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STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF THE PROPOSED AMENDMENTS TO STANDARDS FOR INTERSTATE AND INTRASTRATE WATERS, 20.6.4 NMAC	)	WQCC No. 14-05(R)

AMIGOS BRAVOS' NOTICE OF WITHDRAWAL OF OBJECTION REGARDING PISCICIDE ISSUES, SUPPLEMENTAL PROPOSED CHANGES AND EXHIBIT REGARDING TEMPORARY STANDARDS, AND SUPPLEMENTAL EXHIBITS PERTINENT TO ALUMINUM CRITERIA

I. INTRODUCTION

Amigos Bravos hereby submits the following:

- Notice that it is withdrawing its objection and proposed changes to the New Mexico Environment Department's ("Department's) proposal for 20.6.4.16(c) to eliminate the public hearing requirement for piscicide applications.
- Supplemental proposed changes to the Department's proposal to adopt temporary standards, 20.6.4.10(F) and (H) NMAC, and Supplemental Exhibit K in support of those proposed changes.
- Supplemental Exhibit L regarding the presence of mussels in New Mexico and Supplemental Exhibit M regarding West Virginia's consideration of a hardness-based aluminum criteria pertinent to Amigos Bravos' proposed changes to aluminum criteria at 20.6.4.900 NMAC.

II. NOTICE OF WITHDRAWAL OF OBJECTION AND PROPOSED CHANGES TO THE DEPARTMENT'S PROPOSAL FOR 20.6.4.16(c) NMAC

Amigos Bravos hereby withdraws its objection and proposed changes to the Department's proposal for 20.6.4.16(c) NMAC. The Department, working with Amigos Bravos, made changes to its proposal that assuages Amigos Bravos Concerns.

III. PROPOSED CHANGES TO THE NEW MEXICO ENVIRONMENT DEPARTMENT'S PROPOSAL TO ADOPT TEMPORARY STANDARDS, 20.6.4.10(F) and (H) NMAC

A. Proposed Changes

Amigos Bravos proposes the following changes to the Department's proposal to adopt temporary standards:

20.6.4.10.F. Temporary Standards.

(1) Any person may petition the commission to adopt a temporary standard applicable to all or part of a surface water of the state as provided for in this section and applicable to Subsections in 40 CFR Part 131.14. The commission may adopt a proposed temporary standard if the petitioner demonstrates that:

(a) attainment of the associated designated use may not be feasible in the short term due to one or more of the factors listed in 40 CFR 131.10(g), or due to the implementation of actions necessary to facilitate restoration such as through dam removal or other significant wetland or water body reconfiguration activities as demonstrated by the petition and supporting work plan requirements in Paragraphs (4), and (5) below;

(b) the proposed temporary standard represents the highest degree of protection feasible in the short term, complies with antidegradation protections in 20.6.4.8 NMAC ~~limits the further degradation of water quality to the minimum necessary~~, ensures reasonable and expeditious progress to achieve the original standard by the expiration date of the temporary standard, and adoption will not cause the further impairment or loss of an existing use;

(c) for point sources, existing or proposed discharge control technologies will comply with applicable technology-based limitations and feasible technological controls and other management alternatives, such as a pollution prevention program; and

(d) for restoration activities, nonpoint source or other control technologies shall limit downstream impacts, and if applicable, existing or proposed discharge control technologies shall be in place consistent with Subparagraph (c).

(2) A temporary standard shall apply to specific pollutant(s), ~~and~~ to specific water body segment(s), and to the specific discharges subject to the work plan prepared pursuant to Subparagraph 20.6.4.10.F(5) and approved by the commission. A temporary standard shall be approved for the minimum time necessary and for no more than ten years, including renewal periods. The adoption of a temporary standard does not exempt dischargers from complying with all other applicable water quality standards or control technologies.

(3) Designated uses shall not be modified on a temporary basis. Designated use attainment as reported in the CWA Section 305(b)/303(d) Integrated Report shall be based on the original standard and not on a temporary standard.

(4) A petition for a temporary standard shall:

(a) identify the currently applicable standard(s), the proposed temporary standard for the specific pollutant(s) and the specific surface water body segment(s) of the state to which the temporary standard would apply;

(b) include the basis for any factor(s) specific to the applicability of the temporary standard (for example critical flow under Subsection B of

20.6.4.11 NMAC)

(c) demonstrate that the proposed temporary standard meets the requirements in this Subsection;

(d) present a work plan and with timetable of proposed actions for achieving compliance with the original standard in accordance with Paragraph (5);

(e) include any other information necessary to support the petition.

(5) As a condition of a petition for a temporary standard, in addition to meeting the requirements in this Subsection, the petitioner shall prepare a work plan in accordance with Paragraph (4), and submit the work plan to the department and the public for review and comment. The work plan to support a temporary standard shall identify the factor(s) listed in 40 CFR 131.10(g) or Subparagraph 20.6.4.10.F(1)(a) NMAC affecting attainment of the standard that will be analyzed and the timeline for proposed actions to be taken to achieve the uses attainable over the term of the temporary standard, including baseline water quality, and any investigations, projects, facility modifications, monitoring, or other measures necessary to achieve compliance with the original standard. The work plan shall identify and account for each individual discharge within the specific surface water body segment(s) of the state to which the temporary standard would apply, including by identifying specific actions applicable to each discharge or, where discharges share particular characteristics or technical and economic scenarios, each group of discharges. The work plan shall include provisions for review of progress in accordance with Paragraph (8), public notice and consultation with appropriate state, tribal, local and federal agencies. Once prepared, the work plan shall be submitted to the commission for review and approval and be made available to the public.

(6) The commission may condition the approval of a temporary standard and associated work plan by requiring additional monitoring, relevant analyses, the completion of specified projects, submittal of information, or any other actions.

(7) Temporary standards and work plans prepared to support temporary standards may be approved, adopted, and implemented after a thirty-day public review and comment period before a petition is submitted to the commission for approval and adoption, a public hearing before the commission ~~appropriate public participation~~, commission approval and adoption pursuant to this Subsection for all state purposes, and EPA Clean Water Act Section 303(c) approval for any federal action.

(8) All temporary standards are subject to a required review during each succeeding review of water quality standards conducted in accordance with Subsection A of 20.6.4.10 NMAC. The petitioner shall provide a written report to the commission documenting the progress of proposed actions ninety days prior to the deadline to submit proposed changes to the water quality standards in each succeeding triennial review conducted pursuant to section 303(c) of the Clean Water Act and NMSA 1978 74-6-6.B, ~~pursuant to a reporting schedule stipulated in the approved temporary standard.~~ The purpose of the review is to determine progress consistent with the original conditions of the petition for the duration of

the temporary standard. If the petitioner cannot demonstrate that sufficient progress has not been made the commission may revoke approval of the temporary standard or provide additional conditions to the approval of the temporary standard.

(9) The commission may consider a petition to extend a temporary standard. The effective period of a temporary standard shall be extended only if demonstrated to the commission that the factors precluding attainment of the underlying standard still apply, that the petitioner is meeting the conditions required for approval of the temporary standard, and that reasonable progress towards meeting the underlying standard is being achieved.

(10) A temporary standard shall expire no later than the date specified in the approval of the temporary standard. Upon expiration of a temporary standard, the original standard becomes applicable.

(11) Temporary standards shall be identified in 20.6.4.97 – 899 NMAC as appropriate for the surface water affected.

[20.6.4.10 NMAC - Rp 20 NMAC 6.1.1102, 10-12-00; Rn, 20.6.4.9 NMAC, 05-23-05; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

20.6.4.12 NMAC

H. It is a policy of the commission to allow a temporary standard approved and adopted pursuant to Subsection F of 20.6.4.10 NMAC to be included in the applicable ~~NPDES~~ Clean Water Act permit for discharges for discharges existing at the time the temporary standard was approved and adopted and subject to a commission approved work plan as enforceable limits and conditions. The temporary standard and schedule of actions may be included at the earliest practicable time, and shall specify milestone dates so as to measure progress towards meeting the original standard. A temporary standard shall not be included in Clean Water Act permits for new or increased discharges, and any new or increased discharges must comply with the original standard.
33 [20.6.4.12 NMAC - Rp 20 NMAC 6.1.1104, 10-12-00; A, 10-11-02; Rn, 20.6.4.11 NMAC, 05-23-
34 05; A, 05-23-05; A, 12-01-10; A, XX-XX-XX]

B. Statement of Basis

Amigos Bravos opposes the New Mexico Environment Department's proposal to adopt a temporary standards proposal for New Mexico, as noted in Amigos Bravos September 30, 2014 Proposed Amendments and Statement of Basis and in the direct and rebuttal expert testimony submitted on Amigos Bravos' behalf by Rachel Conn on December 12, 2014 and February 13, 2015. While Amigos Bravos maintains its opposition to the Department's proposal, it offers the following proposed changes outlined in Section II.B above to better protect water quality and to improve the clarity and effectiveness of the temporary standards proposal. Each of the proposed

changes is a logical outgrowth of Amigos Bravos' and the Department's positions and testimony.

- **Changes to F(1)(b):** Amigos Bravos proposes changes to ensure reasonable progress is made towards achieving the original standard. As the Department's witness, Kristine Pintado, explains in her direct testimony at 9-89, "the petition for a temporary WQS will, of necessity, contain a work pan with controls or other limitations tightening over time, which shows progress towards achieving the original criterion." As Ms. Pintado further explains at 10-89, "a temporary [standard] should also identify interim milestones…to ensure reasonable progress is made toward meeting the original [water quality standard] (EPA Water Quality Stanadards Handbook, Second Ed., 1994)." *See also* Rebuttal Testimony of Kristine Pintado at p. 5-18. This is also, of course, implicit in the very notion of a "temporary standard." However, while this may be the case, the Department's intent to ensure reasonable progress is not explicit in the Department's proposed language for adoption of temporary standards. Amigos Bravos thus proposes changes to the Department's proposal to do just that. Amigos Bravos also proposes changes to ensure that any temporary standard (and, specifically, the work plan used to justify it) complies with, and does not circumvent, New Mexico's antidegradation protections. The Department's current language regarding degradation—providing that the temporary standard must "limit the further degradation of water quality to the minimum necessary to achieve the original standard by the expiration date of the temporary standard"—is different then the provisions intended to manage degradation contained in New Mexico's antidegradation policy and implementation plan, 20.6.4.8 NMAC.

- **Changes to F(2):** Amigos Bravos acknowledges NMED's concerns regarding potential tension between EPA's definition of "variance" and the New Mexico Water Quality Act's definition, as implemented by rule, of "variance." Amigos Bravos thus understands the Department's proffered basis behind NMED's proposed use of a "temporary standard" that would, as Amigos Bravos understands it, apply to all dischargers of specific pollutants within a specific water quality segment. However, notwithstanding distinctions in nomenclature, section 5.3 of EPA's Water Quality Standards Handbook and supporting guidance leads to the inescapable conclusion that NMED's proposal must ensure that the temporary standard, to cover multiple discharges, properly account and impose limits on all discharges within a specific water quality segment. Thus, Amigos Bravos proposes to make sure that a discharger can only apply a temporary standard to its operations if it is in fact properly accounted for in the work plan submitted in support of a petition for a temporary standard. Otherwise, discharges that are not accounted for by the work plan could take advantage of the temporary standard and undermine if not preclude achievement of the original standard because they are not accounted for in the work plan. Amigos Bravos' proposed changes to this section, on this point, should be read in conjunction with Amigos Bravos' proposed changes to subsection F(5), which provide that the work plan must in fact identify and account for all discharges that would be subject to the temporary standard.

  Amigos Bravos also proposes a 10-year limit to the application of a temporary standard. This conforms NMED's proposal with EPA's proposed water quality rulemaking, 78 Fed. Reg. 54544 (Sept. 4, 2013), which NMED attached, in part, as Exhibit 23. Specifically, in Exhibit 23, EPA's proposed language for 40 C.F.R. § 131.14(b)(1)(iii) expressly mandates a 10-year limit.

- **Changes to F(5):** Amigos Bravos proposes to make any work plan available for public, not just NMED, review and comment. This provision would help to identify and resolve problems with a work plan before a temporary standard is submitted to the commission for approval. This could therefore help streamline and at least illuminate key issues involving commission's consideration of any temporary standard proposal.

  Amigos Bravos also proposes, consistent with its proposed changes to F(2), that the work plan account for all discharges relevant to a temporary standard proposal. The proposed language, here, reflects the Department's intent, as Amigos Bravos understands it, to apply any approved temporary standard to all dischargers of specific pollutants to a specific water quality segment. The proposed language also reflects EPA guidance for variances that apply to multiple dischargers, specifically *Discharger-specific Variances on a Broader Scale: Developing Credible Rationales for Variances that Apply to Multiple Dischargers*, EPA Publication No. EPA-820-F-13-012 (March 2013). NMED referenced this guidance in its original June 25, 2014 petition, specifically in its basis for change for the temporary standard proposal on page 7. Amigos Bravos also referenced this guidance on page 7 of the direct testimony of Rachel Conn. With this filing, Amigos Bravos submits that guidance document as Supplemental Exhibit K.

  Finally, Amigos Bravos proposes to ensure that the work plan submitted in support of a petition for temporary standard be reviewed and expressly approved by the commission and, once approved, made available to the public.

- **Changes to F(7):** Amigos Bravos finds "appropriate public participation" far too vague, creating uncertain expectations and requirements for the proponent of a temporary standard and thus risking unnecessary tension and conflict between the proponent of a temporary standard and the public. We propose to clarify that public participation means a 30-day public review and comment period before a temporary standards proposal is submitted to the commission for consideration and a public hearing to take place before the commission.

- **Changes to F(8):** Amigos Bravos proposes to clarify when the petitioner must submit a report to the Commission, proposing to require that such reports must be submitted 90 days prior to the deadline to submit proposed changes to water quality standards for each triennial review. This allows other parties to propose changes to the temporary standards. Further, Amigos Bravos proposed changes alleviate the risk of inconsistent reporting requirements inherent to the Department's proposal, which, at present, vaguely provides that the report will be submitted in accord with a reporting schedule stipulated in the temporary standard itself.

- **Changes to 20.6.4.12.H:** Amigos Bravos proposes to limit the application of a temporary standard to discharges existing at the time a temporary standard is proposed and adopted (and, per other proposed changes, identified and accounted for in a work plan). This ensures that a temporary standard would not incentivize new or increased dischargers targeting waterbodies with temporary standards. This also ensures that progress is made towards achievement of the original standard, given that any new or increased discharges would not be encompassed by the work plan provided for in F(5). Indeed, it is reasonable to conclude that any new or

increased discharges, if not identified and accounted for in a work plan, could undermine that work plan by changing the timing, location, and magnitude of discharges in the water quality segment subject to the temporary standard. The Department, in the rebuttal testimony of Ms. Pintado on p. 6-18, notably "disagrees" with the notion, paraphrasing Amigos Bravos' concern, that "[a]llowing a Temporary Standard would result in incrased discharges of pollution." As Ms. Pintado further explained on p. 6-18, "a Temporary Standard must reduce pollutant loads over time and further must demonstrate continued progress toward achieving the original [water quality standard]."

III. SUPPLEMENTAL EXHIBIT L AND M REGARDING THE PRESENCE OF MUSSELS IN NEW MEXICO PERTINENT TO AMIGOS BRAVOS' PROPOSED CHANGES TO THE ALUMINUM CRITERIA, 20.6.4.900 NMAC

Amigos Bravos submits Supplemental Exhibit L, which identifies mussel species extant in New Mexico and Supplemental Exhibit M, an opinion report by Dr. Carys L. Mitchelmore. These exhibits are pertinent to Amigos Bravos' proposed changes to the aluminum criteria, 20.6.4.900 NMAC, and Chevron Mining, Inc.'s Exhibit 8 dealing with West Virginia's consideration of hardness-based aluminum criteria, which was attached to the testimony of Dr. Robert Gensemer.

Respectfully submitted this 12th day of October 2015.

By: _____

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CERTIFICATE OF SERVICE

I certify that a copy of the foregoing pleading was serviced by email, on October 12th, 2015 to:

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The original and fifteen hard copies of this filing will be provided to the board administrator, Pamela Castanada, or, if Ms. Castanada is not present, the hearing officer, at the triennial review hearing on October 13, 2015.

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United States Environmental Protection Agency
Office of Water
Mail Code 4305T
EPA-820-F-13-012
March 2013

Discharger-specific Variances on a Broader Scale: Developing Credible Rationales for Variances that Apply to Multiple Dischargers

Frequently Asked Questions

DISCLAIMER

These Frequently Asked Questions (FAQs) do not impose legally binding requirements on the EPA, states, tribes or the regulated community, nor do they confer legal rights or impose legal obligations upon any member of the public. The Clean Water Act (CWA) provisions and the EPA regulations described in this document contain legally binding requirements. These FAQs do not constitute a regulation, nor do they change or substitute for any CWA provision or the EPA regulations.

The general description provided here may not apply to a particular situation based upon the circumstances. Interested parties are free to raise questions and objections about the substance of these FAQs and the appropriateness of their application to a particular situation. The EPA retains the discretion to adopt approaches on a case-by-case basis that differ from those described in these FAQs where appropriate. These FAQs are a living document and may be revised periodically without public notice. The EPA welcomes public input on these FAQs at any time.

1. Why is the EPA issuing these FAQs?

The EPA is issuing these FAQs to help address questions that arise when states and tribes[1] seek to streamline the adoption and approval of water quality standards (WQS) variances for pollutants that have an impact on multiple permittees (or dischargers). This occurs when groups of permittees are experiencing the same challenges in meeting their water quality based effluent limits (WQBELs) for the same pollutant, regardless of whether or not the permittees are located on the same waterbody. States and tribes that want to find ways to both improve the efficiency of their WQS adoption and approval process, and provide permittees with as much certainty as possible regarding their ultimate discharge requirements, may find these FAQs particularly helpful. While the EPA realizes there may be further questions about the implementation of multiple discharger variances, these FAQs

[1] "Tribal" and "tribes" refers to tribes authorized for treatment in a manner similar to a state (TAS) under section 518 of the Clean Water Act (CWA) for purposes of CWA section 303(c) water quality standards (WQS).

are designed to help states and tribes evaluate the appropriateness of using a multiple discharger variance approach.

The federal water quality standards regulations at 40 CFR 131 and the federal permitting regulations at 40 CFR 122 provide for a number of tools for states and tribes that offer regulatory flexibility when implementing water quality management programs. These tools include site-specific criteria, revisions to designated uses, dilution allowances, permit compliance schedules, and WQS variances. Which regulatory tool is appropriate depends upon the circumstances.

2. What is a water quality standards variance?

A water quality standards variance is a time limited designated use and criterion (i.e., interim requirements) that is targeted to a specific pollutant(s), source(s), and/or waterbody segment(s) that reflects the highest attainable condition[2] during the specified time period. As such, a variance requires a public process and EPA review and approval under CWA 303(c). While the designated use and criterion reflect what is ultimately attainable, the variance reflects the highest attainable condition for a specific timeframe and is therefore less stringent.[3] However, a state or tribe may adopt such interim requirements only if it is able to demonstrate that it is not feasible to attain the currently applicable designated use and criterion during the period of the variance due to one of the factors listed at 40 CFR 131.10(g).[4] Where the currently applicable designated use and criterion are not being met, WQS variances that reflect a less stringent, time limited designated use and criterion allow states, tribes and stakeholders additional time to implement adaptive management approaches to improve water quality, but still retain the currently applicable designated use as a long term goal for the waterbody. States have adopted, and EPA has approved, water quality standards variances that apply to individual dischargers, variances that apply to multiple dischargers, and variances that apply to entire waterbodies or segments.

The interim requirements specified in the variance apply only for CWA section 402 permitting purposes and in issuing certifications under section 401 of the Act for the pollutant(s), permittee(s) and /or waterbody or water body segment(s) covered by the variance. Specifically, the variance serves as the basis for the WQBEL in National Pollutant Discharge Elimination System (NPDES) permits. However, the interim requirements *do not replace* the designated use and criteria for the water body as a whole, therefore, any implementation of CWA section 303(d) to list impaired waters must continue to be based on the designated uses and criteria for the waterbody rather than the interim requirements.

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[2] The highest attainable condition is the condition that is both feasible to attain and is closest to the protection afforded by the designated use and criteria.

[3] While variances are described as "time limited" and designated uses are implied to be "permanent," 40 CFR 131.20 requires that states and tribes hold public hearings for the purpose of reviewing the applicable water quality standards, including designated uses, and modifying them as appropriate.

[4] See Section 5.3 of the *Water Quality Standards Handbook EPA 823 B 94 005a, August 1994; Advanced Notice of Proposed Rule Making, Water Quality Standards Regulation, July 7, 1998 63 FR 36759.*

3. When might a state or tribe want to adopt a WQS variance?

Many states and tribes have found that WQS variances are useful to consider when there is a new or more stringent effluent limit[5] as long as the state or tribe can also provide a demonstration that attaining the designated use and criterion is not feasible for the term of the variance, but the designated use and criterion may be attainable in the longer term. Example situations of when a variance may be appropriate include when:

- Attaining the designated use and criterion is not feasible under the current conditions (e.g., water quality-based controls required to meet the numeric nutrient criterion would result in substantial and widespread social and economic impact) but could be feasible should circumstances related to the attainability determination change (e.g., development of less expensive pollution control technology or a change in local economic conditions); or
- The state or tribe does not know whether the designated use and criterion may ultimately be attainable, but feasible progress toward attaining the designated use and criterion can still be made by implementing known controls and tracking environmental improvements (e.g., complex use attainability challenges involving legacy pollutants).

Properly applied, a WQS variance can lead to improved water quality over the duration of the variance and, in some cases, full attainment of designated uses due to advances in treatment technologies, control practices, or other changes in circumstances, thereby furthering the objectives of the CWA.

4. What is the legal basis for a WQS variance?

The CWA specifies an interim goal that, "wherever attainable," water quality provide for the protection and propagation of fish, shellfish, and wildlife and provide for recreation in and on the water. In implementing the CWA, the regulation at 40 CFR 131.10 establishes how a state or tribe may demonstrate that uses specified in CWA section 101(a)(2) or subcategories of such uses are not feasible to attain. In 1977, an EPA Office of General Counsel legal opinion considered the practice of temporarily downgrading the WQS as it applies to a specific permittee rather than permanently downgrading an entire water body or waterbody segment(s) and determined that such a practice is acceptable as long as it is adopted consistent with the substantive requirements for permanently downgrading a designated use. In other words, a state or tribe may change the standard in a more targeted way than a designated use change, so long as the state or tribe is able to show that achieving the standard is "unattainable" for the term of the variance. The state practice described in the Office of General Counsel legal opinion became known as adopting a "variance" to a water quality standard.

The EPA's regulation at 40 CFR 131.13 provides that variance policies are general policies affecting the application and implementation of WQS and that states and tribes may include variance policies in their state and tribal standards, at their discretion.[6] The EPA interprets its

[5] For example, when dischargers are faced with new or revised criteria, and/or when a reasonable potential analysis shows the need for a water quality based effluent limit.

[6] Section 40 CFR 131.13 further provides that such policies are subject to EPA review and approval.

regulation to authorize the use of a WQS variance where a state or tribe meets the same procedural and substantive requirements as removing a designated use. Therefore, variances can be granted based on any one of the six factors listed at 40 CFR 131.10(g).

5. What are the factors a state or tribe can use to justify the need for a water quality standards variance?

As provided in §131.10(g), states and tribes "may remove a designated use which is *not* an existing use, as defined in 40 CFR 131.3, or establish sub-categories of a use if the state or tribe can demonstrate that attaining the designated use is not feasible because:

(1) Naturally occurring pollutant concentrations prevent the attainment of the use; or

(2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or

(3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or

(4) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or

(5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or

(6) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact."

6. What is a Multiple Discharger Variance?

If a state or tribe believes that the designated use and criterion are unattainable as they apply to multiple permittees because they are all experiencing challenges in meeting their WQBELs for the same pollutant(s) for the same reason, regardless of whether or not they are located on the same waterbody, a state or tribe may streamline its WQS variance process. To do so, the state or tribe would adopt one variance that applies to all of these permittees (i.e., a multiple discharger variance) so long as the variance is consistent with the CWA and implementing regulation at 40 CFR 131.10 (for example, all the dischargers in the group cannot meet the required WQBEL to protect aquatic life for a period of time due to substantial and widespread economic and social impact).

The EPA recognized the utility of a multiple discharger variance, and its distinction from an individual discharger WQS variance in the "Water Quality Guidance for the Great Lakes System: Supplementary Information Document" (SID; EPA–820–B–95–001; March 1995, p.

238). The EPA also spoke to the use of multiple discharger variances in the "Water Quality Standards for the State of Florida's Lakes and Flowing Waters; Final Rule." 75 Fed. Reg. 75762, 75790 (December 6, 2010). It is important to note that multiple discharger variances may not be appropriate or practical for all situations, and may be highly dependent on the parameters considered and the number of affected permittees.

7. What should a state or tribe keep in mind when justifying the need for a multiple discharger variance?

In developing an analysis to justify the need for a multiple discharger variance, states and tribes should consider the following three principles. The variance and the justification:

(1) Must meet the same 40 CFR 131 regulatory requirements as an individual discharger WQS variance, and should consider any EPA guidance. Specifically, the state or tribe must fully demonstrate that a factor listed in 40 CFR 131.10(g) precludes attainment of a use specified in CWA 101(a)(2) for the entire variance period. When using 40 CFR 131.10(g)(6), this means that the documentation provided to support the variance must address both the substantial AND widespread components of the economic and social impacts of attaining the designated use and criterion.

(2) Should ensure that any overall demonstration is conducted in a manner that accounts for as much individual permittee information as possible. A permittee that could not qualify for an individual WQS variance should not qualify for a multiple discharger variance. The demonstration should:

- Apply only to permittees experiencing the same challenges in meeting WQBELs for the same pollutant(s), criteria and designated uses.
- Group permittees based on specific characteristics or technical and economic scenarios that the permittees share (e.g., type of discharger (public or private), industrial classification, permittee size and/or effluent quality, treatment train (existing or needed), pollutant treatability, available revenue, whether or not the permittee can achieve a level of effluent quality comparable to the other permittees in the group, and/or waterbody or watershed characteristics) and conduct a separate analysis for each group.[7] The more homogeneous a group is in terms of factors affecting attainability of the designated use and criterion, the more credible the multiple discharger variance will be.
- Collect sufficient information for each individual permittee, including engineering analyses and financial information, to adequately support the specification of permittee groups for each individual permittee to be covered by the variance (e.g. estimated costs that each permittee may experience, permittee specific revenue).

[7] The EPA recommends that the state or tribe develop a separate variance for each group (even when going through the same rulemaking procedure) so that if questions arise for one group, it does not jeopardize approval for the others.

(3) Should consider an individual variance for a particular permittee if it does not fit with any of the group characteristics (e.g., private vs. public dischargers, large vs. small permittee, or permittees with a parent company vs. those without).

8. What should a state or tribe keep in mind when adopting a multiple discharger variance pursuant to state/tribal law?

Any multiple discharger variance should:

(1) Include a justifiable expiration date, consistent with the analysis provided, for each permittee or group of permittees covered by the variance. After the expiration date, each permittee in the group will be subject to the applicable water quality standards, or obtain EPA approval on a variance renewal. If the variance will expire during the permit term, the permitting authority must either include an appropriate WQBEL that will apply at the expiration of the variance or include a reopener clause such that the WQBEL may be revised in order for that permit to derive from and comply with WQS the entire permit term.

(2) Provide that any renewal of a multiple discharger variance includes a new demonstration that the designated use and criterion are not feasible to attain during the term of the renewed variance, and documentation of the feasible progress that has been made by each permittee covered by the renewal. In addition, individual permittees will be reevaluated to determine if they continue to qualify under their group designation. Permittees that no longer qualify will cease to be covered by the multiple discharger variance.

It is important to note that even though the duration of a variance may be longer than 3 years, a variance is a water quality standard that must be reviewed every 3 years, consistent with 40 CFR 131.20 (a).

9. What must a state or tribe keep in mind when determining the appropriate interim requirements for a multiple discharger variance?

As with any WQS variance, the interim requirements will need to reflect the highest attainable condition during the term of the variance. The highest attainable condition may be expressed as the highest attainable interim use and criterion[8] or highest attainable effluent

[8] Section 131.6(a) requires that each state's water quality standards submitted to EPA for review must include "use designations consistent with the provisions of sections 101(a)(2) and 303(c)(2) of the Act." CWA section 101(a)(2) establishes as a national goal "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water," wherever attainable. Section 303(c)(2)(A) requires state water quality standards to "protect the public health or welfare, enhance the quality of water and serve the purposes of this [Act]." EPA's regulations at 40 CFR part 131 interpret and implement these CWA provisions as creating a "rebuttable presumption" that requires state water quality standards to provide for all of the uses specified in Section 101(a)(2) of the Act, unless those uses are shown by a use attainability analysis to be unattainable. Section 131.10(g) and 131.10(j) authorizes a state to remove protection for a use specified in 101(a)(2) (or subcategory of such a use) if the state can demonstrate that one of the attainability factors is met. Once the presumption is rebutted, the state must still adopt, under 131.6(a), "use designations consistent with the provisions of sections 101(a)(2) and 303(c)(2) of the Act." In order to comply with this provision, states will

condition for a permittee(s) during the term of the variance. For example, this could be accomplished by specifying in the variance a numeric value that reflects the highest water quality that a discharger could achieve (beyond their technology-based effluent limits) during the term of the variance.[9] In general, interim requirements should be established on a permittee specific basis (particularly when demonstrating that the applicable designated use is unattainable based on 40 CFR 131.10(g)(6)), but there may be instances where establishing requirements for a group of permittees may be appropriate (e.g., with "legacy pollutants", or when hydrologic conditions have been modified). EPA notes that some states have included additional interim requirements, such as requirements to research advances in wastewater treatment or improved management practices, to conduct wastewater treatability studies, to define demonstrated performance of wastewater treatment or other control methods.

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need to adopt designated uses that continue to serve the 101(a)(2) goal by protecting for the highest attainable use unless the state has shown that no use specified in 101(a)(2) or no subcategory of such uses are attainable.

[9] This is a reasonable alternative to adopting an interim designated use and criterion because the resulting instream concentration reflects the highest attainable interim use and interim criterion.

New Mexican Mussels

Mussels are defined in the American College Dictionary as "any bivalve mollusk." Bivalve molluscs are members of the class Bivalvia. New Mexico has 23 extant species of mussels and one species presumed extirpated. Mussels occur in at least 10 New Mexican counties (Eddy, Quay, San Miguel, Harding, Sandoval, Union, Colfax, Mora, Santa Fe and Taos).

Species of mussels in New Mexico:

California Floater	Anodonta californiensis
Giant Floater Mussel	Pyganodon grandis
Pondhorn Mussel	Uniomerus tetralasmus
Paper-shell Mussel	Utterbackia imbecillis
Texas Hornshell	Popenaias popeii
Swamp Fingernailclam	Musculium partumeium
Lake Fingernailclam	Musculium lacustre
Long Fingernailclam	Musculium transversum
Ubiquitous Peaclam	Pisidium castertanum
Ridged-beak Peaclam	Pisidium compressum
Shiny Peaclam	Pisidium nitidum
Peaclam	Pisidium contortum
Peaclam	Pisidium insigne
Held's Peaclam	Pisidium milium
Wide-hinged Peaclam	Pisidium pauperculum
Singley's Peaclam	Pisidium singleyi
Peaclam	Pisidium variabile
Globular Peaclam	Pisidium ventricosum
Lilljeborg's Peaclam	Pisidium lilljeborgi
Sangre De Cristo Peaclam	Pisidium sanguinichristi
Striate Peaclam	Sphaerium striatinum
Zebra Mussel	Dreissena polymorpha
Asian Clam	Corbicula fluminea
Tampico pearlymussel	Cyrtonaias tampicoensis (presumed extirpated from NM)

Information from Biota Information System of New Mexico (BISON-M), NM Dept. of Game and Fish, October 8, 2015.

Opinion Report on the West Virginia DEP's Emergency Rule For Changes to the Water Quality Standard For Aluminum (January, 2013).

By

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In Summary:

I believe West Virginia's proposed change for aluminum water quality standards from a fixed threshold to hardness-based criteria to be inappropriate given that;

(1) There are very limited peer reviewed studies and definitive toxicity data available regarding this relationship, especially in the pH range of 7-9.

(2) Aluminum toxicity is complex and dependent upon many other water quality parameters (e.g. dissolved organic material, pH), species and life-stages.

(3) Aluminum toxicity in laboratory tests may not represent the array of toxicity mechanisms (i.e. especially physical toxicity) for aluminum in field situations.

(4) West Virginia's proposal is to use dissolved aluminum levels. This differs from the EPA's guideline that total recoverable aluminum be used. The use of total recoverable is the most conservative and consistent approach.

Detailed report:

In West Virginia the current water quality standard for aquatic life for aluminum is based on fixed values i.e. set at 750 µg/L for acute toxicity and 87 µg/L or 750 µg/L for chronic toxicity for warm and trout waters respectively. These values are based on the current USEPA

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water quality guidelines for aluminum with an acute toxicity level of 750 µg/L and a chronic level of 87 µg/L (USEPA, 1988).

West Virginia proposes to change the water quality standard for aluminum (see WVDEP, 2013) from its current fixed toxicity thresholds to one based upon a relationship with water quality hardness. The proposed changes state that in waters with pH values in the range of > 6.5 to < 9.0 toxicity threshold levels would be calculated on a scale based on one water quality parameter, that of hardness. For example, at hardness levels of 220 mg/L or greater this would set the acute and chronic toxicity levels to be 10,030 and 4,019 µg/L respectively. These would represent a > 13-fold and > 46-fold increase over the current water quality standards for aluminum for acute and chronic toxicity to aquatic life respectively.

It is my opinion that the changes to the water quality standards for aluminum in West Virginia are inappropriate given the paucity of peer-reviewed studies and definitive data sets that specifically investigate the relationship between aluminum toxicity and water hardness. Studies should include definitive LC50 or EC50 values at multiple and wide-ranging hardness levels. Unlike other metals (e.g. Cd, Cu, Zn), where we have a good understanding of the relationship between water hardness and toxicity, there are very few similar robust data sets regarding this relationship with aluminum. There are indeed hundreds of papers detailing this relationship in the afore mentioned metals but very few for aluminum (with the majority of studies having been carried out in the 1970-1980's). Whereas there are studies that suggest this relationship there are others that also disprove this relationship. It is unclear whether differences are due to the specific aquatic species under study (or life-stage) or something else that confounds this relationship (i.e. other water quality parameters such as pH or dissolved organic matter) until more detailed replicate studies in numerous aquatic species are carried out. These studies are also laboratory studies that do not replicate complex field conditions.

Furthermore, many studies were not designed specifically to look at this aluminum/ hardness relationship and hence are limited in their use of only a few concentrations of aluminum and often only two (or a small concentration range) of hardness levels were used. This is especially the case for subacute and chronic studies where very little data is available. Studies are often treated the same and compared together yet they represent differing pH ranges (although they are all in the pH 6.5-9 range required for these new West Virginia guidelines) and there are very few that are in the pH 8-9 range. In addition, some of the mechanisms driving

aluminum toxicity in field situations may be missed in traditional laboratory tests. For example, aluminum can physically alter the habitat by clogging interstitial spaces.

The West Virginia emergency rule states that there is a direct relationship between water hardness and aluminum toxicity in waters of pH 6.5-9, although no references are provided to support this statement (WVDEP, 2013). It is also unclear how the equations used to set the new West Virginia toxicity thresholds for aluminum (i.e. see 8.1.1 and 8.1.2 in Table 1, Appendix E; WVDEP, 2013) were derived. The equations are similar to those used by Colorado (e.g. see GEI, 2010) but they differ slightly resulting in different toxicity threshold values. It is unclear why these equations for the same hardness based criteria exist.

A further issue with the proposed new standards for West Virginia is that they state the use of dissolved aluminum concentrations, rather than total recoverable aluminum as detailed in the USEPA guidelines (USEPA, 1988). As stated earlier Colorado uses a similar hardness based criteria for Aluminum, however, it should be noted that these criteria are based on total recoverable aluminum levels (as in the 1988 EPA guidelines) and thus are much more stringent than those proposed for the West Virginia guidelines that use dissolved aluminum concentrations.

Aluminum toxicity depends on many factors other than water hardness, for example major drivers include pH and also the amount of dissolved organic material (DOM) in the water (see review by Gensemer and Playle, 1999). The solubility, speciation and/or complexation of aluminum is highly dependent upon multiple ambient water quality characteristics that ultimately determine bioavailability and toxicity. There are many peer-reviewed papers that focus on the toxicity of aluminum at lower pH, some at neutral pH, but very few in higher alkalinity waters (or above pH 8). The new proposed guidelines do address this elevated toxicity at lower pH as the standard EPA limits are used in waters of pH < 6.5 or pH >9.0 (USEPA, 1988). However, as mentioned earlier there are very few publications addressing toxicity at pH > 8.0. The increased solubility of aluminum in pH <6 and >8 is known and the toxicity of aluminum to aquatic life in lower pH waters is very well documented. Indeed Gensemer and Playle stated in their future recommendation section that "...predicting Al toxicity as pH values increase above 7 may not be a simple matter and is restricted by our limited understanding of Al bioavailability under such conditions. In particular, the toxicity of $Al(OH)_4^-$, which predominates at pH 7, is very poorly understood" (Gensermer and Playle, 1999).

Furthermore, the toxicity of aluminum can be greatly altered by organism microenvironments. For example, the chemical condition of fish gill surfaces can modify aluminum speciation, sorption and precipitation resulting in chemical or physical toxicity. There is evidence that calcium (i.e. hardness) can compete with monomeric aluminum (and other soluble hydroxide forms) and prevent its binding to fish gills and impacts on ionic regulation but this is just one of the proposed toxicity mechanisms of action for aluminum (Gensemer and Playle, 1999; Gunderson et al., 1994). For example, particulate aluminum can cause physical suffocation and/or irritation especially if it precipitates out in the fish gill microenvironment and polymeric and colloidal forms may be important in fish growth inhibition (Gunderson et al., 1994).

As mentioned earlier, the lack of definitive LC50 (acute) and EC50 (chronic) data and studies using multiple hardness levels at pH levels 6.5 and above (and especially in the range of pH 8-9 and with the pH standardized for each study) is why I believe these new guidelines to be inappropriate. For the new hardness based criteria for Colorado new data (since 1988 and those not included in the USEPA (1988) guidelines) were presented (GEI, 2013). However, this data is also limited in scope (number of aquatic species, replicated studies, definitive LC50 levels, pH levels differing between studies and often a small range of hardness or only two hardness data points used). Indeed, the GEI report (2010) notes that there are very few LC50 data available in the pH range of 6.5 to 9. Furthermore, in the GEI report (2010) used to derive the chronic aluminum/hardness equation for Colorado it was noted that only a few studies were available and that the hardness values used in the literature only represented a small range (i.e. 7.5-45 mg/L). Furthermore, they present data from a study by Cleveland (see Table 2; Cleveland manuscript reference in GEI, 2010) where the toxicity (using pH 6.5) of aluminum increased with increasing hardness.

The study by Gunderson et al (1994) investigated the effect of pH, hardness and humic acid on aluminum toxicity to rainbow trout in acute (96 hour mortality) and sub acute (16 day growth, cumulative mortality). Aluminum induced mortality was different at pH's that are within the range used to apply the new proposed West Virginia guidelines. A higher aluminum-induced mortality was observed at weakly alkaline pH (7.95-8.58) than near-neutral pH (7.14-7.64). The study also found pH (pH range 7.14-8.58) to be the most important independent variable affecting mortality. Furthermore the study found no significant relationship ("negligible hardness

effects"; Gunderson et al, 1994) between 96-hour LC50s and hardness (i.e. at 83.6 $CaCO_3$ mg/L LC50 was 7670 µg/L aluminum but at the higher 115.8 $CaCO_3$ mg/L the LC50 was lower at 6930 µg/L). However, in the subacute tests growth rates were higher at the weakly alkaline compared to the near-neutral pH and hardness did not significantly protect against aluminum-induced growth inhibition although the addition of humic acid did (Gundersen et al., 1994).

In summary given the paucity (and often conflicting) data regarding the relationship of hardness with acute and (especially) chronic toxicity of aluminum particularly at alkaline pH levels (pH 7-9) it is inappropriate to change the current threshold toxicity values for aluminum.

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