

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**ENVIRONMENTAL QUALITY BOARD**

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**MINUTES**

**WEST VIRGINIA ENVIRONMENTAL QUALITY BOARD**

**SEPTEMBER 28, 2004**

**I. General**

On Tuesday, September 28, 2004, a quorum of the members of the Environmental Quality Board (hereinafter referred to as the **ABoard@**) conducted a public meeting via teleconference from the 2<sup>nd</sup> floor conference room at the Board offices located at 1615 Washington Street E., Charleston, Kanawha County, West Virginia. Dr. Snyder, Chair of the Board called the meeting to order at 1:00 p.m.

Board Members participating by teleconference were as follows:

Dr. Snyder  
Dr. Hackney  
Dr. Simonton

Board Members Absent were as follows:

Ted Armbrecht

Staff Members Present were as follows:

Libby Chatfield  
Melissa Carte

Whereupon, the Board addressed the issues set forth in the meeting agenda as follows:

## **I. Remining Variance Requests**

### **1.) Catenary Coal Remining Variance:**

The Board received an application for a variance from water quality standards for remining activities on behalf of Catenary Coal Company on September 11, 2003. The company is seeking a variance for the Left Fork of White Oak Creek and for Moccasin Hollow of White Oak Creek (near Leewood in the Cabin Creek and Sherman Districts of Kanawha and Boone Counties respectively). During the July 22, 2004, Board meeting, the Board made a preliminary determination to approve the remining variance application. The Board conducted a public hearing regarding the remining variance on September 15, 2004, and accepted written comments through the close of that public hearing. After a review of the comments received during the comment period and public hearing, Dr. Hackney moved and Dr. Simonton seconded that the Board grant remining variance request and the motion carried unanimously 3 to 0. The draft order will be sent to the Board Chair for approval before it is distributed to the applicant and the WVDEP.

### **2.) Upper Kanawha Valley Development Corp.:**

On September 11, 2003, Upper Kanawha Valley Development Corp. submitted an application for a variance from water quality standards for remining activities for "Phase Two" of their remining project. The Board conducted a public hearing regarding the remining variance on September 27, 2004, and accepted written comments through the close of that public hearing. After a review of the comments received during the comment period and the public hearing, Dr. Simonton moved and Dr. Hackney seconded that the Board grant the remining variance request and the motion carried unanimously 3 to 0. The draft order will be sent to the Board Chair for approval before it is distributed to the applicant and the WVDEP.

Whereupon, Cheryl Atkinson, Nina Rivera, and Lisa Huff of the US Environmental Protection Agency, Region 3 (USEPA) joined the teleconference.

## II. Rulemaking

### 1.) Proposed Legislative Rule (Aluminum):

House Bill 4193 provides that “the Environmental Quality Board shall, in cooperation with the regulated community and the department of environmental protection, propose for promulgation an emergency and legislative rule to revise the aquatic life aluminum criterion in the Water Quality Standards rule by October 1, 2004.” During the August 11, 2004, Board meeting, the Board reviewed and approved the Proposed Rule, the Rule Summary, the Statement of Circumstances, and the Fiscal Note. In order to amend the current legislative rule the Board then filed a Notice of Public Comment Period and Notice of Hearing with the WV Secretary of State’s office and the Legislative Rule-Making Review Committee. The complete proposed rule packet was filed on August 11, 2004. The Board then conducted a public hearing regarding the proposed change to the water quality standards on September 15, 2004, and accepted written comments through Friday, September 24, 2004.

During the September 28, 2004, Board meeting the Board members discussed the oral comments presented at the public hearing and the written comments submitted during the public comment period. The following are excerpts from a summary of the comments received and the Board’s response to those comments as prepared by Libby Chatfield, the Board’s Technical Advisor. Any Board motions regarding actions to be taken in response to comments are listed in bold type. (The complete Response to Comments Document was included with the Board’s Agency Approved version of the rule when it was filed with the Secretary of State’s Office and the Legislative Rule-Making Committee on September 29, 2004):

### **Comments Received and Board Responses**

#### COMMENT:

1. A set of comments filed jointly by several groups identified as the Industry Groups expressed support for the Board’s proposed revision to suspend the 87 ug/liter value on all streams but trout streams, a suspension, which they note, will allow interested parties to perform a study to prepare an appropriate chronic aquatic life criterion for West Virginia waters. These commenters prepared a draft rationale of the Board’s proposed revision. This document provided a history of the aluminum criteria in West Virginia.

One of the primary concerns identified by these commenters is the weakness of the USEPA's recommended 87 ug/l chronic aquatic life value. Commenters maintain that in setting the chronic aquatic life aluminum value at 87 ug/liter, USEPA failed to follow its own "Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and their USES (1985) which serve as the agency's guidelines for setting aquatic life criteria. They maintain that the data relied upon by USEPA to justify the current chronic aluminum criterion of 87 ug/l is inadequate; and that if they had followed their guidelines correctly, that the chronic value would have been equal to the acute criterion of 750 ug/liter. Commenters outline inconsistencies with the studies relied upon by USEPA to derive their 87 ug/liter value (one study on brook trout and one on striped bass) including quality assurance and quality control deficiencies, internal inconsistencies such as higher mortality of fish at lower aluminum concentrations; and reports in both studies indicating that concentrations of aluminum higher than 87 ug/liter did not cause mortality.

These commenters also included a review of recent scientific literature on aluminum toxicity. One conclusion outlined at the end of this review is that all available data indicates that bioavailable forms of aluminum at low pH can be toxic; however, aluminum is generally not going to be present in a toxic or bioavailable form in waters that are not violating the State's water quality standards for pH.

While these groups made strong arguments against the scientific validity of the 87 ug/liter chronic value, they did, however, indicate support for retaining the 87 ug/l value in trout streams. This support is based on their recognition of the sensitive nature of these streams and noting that further study and development of an alternate number is intended to be conducted.

Several commenters also included a review of aluminum criteria from other states, indicating that only 5 states have adopted USEPA's recommended chronic and acute criteria as total aluminum concentrations. Four other states, including WV, have adopted those criteria as dissolved concentrations. Commenters noted that USEPA's recommended acute aquatic life value of 750 ug/liter value has been adopted as both the acute and chronic value aquatic life criteria by the state of Pennsylvania, and approved by Region 3 USEPA in that state.

#### BOARD RESPONSE:

The Board acknowledges the commenters concerns and agrees that the issues raised regarding the validity of USEPA's recommended chronic aquatic life criterion of 87 ug/liter must be addressed. We are also concerned about the fact that a number of states surrounding West Virginia have not adopted aluminum criteria or have adopted criteria less protective than our current numbers. We support the proposal of a statewide study to determine potential impacts of aluminum to aquatic life.

COMMENT:

2. Several commenters suggested that the language of the proposed footnote should be revised to mention the study on which the Board's decision to suspend the criterion is based.

BOARD RESPONSE:

The Board agrees with these commenters.

COMMENT:

3. In support of the Board's proposed revision, a commenter indicated that the WV DEP Division of Water has stated that the 87 microgram per liter chronic criteria for aluminum is overprotective and needs to be changed. He stated that we all have limited resources and need to expend them in an efficient manner.

The Industry Groups also commented that WVDEP's draft 2004 303(d) List of the states impaired streams (compiled to comply with federal Clean Water Act requirements) includes 166 waters that are considered impaired based on the chronic aluminum criterion of 87 ug/l. The commenters maintain that many of these listed streams – North Fork of the Cherry River, Cranberry River, Williams River, Cacapon River, Cheat River, Greenbrier River and Opequon River - have thriving aquatic communities and have no physical signs of impairment.

BOARD RESPONSE:

The Board agrees with these concerns. In particular, the Board is persuaded by the information submitted during the preliminary comment period which indicates that a number of good quality streams in the state have been placed on the 303(d) list based on violations for the 87 ug/liter criterion. This, and other information presented by WVDEP during the Board's deliberations on this matter, indicate to us that the 87 ug/liter value may be overprotective of aquatic life in the state.

COMMENT:

4. One commenter expressed concern that the Statement of Circumstances document filed with the rule did not include a scientific basis for the Board's proposed revision. This commenter and others suggested that a thorough scientific justification document be prepared for submission to USEPA once the rule is finalized. This commenter also requested that the Board forward the emergency rule package directly to USEPA for immediate consideration.

The Industry Groups included with their comments a revised Statement of Circumstances document, which contains a greater description of the science that has been presented to the Board describing the reasons that the chronic criterion of 87 ug/liter is invalid. They

also included a document entitled “WV ALUMINUM CRITERIA Draft Rationale Document for Proposed Amendments – September 24, 2004” which provides that group’s scientific justification for the Board’s proposed revisions. Those commenters offered these documents for the Board’s review and adoption.

**BOARD RESPONSE:**

The Board agrees with the commenters. **Dr. Hackney moved and Dr. Simonton seconded that the Board adopt the two documents outlined above (The Rationale Document and the Statement of Circumstances submitted by the Industry Groups) for submission to the West Virginia Legislature and the US Environmental Protection Agency with the rule, and the motion carried unanimously 3 to 0.**

**COMMENT:**

5. Commenters presented reviews of aluminum criteria effective in other states based both on total and dissolved concentrations. They indicated that in Region 3, Maryland, Virginia and the District of Columbia have not adopted aluminum criteria, and that their Water Quality Standards rules have been approved by USEPA. This commenter also addressed other commenters concerns about human intake of aluminum, indicating that humans consume about 50 milligrams of aluminum a day from a number of, including bread and baking powder, water treated by using alum and other sources.

**BOARD RESPONSE:**

The Board agrees with the commenters concerns regarding the aluminum criteria in other states.

**COMMENT:**

6. Use of the term “suspension”. Several commenters suggest that by drafting the footnote to state that 750 ug/liter will serve as the chronic value in trout streams during the period of suspension, that the Board in fact has adopted an interim criterion of 750 ug/liter value rather than suspend the 87 ug/liter value. To correct this, they suggest that the footnote be reworded to indicate that its action is a temporary modification, not a suspension.

In addition, these commenters expressed concern that the footnote revising the rule does not include a reference to the proposed scientific study to develop appropriate aluminum criteria for West Virginia. These comments include revised language of the footnote which provides:

Until July 4, 2007, the aluminum criteria will be implemented as follows: the chronic aluminum criterion shall be 87 ug/l for trout waters (as defined in section 2.20 of this rule) and shall be 750 ug.l for all other waters of the State. The implementation of the interim criteria provides time for a study

to develop aluminum criteria for waters of the State which are based upon sound science and are protective of aquatic life.

#### BOARD RESPONSE

The Board finds merit in these concerns and agrees with the rewording of the footnote offered by the commenter. **Dr. Hackney moved and Dr. Simonton seconded that the Board revise the proposed language, to be included as footnote “e” in Table 1 in the rule to read as follows:**

**Until July 4, 2007, the aluminum criteria will be implemented as follows: the chronic aluminum criterion shall be 87 ug/l for trout waters (as defined in section 2.20 of this rule) and shall be 750 ug/l for all other waters of the State. The implementation of the interim criteria provides time for a study to develop aluminum criteria for waters of the State which are based upon sound science and are protective of aquatic life.**

**The motion carried unanimously 3 to 0.**

#### COMMENT:

7. Citing language from 40 CFR 131.11(a), a number of commenters from the environmental community who filed joint comments expressing concern about the proposal, urged the Board to fulfill its obligation under Section 303 of the federal Clean Water Act, to “adopt those water quality criteria that protect the designated use. Such criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use.” These commenters maintain that the Board’s proposal to suspend the 87 ug/l chronic criterion in all but trout waters is not supported by science.

These commenters provided a brief history of consideration of the aluminum criteria as follows:

- In 1998, USEPA disapproved a revision to the aluminum criterion proposed by the Board and adopted by the WV Legislature. That revision deleted the 87 ug/liter value for chronic protection of aquatic life.
- In response to the disapproval by USEPA, the Board reconsidered the aquatic life aluminum criteria and proposed readoption of the 87 ug/liter value and a provision allowing the aluminum criteria to be measured based on dissolved, rather than total concentrations.
- This provision was passed by the West Virginia Legislature, without challenge by the regulated community; and in April of 2003, was approved by USEPA.

These commenters maintain that eliminating the chronic criterion is not an option that complies with the Board's minimum legal requirements and the need to adopt conservative and protective criteria. In support of this position, these commenters describe the complex toxicology of aluminum to aquatic biota, toxicity which may be affected by, among other things, temperature, pH and levels of Ca, K, Mg, P, Si, Fl and dissolved organic matter. They indicate that generally, the sensitivity of fish to elevated levels of aluminum is significantly greater than that of macroinvertebrates, plants and algal forms, which runs counter to USEPA's "Ambient Water Quality Criteria for Aluminum – August, 1998" published by the USEPA Office of Water.

These commenters further urge adoption or maintenance of criteria protective enough for West Virginia's headwater streams, which are particularly vulnerable because they are impacted by acid precipitation and exhibit significant seasonal variations in pH. Another important concern expressed by these commenters is that the impacts of aluminum on the numbers and diversity of fish and other aquatic species in West Virginia have not been adequately characterize, or in most cases characterized at all.

Other commenters expressed concern about the proposed revision, citing data and information indicating that the 750 ug/liter value would not provide adequate protection of aquatic life, particularly fish species, in state waters.

#### BOARD RESPONSE:

The Board acknowledges the concerns of these commenters and believes further study of aluminum impacts is warranted. However, in the interim, we are also persuaded that 750 ug/liter value based on dissolved concentrations will provide adequate protection to aquatic life in warmwater fishery streams. Data submitted by the Industry Groups and by WVDEP provide support for this position. **Dr. Hackney moved and Dr. Simonton seconded that the Board specifically find that the Category B1 waters will be adequately protected by the 750 ug/l aluminum criterion, and the motion carried unanimously 3 to 0. In addition Dr. Simonton moved and Dr. Hackney seconded that the Board include the data submitted by the WVDEP in the rule packet, and the motion carried unanimously 3 to 0.**

#### COMMENTS:

8. A commenter expressed concern about, and questioned the Board's reason for, making the aluminum criterion less stringent. He cited information indicating that aluminum is harmful to all life forms and that it damages all types of tissue. It is a protoplasmic poison and a persistent neurotoxin, which has a tendency to accumulate in the brain and the bones. It is common in our environment, but no living systems use aluminum as part of a biochemical process. The commenter suggested that to protect humans from its impacts, avoidance of ingestion, blocking its uptake with supplements and eliminating it from human systems through intake of certain foods are most effective.

#### BOARD RESPONSE:

The Board acknowledges this commenters concerns but finds that the matters raised in these comments address human health impacts from aluminum, which is not the focus of the Board's review.

#### COMMENTS:

9. One commenter expressed concern that the Board cannot fully understand the implications of their suspension of the chronic aluminum standard, which will allow the dissolved aluminum levels to increase 862% higher than the currently applicable standard. The commenter indicated that two-hour laboratory tests could easily demonstrate that at just a 19% increase from the current standard, plant roots will show adverse and measurable growth inhibition and physiological impairment in two hours. Commenter expressed concern that no scientific basis has been provided for distinguishing between trout and non-trout streams for the application of the more protective criterion. The commenter also indicated that inorganic aluminum can serve to precipitate particulates and phosphate ions, but that it will also remove living microbes from streams - some of which will be beneficial microbes. The commenter also urged the Board and the DEP to consider that the rule will facilitate increased metal discharges from mountaintop mining sites in half of the state – and the full impacts of those increased discharges over time. Commenter also indicated that experts are recognizing that all long-term projections – on all topics – have been incorrect, therefore warranting caution in revisions to the rule that may reduce water quality.

#### BOARD RESPONSE:

The Board acknowledges these comments and appreciates the broad range of concerns addressed by the commenter. It is our intention that the proposed study will answer at least some of the questions he has raised, and that additional revisions made at the end of this study period will address some of these concerns.

#### COMMENTS:

10. In addition to providing an opportunity for comments on the proposal generally, the Board solicited comments two matters which are outlined below, along with the comments received on them.

- How will the use of the 750 ug/liter numeric criterion, measured based on dissolved concentrations rather than total concentrations, ensure the protection of warm water fishery streams?
  - Comments from the Industry Groups referred to work they had submitted to the Board in 1999 by Robert Gensemer, which they believe demonstrates use of dissolved concentrations is appropriate. The

commenters also indicated that the state of Wyoming is considering a revision to their criterion from total to dissolved.

- How will the suspension of the 87 ug/liter value affect waters listed for aluminum on the Clean Water Act Section 303(d) list of impaired waters for West Virginia, which were finalized before the effective date of the suspension?
  - DEP's comments indicate that they will not change the 303(d) list based on the aluminum criterion change. Their letter provides: "The streams on the 2004 list for aluminum would remain until re-evaluated in the 2006 listing process. DEP, in accordance with TMDL Stakeholder Committee recommendations, has not and does not intend to make mid-cycle listing changes. However, if the suspension becomes effective, DEP would not pursue TMDL development for streams listed solely based on the suspended criteria."
  - The Industry Groups indicate that DEP has discretion in managing its list of impaired streams, and they defer to DEP's assessment on the issue. They note that many of these previously listed streams were also impaired for parameters other than aluminum, and therefore a TMDL must be prepared for these streams regardless of the aluminum criteria. The Board's current proposed action, however, would prevent healthy streams from being improperly listed for aluminum until appropriate aluminum criteria can be prepared.

Cheryl Atkinson of the USEPA, Region 3 provided comments to the Board during the teleconference. Ms. Atkinson noted that for any change to the state's water quality criteria, such as suspending the current chronic aluminum standard of 87 ug/l (total) and adopting the 750 ug/l (dissolved) criterion proposed here, the USEPA would require a scientific rationale for such change. Ms. Atkinson expressed concerns that based on the USEPA's review of current scientific literature, the 750 ug/l dissolved standard for aluminum proposed by the Board may not be protective. In addition, she stated that the current 87 ug/l chronic aluminum value was previously approved by USEPA and upheld in Federal Court.

Ms. Atkinson also commented on the Board's representation that the suspension of the 87 ug/l criterion for aluminum would mean that the criterion will not be used for regulatory purposes including NPDES permits, 303(d) listings, and the development of TMDLs. She stated that pursuant to federal regulations, all additions and revisions to water quality standards will become effective for Clean Water Act purposes only after USEPA approval.

She further stated that the USEPA would agree that there is a need for a scientific study to determine what the aluminum criteria should be in the state and encouraged the Board to include within the proposed rule packet, additional information regarding the scientific study being proposed by the Board, such as the Board's approach or plan to evaluate the conditions in West Virginia.

In response to the USEPA comment, the Board will include the following language in the Response to Comments Document to be included in the rule packet: "During the discussions on this matter the West Virginia Department of Environmental Protection suggested the need for studies in state streams to fully evaluate the impacts of the proposed revision to the aluminum criterion – and to ensure that the revision proposed herein will be fully protective of aquatic life. Other interested parties agreed with this suggestion by the agency. Although the particulars of the study, and details of how it will be sponsored have not been decided, the Board also agrees with the agency that it is important, and considers it to be one of the supporting bases for the proposal to establish 750 ug/liter as the interim chronic aluminum criteria for warmwater fishery streams."

Dr. Hackney stated that Maryland, Virginia and the District of Columbia have not adopted aluminum criteria and asked whether those states' water quality standards have been approved even without an aluminum criteria. Nina Rivera stated that the USEPA responds to what is new or revised in a water quality standards package and approves or disapproves standards which are proposed or before it for consideration. Ms. Atkinson stated that the fact that there is not an aluminum standard in those states' water quality standards rules does not mean that there has been a determination that a zero standard is protective.

The Board then discussed Fiscal Note which will be included in the rulemaking packet. Dr. Simonton moved and Dr. Hackney seconded that the language of the Fiscal Note be revised to provide that the objectives of this rule is "To establish an interim chronic aquatic life criterion for aluminum of 750 ug/l for water water fishery streams. The chronic aquatic life aluminum criterion of 87 ug/l will remain in effect for trout streams." And motion carried unanimously 3 to 0.

After a completing a review of the comments, and revising the rule and other documents to be included in the rule-making packet as previously noted in

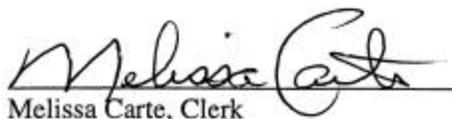
the minutes, Dr. Hackney moved and Dr. Simonton seconded that the Board approve the rule as revised, and the motion carried unanimously 3 to 0.

The rule will be filed as both an Agency Approved Rule and as an Emergency Rule. The Emergency Rule will become effective in forty-three days from the date of that filing unless the Secretary of State disapproves the Emergency Rule within that time frame; and may remain in effect for up to 15 months. The Emergency Rule packet will also be filed with the USEPA as soon as possible after the initial filing with the WV Secretary of State's Office in order to allow the USEPA time to begin to consider the proposed change to the Aluminum criteria in the water quality standards.

All Emergency Rules must be followed by the filing of an "Agency Approved" rule within ninety (90) days from the date the Emergency Rule is filed. The Board will file the "Agency Approved" version of the Water Quality Standards rule with the Secretary of State's Office and the Legislative Rule-Making Review Committee on September 29, 2004. The "Agency Approved" rule will then proceed through the legislative process. That entire rule packet, which will include additional changes to the Water Quality Standards rule and documents such as the transcript of the public hearings, written comments and the rational document, will also be provided to the USEPA once it is approved by the Legislature during the 2005 legislative session.

Whereupon, moved and Dr. seconded that the September 28, 2004, meeting of the WV Environmental Quality Board be adjourned, and the motion carried unanimously 3 to 0.

I hereby certify that the forgoing is a true and correct record of the proceedings of the meeting held on September 28, 2004, by the West Virginia Environmental Quality Board. These minutes were approved by the Environmental Quality Board on December 13, 2004.

  
Melissa Carte, Clerk