



Utilization of AMD in Well Development for Natural Gas Extraction

April 27, 2012

White Paper Process and Goals

- Review Team consisting of cross-deputate DEP staff tasked with developing draft White Paper
- White Paper published on Nov. 18, 2011
- Conducted internal & external discussions for feedback
- Approvals to use AMD during review
- Define the roles of various department programs.
- Establish process for the oil & gas industry to integrate the use of AMD.
- Establish process for DEP to facilitate review, evaluate and approve proposals for use of AMD

Applicant Preliminary Assessment

- The end use of the AMD water will determine the treatment requirements of the AMD or mine drainage, if necessary, at each AMD and active mining site. This information will be provided to the oil & gas industry representative.

Applicant Preliminary Assessment cont.

- Secondary treatment, if necessary and specified by oil & gas industry, is reviewed for consistency with the Bureau of Abandoned Mine Reclamation or District Mining Operations standards.
 - Any additional treatment above and beyond the AMD treatment agreed to by BAMR or DMO and the O&G industry that is needed to make the treated AMD acceptable for use in the hydraulic fracturing operations would be the responsibility of the company.

Applicant Proposal Submittal

- Complete Proposals will include cont.:
 - Characterization (chemistry) of the AMD discharge(s) and/or mine pool(s)
 - Is the AMD source from an existing AMD discharge treatment facility?
 - Will treatment of the AMD be required? If so, what type of AMD treatment is proposed (passive or active treatment)? What is the expected water quality to be produced from the treatment?
 - Identify the landowner(s) and provide proof of consent for the proposed withdrawal/use of the AMD.
 - What is the timeframe for the use of the AMD?
 - What is the classification of the watershed(s) where the water will be stored/utilized?

Applicant Proposal Submittal cont.

- Complete Proposals will include cont.:
 - How will on-site and off-site storage requirements be met based on level of treatment?
 - Types of storage facilities associated with oil & gas activities:
 - Centralized freshwater impoundment (jurisdictional freshwater impoundment or nonjurisdictional impoundment)
 - Centralized wastewater impoundment dam for oil and gas activities
 - On-site impoundment pits and tanks
 - Pumped directly from mine pool

Applicant Proposal Submittal cont.

- Complete Proposals will include cont.:
 - If withdrawal from a mine pool is being proposed, what is the extent of the mine pool, mining history, and mine pool recharge rate?
 - Are there any other known or planned users of the AMD source?
 - Has a detailed monitoring plan been developed or proposed for some timeframe (including before, during and after) for use of the AMD?

DEP Proposal Review

- The proposal for use of AMD would be submitted to O&G
- The proposal would then be shared with a DEP review team determined by O&G.
- That team would consist of one O&G staff member and at least two additional staff members from the following programs (BAMR, Water Management, DMO and Waste Management) as well as a representative from Chief Counsel.
- The team would provide feedback to the requestor (oil & gas company representative) within 15 days of receipt of a completed proposal package.
- That feedback would include guidance on the type of permits needed, if any, and means of addressing issues concerning potential long-term liability for treatment of the AMD source proposed for use by the requestor.

DEP Proposal Review cont.

- Solutions to Long Term Liability Issues
 - Option #1 - Environmental Good Samaritan
 - Option #2 - Consent Order and Agreement
- Team develop recommendations
 - Ongoing
 - Short-Term (0-1 year)
 - Long-Term (1+ years)

Summary of Changes

- Broadened AMD to Mine-Influenced Water
- Clarifications to process
 - Changed proposal review time
 - All parties can apply for approval
 - BAMR changed to BCR
 - Clarify pre-treatment & secondary treatment
 - Transportation and spill concerns
 - Possible permitting needs

Summary of Changes cont.

- Clarifications to Storage Options
 - Mine water is not waste, unless mixed with it
 - Included other specific storage options for AML pits and ponds/wetlands that are part of the treatment system
- Recommendations
 - Expanded discussion to encourage trust funds for long-term treatment

Liability

- No major revisions to original draft.
- DEP proposed revisions:
 - Language to include watershed groups.
 - Incorporated references to better coordinate with Environmental Good Samaritan Act
- Senate Bill 1346 - Use of drainage water for hydraulic fracturing
- EPA – Industry concerns, DEP outreach



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Remaining Steps

- Circulate DEP Executive Staff
- Talk with EPA
- Finalize forms and fact sheet



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QUESTIONS?