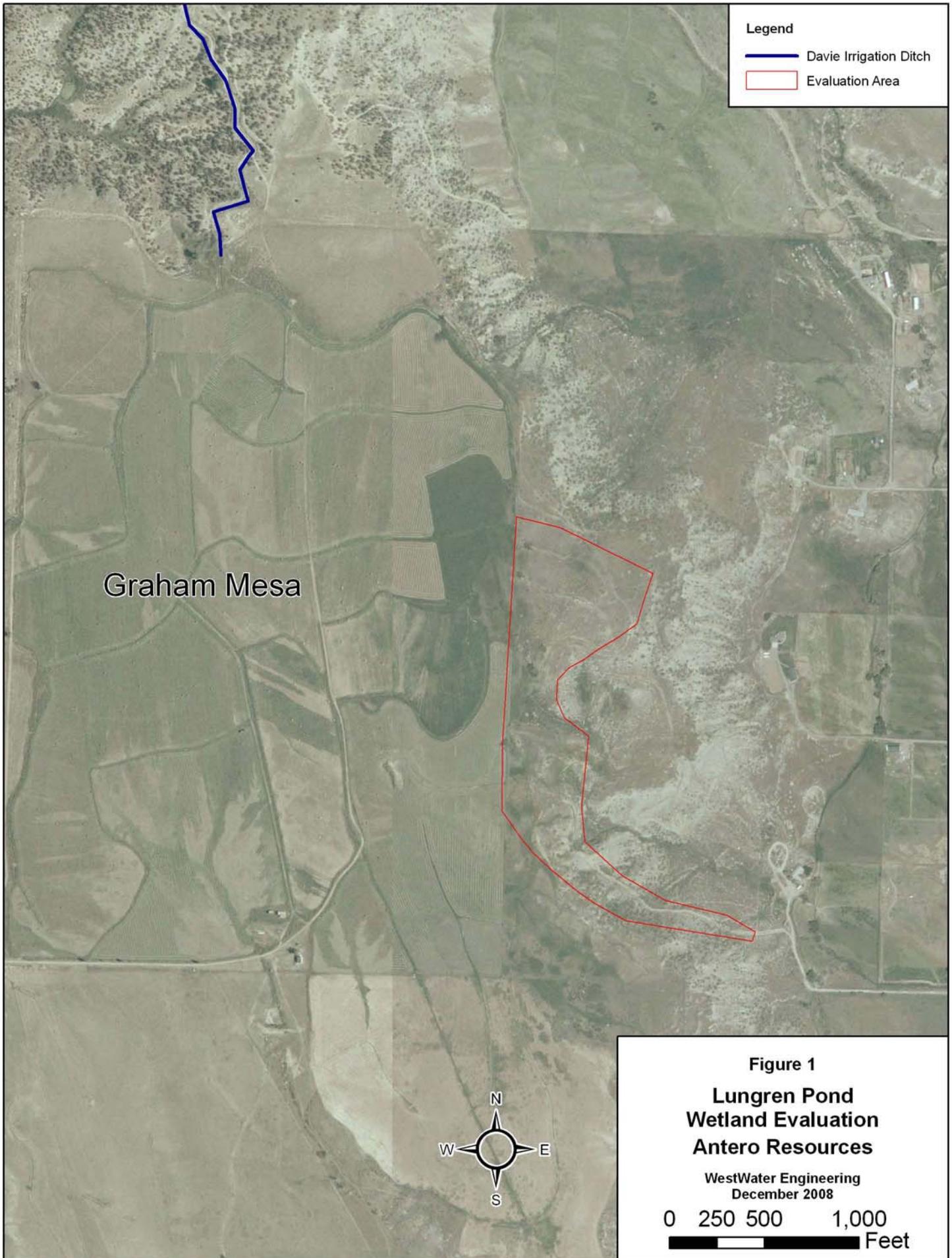
NRCS. 2008. National Resource Conservation Service.
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

Please feel free to contact our office if you have any questions regarding this evaluation, or if we can be of assistance in any way.

Sincerely,



Brett F. Fletcher
Environmental Scientist/ Wetland Biologist





Legend

- Davie Irrigation Ditch
- Lundgren Pad
- Evaluation Area
- Potential Wetlands
- Existing Road
- Old Road
- Approximate Fence Line

Arrows indicate direction of flow
→



Figure 2
Lungren Pond
Wetland Evaluation
Antero Resources
 WestWater Engineering
 December 2008

0 100 200 400
 Feet

Table 1. Common Army Corps of Engineers Nationwide Permit Requirements (NWP) and Regional Conditions (RC) for the State of Colorado

Permit Number	Limitations and General Conditions	
NWP # 12 Utility Line Activities	Total loss of WOUS does not exceed ½ acre, mitigation required for discharge (fill) into a special aquatic site, including wetlands. PCN required, as per Colorado Regional Conditions 2007.	
NWP # 13 Bank Stabilization (streams averaging < 20ft in width)	Activity is no more than 500 ft of bank length, ¼ cubic yard of *suitable fill per running ft. at or below OHW, Material does not impair water flow, Activity does not discharge (fill) into a special aquatic site, including wetlands. PCN required if activity exceeds 500 lineal ft in length, discharge (fill) is greater than ¼ cubic yard per running ft., discharge (fill) is into a special aquatic site, including wetlands. *Suitable fill – consists of soft engineering methods utilizing native non-manmade materials, special permission required for concrete as fill.	
NWP # 14 Linear Transportation Projects	Total loss of WOUS does not exceed ½ acre, mitigation required for discharge (fill) into a special aquatic site, including wetlands. PCN required, as per Colorado Regional Conditions 2007.	
NWP # 41 Reshaping Existing Drainage Ditches	To modify the cross-sectional configuration of currently serviceable drainage ditches. To improve water quality by regrading bank slopes to reduce erosion, increase veg. growth and uptake of nutrients by veg. Cannot increase drainage capacity of existing ditch or area drained by ditch. Cannot drain wetlands or other WOUS and Requires PCN	
Colorado Regional Conditions to NWP		
Final Regional Conditions to NWP within Colorado	NWP 12 Utility Line Activities, NWP 13 Bank Stabilization and NWP 14 Linear Transportation Projects	In the Colorado Basin, utility line and road activities crossing perennial water or special aquatic sites require notification to the District Engineer in accordance with General condition #27.
	NWP 27 Aquatic Habitat Restoration	(1) Activities included fishery enhancement Require PCN to be sent to CDOW for review (2) Activities involving length of stream, sinuosity cannot be significantly reduced (3) Structures will allow passage of aquatic organisms up and down stream
Additional Regional Conditions	<u>Revocation/Special Notification for specific areas</u>	
RC “T”	Fens (wetlands with histosolic soils or peat): All NWP’s require a PCN and COE determination of minimal adverse effects).	
RC “J”	Springs (anywhere a ground water source emanates from the ground and forms a defined channel): All NWP’s require PCN for discharge or fill within 100 ft. of the point of ground water discharge.	
Regional General Permits (RGP) available within the State of Colorado		
Permit	Activities	Conditions in addition to PCN
RGP #53 Flood related activities	-Repair & reconstruction of existing roads -Temp. levee construction/repair -Bridge embankment repair -Protection/repair of utility structures -Bank protection/stabilization -Protection/restoration of intake structures	Up to 1 acre of non-wetland WOUS impact. or 1/3 acre impact to wetlands or Up to 1 acre WOUS & wetlands impacts combined -Must be applied for within 1 year of flood event -Work must be completed 6 months from permit issuance date. Additional information at following link: http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/gp/GP53.pdf
Pre-Construction Notification (PCN or General Condition 27) The PCN must be in writing and include the following information.		
<ul style="list-style-type: none"> • Name, address, and phone numbers of the prospective permittee • Location of the proposed Project • Project description including direct and indirect adverse environmental effects • Delineation of Waters of the US (WOUS) and special aquatic sites (wetlands) • Wetland losses greater than 1/10 requires a description of mitigation satisfaction • Listed species or designated critical habitat • Property listed on or potentially eligible for listing on the National Register of Historic Places 		