

In Defense of SMCRA: The Case For or Against New Federal CCB Rules

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DISCLAIMER

- I can not discuss any details concerning actual CCB rulemaking efforts by Interior.

CCB MINE PLACEMENT HISTORY (JUST THE MAJOR HIGHLIGHTS)



- 1964 DOE Conducts 1st Scientific Research on Coal Mine Placement of Fly Ash to Neutralize Spoil Acidity and Promote Revegetation
- 1977 Surface Mining Control and Reclamation Act Passed (Mine placement of Fly ash at Mine Mouth Power plants is ongoing)
- 1996-2006 OSM Conducts 6 National Technical Forums on Placement at Coal Mines including 114 technical articles & a peer review of the NAS report.
- 2000 – EPA Regulatory Determination that additional Federal Rules may be Necessary for Coal Mining
- 2000 - 2004 JOINT EPA/OSM/IMCC Fact Finding Efforts on CCB Mine Placement
- 2005-2006 EPA Sponsored NATIONAL ACADEMY OF SCIENCES STUDY
- 2007 OSMRE Publishes Advance Notice of Proposed Rule on CCB Specific Regulations under the authority of SMCRA
- 2008 OSMRE submits a proposed rule to the Federal Register but it is rejected due to timing related a change of Administration
- 2015 ??

CURRENT SMCRA CCB Requirements



- **Federally Enforceable**
- **Comprehensive Permitting & Enforcement Program** for Protection of Public Health & the Environment during Surface Coal Mining & Reclamation
- **SMCRA requirements are primarily Performance Standards unlike RCRA which is primarily by Design Specifications**
- **State Primacy with Specific Guidance** for local conditions
 - *State Programs are not required to be the same but must provide equivalent minimum SMCRA protection*



CURRENT SMCRA CCB Requirements

- **Extensive Documentation** in Permit of CCB Characterization, Baseline Conditions, and Mining and Reclamation Planning
- **Only Permit Approved CCBs** are allowed on a SMCRA Mine
- **Minimum Levels** of Environmental Protection
- **Water Monitoring** based on permit specific conditions
- **Reclamation Bond Liability Release** based on achievement of performance standards



Applicability of SMCRA to CCB Placement

- The lack of specific references to CCBs in 30 CFR Part 700 to end **does not mean** that SMCRA regulatory programs do not apply to placement of CCBs on permitted mines.
- Any material placed in coal mines or otherwise used to reclaim a permitted mine must comply with all appropriate SMCRA permitting requirements and performance standards, regardless of whether the material originates within the permit area or whether it is imported from outside the permit area, and SMCRA programs have the authority to establish monitoring and analysis requirements for those materials. See, *Pacific Coal Co. v. OSM*, Civ. No. 03-0260Z, (W.D. Wash. Feb. 2, 2004). As with all material being placed in the backfill, CCBs must be adequately characterized to assure compliance with the performance standards.



Rational Suggested for New Federal SMCRA rules

- NAS CCB Study Recommendations
- Damage Cases
- Differences in State Programs
- Lack of CCB Specific Language
- Lack of CCB related Specifics for Water Monitoring



NAS Report 2006





NAS CCB REPORT RECOMMENDATIONS

- SUPPORT ADEQUATELY REGULATED MINE PLACEMENT
 - *GIVEN THAT THERE HAVE BEEN NO DAMAGE CASES OR SMCRA VIOLATIONS IN 38 YEARS, THE EXISTING STATE SMCRA PROGRAMS APPEAR TO BE ADEQUATELY REGULATING CCB PLACEMENT*
- SCOPE OF SMCRA IS BROAD ENOUGH TO ADEQUATELY REGULATE MINE PLACEMENT
 - NAS POSITIVELY ASSERTED THAT THE CURRENT SMCRA REGULATORY PROGRAM WAS BROAD ENOUGH TO ADEQUATELY REGULATE MINE PLACEMENT
- CCB RULES NEED TO BE SPECIFIC AND FEDERALLY ENFORCEABLE
 - *SMCRA RULES ARE FEDERALLY ENFORCEABLE*
 - *THERE IS NO LEGAL REQUIREMENT FOR CCB SPECIFIC RULES. ALL ACTIVITIES ON SMCRA MINES ARE COVERED BY SMCRA WHETHER OR NOT SPECIFIC LANGUAGE IS USED.*



NAS CCB Study Deficiencies

- Experts in Coal Mining, Mine Placement of CCBs, and the SMCRA regulatory program were prohibited from serving.
- Dept of Interior was specifically prohibited from speaking during the NAS sessions
- An Offer by Interior to educate the NAS panel on SMCRA and mine placement was rejected by the National Academy.



NAS CCB Study Deficiencies

- NAS made no effort to correlate water quality data with SMCRA regulatory requirements or actual mine performance
- NAS focused primarily on water quality problems on **unregulated or inadequately regulated disposal areas completely unrelated to SMCRA** and then used this unrelated data as their reason for requiring additional Federal regulation of SMCRA mines.
- Most of the NAS recommendations were Design Specific and more suitable for RCRA Solid Waste Disposal than SMCRA



NAS CCB Study Deficiencies

- Publication of the NAS Deficiencies is found in Vories, K.C. et al. (eds). 2006. Proceedings of FGD By-Products at Coal Mines & Responses to the NAS Final Report "Managing CCRs in Mines"



NO SMCRA DAMAGE CASES

- CCB PLACEMENT ON SMCRA MINES HAS OCCURRED FOR 38 YEARS
- NO EPA DAMAGE CASES
- NO SMCRA VIOLATIONS
- NO DAMAGE CASES REPORTED BY NAS (NAS identified one possible location in ND but it is not applicable)



ND Alleged Damage Case

- ND does not agree with EPA that it is a damage case.
- Since ND places CCBs on mines under RCRA not SMCRA, whether or not the NAS damage case is legitimate, it is unrelated to SMCRA.



What NAS should have done

- Their entire study should have evaluated the effectiveness of SMCRA to protect the public and the environment and should not have allowed unrelated non SMCRA issues to impact their findings.



OSM Rulemaking Process

CCB Specific Rule Schedule

- Advanced Notice of Proposed Rulemaking (March 14-June 13, 2007)
 - 1,900 Letters received (40 substantive letters from industry, utilities, States, and environmental groups)
- Proposed Rulemaking (?)
- Final Rulemaking (?)



OSMRE Directive Reg 8 Investigation on State Implementation of SMCRA

- OSMRE is required in its responsibilities for oversight of State programs in Directive REG 8 to conduct inspections and evaluations that focus on the on-the-ground/end-result success of State programs in achieving the purposes of the Act.
- This has never been done in relation to actual placement of CCBs on SMCRA mines.



“VALIDITY” OF POTENTIAL NEW FEDERAL RULES BY INTERIOR

- Must demonstrate that existing State SMCRA programs have failed to protect the public and/or environment
 - *Unaware of any substantive evidence that would support this*
- Must demonstrate that differences in State SMCRA programs has resulted in inadequate environmental protection
 - *Unaware of any substantive evidence that would support this. Most State programs that have significant CCB placement have been updated and improved significantly over time indicating the ongoing success of SMCRA.*



“VALIDITY” OF POTENTIAL NEW FEDERAL RULES BY INTERIOR

- Must document scientific studies that demonstrate that the existing SMCRA program is inadequate
 - *Unaware of any substantive evidence that would support this and even NAS agrees that SMCRA is adequate.*
- Must BALANCE additional CCB environmental protection requirements with the need to minimize negative impacts to coal mining [SMCRA Sec. 102 (f)]
 - *Given the lack of substantive evidence that would support additional requirements, unaware of how the requirement for balance would be accomplished*



Possible Legitimate Improvements to SMCRA

- For the purposes of Regulatory Clarity, Provide CCB specific definitions and detail existing regulatory applicability under SMCRA
- Establish Requirements for CCB placement for Abandoned Mine Land Reclamation funded under Title IV of SMCRA
- Based on published 3rd party science, provide a list of elements that have been shown to be leached at potentially toxic levels in land fills to insure their characterization in the permit.



**ACTIVE COAL MINE
APPLICATIONS OF CCBS
UNDER TITLE V SMCRA**



SMCRA Mines with CCB Mine Placement

- Murarka, 2005 identified 95 Mines in 18 States where CCB placement occurred under the SMCRA program. He also identified 11 sites in ND where CCB placement occurred under State RCRA on previously mined land.

U.S. Mine Placement of CCBs

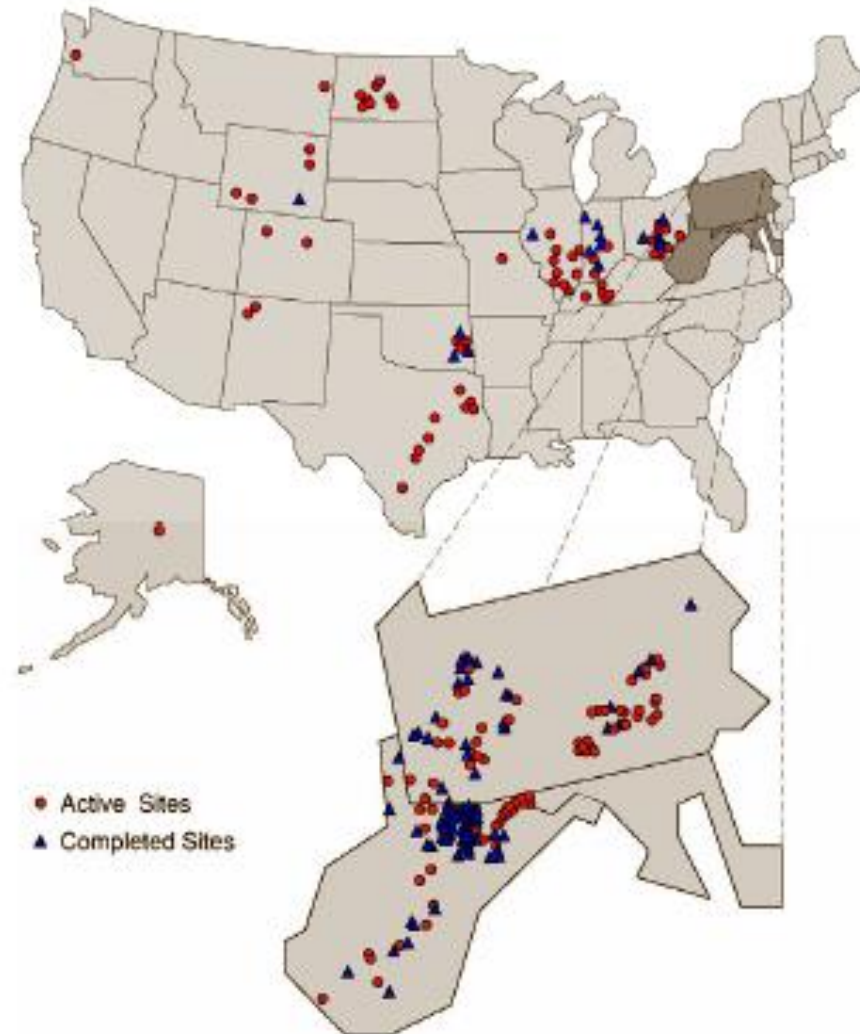


FIGURE 1.5 Coal combustion residue mine placement sites in the United States.
SOURCE: National Research Council; data collected through individual state surveys.



Quantities of CCBs Placed at Mines

- Mine placed CCBs are equal to **1.3%** of the 984 million tons of coal mined nationally in 2013 (USEIA & ACAA)
- **ARIPPA** FBC 2009 – In the last 20 years, 145 Million tons of acid coal refuse was eliminated to produce electric power; 5.1 Million tons/year FBC Ash produced to reclaim abandoned mines & reduce AMD (over 4,500 Acres Reclaimed)
- **ACAA** CCP Utilization Report 2013 – 12.7 Million tons (**11%** of total CCPs produced) placed at mines



CCB PLACEMENT AT MINES CONTROLLED BY ECONOMICS

- LARGE QUANTITIES
 - Mine Mouth Power Plants (**3% of 400** coal fired plants) where Transportation Cost is low (mostly in the Western US)
 - Illinois where CCBs are used to stabilize coal waste at large underground mines because MSHA has not historically allowed the coal waste to be returned to the underground works
- SMALL QUANTITIES:
 - Power Plants that are too small ($\leq 50,000$ tons/year) to have their own Disposal Facility but close to a mine
 - Specific Beneficial or Construction Related Applications that justify the Transportation Cost

ALKALINE SEAL TO PREVENT ACID MINE DRAINAGE



CONSTRUCTION MATERIAL AS COMPACT DURABLE BASE



Mine Road Building (Before Ash)



Mine Road Building (After Ash)



PLACEMENT IN SPOIL TO SUPPORT THE POST MINING LAND USE





Illinois: A SPECIAL CASE

- Illinois allows a mix of alkaline ash with coal slurry and or sludge to create above ground impoundments for underground coal mines that result in post reclamation “ash” mountains.



STATE RCRA PROGRAMS

- NORTH DAKOTA REGULATES CCB DISPOSAL ON MINED LAND UNDER ITS RCRA SOLID WASTE PROGRAM
- A SMCRA final pit will be released as an industrial land use that is permitted under the State RCRA program.

North Dakota: RCRA Solid Waste Disposal of Coal Ash on Previously Mined Land





ABANDONED MINE LAND APPLICATIONS

ALKALINE FILL FOR ACID AML PIT



SOIL SUBSTITUTE FOR AML RECLAMATION



ASH GROUTING OF UNDERGROUND MINES FOR AMD ABATEMENT OR SUBSIDENCE CONTROL



Waste Coal Converted to Power



AML Reclamation with FBC Ash



AML Ash and Harbor Dredge Fill (Before Reclamation)



AML Ash & Harbor Dredge Fill (After Reclamation)





FUTURE RESEARCH NEEDS

- **LEACHATE TEST METHODS** ENDORSED BY ASTM FOR RECLAIMED COAL MINE HYDRO/GEOLOGY
- **UNIVERSITY STUDIES OF ACTUAL CCB MINE PLACEMENT PUBLISHED IN PROFESSIONAL JOURNALS (This needs to be ongoing)**



Questions
