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Via Email and Facsimile: (907) 451-2187

Ms. Nancy Sonafrank
Environmental Specialist
610 University Drive
Fairbanks, AK 99709

Re: Comments on Proposed Changes and Revisions to Mixing Zones and Water Quality Standards, 18 AAC 70.240

Dear Ms. Sonafrank,

These comments regarding the proposed revisions to the mixing zone provisions of the Alaska Water Quality Standards in 18 AAC 70.240 ("Proposed Rule") are submitted on behalf of Cook Inlet Keeper, Bristol Bay Alliance, Alaska Center for the Environment, Alaska Public Interest Research Group, Cook Inlet Alliance, Alaskans for Environmental Responsibility, Campaign to Safeguard America's Waters, Alaska Community Action on Toxics, Kenai Watershed Forum, and Earthworks. These organizations and their Alaska-based and other members are very concerned about this rollback of protections for Alaska's fish spawning waters and for water quality in general.

The continued protection and maintenance of water quality is of vital significance and importance for the health of present and future Alaskans, the quality of fish and shellfish harvested from State and federal waters, the marketing of fish and shellfish from Alaska, and the maintenance of wildlife throughout the state. The Alaska Department of Environmental Conservation ("DEC") proposes to revise its mixing zone regulations in such a way as to degrade the quality of the State's waters in violation of federal and state water quality policy and law. These comments explain how these revisions violate basic federal Clean Water Act ("CWA") requirements and state and federal antidegradation policies by relaxing standards and providing greater administrative discretion and decreased accountability when approving mixing zones. They also explain the on-the-ground impacts of the rollback.

The Proposed Rule is a new spin on DEC's 2004 mixing zone proposal. DEC claims that mixing zones in spawning areas will be allowed only as an exception to the general prohibition. However, under the Proposed Rule, DEC has the authority and discretion to approve a mixing zone in any case. This "exception" swallows the rule and therefore the Proposed Rule suffers from the same defects as the 2004 proposal.

Further, a rollback of the ban against mixing zones in fish spawning areas has been “in the works” for years due to pressure from the mining industry and others. This major rule change could be addressed with narrower and less dangerous strategies, such as site-specific criteria under 18 AAC 70.235 or short-term variances under 18 AAC 70.200. For instance, DEC’s two main examples of why this rule change is necessary are: the Valdez sewage treatment operations where fish are spawning in a ditch that conveys the facility’s effluent, and Golden Heart Utilities in Fairbanks where lime is being removed from the effluent stream and disposed of in a landfill. In both cases, DEC could undertake site-specific criteria in regulation that demonstrate protection of the fish spawning in these waterbodies while allowing exceedance of water quality standards in a limited area. *See* 18 AAC 70.270(c) and (d). This overly broad rule change, which would impact multiple industries and ecosystems in numerous watersheds, is therefore not warranted.

I. LEGAL BACKGROUND

A. Water Quality Standards

The overarching objective of the CWA “is to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” 33 U.S.C. § 1251(a) (emphasis added). Water quality standards (“WQS”) are both a mechanism for establishing water quality goals for the nation’s waters, and a regulatory requirement when the technology-based scheme proves inadequate. *See* Water Quality Standards Handbook: Second Edition (“Handbook”), EPA-823-B94-005a, p. INT-1 (1994). These water quality standards were codified in CWA § 303(c) and are necessary to enhance and maintain water quality to protect public health and welfare beyond the reaches of the National Pollutant Discharge Elimination System (“NPDES”) permit system. Generally, WQS define the water quality goals for a water body by designating the uses of the water body, setting criteria to protect the designated uses, and using antidegradation requirements to prevent any worsening of water quality. 40 C.F.R. § 131.6.

B. Antidegradation Policy (“ADP”)

When a state undertakes “a scheduled water quality standard review” – such as the current review of which the Proposed Rule is part – the state must perform an antidegradation policy analysis. 33 U.S.C. § 1313(d)(4)(B); Handbook, p. 4-10. Antidegradation is not defined in statute or regulation, but is a procedure to be followed when evaluating activities that may impact water quality. The implementation of that procedure is meant to protect water quality by maintaining or improving water quality and not allowing water quality to be degraded.

Federal regulation requires that states include an ADP that is no less stringent than the federal ADP in every WQS package submitted to the EPA for review. *See* 40 C.F.R. §131.6(d). The federal ADP delineates different levels of protection for three different “tiers” of water quality. Tier 1 sets the minimum level of water quality to protect all existing uses of a waterbody: water quality may be lowered only if “existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.” 40 C.F.R. §131.12(a)(1). Tier 2 provides the protection “necessary to support propagation of fish, shellfish,

and wildlife and recreation in and on the water” to waters whose quality already exceeds the Tier 1 level and allows for reduction in quality only if, after a full public process and intergovernmental coordination, it is “necessary to accommodate important economic and social development.” 40 C.F.R. § 131.12(a)(2). “In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully.” *Id.* (emphasis added). Tier 3 waters are those waters that have been designated as Outstanding Natural Resource Waters (“ONRW”). These waters include waters in National Parks, National Wildlife Refuges, and waters of “exceptional recreational or ecological significance.” 40 C.F.R. § 131.12(a)(3).

EPA’s antidegradation regulation also requires the State to “identify the methods for implementing such policy. . . .” 40 C.F.R. § 131.12(a). For enforcement purposes, this is the most important part of the antidegradation requirement. The procedures developed to implement the ADP must be designed to: (1) prohibit any degradation in some waters; (2) minimize the impacts of degrading activities in others; and (3) assure that in every case, existing uses are protected.

Although EPA guidance indicates that some type of review process is required for all three tiers of antidegradation policy, the review process is especially important in the context of waters protected by Tier 2. *See Handbook*, pp. 4-6 – 4-9. Whenever any lowering of water quality occurs under Tier 2, the antidegradation regulation requires a state to: (1) determine whether the degradation is “necessary to accommodate important economic or social development in the area in which the waters are located;” (2) consider less degrading alternatives; (3) ensure that the best available pollution control measures are used to limit degradation; and (4) guarantee that, if water quality is lowered, existing uses will be fully protected. 40 C.F.R. § 131.12(a)(2); *Handbook*; p. 4-7.

Alaska, like many states, has adopted the federal ADP “3-tier” requirements:

It is the state’s antidegradation policy that

- (1) existing uses and the level of water quality necessary to protect existing uses must be maintained and protected;
- (2) if the quality of a water exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality must be maintained and protected unless the department, in its discretion, upon application, and after compliance with (b) of this section, allows the reduction of water quality for a short-term variance under 18 AAC 70.200, a zone of deposit under 18 AAC 70.210, a mixing zone under 18 AAC 70.240, or another purpose as authorized in a department permit, certification, or approval; . . .
- (3) if a high quality water constitutes an outstanding national resource, such as a water of national or state park or wildlife refuge or a water of exceptional recreational or ecological significance, the quality of that water must be maintained and protected . . .

18 AAC 70.015(a). DEC has not, however, established implementation procedures for its ADP as required by EPA, nor has it performed the required 4-part analysis for the Proposed Rule.¹ See Handbook, p. 4-10.

C. Mixing Zones

The Clean Water Act does not contemplate dilution as a solution to pollution. In fact, during public hearings on the 1972 CWA, then-EPA Administrator Ruckelshaus testified that “we don’t believe that the solution to pollution is dilution,” and “the Conference substitute bill specifically bans pollution dilution as an alternative to waste treatment.” *Hercules Inc. v. EPA/Velsicol Chemical Corp. v. Costle*, 598 F.2d 91, 108 (D.C.Cir. 1978). Mixing zones, which use exactly that disfavored strategy, are found in regulation, not the statute itself. See 40 C.F.R. § 131.13. A mixing zone is a limited area of a water body surrounding a pollution discharge point where initial dilution of a discharge takes place and where numeric water quality criteria is allowed to be exceeded. See Handbook, p. 5-2. A regulatory mixing zone allows initial dilution of a discharge rather than imposing strict end-of-pipe concentration requirements for NPDES permits for conventional and toxic discharges. See *Id.* Where a mixing zone is allowed, restrictions should be placed on it to ensure that:

- The mixing zone does not impair the integrity of the water body as a whole,
- There is no lethality to organisms passing through the mixing zone, and
- There is no significant health risk considering likely pathways of exposure.

See Handbook, p. 5-1, see also Technical Support Document for Water Quality-based Effluent Limitations (“TSD”) EPA/505/2-90-001 (1991), p. 33.

As defined by Alaska state regulation, a mixing zone is an “area in a water body surrounding, or downstream of, a discharge where the effluent plume is diluted by the receiving water within which specified water quality criteria may be exceeded.” 18 AAC 70.990(38). The area or volume of an individual mixing zone or group of zones must be as small as practicable and it must not interfere with the designated uses of the water body or with the established community of aquatic life within the zone. See Handbook, p. 5-3.

Under Alaska law, water quality criteria have been established for “acute” and “chronic” conditions, which are defined as follows.

[A]cute means of, relating to, or resulting from a level of toxicity of a substance, a substance combination, or an effluent sufficient to produce observable lethal or sublethal effects in aquatic organisms exposed for short periods of time, typically 96 hours or less....

[C]hronic means of, relating to, or resulting from a level of toxicity of a substance, a substance combination, or an effluent sufficient to produce observable lethal or sublethal effects, including effects on growth, development, behavior, reproduction, or survival, in aquatic organisms exposed for a period of time that

¹ For example, Alaska has numerous waterbodies that meet Tier 3 criteria, but no way to implement their designation and protection.

time that generally is one-tenth or more of their life span.

18 AAC 70.990(1) & (11).

For application of the acute and chronic aquatic life criteria, there may be up to two types of mixing zones; the acute criteria are met at the edge of the first zone, and the chronic criteria are met at the edge of the second zone. The acute mixing zone must be sized to prevent lethal or sublethal effects to passing organisms and the chronic mixing zone must be sized to protect the ecology of the water body as a whole. However, the existing definitions for the criteria are not protective. The acute definition allows for exposures of 4 days. This is a substantial amount of time in the life of fish and invertebrates.² These acute-chronic mixing zones will be allowed in spawning areas, and harm can occur in much less time than that provided in the criteria, which makes mixing zones in fish spawning areas very dangerous.

DEC's proposed changes to the mixing zone requirements do not meet CWA requirements nor do they conform to EPA Guidance requirements, as described below.

II. THE PROPOSED RULE VIOLATES THE CWA AND EPA GUIDANCE.

A. The Requirements for Mixing Zones in Spawning Areas are Inconsistent With, and More Lax Than, the Requirements for Mixing Zones in Other Areas.

Section 70.240(f) of the Proposed Rule is the "exception" to the general prohibition against mixing zones in spawning areas. It provides:

Notwithstanding subsection (e), the Department may authorize a mixing zone in a spawning area of a lake, stream, river or other flowing fresh water if, after consultation with the Department of Natural Resources, Office of Habitat Management and Permitting, or the Department of Fish and Game if within a legislatively designated special area under AS 16.20, the department finds that the applicant has

(1) demonstrated that spawning fish, fish eggs, or alevins are not physically present within the mixing zone when the discharge will occur and the discharge will not adversely affect the capability of the area to support future spawning, incubation, and rearing activities;

² This is a severe weakening of the acute criteria concept, especially in the case of toxic discharges. The TSD, EPA's guidance for water quality-based toxics control, prescribes a 1-hour test for criterion maximum concentrations, and a 4-day timeframe for criterion continuous concentration. The 1-hour test is used to determine the highest concentration in any selected hour that would result in significant impacts. However, the average of the effluent concentration over any period under 96 hours, will likely result in a much lower average concentration. Since the permit limit is set on the basis of this concentration, using the lower average as representative of the discharge would lead to allowing much more pollution at any given moment in the inner mixing zone.

- (2) demonstrated the discharge does not contain pollutants that will adversely affect the capability of the area to support present and future spawning, incubation, and rearing;
- (3) submitted a mitigation plan approved by the Department of Fish and Game under 5 AAC 95.900 if within a legislatively designated special area under AS 16.20; or
- (4) submitted a mitigation plan approved by the Department of Natural Resources, Office of Habitat Management and Permitting, and incorporated as part of the Department of Environmental Conservation permit, that includes one or more of the following mitigation actions:
 - (A) avoid the impacts altogether by not taking a certain action or parts of an action;
 - (B) minimize the impact by limiting the degree or magnitude of the action and its implementation;
 - (C) rectify the impact by repairing, rehabilitating, or restoring the impacted environment;
 - (D) reduce or eliminate the impact over time by preservation and maintenance operations during the life of the proposed use or activity;
 - (E) compensate for the impact by replacing or providing substitute resources or environments.

This subsection establishes the initial test that the discharger must meet to obtain a mixing zone in a fish spawning area. Thus, the discharger must either demonstrate the requirements of (1) or (2), or submit a mitigation plan from the Department of Fish and Game (“DFG”) or the Department of Natural Resources, Office of Habitat Management and Permitting (“DNR”).

In the case of the requirements of (1) or (2), the discharger has the burden of proof to demonstrate that the discharge will not occur when spawning fish, fish eggs, or alevins (newly-hatched fish) are physically present and the discharge will not adversely affect the capability of the area to support future spawning, incubation, and rearing activities, or that the discharge does not contain pollutants that will adversely affect the capability of the area to support present and future spawning, incubation, and rearing. There are no standards for how a discharger will demonstrate these requirements, however. Without standards, what data, and how much data, must the discharger submit? The likely result of this lack of clear standards could be the total loss of local fish, and likely other aquatic, populations.

For example, if the standard is the biological integrity of the waterbody or a particular reduction in the population of fish and/or shellfish, the standard will be nearly impossible to apply. DEC does not have the data for every waterbody and discharge point to determine whether the criteria are or will be met. It will take years of monitoring to obtain baseline information, and years of post-discharge monitoring to determine whether the “standard” is attained. Additionally, fish populations vary for a variety of causes that are not entirely understood. As a result, at some point there could be a total loss of local populations of fish, shellfish, and other aquatic life when a mixing zone is allowed in a spawning area. If that occurred, then the existing uses of the

occurred, then the existing uses of the waterbody would not be maintained or protected; the overall biological integrity of the waterbody would be impaired; established commercial, sport, personal-use, or subsistence fish and shellfish harvesting would be precluded; fish or shellfish populations levels would be reduced; and permanent or irreparable displacement of indigenous organisms would result. All of these consequences are reasons why DEC would not approve a mixing zone outside a spawning area, yet the effect of the Proposed Rule could lead to these consequences in spawning areas. See Proposed 18 AAC 70.240(c).

Further, the mitigation plans that are the alternative to demonstrating the requirements of (1) or (2) would allow the loss of fish and/or shellfish populations and biological integrity because mitigation would occur after-the-fact or off-site. The mitigation plans require one or more of the following actions: (A) avoid the impacts altogether by not taking a certain action or parts of an action; (B) minimize the impact by limiting the degree or magnitude of the action and its implementation; (C) rectify the impact by repairing, rehabilitating, or restoring the impacted environment; (D) reduce or eliminate the impact over time by preservation and maintenance operations during the life of the proposed use or activity; and/or (E) compensate for the impact by replacing or providing substitute resources or environments. (A) and (B) would likely include similar requirements to (1) or (2) with the approval of DFG or DNR, which would have the same defects described above. (C)-(E) would allow mitigation after-the-fact or off-site. Thus, the impacts described in the previous paragraph would likely occur for all mitigation plan requirements, which would require DEC to deny a mixing zone outside of a spawning area. The criteria for allowing mixing zones in spawning areas are therefore inconsistent with, and easier to demonstrate than, the requirements for obtaining a mixing zone outside of a spawning area.

B. Violations of Clean Water Act Antidegradation Policy.

1. The Proposed Rule removes the statewide ban on mixing zones in anadromous or resident fish spawning or rearing areas in violation of the state and federal³ antidegradation policies.

Lifting the prohibition on mixing zones in fish spawning areas violates state and federal antidegradation policies because it will not maintain and protect existing uses. On its face, the Proposed Rule allows mixing zones in spawning areas where they have been prohibited for years, which will inevitably degrade water quality in those areas, and likely the waterbodies as a whole. Further, without an implementation policy, there has been no analysis of whether the Proposed Rule complies with the state's ADP. Consequently, the state and federal ADPs are violated by the Proposed Rule itself as well as its implementation when permits are issued.

Current DEC water quality regulations, as amended through June 26, 2003, include the following provision banning mixing zones in certain fish spawning waterbodies:

³ The federal ADP is violated in each case that the state ADP is violated because both ADPs have the same requirements.

For streams, rivers, or other flowing fresh waters...a mixing zone will not be authorized in an area of

- (1) anadromous fish spawning, or
- (2) resident fish spawning redds for Arctic grayling, northern pike, rainbow trout, lake trout, brook trout, cutthroat trout, whitefish, sheefish, Arctic char (Dolly Varden), burbot, and landlocked coho, king, and sockeye salmon.

18 AAC 70.255(h)(1) & (2).

The Proposed Rule removes this ban and allows DEC to approve mixing zones in streams, rivers, or other flowing fresh water areas, as described above. *See* Proposed 18 AAC § 70.240(f). This determination by DEC is not the 19-part test claimed by DEC, but a very low threshold, 1-part test that dischargers will be able to easily meet to obtain a mixing zone in spawning areas where they are currently prohibited. As discussed in Section A above, it is clear that this “exception” swallows the rule.

Further, the State does not have the necessary data or resources to assure that dischargers will not adversely affect the capability of an area to support present and future spawning, incubation, and rearing activities. Currently, the State does not compile complete data on salmon and other freshwater fish populations, does not monitor the vast majority of streams for water quality and flow, does not regularly test fish for contamination, nor does it have complete information on contaminant lethal and sublethal toxicity characteristics. The State also does not require dischargers to obtain this information. In addition, this relaxation of WQS will allow acute and chronic levels of pollutants where they have not previously been allowed. This will contribute to increases in chronic levels of pollutants due to the retention of pollutants in sediments and resuspension in the water column. Thus, this rollback results in the degradation of water quality in violation of state and federal ADPs.

In a memo regarding an internal preliminary draft of the Proposed Rule, DFG raised concerns about the ambiguity of the language “adversely affect the capability of an area to support spawning, incubation, and rearing activities, the tremendous discretion provided to DEC in approving mixing zones with no specific guidance or performance standards, and the lack of criteria to determine the impact of removing the ban against mixing zones in spawning areas at the waterbody or population level.” *See* Memo from Doug Vincent-Lang, Assistant Director of DFG, to Nancy Sonafrank, DEC, re: Draft Revision of Mixing Zone Regulations 18 AAC 70.240 - .270 (May 14, 2004) (attached as Exhibit A). None of these concerns has been addressed in the Proposed Rule, and DEC’s “consultation” with DFG and DNR does not clarify any of these deficiencies.

Further, commenters have reviewed the documents supporting this rulemaking and found absolutely no support, either legal or scientific, for the rollback of the ban on mixing zones in fish spawning waterbodies. A June 23, 2004, Memorandum from Ernesta Ballard, DEC Commissioner to Lt. Governor, Loren Leman (attached as Exhibit B) states, “The [lifting of the ban on mixing zones in fish spawning areas] is likely to be highly controversial and portrayed as

a weakening of the department's commitment to protect water quality and fish. In reality, while allowing mixing zones in spawning areas under certain circumstances, DEC will still hold mixing zones in spawning areas to a higher standard, safeguard against adverse effects, and allow no net loss of fish." This promise cannot be borne out because DEC will allow dischargers to have mixing zones in spawning areas with fewer requirements than mixing zones in other areas.

Mixing zones must be based on sound scientific rationale and must protect the designated uses of waterbodies. 40 C.F.R. §§ 131.11, 131.3(b). In order to approve a mixing zone policy which allows otherwise applicable criteria to be exceeded, the State must show it is protecting the designated uses of the waterbody as a whole. Handbook, Section 5.1, p. 5-1; Advanced Notice of Proposed Rule Making, 63 Fed. Reg. 36,742, 36,787-36,792 (July 8, 1998); TSD, Sections 2.2, 4.3, 4.4, p. 70. On October 1, 2004, EPA Region 10 disapproved Oregon state water quality standards for alternate mixing zone requirements because those standards had no scientific basis, among other reasons. *See* Letter from Michael F. Gearheard, Director of Office of Water and Watersheds, Region 10, to Stephanie Hallock, Director of Oregon Department of Environmental Quality, re: Disapproval of the Oregon State Water Quality Standards [OAR-340-041-0053(h)] Alternate Requirements for Mixing Zones (October 1, 2004) (attached as Exhibit C). EPA will likely disapprove the Proposed Rule for similar reasons, including violation of antidegradation requirements.

2. The "smaller initial mixing zone" allowance does not comply with federal guidelines for sizing and cannot be applied in spawning areas.

The Proposed Rule broadens the methods used to approve the smaller initial mixing zone area where acute levels may be exceeded in violation of EPA guidelines. The new regulations remove the previously explicit requirement that the DEC "must follow procedures under Alternatives 2, 3, or 4 in Section 5.1.2 of the" Handbook. 18 AAC § 70.255(d). The new language allows "DEC-approved methods" to be used for sizing requirements. Proposed 18 AAC 70.240(d)(8). This adds a discretionary element to mixing zone approval that is less stringent than federal policy and therefore not allowed. Further, allowing initial mixing zones without specific requirements will make the mixing zones unenforceable because it will be impossible to determine if the initial mixing zone requirements are being met. As a result, EPA cannot approve such a program. DEC must either explicitly follow EPA guidance, or provide for procedures that are more stringent than EPA requirements.

Importantly, we note that Alaska allows the acute-chronic system for mixing zones, which includes an initial mixing zone where acute levels may be exceeded. *See* 18 AAC 70.255(d). This acute-chronic system will be allowed in spawning areas. Proposed 18 AAC 70.240(d)(8); *see also* 18 AAC 70.240(a) (allowing "multiple mixing zones"). As discussed previously, existing definitions for acute and chronic criteria are not protective because harm can occur in much less time than the 4 days provided in the acute criteria. Further, relying on dilution to protect fish populations is particularly problematic as the Alaskan climate becomes warmer and drier. Under those conditions, rain- and snow-fed streams in Alaska will be significantly lower than their long-term flows would indicate, and fish that are already stressed due to low flow, high

due to low flow, high temperature conditions could be severely impacted by contamination from permitted discharges in mixing zones.

The impact of allowing acute criteria in spawning areas is therefore great. Because the only restriction on mixing zones in fish spawning areas is that DEC shall act reasonably to prevent adverse effects to fish, any pollutant parameter may be allowed at acute levels in fish spawning areas through a mixing zone. Thus, even though DEC has performed no antidegradation analysis for the Proposed Rule's mixing zone sizes, so long as DEC provides some degree of reasonable justification for a mixing zone, permits will be reissued that are less stringent, more pollutants will be discharged, and inevitably, maintenance of water quality will be compromised. New permits will allow for these same flaws. As a result, the Proposed Rule violates federal and state antidegradation policies.

3. The Proposed Rule is vague, overbroad, and ambiguous.

In an effort to improve clarity and reduce redundancy, DEC has reorganized the regulations in a variety of ways. Most significantly, DEC has combined sections 70.240 to 70.270 into one new section, 70.240. In doing so, language has been moved, deleted, and edited. Rather than achieving its stated goal of improving clarity, however, DEC has removed much needed specificity, created new decisions left to agency discretion, and confused water quality requirements making it difficult for the regulated public to determine what is expected of it. This lack of clarity may result in the degradation of water quality, not its improvement or maintenance, which violates antidegradation policy.

In 1993, in a challenge to mixing zone regulations, the Illinois Supreme Court held that the language of a regulation "must convey with sufficient certainty fair warning and notice of what constitutes prohibited conduct, and what is fair and adequate is measured by common understanding." *Granite City Div. of Nat'l Steel Co. v. Illinois Pollution Control Board*, 155 Ill.2d 149, 164 (Ill. 1993). The court held that where the words and phrases of the rule have a technical or special meaning commonly understood by the regulated community, the certainty requirement is satisfied; otherwise, the regulation is unconstitutionally vague. *Id.* at 164. The petitioners in *Granite City* contended that without explicit standards, the regulations were so vague and uncertain that they violated due process of law. *Id.* at 163. Furthermore, they argued that the regulations were "unconstitutionally vague and would consequently result in arbitrary and discriminatory enforcement by the Agency." *Id.* (citing *Smith v. Goguen*, 415 U.S. 566, 613 (1974)). The Illinois Supreme Court found that the regulations provided adequate technical specificity by providing numeric criteria that must be met in the industry mixing zone permits, which met the certainty requirement because the regulations provided the requisite technical meaning understandable to the regulated community. *Id.* at 163. Thus, if regulations do not contain specific standards, they are unconstitutionally vague.

Unlike *Granite City*, DEC's Proposed Rule is unconstitutionally vague because it does not provide specific standards. First, the Proposed Rule allows mixing zones to be "safely increased" in size. See Proposed 18 AAC 70.240(g). Specifically, the Proposed Rule allows

DEC to approve a mixing zone if it is as small as practicable and will comply with the requisite size restrictions, “unless the department finds that evidence is sufficient to reasonably demonstrate that these size limitations can be safely increased.” *Id.* (emphasis added). The utilization of “safely” as a performance standard for the size increase of mixing zones is broad and ambiguous, constituting an unconstitutionally vague regulation under *Granite City*. *Granite City*, 155 Ill.2d at 163. Clarity as to when and to what degree a mixing zone may be increased in size is absolutely necessary, and until this revision is clarified, it will not pass constitutional muster.

Second, the phrase “significant unforeseen adverse environmental effect” used to define when DEC must terminate, modify, or deny the renewal of a permit is overbroad and ambiguous. *See* Proposed 18 AAC 70.240(i). This phrase uses so many confusing qualifying terms to describe the effect under which a permit must be terminated, modified, or denied that it is nonsensical. Even if the phrase were understandable, it sets far too high of a threshold and grants the agency far too much discretion. Thus, this impossible and ambiguous standard fails to provide any guidance to regulators or the regulated community. It cannot possibly protect fish spawning waterbodies.

Third, the phrase “unacceptable risk to human health” is unacceptably ambiguous. Proposed 18 AAC 70.240(d)(2). “Risk” is defined with reference to risk assessment methods contained in 18 AAC 70.025; however, that section only refers to cancer risks at a level of 1 in 100,000. There is no standard for mutagenic, teratogenic, or other effects. Thus, “unacceptable” is not a clear performance standard for risks to human health, and is therefore unconstitutionally vague.

Because of its vague language, the Proposed Rule does not provide certainty for the public and the regulated community to understand when, how, where, and why mixing zones are allowed, and the regulations cannot be approved.

4. Under the Proposed Rule, actual mitigation will rarely be required.

The Proposed Rule will allow mixing zones in spawning areas if, after consultation with DNR or DFG, DEC finds that the discharger has: (1) demonstrated that spawning fish, fish eggs or alevins are not physically present within the mixing zone when the discharge will occur, and the discharge will not adversely affect the capability of an area to support future spawning, incubation, and rearing activities; (2) demonstrated that the discharge does not contain pollutants that will adversely affect the capability of the area to support present and future spawning, incubation, and rearing activities; (3) submitted a mitigation plan approved by DFG if the discharge is within a designated special area; or (4) submitted a mitigation plan approved by DNR that includes one or more “mitigation actions.” Proposed 18 AAC § 70.240(f) (emphasis added).

If the discharge is within a legislatively designated area, a mitigation plan must be approved by DFG with mitigation techniques employed in the following order of priority: (A)

avoid the impacts altogether by not taking a certain action or parts of an action; (B) minimize the impact by limiting the degree or magnitude of the action and its implementation; (C) rectify the impact by repairing, rehabilitating, or restoring the impacted environment; (D) reduce or eliminate the impact over time by preservation and maintenance operations during the life of the proposed use or activity; (E) compensate for the impact by replacing or providing substitute resources or environments. 5 AAC 95.900. While the priority is established, DFG may approve any of the techniques, which is the same result for a mitigation plan approved by DNR. *See* Proposed 18 AAC 70.240(f)(4). As discussed in Section A above, the techniques would likely include similar requirements to (1) or (2), or would allow mitigation after-the-fact or off-site. Thus, the approved mitigation plans do not require actual mitigation because there is no data to support the requirements of (1) or (2). Mitigation after-the-fact or off-site is not mitigation in the discharge and mixing zone areas, and therefore is not sufficient.

Further, if the discharger can demonstrate (1) or (2), the only mitigation requirement is: "In determining whether to authorize a mixing zone under this section, the department will consider...any additional measures that would mitigate potential adverse effects to the aquatic resources present." Proposed 18 AAC 70.240(b)(4). On the one hand, this requirement may force DEC to undertake mitigation practices regarding mixing zones in instances where it otherwise would not have done anything further. However, by failing to provide specificity as to how adverse effects to aquatic resources will be mitigated, the provision by itself does little to ensure that the least destructive mixing zones are approved. The mitigation provision therefore operates as a general catch-all that will more likely have the effect of shielding DEC from undertaking specific mitigation actions, and providing DEC with too much discretion to not require mitigation at all. This has not been evaluated by DEC in an antidegradation analysis, and therefore this language does not comply with antidegradation requirements.

5. The Proposed Rule removes subsistence considerations from the mixing zone analysis.

The current regulations describe the evaluation of human health risks for mixing zones:

The department will not authorize a mixing zone if the department finds that available evidence reasonably demonstrates that (1) the pollutants discharged could . . . (B) be expected to cause carcinogenic, mutagenic, or teratogenic effects on, or otherwise present a risk to, human health; when evaluating a discharge under this paragraph, the department will, in its discretion, require the applicant to perform a department-approved, site-specific analysis based on exposure pathways, including exposure duration of affected aquatic organisms in the proposed mixing zone and patterns of fisheries use and consumption of water, fish, or shellfish in the area; in the absence of site-specific analysis, the evaluation of a discharge under this paragraph will be based on the most protective assumption, as determined by the department, regarding exposure pathways, including exposure duration of affected aquatic organisms in the proposed mixing

zone and patterns of fisheries use and consumption of water, fish, or shellfish in the area.

18 AAC 70.250(a)(1)(B) (emphasis added). This provision meets EPA's requirement to determine health risk by considering likely pathways of exposure. *See Handbook, p. 5-1, see also Technical Support Document for Water Quality-based Effluent Limitations ("TSD") EPA/505/2-90-001 (1991), p. 33.* However, the Proposed Rule states only:

The department will approve a mixing zone, as proposed or with conditions, only if the department finds that available evidence reasonably demonstrates that within the mixing zone the pollutants discharged will not . . . (2) present an unacceptable risk to human health from carcinogenic, mutagenic, teratogenic, or other effects using risk assessment methods approved by the department and consistent with 18 AAC 70.025.

Proposed 18 AAC 70.240(d)(2) (emphasis added).

The Proposed Rule fails to evaluate consumption risks, which are extremely relevant for subsistence users. Further, the current regulation prohibits mixing zones if there is any risk to human health, including from consumption of water, fish, or shellfish, whereas the Proposed Rule covers only unacceptable risks, and there is no mention of exposure via consumption. The evaluation under current regulations is also "based on the most protective assumptions" for exposure pathways and the duration of exposure to aquatic organisms, not to mention the exposure duration assumptions used for acute and chronic criteria discussed above, which only compound the human health risk evaluation. Because the State has no implementation policy for its ADP, no antidegradation analysis of this rollback of human health risk evaluation criteria has been performed, which violates antidegradation requirements.

C. The Proposed Rule is Bad Policy.

The Proposed Rule is simply bad policy. The State's current ban on mixing zones in fish spawning areas ensures a certain degree of protection for these resources, which are extremely important to Alaskans and Alaska's economy. If the State were to allow mixing zones in fish spawning areas, it would create a variety of risks and a cloud of uncertainty about the quality and health of these important resources. For example, with almost any proposed discharge of pollutants, there may be inadequate or incorrect information concerning the nature and quantity of the pollutants, the modeling of the harm from those pollutants may be inadequate or incapable of providing accurate predictions, and the changing conditions or variability of the natural environment and stream flow may make such predictions unreliable, which may result in degradation of water quality, habitat loss, and loss of valuable commercial and recreational fish. Allowing mixing zones in fish spawning areas will also negatively impact the marketing of Alaskan wild salmon because it will damage the current public perception of the State's pristine, unpolluted salmon streams.

Moreover, with its limited resources, the State will not be able to ensure proper implementation of the mixing zones or of any relevant restriction or condition that the State imposes. The State also does not have sufficient resources to monitor the health of every spawning area in which a mixing zone is established. In short, as long as mixing zones can be created in waterways that contain spawning areas and resident fish, those resources are at risk of serious harm. Given such risks, the State's inability to monitor and protect them in every instance, and the importance of those resources to the citizens of Alaska, the Proposed Rule makes no sense. The State has not demonstrated any potential benefits to justify these risks.

D. Violation of Clean Water Act Antibacksliding Provision

The Clean Water Act prohibits backsliding: A permit applicant may not obtain a renewed, reissued, or modified permit that contains less stringent effluent limitations than the comparable effluent limitations from the previous permit unless, in the case of new water quality standards, the relaxed permit does not violate the state or federal antidegradation policy. *See* 33 U.S.C. § 1342(o)(1).

All permits reissued in spawning areas that would be approved under the Proposed Rule will, by definition, be less stringent than the permit previously issued to a discharger. A less stringent permit constitutes backsliding and directly violates the antibacksliding requirement of the CWA stated above. Unless permit backsliding has not violated the antidegradation provision of the CWA, which currently cannot be proven because DEC has no antidegradation implementation policy, it cannot be allowed. DEC must provide clear evidence that it has considered this potential legal problem and has undertaken the requisite ecological and economic analysis to ensure against violation of antidegradation policies.

E. DEC failed to use the precautionary principle to uphold the policies and goals of the Clean Water Act.

Proposed section 18 AAC 70.240(g) reads as follows:

...If the department finds that available evidence reasonably demonstrates that a mixing zone authorized by the department has had or is having a significant unforeseen adverse environmental effect, the department will terminate, modify, or deny renewal of the permit or certification authorizing the mixing zone.

The precautionary principle "requires that in the light of scientific uncertainty, when credible evidence is put forth that a risk exists, action should be taken to minimize that risk or eliminate it even though absolute proof has not been obtained which quantifies the risk." *New Mexico v. General Electric Company*, 2004 U.S. Dist. LEXIS 12624, 100 (D.N.M. 2004) (emphasis added). Rather than operating under the precautionary principle, which directs preemptive action to minimize or eliminate risk to the environment, the Proposed Rule provides for only *post hoc* evaluation to deny, modify, or terminate mixing zones in all areas.

DEC should provide for a stringent evaluation of mixing zones before, during, and after they are issued, including comprehensive monitoring requirements, and must scientifically justify any expansion of the use of mixing zones in order to protect water quality.

III. CONCLUSION

As discussed, the Proposed Rule does not meet CWA or constitutional requirements. Before regulations such as these can be adopted, a comprehensive scientific analysis must be done and an antidegradation policy implementation plan and analysis must be prepared. Until then, DEC must maintain the prohibition against mixing zones in spawning areas. In the meantime, DEC may use site-specific criteria and short-term variances to address discharges that cannot meet water quality standards at the discharger point in spawning areas.

Thank you for your consideration of these comments. If you have any questions, please feel free to contact me at (907) 276-4244, ext. 113.

Very truly yours,



Vicki Clark
Staff Attorney

cc: Cook Inlet Keeper
Bristol Bay Alliance
Alaska Center for the Environment
Alaska Public Interest Research Group
Cook Inlet Alliance
Alaskans for Environmental Responsibility
Campaign to Safeguard America's Waters
Alaska Community Action on Toxics
Kenai Watershed Forum
Earthworks

Exhibit A

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

Division of Sport Fish

FRANK MURKOWSKI, GOVERNOR

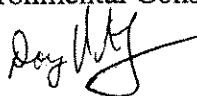
333 Raspberry Road
Anchorage, AK 99518-1599
PHONE: (907) 267-2342
FAX: (907) 267-2464

MEMORANDUM RECEIVED

MAY 17 2004

TO: Nancy Sonafrank
Department of Environmental Conservation

DEPT. OF ENVIRONMENTAL
CONSERVATION

FROM: Doug Vincent-Lang 
Assistant Director

DATE: May 14, 2004

SUBJECT: Draft Revision of Mixing Zone Regulations 18 AAC 70.240 - .270

The Alaska Department of Fish and Game has reviewed the May 5, 2004, CONFIDENTIAL, deliberative draft of the mixing zone regulations portion of the Alaska Water Quality Standards found in 18 AAC 70. We understand that the intent of the revision is to create regulations and standards that are rationale and enforceable.

Overall, we are pleased that the proposed regulations appear to have retained much of the fish, wildlife and public use of fish and wildlife provisions of the existing regulations. However, we note a significant change has been made through the removal of the outright prohibition of having mixing zones in spawning areas of anadromous and certain resident fish. This prohibition is replaced with a conditionally approval of a mixing zone in a spawning area designed to minimize impacts at the water body or "population" level. We are unsure what criteria will be used to determine the extent of possible impact at the water body or population level. We are also unsure whose responsibility it will be to demonstrate this. As such, we concerned that cumulative impacts could occur and request that criteria and responsibility be clearly defined.

We also note that the draft regulations provide wide unspecified discretionary authority to the Department of Environmental Conservation, particularly in those portions of the regulations dealing with methods to be used for determining (A) the size of the lethal portion of a mixing zone in 18 AAC 70.240 (d)(6), (B) the length of a mixing zone in flowing freshwaters in 18 AAC 70.240 (e)(3), and (C) the volume of flow available for dilution in flowing fresh waters in 18 AAC 70.240 (f). As written, these portions of the proposed regulations provide no specific guidance or performance standards that must be met when assessing or calculating these mixing zone parameters. This causes confusion and the potential for litigation. As such, we suggest that criteria be included.



We offer the following specific comments to identify other issues and concerns that should be addressed before the proposed regulations are published for public review.

18 AAC 70.240 (c) (4) (D, E, and F) Lakes and wetlands connected to streams provide fish habitat considered flowing waters. We suggest you consider adding wetlands and lakes to the list of fresh waters that are covered by these provisions.

18 AAC 70.240 (c) (4) (E) We suggest you describe or identify the methods to be employed and the criteria to be met to determine that a mixing zone will not adversely affect the capability of an area to support spawning, incubation or rearing of anadromous or resident fish. Are pre and post-discharge field data required?

18 AAC 70.240 (d) (5) What is meant by the term "passing organism"? Does it include organisms that reside full time within the area of a mixing zone?

18 AAC 70.240 (e) (2) We suggest that a maximum size limit be established for mixing zones in lakes and offer the following wording for consideration: "for lakes, the total area allocated to mixing zones may not exceed 10 percent or 15 acres of the lake's surface area, whichever is less;"

Although the definitions section of the regulations were not provided for review we offer the following suggested revisions to 18 AAC 70.990:

"fish" means any species of aquatic finfish, invertebrate, or amphibian, in any stage of its life cycle, that is indigenous to state water or that is authorized to be imported into the state under a permit issued by the Commissioner of the Department of Fish and Game.

"shellfish" means any species of crustacean, mollusk, or other invertebrate, in any stage of its life cycle, that is indigenous to state water or that is authorized to be imported into the state under a permit issued by the Commissioner of the Department of Fish and Game.

We appreciate the opportunity to comment. Please feel free to contact me with any questions you may have.

cc: W. Regelin, ADF&G
K. Hepler, ADF&G
W. Jeffress, DNR/OPMP
K. Howard, DNR/OHMP
D. Easton, DEC
L. Kent, DEC
R. Klein, DEC
T. Thurbon, AG
C. Leonard, AG

Exhibit B

MEMORANDUM

State of Alaska

Department of Environmental Conservation
Division of Water

TO: Loren Leman
Lt. Governor

DATE: June 23, 2004

FILE NO:

THRU:

PHONE NO: (907) 465-4903

FROM: Ernesta Ballard
Commissioner

SUBJECT: Revisions to the Water Quality
Standards Regulations

Proposal

The Water Division is proposing to revise the Water Quality Standards Regulations, 18 AAC 70, to reorganize and consolidate the mixing zone standards and to allow mixing zones in fish spawning areas under certain circumstances

Objectives

- Reorganize the mixing zone regulations to ensure clarity, ease of use and reduce duplication.
- Allow for the flexibility to permit mixing zones in fish spawning area where it causes no net adverse effect, which is now prohibited.
- Move technical specifications out of regulation and into guidance to allow the use the latest technology and site appropriate models for creating mixing zones.

Potential Issues of Controversy

The current regulations prohibit mixing zones in spawning areas, while allowing them in waters used for other uses such as drinking water and swimming. The change is likely to be highly controversial and portrayed as a weakening of the department's commitment to protect water quality and fish. In reality, while allowing mixing zones in spawning areas under certain circumstances, DEC will still hold mixing zones in spawning areas to a higher standard, safeguard against adverse effects, and allow no net loss of fish. Measures to offset potential adverse effects to aquatic systems will be permitted.

Possible opponents: subsistence, sport and commercial fishing groups, environmental activists

Supporters: Industry groups particularly mining

If you have any questions or concerns regarding the proposed changes, please contact Ron Klein , Water Quality Assessment and Monitoring Program Manager at 269-7595 or ron_klein@dec.state.ak.us

Cc: Dan Easton, Director, DEC Water Quality
Lynn Kent, Manager, DEC Water Programs
Ron Klein, DEC/WMA/Anchorage
Nancy Sonafrank, DEC/WMA/Fairbanks

Exhibit C



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

Attn Of: OW-131

October 1, 2004

Stephanie Hallock, Director
Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, OR 97204-1390

Re: Disapproval of Oregon State Water Quality Standards [OAR 340-041-0053(h)]
Alternate Requirements for Mixing Zones

Dear Ms. Hallock:

This letter is in response to your letter of April 29, 2003, on behalf of the Oregon Department of Environmental Quality (DEQ) to the U.S. Environmental Protection Agency (EPA) submitting new and revised water quality standards to add provisions allowing the use of an alternate mixing zone for our action in accordance with section 303(c)(2)(A) of the Clean Water Act (CWA). Based on a review of the Oregon DEQ submission and supporting documentation, I am informing you that EPA Region 10 is disapproving the Oregon State Water Quality Standards [OAR340-041-0053(h)] Alternate Requirements for Mixing Zones because they are inconsistent with the CWA and EPA's implementing regulations at 40 C.F.R. Part 131. This letter describes those deficiencies and the rationale for this disapproval.

The provision at issue [OAR340-041-0053(h)] is intended to apply to the following three circumstances: (1) when a discharger demonstrates that its discharge creates an overall environmental benefit; (2) for a constructed water course; or (3) for insignificant discharges (defined as filter backwash discharges and underground storage tank cleanups). In these circumstances, the discharge is not subject to the mixing zone requirements previously established in Oregon's water quality standards, but, rather, is subject to "alternate" requirements.

EPA finds that OAR 340-041-0053(h) as a whole has the following deficiencies. Mixing zones, which are limited areas where applicable criteria may be exceeded, must be based on sound scientific rationale and protect the designated use [40 C.F.R. 131.11; 131.3(b)]. In order to approve a mixing zone policy which allows otherwise applicable criteria to be exceeded, the State must show it is protecting the designated uses of the waterbody as a whole. [Water Quality Standards Handbook Chapter 5 Section 5.1, p. 5-1; Advanced Notice of Proposed Rule Making, 63 Fed. Reg. 36,742-36,787-36,792 (July 8, 1998); Technical Support Document For Water Quality-Based Toxics Control (US EPA 1991, Sections 2.2, 4.3, 4.4, page 70.)] The provision as submitted to EPA does not assure that the applicable numeric water quality criteria would be met within a reasonable distance of the discharge in a manner that would protect the designated uses of the waterbody as a whole. The provision states that "Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located..." [OAR 340-041-005(g)(D)(i)]. By using the entire receiving stream as the mixing zone, it is not possible to assure that the designated use is protected in the waterbody as a

whole.

OAR 340-041-0053(h) does not provide for calculations to minimize the area or volume to be as small as possible. This section does not assure a portion of the water body to be kept free from the mixing zone that would allow continuous passage for free-swimming and drifting organisms (WQS Handbook 5-2).

OAR 340-041-0053(h) does not provide for the protection of designated uses. The provision does not prohibit mixing zones from where they may endanger critical areas, such as areas with sensitive biota (WQS Handbook 5-1). While the provision prohibits acute effects, it would allow the mixing zone to present chronic effects. Thus, it could allow conditions inadequate to assure survival, growth and reproduction of sensitive species. Given the prevalence of threatened and endangered species in Oregon, prohibiting acute effects does not assure protection of designated uses.

In addition to these issues with the provision as a whole, the individual provisions present unique concerns. The Overall Environmental Benefit provision (OAR 340-041-0053(h)(A)) recognizes that threatened and endangered species should be considered, but stops short of assuring their protection. It calls for identifying and studying them, but no prevention or mitigation is required. Further, OAR 340-041-0053(h)(A)(g) authorizes the Department to waive some or all of the study requirements.

The Constructed Water Course provision, OAR 340-041-0053(h)(B), does not protect the uses Oregon has designated for waterbodies where this may apply. EPA's review of Oregon's designated uses for waters where this provision was previously applied showed that these waters may have as many as 20 designated uses. They range from irrigation to public domestic water supply to fishing and boating. As EPA's regulations require that a mixing zone protect the designated use, and that criteria shall support the most sensitive use (40 C.F.R 131.11), EPA does not believe that the provision supports the designated uses in applicable waterbodies.

The Insignificant Discharge provision, OAR 340-041-0053(h)(C), is vague. The phrase, "underground storage tank cleanup" is not defined in OAR 340-041-0053(h) or elsewhere in OAR 340-041. It could be interpreted as to apply to the rinse water from individual tanks or a tank system, or the area of a cleanup of an underground storage tank release.

In addition, OAR 340-041-0053(h)(C) will not protect designated uses because likely discharges will contain toxic chemicals. Underground storage tank cleanups address petroleum and hazardous substances (excluding RCRA Subtitle C hazardous wastes, but including all other CERCLA hazardous substances).

Furthermore, the insignificant discharge provision is inconsistent with Underground Storage Tank statutory provisions in RCRA Subtitle I (42 USC § 6991 et seq.), which are designed to prevent contamination of water, and the Oil Pollution Act (33 USC §2701 et seq.), which address cleanup of even small quantities of oil.

In conclusion, because a mixing zone allows the exceedance of the otherwise applicable criteria, it must be scientifically based to protect the designated use of the waterbody as a whole; the Alternate Mixing Zone provision does not meet this test.

To remedy this disapproval and assure that the State's mixing zone provisions are consistent with the federal requirements, Oregon DEQ should remove this provision from its water quality standards regulation. Under EPA's regulations at 40 C.F.R. 131.21, this provision is disapproved and thus is not in effect for CWA purposes. Because this disapproval removes an optional provision not required by the CWA, a replacement provision is not necessary to meet the requirements of the CWA, and there is not reason for EPA to propose a replacement provision pursuant to section 303(c) of the CWA. If the State wishes to further revise its water quality standards to provide mechanisms by which dischargers may seek changes to water quality standards, several options are available to the State. Where appropriate demonstrations are made, analyses may be conducted by the dischargers or the State to support a variance [OAR 340-041-0061(2)], site specific criteria [OAR 340-041-0028(13)], or a use attainability analysis under CWA 40 C.F.R. 131.10.

Oregon DEQ, as the delegated National Pollutant Discharge Elimination System permitting authority, is to be commended for its CWA compliance work to date with Oregon irrigation districts and other dischargers. EPA-Region 10 is committed to work with Oregon DEQ to help develop a pathway for potential short term and long term CWA compliance pathways including the use of Clean Water Act tools. If you have any questions concerning this letter please contact me at (206) 553-7151 or have your staff contact Mary Lou Soscia at (503) 326-5873.

Sincerely,

/S/

Michael F. Gearheard
Director
Office of Water and Watersheds

cc: Michael Tehan, NOAA Fisheries
Kemper McMaster, U.S. Fish and Wildlife Service
Holly Schroeder, Oregon DEQ
Robert Baumgartner, Oregon DEQ
Geoffrey Grubbs, EPA, Office of Science and Technology
NWEA/Pacific Environmental Advocacy Center