AGENDA ITEM P.1.a.

CITY OF SOLDOTNA, ALASKA

MEMORANDUM

To: Mayor and Council
From: Tom Boedeker, City Manager
Date: September 7, 2004
Subject: Proposed ADEC mixing zone regulation changes

There has been a great deal of comment regarding the proposed ADEC changes to mixing zone regulations Much of the comment gives the impression that mixing zones are not currently allowed in salmon streams and this would now allow them to be permitted. The truth is that mixing zones meeting the standards can be permitted under current regulations, but there is a prohibition of issuing a mixing zone permit in "an area of anadramous fish spawning" regardless of whether any adverse impacts exist. The proposed regulation removes this absolute prohibition, but still maintains all the same standards that a mixing zone will not be allowed if there are any adverse impacts on spawning areas for anadramous fish.

With the exception of removing the prohibition of mixing zone in spawning areas the proposed regulations contain the same criteria for approving a mixing zone as in existing regulations. They combine several sections and reorganize them plus they change the wording on the burden of proof needed for a permit. The existing regulations provide that a permit will be denied if adverse conditions are found to exist. The proposed say the applicant cannot get a permit until they satisfactorily demonstrate that none of the identified adverse conditions will occur. It certainly does not lower the proof standard, and arguably, the proposed language puts a somewhat broader burden on the applicant than what is currently in place. Staff felt this might give more latitude to the ADEC to not approve a permit than under current regulations. Our concern was with this shift, not the question of allowing a mixing zone in a spawning area since neither version would allow one if there were any adverse impact. Given current practices we feel the change is not sufficient for us to object to those changes.

The question is whether this has any bearing on our discharge permits for the wastewater treatment plant. The answer is yes as the City has a mixing zone permit for discharge into the Kenai River. If a spawning area was identified somewhere in our existing mixing zone, the City could not get a renewal permit when the existing one expired or need modification due to repair or replacement of our outfall. This would be the situation under our current regulations even if there was no harm resulting from the discharge. We could even filter all the particulates out and still not be allowed a permit. Alternative discharge options could cost millions of dollars. This is exactly what happened to the City of Valdez and Golden Heart Utilities (Fairbanks) when their permits came up for renewal A copy of a frequently asked questions sheet from ADEC details the problem with the current absolute prohibition of a mixing zone in a spawning area, especially in Valdez where the salmon moved in and started spawning in the discharge flow. When the flow is cut off the "stream" the salmon started using will go away.

As far as other changes go, the regulations keep all the same criteria as exist now, but eliminate some of the specific details of how a mixing zone is calculated and require the use of computer modeling to demonstrate the mixing zone will meet the criteria in the regulations.

Division of Water

Water Quality Standards

http://www.state.ak.us/dec/water/wqsar/trireview/trireview.htm

2003-2005 Triennial Review
Section Manager, Nancy Sonafrank

Frequently Asked Questions:
2004 Proposed Mixing Zones Revisions and Permitting Examples

What is a Mixing Zone? In introducing the concept of mixing zones, EPA guidance (the *Water Quality Standards Handbook*) states that, "It is not always necessary to meet all water quality criteria within the discharge pipe to protect the integrity of the water body as a whole. Sometimes, it is appropriate to allow for ambient concentrations above the criteria in small areas near outfalls. These areas are called mixing zones." The Handbook goes on to define mixing zones as "an area where an effluent discharge undergoes initial dilution and is extended to cover the secondary mixing in the ambient water body. A mixing zone is an allocated impact zone where water quality criteria can be exceeded as long as acutely toxic conditions are prevented." DEC's mixing zone provision complies with these federal guidelines and has been approved by EPA.

Why amend the mixing zone provisions? The regulations have been added to and modified in a piecemeal fashion over the years. The result is a much longer than necessary, duplicative and poorly organized regulation. One reason to amend the regulations is simply to overhaul them to improve organization and eliminate duplication without changing content. The amendments also include a substantive change to the current all-out ban on mixing zones in freshwater spawning areas. The department, along with the other state resource agencies, has come across permitting situations where the current ban on mixing zones in spawning areas is unnecessary to protect spawning success or fish populations. (More on that later.)

Do other States have mixing zone provisions? All states have provision for mixing and dilution of discharges in receiving waters either through regulation (46 states) or through agency policies and procedures (four states). (C-SAW Mixing Zone Survey)

Do other states ban mixing zones in spawning areas? As part of developing proposed amendments, DEC polled all other states to find out how they deal with mixing zones in spawning areas. Of the 21 states that responded to our survey, we found only one state (Minnesota) that has the flat out prohibition on mixing zones in spawning areas similar to our current regulation. State mixing zone regulations vary widely, but nine states allowed mixing zones in spawning areas under certain circumstances, similar to Alaska's proposed regulations. Eleven of the 21 states did not afford spawning any specific consideration under their mixing zone provisions.

Will DEC be making mixing zone decisions alone, or will other agencies be consulted? DEC has proposed guidance which calls for consultation with the Department of Natural Resources, Office of Habitat Management and Permitting and the Department of Fish and Game, Division of Sport Fish whenever it is considering designating a mixing zone in a spawning area. As the primary wastewater discharge permitting authority in Alaska, the Environmental Protection Agency also participates in most mixing zone decisions.

How would the proposed changes protect fish and spawning habitat? We envision three situations where a mixing zone could be designated in a spawning area.

- Some pollutants that affect water quality do not necessarily impact fish or fish spawning. For example, discharges that affect the color of receiving waters or bacteria concentrations usually have no effect on spawning and a mixing zone might be designated. On the other hand, there are pollutants such as sediments or chlorine which can adversely affect fish and fish spawning. The regulation would not allow mixing zones for those substances in spawning areas.
- Since fish do not all spawn at all times of year, discharges may be timed to avoid impacts to fish spawning and to protect eggs, juvenile fish and spawning habitat.
- There may be situations where adverse effects can be offset by habitat improvements or other measures that would maintain area spawning success, and fish populations and health.

Will the water quality affect the quality of fish products? The proposed regulation does not change any of the current water quality standards that protect fish from exposure to contaminants outside of mixing zones. The amendments also retain all of the current protections within mixing zones to guard against exposure to toxic and persistent pollutants or concentration of pollutants through food chain.

Are there real examples where the current ban on mixing zones in spawning areas is not working?

- In 1976, the City of Valdez constructed a ditch to carry treated municipal wastewater from their sewage lagoon to the nearby ocean. When the City of Valdez recently applied for a new permit, a mixing zone was not allowed because salmon had begun spawning in the treated effluent. The alternative would be expensive and unneeded treatment or a $1 million pipe to convey the effluent to the ocean.
- Golden Heart Utilities in Fairbanks (GHU) is another example. GHU applied to renew a discharge permit for backwash water from its drinking water facility when it was discovered that grayling spawn in the mixing zone area. The discharge contains lime sludge, a water softening by-product that has been shown to have no effect on grayling spawning. Nevertheless, the current ban prohibits designating a mixing zone and any discharge. As a result, GHU has spent well over $1 million to redesign its operation and is shipping lime to the Fairbanks landfill adding significant operating costs and shortening the life of the landfill.