



Idaho Association of
Commerce & Industry
The Voice of Business in Idaho®

October 3, 2014

Ms. Paula Wilson
Idaho Department of Environmental Quality
1410 North Hilton Street
Boise, ID 83706

Dear Ms. Wilson:

The Idaho Department of Environmental Quality (the Department) has requested comments on changes to the Mixing Zone Policy found in the Water Quality Standards at 58.01.02.060. The Idaho Association of Commerce & Industry (IACI) is Idaho's largest trade association representing hundreds of businesses in all industries and sizes, which employ approximately 200,000 employees.

IACI's comments on the Mixing Zone Policy changes focus on three topics: (a) water quality limited water bodies, (b) what constitutes "unreasonable interference," and (c) having a provision for mixing zones for stormwater discharges. Proposed additions to the rule are shown in red and deletions in ~~strikethrough~~.

Receiving Waters Not Meeting Water Quality Criteria [§060.01.a]

In light of the Department's practice of listing impaired waters on a watershed basis, this provision should only apply when criteria is not met immediately downstream of the discharge. IACI supports the authorization of a mixing zone when the permitted discharge is consistent with an approved TMDL allocation or other applicable plans as provided in the proposed language in §060.01.a. Such a provision allows the consideration of a mixing zone for situations such as temperature (heat load) where natural conditions may exceed a criteria and/or the contaminant is non-conservative in the aquatic environment.¹ One additional aspect of water quality that needs to be considered for this portion of the rule are certain ubiquitous contaminants that exist from either natural conditions or sources beyond the control of the State of Idaho. Examples include mercury and polychlorinated organics.² As changes are made in the factors used to calculate water quality criteria, such as fish consumption rates, the criteria may become more stringent. Because of the nature of such contaminants, the concentrations in water bodies may exceed the new more

¹ The temperature of a water body is dependent not only on impacts from point sources, but also on natural conditions. Thermal energy can be transferred from the atmosphere into the water body and vice versa. Thus, not all the thermal energy that enters a water body stays but some may be transferred to the atmosphere.

² For mercury there are some point sources, but there are also considerable natural sources and atmospheric deposition from global sources. Similarly, uses of most polychlorinated biphenyls and similar organic compounds have been phased out, but such contaminants from historical use are present. As changes are made in the factors used to calculate water quality criteria, such as fish consumption rates, the criteria may become more stringent. Because of the ubiquitous nature of such contaminants, the concentrations in water bodies may exceed new more stringent criteria.

stringent criteria. This will present new challenges as to how to regulate these trace concentrations in point sources including whether mixing zones will be allowed for such contaminants.

To accommodate such situations, IACI recommends the following language for consideration.

“.....however, the Department may authorize a mixing zone when the permitted discharge is consistent with an approved TMDL allocation or other applicable plans ~~or analyses~~ (such as 4b implementation plans, watershed loading analyses, or facility-specific water quality **contaminant management plans** ~~analyses~~) that demonstrate that authorizing a mixing zone is consistent with achieving compliance with water quality standards in the receiving water.”

Unreasonable Interference [§060.01.d.]

The concern from IACI’s membership is identifying what specific information or criteria must be met to satisfy the requirements for a mixing zone; in particular what constitutes “unreasonable interference” as described in §060.01.d.i-iv. The requirements in this section of the proposed rule are very broad and ambiguous and from the regulated community perspective have less clarity than the existing rule. Specific questions/comments include:

- “Causing injury” is ambiguous; “injury” is a very subjective concept.
- What constitutes thermal shock? Though “thermal shock” is defined in §010, this definition of thermal shock lacks specificity regarding what constitutes a “rapid” change, or what is considered “disoriented” or “increased susceptibility” to predation or disease. Rapid may be quantifiable but disorientation and increased susceptibility are qualitative. It is also unclear if indirect effects of a temperature change (e.g. reduced dissolved oxygen concentration) are considered in the definition.
- Likewise “loss of cold water refugia” is problematic for similar reasons. How will cold water refugia be defined? On what basis will “loss” be evaluated? Is any loss “unreasonable?”
- As for the bioaccumulation of pollutants are the “aquatic organisms” referenced those within a proposed mixing zone? Or, is this determination to be made further downstream?
- The method of determining “bioaccumulation resulting in tissue levels in aquatic organisms higher than the applicable water column criteria would predict” is not clear. Also, the “factors” for bioaccumulation/bioconcentration (“enrichment factor”) vary by organism and water type.³ Thus, it is not clear how practicable this type of analysis might be.

³ For example, EPA is considering a tissue-based criterion for selenium. When looking at selenium in the aquatic environment, there are different “enrichment factors” for different aquatic life (i.e., algae vs. invertebrates vs. fish) and different water systems (lentic and lotic). See *Comments of the North American Metals Council – Selenium Work Group in Response to EPA’s Draft National Recommended Aquatic Life Criterion for the Pollutant Selenium*, July 2014 for a discussion of this topic.

- Furthermore, the language in “i”
 “...any life stage or other aquatic life....”
 “...causing injury to attached aquatic life....”
implies the rule is not focused on protecting beneficial uses, but avoiding impact to any aquatic species including individual organisms. It is conceivable that any impact to aquatic life could be construed as the basis for limiting or prohibiting a mixing zone.

By definition, if the acute criteria are not met at the interface of the diffuser and the receiving water and the chronic criteria are not met until the edge of the mixing zone, then there is the possibility of harm to individual aquatic life (organisms), including attached aquatic life.

Furthermore, there are other provisions in the proposed rule that deal with topics in this section. For example:

- §60.01.b requires that the acute criteria be met at the edge of the initial dilution zone. This provision reduces the possibility of “injury” to aquatic life (§060.01.d.i) and lethality (§060.01.d.iv).
- The restrictions in §060.01.h on the size of the mixing zone and characteristics of a mixing zone (i.e., no shore hugging) reduce the likelihood of the mixing zone blocking or impeding passage of fish.
- Other portions of the water quality rules limit thermal changes; §250.02.g and §401.01 limit the temperature increase that can result from a point source.

Without clearly defined and understood terms in the rule, subjectivity will be a significant concern in the implementation as subsection 60.010.d.i-vi is intended to define “unreasonable interference.” IACI believes that modifications are needed to i-iv to clarify the “thresholds” for determining if a mixing zone causes “unreasonable interference with, or danger to, beneficial uses” and that the focus is on “beneficial uses” not “effects.” Therefore, we recommend the following language:⁴

- i. **Impairment to the integrity of the indigenous aquatic community including interfering with successful spawning or blocking passage of aquatic life. There shall be a zone of passage around the mixing zone which shall not contain pollutant concentrations that exceed the chronic aquatic life values and does not exceed the temperature change at the mixing zone boundary specified in Sections 250.02.g and 401.01. ~~Blocking or impeding passage to any life stage of fish or other aquatic life,~~**

⁴ The proposed changes are based on material in *Technical Support Document for Water Quality-Based Toxics Control*. EPA, March 1991 (EPA 505/2-90-001). On pages 70-71 EPA discusses that allowable mixing zone characteristics should be established to ensure the following:

- Mixing zones do not impair the integrity of the waterbody as a whole.
- There is no lethality to organisms passing through the mixing zone.
- There are no significant health risks, considering likely pathways of exposure.

In regards to bioaccumulative pollutants, EPA discusses three factors: (1) the bioconcentration factor; (2) the duration of exposure; (3) the concentration of the chemical of interest.

~~preventing successful spawning, egg incubation or rearing, or causing injury to attached aquatic life.~~

~~ii. Heat in the discharge that causes thermal shock, lethality or loss of cold water refugia.~~

iii. ii Pollutants which may persist in aquatic species within the mixing zone and cause harm to these species based upon exposure, toxicity and concentration of the pollutant.

iv. iii. Lethality to aquatic life passing through the mixing zone.

v. iv. Concentrations of pollutants that exceed Maximum Contaminant Levels at drinking water intake structures.

vi. v. Conditions which impede or prohibit recreation in or on the water body. Mixing zones shall not be authorized for E. coli.

To complement these proposed language changes, the following definition changes in §010 are recommended:

~~Bioaccumulative Pollutants: A compound with a bioaccumulation factor of greater than one thousand (1,000) or a bioconcentration factor of greater than three hundred (300).~~

LC50. The toxicant concentration or **thermal condition** killing fifty percent (50%) of exposed organisms at a specific time of observation (e.g., ninety-six hours (96) hours).

Lethality. The LC50 or thermal condition killing fifty percent (50%) of exposed organisms at a specific time of observation.

Stormwater

As stated in earlier comments by IACI members, there should be an explicit provision for allowing a mixing zone for permitted stormwater discharges. This is consistent with IDEQ current practice of certifying that general stormwater permits comply with water quality standards and anti-degradation. As the stormwater program continues to evolve in complexity, there should be a presumption that mixing zones are authorized for stormwater discharges. IACI proposes the following language for such situations:

(New 02.) A mixing zone for stormwater discharges shall be authorized consistent with subsections 060.01.h and 060.01.i unless the Department determines such discharges cause unreasonable interference to beneficial uses.

Other Comments

Subsection 010.54. (now 010.55.): Change “LC-50” to “LC50” to be consistent with its use in 58.01.02

Subsection 060.01.a: “provided, however, the Department” to “provided, however, that the Department”.

Subsection 060.01.f.: Change “zones can be” to “zones may be”.

Subsection 060.01.h.i.(2): Change to “The mixing zone shall not include more than twenty-five percent (25%) of the **design low flow downstream of the effluent, as defined by the applicable** low flow design discharge conditions set forth in Subsection 210.03.b. of these rules.”

Subsection 060.02 **03** (Points of Compliance as Alternatives to Mixing Zones). IACI supports the proposed provisions in §060.0**3**. This provision has worked very well, especially with 404 dredge and fill activities.

We appreciate the opportunity to provide these comments, and the Department’s consideration of them is sincerely appreciated.

Sincerely,



Alex LaBeau
President

cc: Alan Prouty, Chair
IACI Environment Committee