

MANAGING CCRS AT MINES

A PRELIMINARY REVIEW
OF NAS REPORT
BY IMCC & OSM

NAS STATEMENT OF WORK

- ADEQUACY OF WATER MONITORING DATA AT MINES
- IMPACTS TO AQUATIC LIFE
- REGULATOR & OPERATOR RESPONSE TO CONTAMINATION
- ADEQUACY OF CHARACTERIZATION OF CCRS & SITE HYDROGEOLOGY
- ADEQUACY OF PERFORMANCE STANDARDS FOR BENEFICIAL USE

NAS STATEMENT OF WORK

- NEED FOR ISOLATION REQUIREMENTS
- WATER MONITORING SYSTEM ADEQUACY
 - DURATION OF MONITORING
 - NUMBER & LOCATION OF WELLS
 - CCR LEACHATE PARAMETERS INCLUDED
 - ENFORCEABLE CONSEQUENCES FOR CONTAMINATION

NAS STATEMENT OF WORK

- ADEQUACY OF RESTORATION OF LAND USE
- FINANCIAL ASSURANCE FOR MONITORING AND COMPLIANCE LONG TERM
- PUBLIC INVOLVEMENT IN PERMITTING AND POLICY
- ADEQUACY OF RISK ASSESSMENT

NAS SUMMARY OF FINDINGS

- VIABLE OPTION FOR “DISPOSAL”
- ONLY CREDIBLE EXISTING DATA IS FROM EPA DAMAGE CASES AT UNREGULATED SAND AND GRAVEL QUARRIES
- NO PROVEN DAMAGE CASES FROM SMCRA MINES
- EXISTING DATA FROM MINES IS INADEQUATE TO
 - DETERMINE LONG TERM IMPACT
 - EVALUATE RISK ASSESSMENT
 - DETERMINE RELATIVE SAFETY

NAS SUMMARY OF FINDINGS

- HIGH LEVELS OF CONTAMINANTS IN CCRS MAY CREATE CONCERNS OVER THE LONG TERM
- FULL CHARACTERIZATION OF CCRS SHOULD NOT BE REDUCED FOR “BENEFICIAL USES”
- FULL CHARACTERIZATION OF CCRS MUST TRACK CHANGES IN MATERIALS OVER TIME
- LEACH TESTS NEED TO BE SITE AND CCR SPECIFIC

NAS SUMMARY OF FINDINGS

- SMCRA SITE CHARACTERIZATION MUST SPECIFICALLY ADDRESS CCR PLACEMENT
- SMCRA NEEDS SITE SPECIFIC MANAGEMENT PLANS FOR CCRS
- MINIMIZE CONTACT WITH WATER BY:
 - PLACING ABOVE WATER TABLE
 - COMPACT IN LIFTS
 - ADD CEMENT
 - USE IMPERMEABLE LINERS
 - COVER WITH LOW PERMEABLE MATERIALS

NAS SUMMARY OF FINDINGS

- SMCRA POST RECLAMATION WATER MONITORING IS INSUFFICIENT TO ASSESS CONTAMINANT MIGRATION IN:
 - NUMBER OF WELLS
 - SPATIAL COVERAGE OF WELLS
 - DURATION OF MONITORING
 - SPECIFIC CCR PARAMETERS

NAS SUMMARY OF FINDINGS

- SMCRA QUALITY ASSURANCE AND INFORMATION MANAGEMENT IS INADEQUATE
- NEED ONE TO TWO WELLS IN CCR
- SMCRA NEEDS SITE SPECIFIC PERFORMANCE STANDARDS TO ADDRESS CCR DISPOSAL
- NEED MORE STRINGENT REQUIREMENTS TO PROTECT AQUATIC LIFE
- NEED AUTHORITY FOR PENALTIES FOR VIOLATIONS

NAS SUMMARY OF FINDINGS

- CCR USE AT AML SITES MUST BE PERMITTED WITH THE SAME REQUIREMENTS AS ACTIVE MINE SITES
- NEED RESEARCH ON ENVIRONMENTAL IMPACTS OF CCR PLACEMENT OVER WIDE RANGE OF SITE CHARACTERISTICS, CCR TYPES, AND MINING & RECLAMATION METHODS
- NEED RESEARCH ON LONG TERM EXPOSURE OF CONTAMINANTS
- NEED RESEARCH ON FIELD VALIDATION OF LEACHATE TESTS

NAS SUMMARY OF FINDINGS

- NEED FULL PUBLIC PARTICIPATION IN PERMITTING INCLUDING ALL CCR PERMIT REVISIONS
- SMCRA IS BROAD ENOUGH TO REGULATE CCR PLACEMENT
- MUST DEVELOP ENFORCEABLE FEDERAL STANDARDS FOR CCR DISPOSAL IN MINES
- OSM & SMCRA STATES SHOULD TAKE THE LEAD IN DEVELOPING NEW FEDERAL STANDARDS
- OSM & EPA SHOULD COORDINATE TO FOSTER REGULATORY CONSISTENCY WITH RCRA RULEMAKING FOR IMPOUNDMENTS AND LANDFILLS

NAS SUMMARY OF FINDINGS

- GUIDANCE DOCUMENTS WILL BE NECESSARY TO HELP STATES IMPLEMENT CCR REQUIREMENTS

PERSPECTIVE OF PREVIOUS OSM REPORTS

DISTRIBUTION & FREQUENCY OF CCB USE AT MINE SITES

- CCB Inventory Study (Murarka, 2001)
finds CCB placement at 1% (100 out of
apx. 9650) coal mine sites in 17 of the 26
coal mining States.
 - 7 Western States
 - 5 Midwestern States
 - 5 Appalachian States

ALKALINE SEAL TO PREVENT ACID MINE DRAINAGE



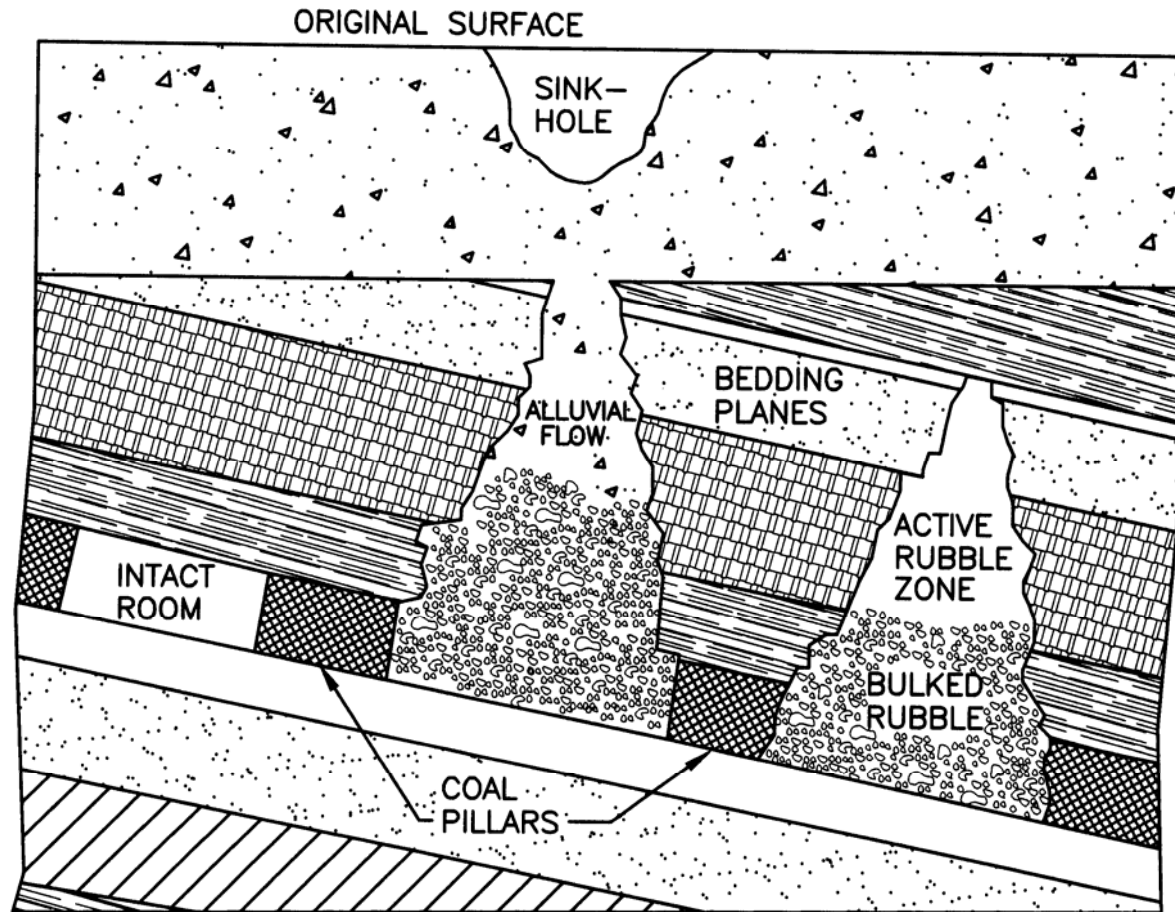
ALKALINE FILL FOR ACID AML PIT



SOIL SUBSTITUTE FOR AML RECLAMATION



FLOWABLE FILL FOR SUBSIDENCE CONTROL



Ash Grouting for AMD Abatement



CONSTRUCTION MATERIAL AS COMPACT DURABLE BASE



Mine Road Building (Before Ash)



Mine Road Building (During)



Mine Road Building (After Ash)



NON-TOXIC FILL TO REDUCE RECLAMATION COST



Mine Fill with Ash



Waste Coal Converted to Power



AML Reclamation with FBC Ash



AML Ash and Harbor Dredge Fill (Before)



AML Ash & Harbor Dredge Fill (After Reclamation)



SMCRA

PERFORMANCE STANDARDS

- STATE SPECIFIC GUIDANCE FOR LOCAL CONDITIONS
- ONLY PERMIT APPROVED CCBS ARE ALLOWED ON A SMCRA MINE SITE
- NO CCB EXEMPTION FROM SMCRA LAW OR REGULATION
- EXTENSIVE DOCUMENTATION IN PERMIT OF BASELINE CONDITIONS AND RECLAMATION PLANNING
- MINIMUM LEVELS OF ENVIRONMENTAL PROTECTION
- MONITORING BASED ON SITE SPECIFIC CONDITIONS
- LIABILITY RELEASE BASED ON ACHIEVEMENT OF PERFORMANCE STANDARDS

**THE EXISTING SCIENTIFIC DATA
DOES NOT SUPPORT
NEW COAL MINING REGULATIONS
UNDER RCRA OR SMCRA**

- UNAWARE OF ANY SCIENTIFIC DATA WHERE CCB PLACEMENT AT ANY SMCRA MINES HAS RESULTED IN TOXICITY
- MANY CASES OF CCB PLACEMENT AT SMCRA MINES HAVE DEMONSTRATED IMPROVEMENTS TO ENVIRONMENTAL QUALITY
- SMCRA PERMITTING, BONDING, & WATER QUALITY PROTECTION REQUIREMENTS PROVIDE A ROBUST AND COMPREHENSIVE METHOD TO PROTECT THE PUBLIC AND THE ENVIRONMENT