Submittal Review for the Wisconsin Department of Natural Resources (WDNR)
Request for Approval of a Variance from Water Quality Standard for Mercury
(Little Rapids Corporation, WPDES Permit Number WI-0001341-08)[1]

Date: JUN 2 2 2009

This review documents the basis for U.S. Environmental Protection Agency's action on its review of the approval request from the WDNR for a water quality standards (WQS) variance for discharge by the Little Rapids Corporation.

Summary

Submittal History:

On April 14, 2009, WDNR submitted a request to EPA for approval of a variance from the WQS for mercury for a discharge by Little Rapids Corporation in Shawano County, Wisconsin (WPDES Permit Number WI-0001341-08). This submittal was received by EPA on April 24, 2009, and included the following documents:

- Transmittal letter from WDNR to EPA, dated April 14, 2009.
- Certification Statement for Approval of a Variance to Water Quality Standards, Little Rapids Corporation, WPDES Permit Number WI-0001341-08, dated March 26, 2009.
- Little Rapids Environment Impacts Evaluation, dated January 23, 2009.
- Justification for Alternative Mercury Effluent Limitation under S. NR 106.145, Wisconsin Administrative Code, dated April 9, 2009.

Additionally, WDNR submitted the following documents electronically to EPA:

- Public Notice of Intent to Reissue the Permit and Approve a Variance.
- Draft Permit.
- Permit Fact Sheet.
- Water Quality-Based Effluent Limitation Evaluation Document.

Description of Action:

WDNR proposes to grant the Little Rapids Corporation a variance from Wisconsin's water quality criteria for mercury applicable to the Wolf River in Shawano County. The water quality-based effluent limit for mercury of 1.3 ng/L as a monthly average is exceeded in the effluent from the Little Rapids Corporation wastewater treatment facility. Over the period 2003 to 2007, the mill averaged a discharge concentration of 1.1 ng/l, however, the effluent variability resulted in occasional exceedances of the 1.3 ng/l monthly average limit. An alternative mercury effluent limit of 3.7 ng/L expressed as a daily maximum is proposed along with continued influent and

[1] This review is also documented and all electronic files are maintained in the Region 5 Water Quality Standards Tracking System (WQSTS) as submission number: WI2009-295.

effluent monitoring, continued implementation of an approved Pollution Minimization Program (PMP) for mercury, and annual PMP progress reports. The 3.7 ng/L limit selected as the proposed alternative limit equals the upper 99th percentile of the available effluent monitoring data for total recoverable mercury.

Basis of Action:

Wisconsin's administrative rules at Wis. Admin. Code § NR 106.145 provide for "alternative mercury effluent limits" based on a determination by WDNR that, "Requiring all dischargers of mercury to remove mercury using wastewater treatment technology to achieve discharge concentrations necessary to meet WQS would result in substantial and widespread adverse social and economic impacts." (NR 106.145(1)(a)) This finding is based on, "Assessing the Economic Impacts of the Proposed Ohio EPA Water Rules on the Ohio Economy," prepared in 1997 by the Ohio Environmental Protection Agency, Foster Wheeler Environmental Corporation and DRI/McGraw-Hill in support of the multiple discharger variance adopted by the State of Ohio. The primary conclusion of this study was that the treatment technology that is necessary to remove mercury to the level of the WQS are either not available or are prohibitively expensive and would have a widespread economic and social impact.

Based on this information, WDNR concluded that:

1) The Little Rapids Corporation wastewater treatment facility does not comply currently with a 1.3 ng/L monthly average permit limit for mercury;
2) The Little Rapids Corporation wastewater treatment facility is well-operated and achieving mercury removal rates appropriate for such a facility;
3) Additional end-of-pipe treatment would be necessary to comply with a 1.3 ng/L water quality-based effluent limit; and such treatment would be technically and economically infeasible. This conclusion was based in part on the expense of building and operating additional treatment to comply with a 1.3 ng/L water quality-based effluent limit, which would result in widespread social and economic harm, allowing the facility to seek a variance consistent with s. 283.15, Wis. Stats., Wis. Admin. Code § NR 106.145 and Federal regulations at 40 CFR 131.10(g).

Area Affected and Environmental Impacts

Area Affected:

The area affected by this variance is the middle portion of the Wolf River, downstream from the town of Shawano, Wisconsin, which has been classified as a warm water sport fishery. The annual average design flow (effluent) of the Little Rapids Corporation facility is 2.32 MGD (3.6 cfs) with a daily maximum of 3.09 MGD (4.8 cfs). The 7-day, 10-year low flow (7Q10) and the harmonic mean flow for the Wolf River at Keshana, just upstream from the Little Rapids Corporation facility, is 310 cfs and 596 cfs, respectively.

Environmental Impacts:

Aquatic Life

Wisconsin's aquatic life criteria for mercury are: Acute Mercury (+2) Criterion = 830 ng/L and Chronic Mercury (+2) Criterion = 440 ng/L. The proposed effluent limitation of 3.7 ng/L, is significantly less than both the acute and chronic criteria to protect aquatic life. Thus, the variance will have no effect on aquatic life. Because the discharge concentration of mercury in the effluent will be limited by the variance to 3.7 ng/L, both the acute and chronic aquatic life criteria will be met at the point where the effluent enters the Wolf River.

Human Health & Wildlife

As a condition of the proposed variance, the discharge concentration is limited in the permit to 3.7 ng/L as a daily maximum effluent concentration. This concentration is substantially less than EPA's current maximum contaminant level of 2 µg/L for mercury in drinking water. In addition, the river is not designated as a public water supply. Thus, the proposed variance will not adversely affect human health directly via drinking water.

CWA Section 303(c)/40 CFR131 Review

Regulatory Requirement:	**Little Rapids Corporation Variance submittal:**
Use designations consistent with the provisions of section 101(a)(2) and 303(c)(2) of the Act **(40 CFR 131.6(a))**	The designated use for the Wolf River is Warm Water Sport Fishery; The Wolf River is not designated as a public water supply.
Methods used and analyses conducted to support WQS revisions **(40 CFR 131.6(b))**	Documents submitted by WDNR in support of this variance include all items listed above under submittal history.
Water quality criteria sufficient to protect the designated use "warm-water sport fish community" **(40 CFR 131.6(c))**	The applicable criteria to protect aquatic life are 830 ng/L acute and 440 ng/L chronic. Under the conditions of the variance, the achievable concentration of mercury will be 3.7 ng/L as a daily maximum, which is well within the applicable aquatic life criteria.
An antidegradation policy consistent with §131.12 **(40 CFR 131.6(d))**	Not applicable. This variance does not affect Wisconsin's existing antidegradation policy.
Certification by the State Attorney General or other appropriate legal authority within the State that the WQS were duly adopted pursuant to State law. **(40 CFR 131.6(e))**	WDNR's General Counsel certified the variance in a letter from Michael Lutz to Tinka Hyde, dated March 26, 2009.
General information which will aid the Agency in determining the adequacy of the scientific basis of the standards which do not include uses specified in section 101(a)(2) of the Act as well as information on general policies applicable to State standards which their application and implementation. **(40 CFR 131.6(f))**	The information submitted by WDNR and the Little Rapids Corporation is described above. The Little Rapids Corporation operates a secondary wastewater treatment facility with an annual average design flow (effluent) of 2.32 MGD. As a condition of the variance, the Little Rapids Corporation is required to continue to implement a pollutant minimization program (PMP).

Regulatory Requirement:	**Little Rapids Corporation Variance submittal:**
Variance not applicable to new/recommencing discharges **(40 CFR 132, Appendix F, Procedure 2.A.1)**	The Little Rapids Corporation wastewater treatment facility is an existing facility.
Variance does not jeopardize federally-listed threatened/endangered species **(40 CFR 132, Appendix F, Procedure 2.A.2)**	According to the USFWS, there are no aquatic or aquatic-dependent federally-listed candidate, proposed, endangered, or threatened species in the action area of Shawano County requiring consultation.
WQS cannot be attained by implementing treatment requirements of sections 301 and 306 of the CWA **(40 CFR 132, Appendix F, Procedure 2.A.3)**	There are no applicable treatment requirements for mercury from wastewater treatment facilities under section 301 and/or 306 of the CWA. The facility is currently meeting its secondary treatment requirements. Regarding non-point source control, there are no cost-effective and reasonable best management practices applicable to mercury, as mercury is not a constituent of agricultural run-off.
Duration of the variance is five years or the life of the permit, whichever is less **(40 CFR 132, Appendix F, Procedure 2.B.)**	As proposed the variance duration is the life of the permit. The life of the permit is five years.
Variance is based on one of the six conditions. **(40 CFR 132, Appendix F, Procedure 2.C.)**	The variance is based on substantial and widespread social and economic impacts that would occur if the facility were required to comply with WQS. In particular, there are no available treatment technologies the Little Rapids Corporation could construct to reduce mercury in the discharge to 1.3 ng/L. Wisconsin's administrative rules at Wis. Admin. Code § NR 106.145(1)(a) provide for "alternative mercury effluent limits" based on a determination by WDNR that, "Requiring all dischargers of mercury to remove mercury using wastewater treatment technology to achieve discharge concentrations necessary to meet WQS would result in substantial and widespread adverse social and economic impacts." This finding is based on "Assessing the Economic Impacts of the Proposed Ohio EPA Water Rules on the Ohio Economy," prepared in 1997 by the Ohio Environmental Protection Agency, Foster Wheeler Environmental Corporation and DRI/McGraw-Hill in support of the multiple discharger variance adopted by the State of Ohio. The primary conclusion of this study was that the treatment technology that is necessary to remove mercury to the level of the WQS are either not available or are prohibitively expensive and would have a widespread economic and social impact.
Variance conforms with State antidegradation policy. **(40 CFR 132, Appendix F, Procedure 2.C.2.a.)**	Granting this variance does not remove an existing use.
Any increased risk to human health or the environment is consistent with the protection of public health, safety and welfare. **(40 CFR 132, Appendix F, Procedure 2.C.2.b.)**	According to the Alternative Effluent Limit for Mercury (January 23, 2009), the Little Rapids Corporation facility appears to return no more mercury than it withdraws from the Wolf River. On average the facility discharges an average of 8.9 to 9.1 mg/day in it effluent compared to an average of 8.3 to 13 mg/day in intake withdrawn from the Woof River. In addition, a condition of the variance is for the Little Rapids Corporation to continue to implement its pollutant minimization program (PMP) to reduce levels of mercury in the influent and submit annual progress reports through the term of the permit. The PMP plan was submitted on July 12, 2008 and is

Regulatory Requirement:	Little Rapids Corporation Variance submittal:
	required to go into effect no later than July 1, 2009. Under the proposed variance, the discharge concentration is limited in the permit to 3.7 ng/L as a daily maximum effluent concentration. This concentration is substantially less than EPA's current maximum contaminant level of 2 µg/L for mercury in drinking water. Also, the river is not designated as a public water supply. Thus, the proposed variance will not adversely affect human health directly via drinking water. Granting a variance in this situation is consistent with the protection of public health, safety, and welfare.
Submittal of a variance application by the permittee demonstrating that attaining WQS is not feasible and showing compliance with the requirements of section C.2. of procedure 2. **(40 CFR 132, Appendix F, Procedure 2.D.)**	The application submitted by the Little Rapids Corporation makes the demonstrations and showings that are specified.
Submittal to EPA, including permittee's application, public comments and hearing records (if held), final decision, NPDES permit with conditions consistent with 2.F. **(40 CFR 132, Appendix F, Procedure 2.I.)**	WDNR provided all the required information, including the establishment of an alternative mercury effluent limitation, which represents the level currently achievable by the permittee, and which is no less stringent than that achieved under the previous permit. WDNR public noticed the permit and variance on February 4, 2009. WDNR indicated that no comments were received from the public.

The information provided by WDNR meets the substantive requirements for a WQS submittal of 40 CFR 131.6. In addition, the information provided by WDNR demonstrates that the Wisconsin mercury criteria for the protection of wildlife is neither attained nor attainable in the Wolf River near the Little Rapids Corporation, consistent with 40 CFR 131.10(g). This is not to say that wildlife uses are not occurring on the Wolf River. Wildlife are able to use the Wolf River for forage and drinking water, however, there may be exposure to marginally higher levels of mercury than would occur if the wildlife criterion was attained.

Endangered Species Act (ESA) Section 7 Evaluation

Consistent with section 7 of the ESA and federal regulations at 50 CFR Part 402, EPA is required to consult with U.S. Fish and Wildlife Service (FWS) on any action taken by EPA that may affect federally-listed threatened and endangered species or their designated critical habitat. Actions are considered to have the potential to affect listed species if listed species are present in the action area. In the case of this action, there are no federally-listed proposed, endangered, or threatened aquatic or aquatic-dependent species present in the action area that would require consultation, based on FWS's Section 7 Consultation Technical Assistance website, accessed on June 15, 2009. Therefore, EPA concludes that approval of this variance will have no effect on Federally-listed species or designated critical habitat, and consultation under section 7 of the ESA is not required.