

Testimony
Water Related Topics Overview Committee
Tuesday, August 30, 2011
Harvest Room, State Capitol, 9:45 a.m.
North Dakota Department of Health

Water Quality Issues on Devils Lake Basin and Sheyenne and Red Rivers

Chairman Fisher and members of the Water Related Topics Overview Committee, my name is L. David Glatt, Chief of the Environmental Health Section for the North Dakota Department of Health. The Health Department is responsible for the implementation and oversight of many of the environmental protection programs in the state, including elements of the Clean Water Act.

I am here today to briefly discuss water quality as it relates to the Devils Lake flooding, the Sheyenne River and the Red River. Water quality is only one element of the problem when addressing solutions to the Devils Lake flood. Other issues relate to water quantity and potential downstream concerns. However, today I will limit my discussion to the current Devils Lake water quality, water quality standard development and multi-jurisdictional water quality standards.

Devils Lake Water Quality

Historically, every Devils Lake flood control alternative has been required to identify water quality issues and assess their potential impact on downstream users. Water quality assessments have resulted in the collection of environmental data from several locations throughout Devils Lake as well as the Sheyenne and Red Rivers. This data continues to be collected and is used to characterize water quality changes in the lake as the elevation rises and also in the rivers as discharges from the lake increase. Data collected to date shows that water quality in Devils Lake varies from west to east. In general terms, the best water quality is found in the western portion of Devils Lake with poorer quality in the eastern portion. Water quality can vary to as much as five times from west to east. For example, sulfate is approximately 500-525 mg/l in the West Bay and approximately 2,500 mg/l in Stump Lake. Other water quality parameters exhibit a similar increasing trend from west to east. One should note that as the lake elevation has increased, water quality has improved throughout the lake. This improvement in water quality, especially in the western portion of the lake, along with increased river flows has resulted in the

ability to move more water out of the lake with no adverse impacts on downstream beneficial uses.

Water Quality Standards

Over the years water quality standards have been discussed in great detail by local, state, federal and international interests. Although many of the discussions have been factual, some misinformation on how standards are developed and implemented has been disseminated. It is important to note that the Department of Health has a long history of addressing water quality concerns by following state and federal law. In fact, North Dakota Century Code Chapter 61-28 declares it to be the policy of the state of North Dakota to act in the public interest to protect, maintain and improve the quality of water in the state for continued beneficial uses.

In statute, beneficial uses are typically described as municipal, industrial, agricultural, aquatic life and recreational. To maintain these beneficial uses, the state has established water quality standards that may vary from regions of the state or even from one point of a stream to another. These standards cover many different parameters and are evaluated once every three years for potential modification. Water quality standards are developed in a process which utilizes applicable science, site specific background data, the law and a public review process that includes oversight by the Environmental Protection Agency.

The state takes into consideration the following when identifying a water quality standard:

- Site-Specific Background Data: Background water quality data is important as it identifies the current and historical condition of a water body, sometimes before man made impacts. This data is used to develop standards that maintain the existing or achievable quality of a water body and to protect beneficial uses that have developed or become accustomed to the natural or background quality.
- Current or Historical Beneficial Uses: The current or historical beneficial uses of the stream are identified and evaluated. Depending on the current, historical or desired use of a water resource, site-specific standards may be established. Of primary importance is whether or not a beneficial use has included a municipal water supply. Current or historical use of a water

resource as a public water supply may prohibit relaxing of water quality standards.

- Applicable Science: Also utilized in the determination process is the current state of the science that describes the maximum concentration a beneficial use may tolerate. The maximum concentration a beneficial use may tolerate will depend upon how the water is used, chemical parameter of concern and duration of exposure.
- Applicable Law: Federal and state laws or rules, along with agreements between nations, may also play a role in influencing final water quality standard determinations. Federal requirements identified in the recent water quality standards for the state of North Dakota direct the state to acknowledge, and where possible maintain compliance with downstream standards. In addition, many state laws address the maintenance or improvement of water quality for future beneficial uses (also known as antidegradation). There are some recent determinations, such as the federal water-to-water transfer ruling, that may exempt activities like Devils Lake discharges from a formal 402 process (a.k.a. water discharge permit). However, this exemption does not alleviate the responsibility to protect downstream beneficial uses.
- Public/Federal Review: The final step in the process, after considering all of the above, is a public comment process which provides the public an opportunity to identify issues that they feel may not have been appropriately addressed. After the state has provided a response to public comments, the draft final water quality determination is submitted to the EPA for review; approval; approval with modification or rejection.

Once approved, the federal expectation is that the standards will be implemented to protect water quality and beneficial uses at the state level. A state's failure to appropriately implement the standards can result in increased federal intervention. Recently, increased federal oversight of state programs has been addressed in some states including Florida, Indiana and Wisconsin.

Sheyenne and Red River Water Quality Standards

Using the previously described process, water quality standards have been established for the Sheyenne and Red Rivers.

For the Sheyenne River, the water quality standards were modified in 2010 to reflect the following:

From the headwaters to Baldhill Dam:
750 mg/l for sulfate

From the downstream side of Baldhill Dam:
Remains at 450 mg/l for sulfate

It is important to note that due to the fact that the Sheyenne River is used as a municipal supply, EPA would not allow a change in the sulfate standard.

For the Red River, the sulfate standard remains at 250 mg/l. Because it is a shared water resource with Minnesota, the state is obligated to acknowledge the downstream standard.

There are numerous other standards that may need to be considered in the future depending upon discharge water quality and ambient flows. However, currently sulfate has been the primary parameter of concern.

The state understands the need to move water out of Devils Lake as quickly as possible and in sufficient quantities to provide meaningful flood relief. Issues of water quantity and quality remain for those potentially impacted downstream. The state continues to evaluate alternatives that acknowledge upstream and downstream concerns while providing flood relief.

This concludes my testimony, I would be happy to answer any of your questions.