

Regulatory and Programmatic Context for SAB Review of EPA Conductivity Benchmark and Report on Effects of Valley Fills on Aquatic Ecosystems in Appalachia

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Overview of Presentation

- Introduction and purpose of SAB review
- Environmental context
- Regulatory context
- Programmatic context
- Looking to the future

Introduction and Purpose

Draft scientific reports that are subject of SAB review helped inform development of EPA's April 2010 interim final guidance to EPA's regional offices on how to ensure that Appalachian surface coal mining-related permits meet CWA requirements.

Guidance clarifies EPA's expectations for ensuring that conductivity levels from mining operations do not reach levels harmful to aquatic life in Appalachian streams.

Guidance was effective immediately, and EPA committed to determine whether modifications are necessary after consideration of public comments and the results of this SAB review.

Introduction and Purpose

- Focus of SAB review is on EPA's two scientific reports and whether their conclusions are supported by the science.
- EPA continues to evaluate proposed mining projects for compliance with the CWA. These permit reviews are not the subject of today's SAB review.
- EPA is keenly interested in the SAB's views on the reports and the supporting science, and greatly appreciates the Panel's efforts.

Environmental Context

Surface mining in Appalachia primarily consists of:

- Contour mining
- Mountaintop mining
- Area/Mine-through operations

Contour Mining



Mountaintop Mining



Area/Mine-Through Operations

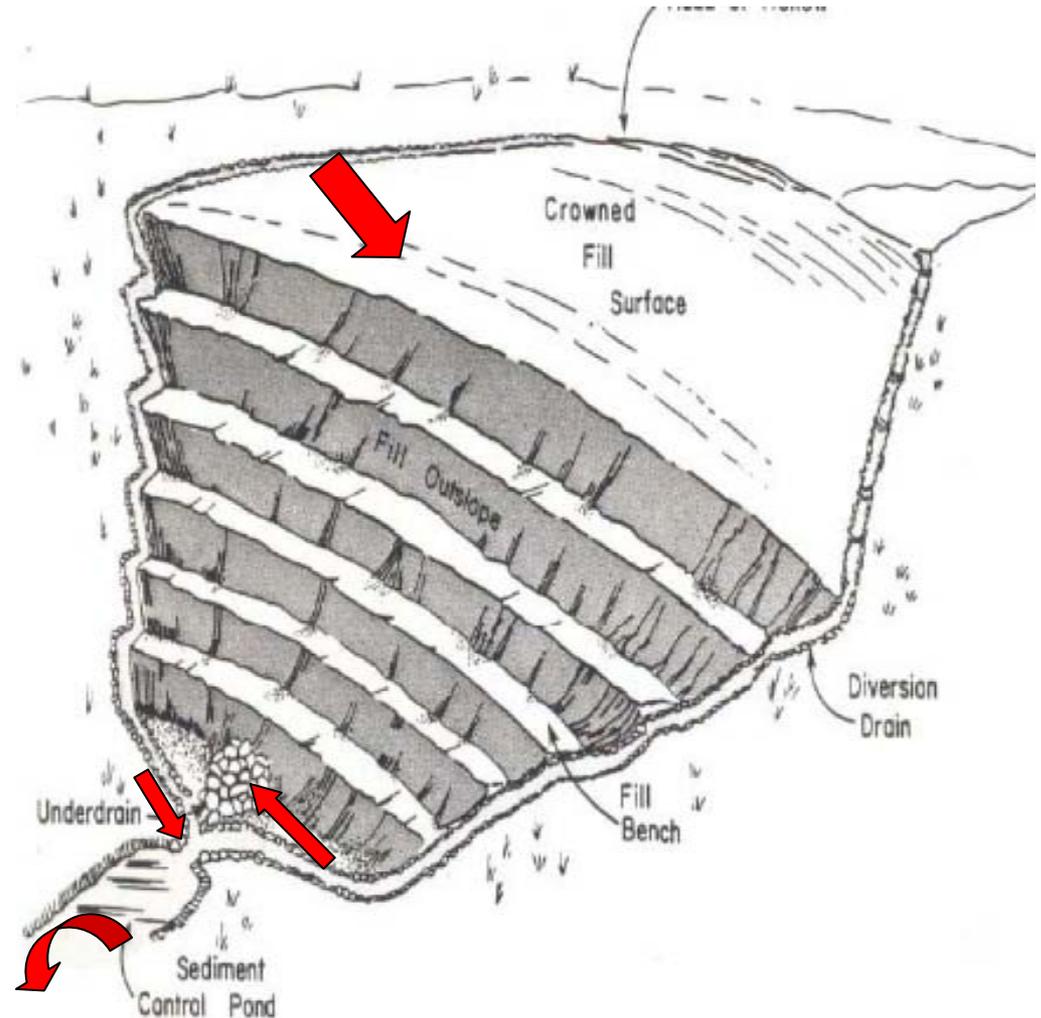


Environmental Context

- Nearly 1,200 miles of Appalachian streams were filled by surface mining from 1992-2002, and thousands more are impaired downstream of surface coal mining operations.
- A 2008 EPA study (Pond et al. 2008) found that 92% of streams below surface mining operations exhibit long-term impairments to aquatic life.
- An EPA study found that selenium and dissolved solids in many streams below valley fills exceed water quality criteria.

Regulatory Context Clean Water Act

- CWA 404 permit required for discharges necessary to create valley fill, impoundment, or mine-through areas.
- No permit required for discharges from fill into stream segment leading to sediment pond.
- CWA 402 permit required for discharge from sediment pond to downstream waters



Regulatory Context

Clean Water Act Section 404

Under Section 404, the US Army Corps of Engineers is the agency responsible for processing and evaluating project applications for “filling” of waters.

EPA reviews public notices and comment as needed to ensure no unacceptable adverse aquatic impacts occur.

Regulatory Context

Clean Water Act Section 404

- Sediment Structures
- Valley/Hollow Fills
- Mine-Through Areas
- Stream relocations
- Slurry Impoundments
- Culvert placements (road crossings)
- Deep Mine Face-ups
- Utility Lines



Regulatory Context

Clean Water Act Section 402

Under the National Pollutant Discharge Elimination System (NPDES) Program, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a NPDES permit.

- All states in Appalachia are authorized to issue NPDES permits, with EPA oversight.
- EPA will continue to work with States to improve environmental review of proposed NPDES permits and protect narrative water quality standards.

Regulatory Context

June 2009 MOU

- In response to growing awareness and scientific data regarding the ecological and social impacts of Appalachian surface coal mining, Federal agencies developed and announced a Memorandum of Understanding (MOU) on June 11, 2009.
 - EPA
 - Department of the Army (Corps of Engineers)
 - Department of the Interior
- The MOU commits agencies to working together to reduce the harmful environmental consequences of Appalachian surface coal mining.



Regulatory Context:

EPA's MOU Roles and Commitments Include:

- Improve the coordination of surface coal mining regulation across federal agencies.
- Strengthen the environmental review & oversight of proposed surface coal mining projects under Sections 402 & 404 of the Clean Water Act
- Take appropriate steps to assist states to strengthen state regulations, enforcement and permitting.
- Clarify how to evaluate mining's impacts on streams and how to effectively mitigate these impacts.

Regulatory Context

April 1, 2010 Guidance

- Clarifies EPA's expectations for Regional review of proposed surface coal mining projects
 - State permits under CWA Section 402
 - Permit applications under CWA Section 404
 - Analysis of proposed projects under the National Environmental Policy Act and Executive Order 12898 on environmental justice
- Applicable to six Appalachian States
- Applies existing CWA requirements and best-available science toward EPA permit reviews

Regulatory Context:

April 1, 2010 Guidance and Conductivity

Guidance includes clear conductivity benchmarks for protecting aquatic life.

- Conductivity $>500 \mu\text{S}/\text{cm}$: Likely to be associated with adverse aquatic life impacts; may not meet narrative criteria to protect aquatic life
 - *Source*: Pond et al. 2008
- Conductivity $<300 \mu\text{S}/\text{cm}$: Generally not associated with adverse aquatic life impacts; likely meets narrative criteria to protect aquatic life
 - *Source*: Draft conductivity benchmark report

Conductivity benchmarks are applicable to ecoregions 68, 69, and 70, consistent with draft conductivity benchmark report

Programmatic Context

Since April 1, 2010:

- EPA has incorporated the guidance and conductivity benchmarks into Section 402 permit reviews.
- EPA has applied the guidance to approximately 6 coal mining project public notices for Section 404 applications. EPA has used the guidance to develop recommended conditions for the issuance of these Section 404 permits.
 - For example, in one case, EPA review indicated the potential for the proposed multiple valley fills to result in downstream conductivity levels in excess of 500 $\mu\text{S}/\text{cm}$.
 - As a result, EPA recommended that the 404 permit not allow for more than one valley fill until applicants demonstrate that conductivity from the fill will not harm aquatic life. .

Looking to the Future

- Conduct review of proposed 404 permits for the additional ~37 pending applications for Section 404 permits for Appalachian surface coal mining projects.
- Complete SAB review of science reports and consider feedback.
- Accept public comments on April 2010 Guidance through December 1, 2010.
- Based on public comments and SAB review, evaluate need for revisions to April 2010 guidance, including conductivity benchmarks.
- Issue final guidance by April 1, 2011.

Looking to the Future

- Consider need for additional conductivity reviews for other locations and need for 304(a) criteria for conductivity.
- Continue to work with Federal and State regulatory partners to improve coordination and environmental review of proposed surface coal mining projects.