

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
DIRECTOR'S OFFICE

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August 14, 2006

Michael F. Gearheard, Director
Office of Water and Watersheds
US Environmental Protection Agency
1200 Sixth Avenue
Seattle, WA 98101

RE: Revisions to Alaska Water Quality Standards for mixing zones

Dear Mr. Gearheard:

The Department of Environmental Conservation (DEC) adopted a revision to Alaska's Water Quality Standards in 18 AAC 70 regarding mixing zones regulations and is submitting the change to the Environmental Protection Agency (EPA) for review. The final mixing zone regulation includes revisions that

- expand the prohibition on mixing zones in spawning areas to include lakes;
- create exemptions to the prohibition on mixing zones in non-salmon spawning habitat;
- allow an exemption to the prohibition for mixing zones that were previously authorized in areas where fish were not spawning;
- reorganize the mixing zone regulation to improve clarity and reduce redundancy;
- simplify some technical provisions including ones dealing with risk assessment, flow calculations, and mixing zone models;
- update a reference to federal technology-based effluent limitations;
- include a new definition for shellfish; and
- provide for consideration of measures that would mitigate the potential adverse effects of mixing zones on aquatic resources.

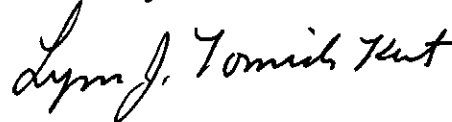
The revised regulation was signed by Commissioner Kurt Fredriksson on February 17, 2006 and filed by Lieutenant Governor Leman on February 21, 2006. The requirements under this regulation went into effect for state purposes on March 23, 2006.

Please find enclosed:

1. a copy of the final regulation in 18 AAC 70.240;
2. the adoption order signed by Commissioner Fredriksson and Lieutenant Governor Leman;
3. the February 21, 2006 memo from the Alaska Department of Law certifying the regulation;
4. DEC response to EPA comments on the 10-17-06 proposed regulations;
5. Commissioner Fredriksson's letter dated January 12, 2006 explaining the new regulations; and
6. the draft mixing zone revisions guidance.

If you have any questions please contact me or Nancy Sonafrank at (907) 451-2726.

Sincerely,



Lynn J. Tomich Kent
Director

Enclosures

cc:

(w/enc): Janine Jennings, EPA R10/Seattle
Lisa McGuire, EPA R10/Seattle

[w/out enc]: Dan Easton, DEC Deputy Commissioner
Nancy Sonafrank, DEC Water/Fairbanks

18 AAC 70.240 is repealed and readopted to read:

18 AAC 70.240. Mixing zones. (a) Upon application, the department may authorize in a discharge permit or certification, a mixing zone or multiple mixing zones in which the water quality criteria and any limit set under this chapter may be exceeded. The applicant shall provide to the department all available evidence reasonably necessary to demonstrate that a mixing zone will comply with this section. The department will approve, approve with conditions, or deny a mixing zone application.

(b) In determining whether to authorize a mixing zone under this section, the department will consider

(1) the characteristics of the receiving water, including biological, chemical, and physical characteristics such as volume, flow rate, and flushing and mixing characteristics;

(2) the characteristics of the effluent, including volume, flow rate, dispersion, and quality after treatment;

(3) the effects, if any, including cumulative effects of multiple discharges and diffuse, nonpoint source inputs, that the discharge will have on the uses of the receiving water;

(4) any additional measures that would mitigate potential adverse effects to the aquatic resources present; and

(5) any other factors the department finds must be considered to determine whether a mixing zone will comply with this section.

(c) The department will approve a mixing zone, as proposed or with conditions, only if the department finds that available evidence reasonably demonstrates that

(1) an effluent or substance will be treated to remove, reduce, and disperse

pollutants, using methods that the department finds to be the most effective, technologically and economically feasible, and at a minimum consistent with statutory and regulatory treatment requirements including

(A) any federal technology-based effluent limitation identified in 40 C.F.R. 122.29 and 40 C.F.R. 125.3, as revised as of July 1, 2005 and adopted by reference;

(B) minimum treatment standards in 18 AAC 72.050; and

(C) any treatment requirement imposed under another state statute or regulation that is more stringent than a requirement of this chapter;

(2) designated and existing uses of the waterbody as a whole will be maintained and protected;

(3) the overall biological integrity of the waterbody will not be impaired; and

(4) the mixing zone will not

(A) result in an acute or chronic toxic effect in the water column, sediments, or biota outside the boundaries of the mixing zone;

(B) create a public health hazard that would preclude or limit existing uses of the waterbody for water supply or contact recreation;

(C) preclude or limit established processing activities or established commercial, sport, personal-use, or subsistence fish and shellfish harvesting;

(D) result in a reduction in fish or shellfish population levels;

(E) result in permanent or irreparable displacement of indigenous organisms;

(F) adversely affect threatened or endangered species except as authorized under 16 U.S.C. 1531 - 1544 (Endangered Species Act); or

(G) form a barrier to migratory species or fish passage.

(d) 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

(1) bioaccumulate, bioconcentrate, or persist above natural levels in sediments, water, or biota to significantly adverse levels, based on consideration of bioaccumulation and bioconcentration factors, toxicity, and exposure;

(2) present an unacceptable risk to human health from carcinogenic, mutagenic, teratogenic, or other effects as determined using risk assessment methods approved by the department and consistent with 18 AAC 70.025;

(3) settle to form objectionable deposits, except as authorized under 18 AAC 70.210;

(4) produce floating debris, oil, scum and other material in concentrations that form nuisances;

(5) result in undesirable or nuisance aquatic life;

(6) produce objectionable color, taste, or odor in aquatic resources harvested from the area for human consumption;

(7) cause lethality to passing organisms; or

(8) exceed acute aquatic life criteria at and beyond the boundaries of a smaller initial mixing zone surrounding the outfall, the size of which shall be determined using methods

approved by the department.

(e) In lakes, streams, rivers, or other flowing fresh waters, a mixing zone will not be

(1) authorized in a spawning area of any of the five species of anadromous Pacific salmon found in the state; or

(2) allowed to adversely affect the present and future capability of an area to support spawning, incubation, or rearing of any of the five species of anadromous Pacific salmon found in the state.

(f) In lakes, streams, rivers, or other flowing fresh waters, except as provided in (g) of this section, a mixing zone will not be authorized in a spawning area for

(1) Arctic grayling;

(2) northern pike;

(3) lake trout;

(4) brook trout;

(5) sheefish;

(6) burbot;

(7) landlocked coho salmon, chinook salmon, or sockeye salmon; or

(8) anadromous or resident rainbow trout, Arctic char, Dolly Varden, whitefish,

or cutthroat trout.

(g) The department may authorize a mixing zone in a spawning area of a lake, stream, river, or other flowing fresh water for the species listed in (f) of this section if

(1) after consultation with the Department of Natural Resources, or with the Department of Fish and Game if the spawning area is within a special area, the department finds

that the applicant has demonstrated that the discharge

(A) does not contain pollutants at concentrations that exceed the criteria for growth and propagation of fish, shellfish, other aquatic life, and wildlife established in 18 AAC 70.020(b)(1) - (12); and

(B) will not adversely affect the capability of the area to support future spawning, incubation, and rearing activities;

(2) the applicant has submitted to the department a mitigation plan approved by the Department of Fish and Game under 5 AAC 95.900 if the spawning area is within a special area;

(3) the applicant has submitted to the department a mitigation plan approved by the Department of Natural Resources under AS 41.14, if the spawning area is within waters included in the *Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes*, adopted by reference in 11 AAC 195.010; the department will incorporate the mitigation plan as part of the discharge authorization; or

(4) the applicant has submitted to the department a mitigation plan approved by the department, after consultation with the Department of Natural Resources, if the spawning area is not within waters described in (2) or (3) of this subsection; the mitigation plan must use measures described in the *Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes*, adopted by reference in 11 AAC 195.010; the department will incorporate the mitigation plan as part of the discharge authorization.

(h) In a mixing zone authorization under (g) of this section, the department may require the applicant to monitor effluent, ambient water quality, and biological conditions to determine

whether unanticipated adverse effects on spawning, incubation, and rearing of species identified in (f) of this section are occurring.

(i) The provisions of (e), (f), and (g) of this section do not apply to the renewal of a mixing zone authorization where spawning was not occurring at the time of the initial authorization, but successful spawning, incubation, and rearing has occurred within the mixing zone after the initial authorization of that mixing zone.

(j) When determining whether to authorize a mixing zone under (e), (f), or (g) of this section, the department will make that determination

(1) in conformance with the determination of the Department of Fish and Game, acting under AS 16.20, of the location and time of a spawning area within a special area;

(2) in conformance with the determination of the Department of Natural Resources, acting under AS 41.14, of the location and time of a spawning area within waters included in the *Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes*, adopted by reference in 11 AAC 195.010; or

(3) after consultation with the Department of Natural Resources, as to what the Department of Natural Resources considers the location and time of a spawning area not within waters described in (1) or (2) of this subsection.

(k) The department will approve a mixing zone, as proposed or with conditions, only if it finds that the mixing zone is as small as practicable and will comply with the following size restrictions, unless the department finds that evidence is sufficient to reasonably demonstrate that these size restrictions can be safely increased:

(1) for estuarine and marine waters, measured at mean lower low water,

(A) the cumulative linear length of all mixing zones intersected on any given cross section of an estuary, inlet, cove, channel, or other marine water may not exceed 10 percent of the total length of that cross section; and

(B) the total horizontal area allocated to all mixing zones at any depth may not exceed 10 percent of the surface area;

(2) for lakes, the total horizontal area allocated to all mixing zones at any depth may not exceed 10 percent of the lake's surface area;

(3) for streams, rivers, or other flowing fresh waters, the length of a mixing zone may not extend beyond the computed point of complete mixing, as determined using a standard river flow mixing model or other methods accepted by the department;

(4) for streams, rivers, or other flowing fresh waters, the length of a mixing zone may not extend downstream beyond the location where the department determines that a public health hazard reasonably could be expected to occur.

(I) For streams, rivers, or other flowing fresh waters, in calculating the maximum pollutant discharge limitation, the volume of flow available for dilution must be determined using

(1) the actual flow data collected concurrent with the discharge; or

(2) for conventional and nontoxic substances, the 10-year, 7-day low flow (7Q10) as the criteria design flow; for the protection of aquatic life, the 10-year, 7-day low flow (7Q10) as the chronic criteria design flow and the 10-year, 1-day low flow (1Q10) as the acute criteria design flow; and for the protection of human health, the 5-year, 30-day low flow (30Q5) as the noncarcinogenic criteria design flow and the harmonic mean flow as the carcinogenic criteria

design flow; these low flows must be calculated using methods approved by the department.

(m) 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.

(n) When consulting with an agency under (g) or (j) of this section, the department will give appropriate weight to any information received from the agency, considering the agency's expertise.

(o) For purposes of this section, the five species of anadromous Pacific salmon found in the state are chinook salmon, coho salmon, sockeye salmon, pink salmon, and chum salmon.

(p) In this section, "special area" means a state game refuge, a state game sanctuary, or a state fish and game critical habitat area, established under AS 16.20. (Eff. 11/1/97, Register 143; am __/__/__, Register __)

Authority:	AS 46.03.010	AS 46.03.080	AS 46.03.110
	AS 46.03.020	[AS 46.03.090]	AS 46.03.710
	AS 46.03.050	AS 46.03.100	AS 46.03.720
	AS 46.03.070		

18 AAC 70.245 is repealed:

18 AAC 70.245. Mixing zones: appropriateness and size determination. Repealed.

(Eff. 11/1/97, Register 143; repealed __/__/__, Register __)

Register __, ____ 2006 ENVIRONMENTAL CONSERVATION

18 AAC 70.250 is repealed:

18 AAC 70.250. Mixing zones: general conditions. Repealed. (Eff. 11/1/97, Register 143; repealed __/__/__, Register __)

18 AAC 70.255 is repealed:

18 AAC 70.255. Mixing zones: in-zone quality and size specifications. Repealed. (Eff. 11/1/97, Register 143; repealed __/__/__, Register __)

18 AAC 70.260 is repealed:

18 AAC 70.260. Mixing zones: application requirements. Repealed. (Eff. 11/1/97, Register 143; repealed __/__/__, Register __)

18 AAC 70.270 is repealed:

18 AAC 70.270. Mixing zones: termination, modification, or denial of renewal. Repealed. (Eff. 11/1/97, Register 143; repealed __/__/__, Register __)

18 AAC 70.990(2) is amended to read:

(2) "**anadromous,**" with respect to fish, ["ANADROMOUS FISH"] has the meaning given **in the definition of "anadromous fish"** [THAT TERM] in the definitions section of the **Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes** [CATALOG OF WATERS IMPORTANT FOR SPAWNING, REARING, OR MIGRATION OF ANADROMOUS FISHES], adopted by reference in 11 AAC 195.010;

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18 AAC 70.990(30) is repealed:

(30) repealed ___/___/___;

18 AAC 70.990 is amended by adding a new paragraph to read:

(72) "shellfish" means a species of crustacean, mollusk, or other aquatic

invertebrate with a shell or shell-like exoskeleton, in any stage of its life cycle. (Eff. 11/1/97,

Register 143; am 4/29/99, Register 150; am 6/22/2003, Register 166; am ___/___/___, Register

___)

Authority:	AS 46.03.010	AS 46.03.080	AS 46.03.110
	AS 46.03.020	[AS 46.03.090]	AS 46.03.710
	AS 46.03.050	AS 46.03.100	AS 46.03.720
	AS 46.03.070		

