

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

<hr/> MINGO LOGAN COAL CO., INC.,)	
)	
Plaintiff,)	
)	
v.)	Case No. 1:10-cv-00541-ABJ
)	
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,)	
)	
Defendant.)	
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**BRIEF OF AMICI CURIAE NATIONAL MINING ASSOCIATION IN SUPPORT OF
PLAINTIFF**

STATEMENT OF INTEREST

Pursuant to the concurrently filed Motion for Leave, the *amici curiae* listed in the motion respectfully submit this brief in support of Plaintiff Mingo Logan Coal Company (“Mingo Logan”)’s motion for summary judgment.

Amici are the national and state trade associations whose members produce most of America’s coal, metals and industrial and agricultural minerals. The domestic mining industry produces vital resources needed to fuel, feed and build our Nation. In 2010, the U.S. mining industry produced \$100 billion of mineral, metal and fuel products. These products were in turn used to create more than \$2 trillion worth of consumer and industrial goods and generate half of the Nation’s electricity.

Amici have a substantial interest in this case. The U.S. Environmental Protection Agency (“EPA”)’s unprecedented decision to retroactively revoke a permit issued by another agency casts American businesses adrift in uncharted territory in terms of regulatory risk. Such grave

uncertainty stymies future investments necessary to sustain stable and reliable mineral and fuel supply chains. EPA's unlawful and capricious decision is all the more problematic because it is strongly influenced by a single study that was not subjected to the rigors of independent peer review or vetted in advance through the agency's longstanding procedures for assuring scientific integrity. The mining industry has gained much experience, data and information from pre and post-mining monitoring while working hand in hand with environmental experts to design projects that meet or exceed current environmental standards. In doing so, the industry has developed scientific analyses that refute the scientific assumptions EPA used to justify the unprecedented retroactive revocation of the Spruce permit. The industry submitted these analyses to the EPA, but the agency has never disputed, or otherwise responded to, them.

SUMMARY OF THE ARGUMENT

EPA's retroactive revocation of the Spruce permit rests in large part upon an *ad hoc* water quality standard the agency has never lawfully promulgated. The Clean Water Act ("CWA") and its implementing regulations provide, but EPA did not follow, specific procedures for establishing or revising water quality criteria or standards. For this reason alone, EPA's decision should be set aside.

The agency also used unsound science to establish the *ad hoc* water quality standard. The study that serves as the principal basis for EPA's *ad hoc* standard was not subject to independent peer review, does not conform to the agency's standard methodology for development of water quality criteria, has been the subject of serious criticism by water quality experts and, by its own admission, includes shortcomings that leave it inadequate for the task of setting a numeric

standard. Perhaps these flaws explain why EPA chose to evade lawful procedures and accepted protocols for setting the new criterion it used to revoke the Spruce permit.

INTRODUCTION

Coal mining operations require permits under a number of federal and state environmental statutes and regulations. CWA § 404 allows for the “discharge of dredged or fill material into the navigable waters [of the United States] at specified disposal sites.” 33 U.S.C. 1344(a). The Corps has sole statutory authority to issue § 404 permits under the CWA. *Id.* EPA has authority over § 404 permits in two specific areas. First, EPA, with the Corps, develops guidelines (404(b)(1) Guidelines) for the Corps to apply in determining whether to permit a discharge of fill material. 33 U.S.C. § 1344(b). Second, EPA, under specified procedures, may prevent the Corps from authorizing certain disposal sites. 33 U.S.C. § 1344(c). On all other issues EPA, like other federal agencies, may only provide comments to the Corps.

§ 404 permits are issued as either general (also called nationwide) permits or individual permits. The primary difference between the two is that general permits are for discharges with a minimal environmental impact and expire after a term of five years while individual permits are authorized for a much longer term, often for the life of a project. Individual permits are designed for projects that are generally larger in scale and more complex or controversial in nature. Accordingly, the accompanying environmental analysis is more rigorous and the associated costs are much higher for individual permits. It is acknowledged by both project proponents and regulatory agencies that the additional time and resources required are justified, as the resulting individual permit is typically “good for the life of the project.”

The Spruce permit is the product of the more rigorous individual permit path. Indeed, the Spruce mine is the most studied coal mine in history, with the decision to issue the Spruce permit culminating after nearly ten years of environmental review, analysis, public hearings and multi-agency comments. EPA was actively engaged throughout the entire permit review process, concurred with the findings of the Environmental Impact Statement (EIS) and raised no objection to the issuance of the permit through the procedures provided by Congress under §404. Upon obtaining the permit, Mingo Logan invested millions of dollars and commenced mining operations consistent with permit terms and conditions. Four years later, EPA abruptly reversed course and revoked the permit.

ARGUMENT

I. EPA's Determination Relies on an *Ad Hoc* Water Quality Standard the Agency Never Lawfully Promulgated

A. The CWA Establishes Procedures for When EPA Can Develop Water Quality Standards For the States Which EPA Failed to Follow

EPA created, and then used, an *ad hoc* water quality criterion¹ for conductivity as a reason for its final determination to revoke the Spruce permit. The standard has never been lawfully promulgated by EPA or adopted by the state of West Virginia, which the CWA vests with the authority to establish and apply water quality standards within its borders.

The day before EPA proposed to revoke the Spruce permit, the agency issued Detailed Guidance on “Improving EPA Review of Appalachian Surface Coal Mining Operations under the Clean

¹ Although the EPA refers to its conductivity limit as a “benchmark” rather than a “criterion,” it nevertheless constitutes an impermissible standard under the CWA.

Water Act, National Environmental Policy Act, and the Environmental Justice Executive Order.” 75 Fed. Reg. 18500 (April 1, 2010). The Detailed Guidance became “effective immediately” without the benefit of any public comment on the new policy or the underlying science that purportedly supports the new policy.²

Of particular relevance to this case, the Guidance dictates use of an EPA draft report, “*A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams*,” which presumes that “in-stream conductivity levels above 500 $\mu\text{S}/\text{cm}$ are likely to be associated with adverse stream impacts.”³ Accordingly, the Guidance states that CWA § 402 and § 404 permits should include permit conditions that prevent conductivity levels from exceeding 500 $\mu\text{S}/\text{cm}$.⁴ In doing so, the Guidance creates a new *ad hoc* water quality standard for conductivity that has been neither properly promulgated nor adopted by any of the states. Nonetheless, this newly minted standard serves as a basis for EPA’s revocation of the Spruce permit.

EPA has purposefully evaded the governing statutory framework for water quality standard development. § 304(a) of the CWA requires EPA to develop criteria for water quality that may be used by the States as information in developing water quality standards. But the CWA assigns primary authority for development of water quality standards to the states. *See* 33 U.S.C. § 1313. A water quality standard designates uses for a particular body of water and establishes

² Detailed Guidance: Improving EPA Review of Appalachian Surface Coal Mining Operations under the Clean Water Act, National Environmental Policy Act, and the Environmental Justice Executive Order, at p. 1 n. 1, *available at* http://water.epa.gov/lawsregs/guidance/wetlands/upload/2010_04_01_wetlands_guidance_appalachian_mntntop_mining_detailed.pdf.

³ *Id.* at 12, 22. EPA recently announced finalization of these two reports, four months after making its final determination in the Spruce veto. 76 Fed. Reg. 30938 (May 27, 2011).

⁴ *Id.*

criteria for protecting and maintaining those uses. 40 C.F.R. § 131.2 (2010). These standards can be expressed as a specific numeric limitation on pollutants or as a general narrative statement. *See* 40 C.F.R. § 131.3(b). The states have the responsibility to develop water quality standards, and the EPA reviews them for approval. 40 C.F.R. §§ 131.4, 131.5. Nothing in the Act authorizes EPA to restrict the states' authority to interpret their own native water quality standards. 33 U.S.C. § 1370.

The EPA may promulgate water quality standards to the exclusion of a state only if (1) it determines that a state's proposed new or revised standard is inconsistent with the CWA's requirements and the state refuses to accept EPA-proposed revisions, or (2) a state does not act, but in the EPA's view a new or revised standard is necessary to meet the requirements of the CWA. 33 U.S.C. § 1313(a)(2) – (4). Neither exception applies here. EPA has not taken any steps or made any formal determinations necessary to displace state water quality standard implementation with regard to conductivity. Instead, EPA evaded the applicable procedures by first creating and then applying its own *ad hoc* standard by way of impermissible and unlawful guidance and by impermissible and unlawful revocation of the Spruce permit. The United States District Court for the District of Columbia recently found that EPA's Guidance Memorandum and *ad hoc* water quality limit for conductivity are unlawful evasions of the procedural requirements of the CWA and Administrative Procedure Act ("APA"), and that the agency's *ad hoc* water quality limit for conductivity unlawfully encroaches upon the authority the CWA confers upon the states.⁵ The unlawfulness of EPA's action is even more egregious in this case because not only has EPA failed to follow the required procedures for promulgating a water

⁵ *Natl Mining Ass'n v. Jackson*, No. 1:10-cv-1220-RBW, 2011; WL 124194, at 10 (D.D.C., Jan. 14, 2011).

quality standard but it has also applied that standard retroactively, in clear contravention of the APA.

B. EPA Disregarded the States' Conductivity Determinations

States, including West Virginia, have made their own determinations about the appropriateness of developing water quality standards for conductivity. Conductivity is not a pollutant or a contaminant. Rather, it is a measure of the capacity of a solution to conduct an electrical current at a specific temperature and can serve as a rough measure of concentrations of the total dissolved ions or salts in solution (TDS). Conductivity does not provide information on the specific constituents in water.

In making water quality determinations, conductivity is typically used as a coarse measure or indicator of possible impairment, with the understanding that toxicity is exerted by individual components, or specific ions, or the actual ionic composition, or mix, or ions. EPA has recognized this fact in other regulatory determinations including its approval of Indiana's numeric limits for individual ions, sulfate and chloride, as opposed to a composite variable such as TDS. In approving the standard, EPA noted "the TDS standard currently in place is inappropriate. By definition TDS is a measure of all dissolved solids, yet we know that the toxicity of TDS is exerted by its individual components."⁶ Indeed other states, including Illinois, Iowa, Kentucky and West Virginia, have likewise rejected conductivity or TDS-based aquatic life numeric standards, concluding that the available scientific information does not support development of regulatory thresholds based on such composite variables. These states have

⁶ *Supporting Rationale for Decision, Revisions to Indiana's Sulfate Water Quality Standards*, WQSTS IN2008-257 (EPA Region 5, 2008).

instead developed individual numeric criteria for specific ions as their preferred approach, which comports with EPA's 2008 approval of Indiana's standards.

II. EPA Relied on a Flawed Study as the Basis for Establishing a New *Ad Hoc* Limit for Conductivity

Undergirding EPA's new conductivity "benchmark" limitation is a single study performed by EPA Region 3.⁷ This "Pond" study found that aquatic life (certain sensitive mayflies) at sites with specific conductance greater than 500 $\mu\text{S}/\text{cm}$ were observed to have been adversely impacted (population shifts) based on a genus-level multi-metric biological index.⁸ As an initial matter, the referenced index, also fashioned by Pond, has never been peer reviewed or published and has not been adopted for use in any state. In fact, states have developed their own biological indices for measuring impairment, but without any explanation Pond rejected these readily available tools in favor of developing a new one.

Amici commissioned an analysis of the Pond-created biological index, which found that there are several aspects of its development and use that require further investigation.⁹ For example, in selecting what types of aquatic life to include in the index, out of hundreds of options, Pond chose to start with only 36 metrics, which constitutes a very small, somewhat arbitrary list. Pond whittled this number down further to only 9 metrics for the final index. Additionally, the initial

⁷ G.J. Pond, M.E. Passmore, F.A. Borsuk, L. Reynolds and C.J. Rose (U.S. EPA Region 3), *Downstream effects of mountaintop coal mining: comparing biological conditions using family- and genus-level macroinvertebrate bioassessment tools*, J. N. Am. Benthol. Soc. 27(3):717-737 (Jul. 8, 2008).

⁸ *Id.*

⁹ See GEI Consultants, Inc., Identification of Issues in Regard to the "Pond et al. Study on Effects of Mountaintop Mining and Valley Fill on Benthic Invertebrate Communities (Technical Memorandum, 2009), available at <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2009-0934-0814>.

list appeared to be lacking in diverse habitat metrics (including only one functional group) and was further limited by its inclusion of only the most sensitive groups. By virtue of these design flaws, the analysis concludes that use of the Pond index results in an overestimation of “impairment.”¹⁰

Amici also submitted to EPA two reports by water quality experts that exposed serious flaws with the Pond study itself.¹¹ The reports demonstrate that the relationships identified in Pond were based purely on modest statistical correlations between water quality characteristics and narrow benthic macroinvertebrate (sensitive mayfly) community structure, and do not represent a formal or mechanistic test of the hypothesis that conductivity is the primary cause of changes in the macroinvertebrate communities downstream of mining and valley fill activities.¹² In fact, the reports disclosed that the Pond study found no evidence that even correlated the results of their multimetric indices with mining. Absent a correlation, much less the demonstration of a cause-and-effect relationship, that study is insufficient to determine a threshold level for an adverse response to conductivity.

In sum, analyses have shown that the Pond study lacks sufficient rigor and results to form the basis for establishing a water quality criterion for conductivity. EPA never responded to these experts’ critiques and simply ignored the flaws in study design and the inherent limitations of the results.

¹⁰ *Id.* at 3.

¹¹ GEI Consultants, Inc., Final Report Technical Review: A Field-based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams (Sept. 2010), *available at* <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2009-0934-0814>.

¹² *See id.* *See also* GEI Consultants, Inc., Update on Issues for Further Investigation in Regard to the —Pond et al. Study on Effects of Mountaintop Mining and Valley Fill on Benthic Invertebrate Communities (Technical Memorandum, 2009), *available at* <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-ORD-2009-0934-0814>.

III. EPA's Methodology Departs from Agency Guidelines and Other Policies

A. EPA's Conductivity Limit Violates the Agency's Guidelines for Water Quality

Criteria Development Under Section 304(a)

EPA violated its own national criteria development guidelines in developing its *ad hoc* conductivity limit by (1) focusing on a limited number of data, (2) using field data instead of controlled laboratory tests and (3) failing to establish a threshold effect. Rather than following its existing guidelines, EPA created an entirely new methodology for deriving its conductivity limit, made the limit immediately effective and deployed it to reopen coal-related CWA permit decisions. All of these actions were undertaken without either peer or public review or the protections of the CWA and the APA.

EPA's standard methodology for developing water quality criteria under Section 304(a) is set forth in EPA's 1985 National Guidelines.¹³ These National Guidelines establish the threshold principles required for all aquatic water quality criteria. The guidelines require the availability of adequate data upon which to develop proper criteria derivation.¹⁴ Specifically, there must be adequate data on pollutant levels that cause an unacceptable adverse effect on any of the specified biological measurements.¹⁵ For materials that have a threshold effect, a threshold of unacceptable effect must then be determined.¹⁶

¹³ 1985 *National Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Use* (USEPA 1985) (hereinafter National Guidelines).

¹⁴ *Id.* at 5-6.

¹⁵ *Id.* at 39.

¹⁶ *Id.* at 8.

EPA's Conductivity Study departs significantly from the National Guidelines. First, lacking adequate data, the Conductivity Study focused on one macroinvertebrate order (mayflies) that are only one portion of the macroinvertebrate communities found in Appalachian streams.¹⁷ Second, in lieu of controlled laboratory tests that allow for scientific verification of threshold adverse effects, EPA used field data collected in uncontrolled settings and relied on statistical modeling. Third, EPA failed to establish anything more than a modest correlation between conductivity and number of mayflies present at mining sites. These problems belie the soundness of the scientific methodology and conclusions in EPA's reports, "*The Effects of Mountaintop Mines and Valley Fills on Aquatic Ecosystems of the Central Appalachian Coalfields*" and "*A Field-based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams*," as well as any permitting decisions based upon those studies.

B. EPA Has Not Explained Such a Drastic Departure from Agency Policy

EPA's methodology of focusing on one macroinvertebrate group (mayflies) departs from the agency's long-held policy of requiring reliable data from a wide number of organisms when developing aquatic water quality criteria.¹⁸ The agency had previously proposed in a White Paper to adapt its National Guidelines to narrow the number of organisms needed when developing aquatic water quality criteria, which was the approach it ultimately took in its conductivity benchmark study. On December 18, 2008, however, the SAB issued an Advisory

¹⁷ GEI Consultants, Inc., *Final Report Variability of Benthic Invertebrate Communities of Headwater Streams in Southern West Virginia* (March 2011), available at http://www.nma.org/pdf/tmp/031511_final_headwaters_report.pdf (4.5MB).

¹⁸ National Guidelines at 12-13.

on the White Paper specifically disagreeing with that proposal.¹⁹ The SAB expressly noted “[t]here is a need to maintain broad taxonomic coverage for the development of aquatic life criteria.”²⁰ The use of data from only invertebrate species and consideration of the effects of potentially confounding variables on only mayflies in the current studies directly contradicts the SAB’s specific recommendation to “maintain broad taxonomic coverage.”

EPA’s narrow focus also departs from its published policy on the similar issue of developing biological criteria. In the EPA pamphlet “*States and Tribes Embrace Bioassessment and Biocriteria for Protecting Streams and Small Rivers*,” EPA explains “[t]he presence, condition, numbers and types of fish, insects, algae, plants, and other organisms provide direct, accurate information about the health of water bodies” while the

[a]ssessment of only one type of animal or plant life leads to only 80-85% effectiveness in identifying aquatic life use attainment or non-attainment.

Assessment of a water body’s biology can include the analysis of macroinvertebrates (insects), periphyton (algae), or fish life. EPA recommends the use of two or more of these groups of biological assessments.²¹

¹⁹ Science Advisory Board, *Advisory on Aquatic Life Water Quality Criteria for Contaminants of Emerging Concern*, EPA-SAB-09-007, (Dec. 18, 2008).

²⁰ SAB Advisory, at 10.

²¹ EPA, *States and Tribes Embrace Bioassessment and Biocriteria for Protecting Streams and Small Rivers*, available at <http://www.epa.gov/bioiweb1/pdf/EPA-822-F-03-005StatesandTribesEmbraceBioassessment.pdf>.

The document also warns that collecting data from only mayflies, as was done in the Pond and benchmark studies, provides insufficient data upon which to make a conclusion about appropriate aquatic life criteria.²²

According to the National Guidelines and agency policy statements, if all required data are not available a numerical criterion should not be derived “except in special cases.”²³ EPA has provided no rationale for its departure from this principle in the case of conductivity. Thus, in order to comply with the National Guidelines, EPA must develop all necessary data identified in the Guidelines, which includes data from at least eight different families of aquatic life.²⁴ Until such time as EPA completes this additional work, the agency’s conductivity benchmark is incomplete and it is premature to give the benchmark any regulatory relevance.

CONCLUSION

EPA’s retroactive revocation of the Spruce permit improperly relies upon an *ad hoc* water quality criteria that was never promulgated lawfully and is the product of unsound and incomplete science. For these reasons, as well as those set forth by Plaintiff Mingo Logan, the decision should be set aside and vacated.

²² *Id.*

²³ *See, e.g.,* National Guidelines at 26.

²⁴ *Id.* at 23.

Respectfully submitted,

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